

A photograph of an industrial facility, likely a refinery or chemical plant, featuring a large, bright orange and yellow fire or flare against a clear blue sky. The fire is the central focus, extending horizontally across the right side of the frame. In the foreground, there are several tall, dark metal structures with multiple vertical pipes or chimneys, supported by a complex steel framework. A white rectangular box is superimposed over the upper part of the image, containing the text 'Risk-Management'.

Risk- Management

Risk Management

Osaka Gas focuses closely on three external management risks: LNG procurement risk, business risk accompanying such factors as deregulation, and risk from the adverse effects of temperatures on gas sales. As part of its risk management, Osaka Gas is taking a vigorous approach to addressing these three issues.

In its LNG procurement operations, Osaka Gas has registered steady progress in diversifying into upstream sectors with the aims of strengthening its price-negotiation capabilities and reducing transport costs. To respond to business



risk, Osaka Gas has already established uniform investment judgment standards for the entire Osaka Gas Group. To this end, Osaka Gas makes decisions for investment in new businesses in accordance with a hurdle rate based on a weighted average of capital costs that incorporates the risk characteristics of each business. For businesses already commenced, Osaka Gas has introduced an investment decision-making system that involves close monitoring on an annual basis as well as taking such measures as withdrawing from a business when necessary.

To reduce management risk resulting from temperature changes, Osaka Gas has adopted new trial measures that include entering into weather derivative contracts with Tokyo Electric Power Co., Inc. (TEPCO) and Kansai Electric Power Co., Inc. (KEPCO).

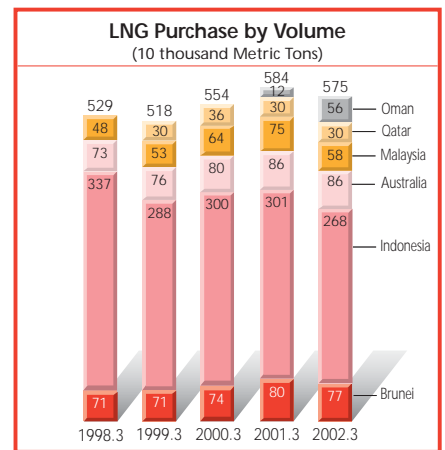
Securing Stable Supplies and Reducing Costs for Natural Gas

Osaka Gas is dependent on imported LNG as a source of natural gas. Therefore procuring stable supplies of LNG at low costs is a crucial issue. Osaka Gas considers the areas encompassing the upstream to downstream sectors of natural gas—from procurement to sales and maintenance—as the value chain. By proactively participating in each sector comprising this value chain, Osaka Gas is reducing risk while maximizing opportunities to expand income. Specifically, Osaka Gas has acquired a plethora of experience in these sectors, which includes overseas gas field development (acquiring rights in gas exploration projects) and the operation of its own fleet of three LNG tankers.

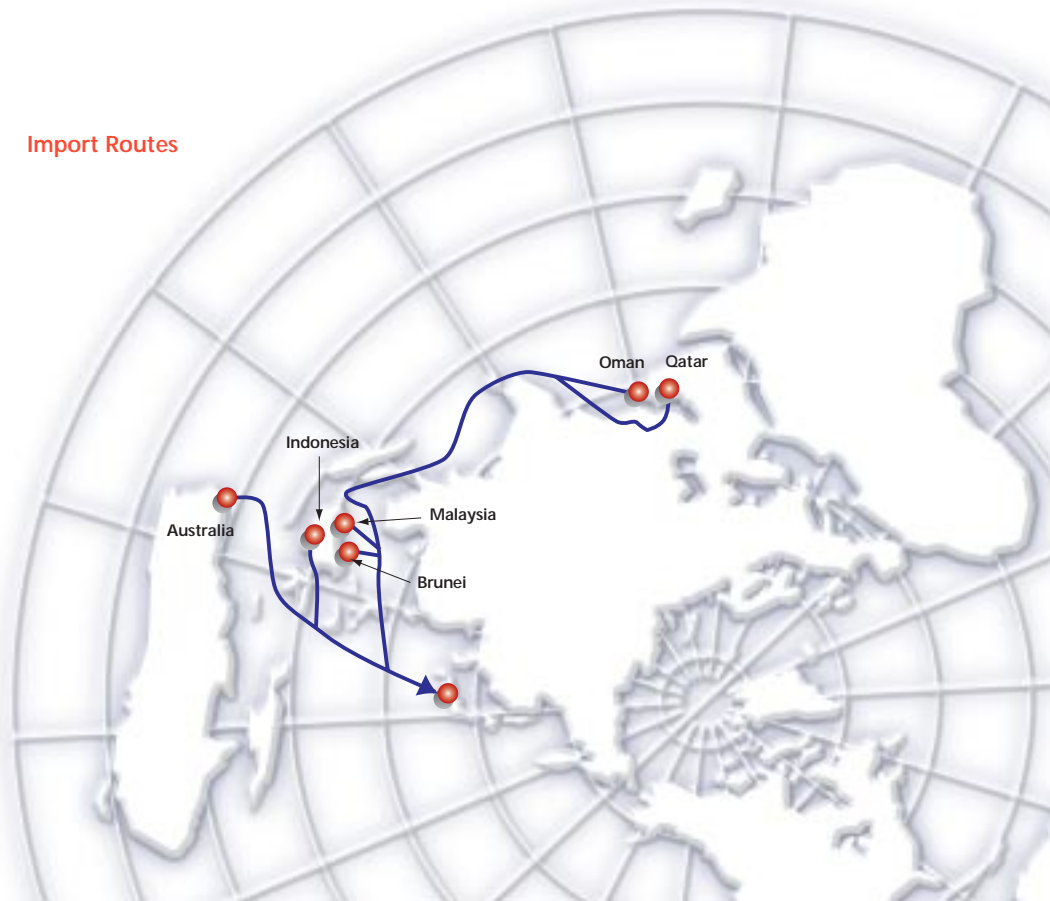
Osaka Gas also believes that diversification of procurement sources is an essential element of risk management. Acting on this conviction, Osaka Gas purchases LNG from six different countries: Indonesia, Australia, Brunei, Malaysia, Qatar, and Oman.



