

Oil Field Development, Crude Oil Transport

Japan depends on imports of crude oil from abroad, largely from the Middle East. Cosmo Oil has a long history of independent crude oil development in the Middle East; today in the oil fields which are the site of crude oil production, in local production facilities and during the ocean transportation of crude oil by tanker, a borderless system of environmental measures have been put into place.



Production at the Abu Dhabi Mubarraz Oil Field

***Associated Gas**

This gas, which emerges from the oil field during crude oil production, contains a high degree of hydrogen sulfide, CO₂ and other acid gases.

Repressurization and Subterranean Injection of Associated Gas and Water: More Environmentally-Friendly Oil Fields

A familiar sight at the oil fields of the world is the orange flame—the flare—of associated gas*, which emerges during crude oil production, being burned in the atmosphere. This is not only a waste of resources but a process with the environmental problems of the discharge of hazardous materials and the generation of CO₂.

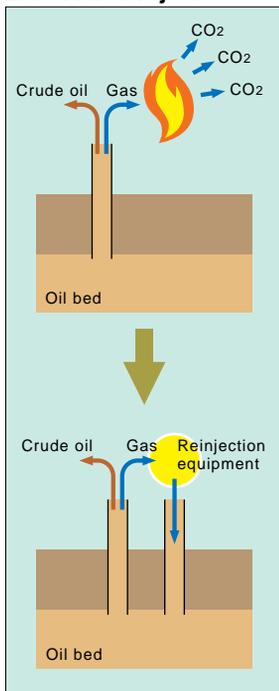
Cosmo Oil is the majority stockholder of Abu Dhabi Oil Co., Ltd., with 51.1 percent of outstanding shares. In November of 2000 at two oil fields which are managed by the company in Abu Dhabi including the Mubarraz oil field, we first began the Sour Gas Reinjection Project, in which associated gas is reinjected into the earth. Through the project, the associated gas which previously was burned in the atmosphere is repressurized with a large compressor and reinjected into the subterranean oil layer, realizing a major cutback in hydrogen sulfide emissions, a major cause of acid rain, and of CO₂ resulting from combustion.

This not only helps to prevent air pollution in Abu Dhabi, but contributes greatly to the prevention of global warming, and has the added benefit of increasing the recovery rate from the oil field due to the increased pressure within the oil bed.

The project won high praise from the Abu Dhabi government, and was selected as Supreme Winner of the 2000 ADNOC HSE Award presented by the Abu Dhabi National Oil Company.

The Sour Gas Reinjection Project is the first step in the Zero-Flare Project, through which all Abu Dhabi Oil fields will handle associated gas in the same way.

Zero-Flare Project



Promoting Larger Sizes and Double Hulls Safe, Energy-Saving Ocean Transport of Crude Oil

In marine transportation, environmental protection is a major issue for ship owners; as a ship charterer, we also fully understand the need for safe navigation. In fixed-term chartering, good ship owners enter the contract with few past problems and a plan firmly in place to prevent any recurrence of problems that do happen. In spot charters, we work for the prevention of ocean pollution by a confirmation of the actual operating data of the ship, based on our own examination standards.

To prevent accidents resulting in oil spills, we have proceeded since 1998 with the term chartering of double-hulled tankers. As of March 31, 2001, three term-charter double-hulled vessels were introduced into the fleet of 13 ships. Another ship is to be added in 2002.

The use of Very Large Crude Carriers (VLCCs—ships of 200,000 tons or more) has also resulted in a 10 percent reduction in the fuel used per volume of transported crude oil compared to 1996 levels.

In November of 2000, a business partnership with Nippon Mitsubishi Oil Corporation aimed at joint tanker operations resulted in the founding of Nippon Global Tanker Co., Ltd. By drawing on advantages of scale, the new company will provide an increase of efficiency in ships and operations, as well as reduce fuel consumption.

Term-Charter VLCC Fuel Consumption