The Karratha LNG Base in Australia

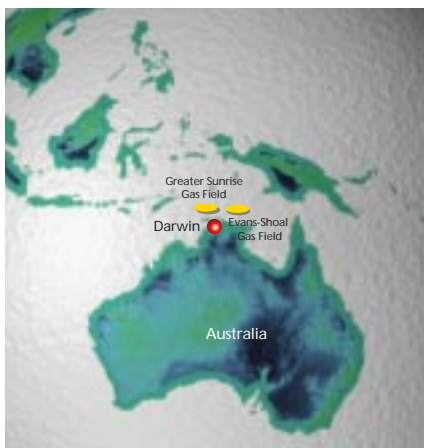


Import Routes



Establishing Groupwide Uniform Investment Judgment Standards

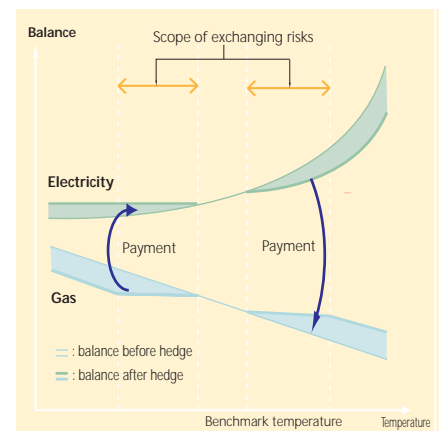
As a basic investment judgment standard, in 2000 we adopted net present value (NPV) of cash flows from projects in which we have invested, and which is calculated using hurdle rates adjusted for risk characteristics of each project. Osaka Gas's investment judgment standards have two features: 1) the appropriate inclusion of assumed risk excluding such factors as terminal value after the end of the investment valuation period and 2) in addition to clarifying withdrawal standards at the time of the investment decision, stipulations are clarified for withdrawal standards after the commencement of a business, including continual follow-ups on the investment.



The Northern Australia Gas Venture (NAGV)



LNG tanker



Scheme of exchanging temperature risk

Investment Judgment Standards

NPV (Net Present Value) to be positive within 10 years

$$NPV = \frac{PCF_n}{(1+h)^n}$$

FCF = Operating income after tax + depreciation – capital investment (cash basis)
– increase in working capital

h: hurdle rate = WACC (Weighted Average Capital Cost) + margin

n: Investment recovery period (In principle, 10 years)

Reducing Risks from Temperature Changes

Fluctuations in air and water temperatures exert a significant influence on the sales volumes of gas and represent one of Osaka Gas's principal business risks. To minimize risks from temperature fluctuations, Osaka Gas has entered into weather derivative contracts with Tokyo Electric and Kansai Electric that cover temperatures through June to September, 2002. These derivative contracts were introduced in fiscal 2003. In the service areas of both of these companies there is an inverse correlation between summer temperatures and profits in the gas business. Osaka Gas is using these characteristics to hedge revenue and expenditure risk. By utilizing weather derivative contracts, the Company can hedge most temperature risk during summer months.