

The industrial plant markets in the Middle East, Africa, and Japan—the JGC Group’s main markets—were active due to aggressive capital investment by state-run oil and gas companies, oil majors, and domestic oil and chemical companies, against a backdrop of a medium- and long-term uptrend in demand for energy. At the same time, however, there has been a marked rise in the prices of materials and equipment, lengthened delivery times, and shortages of skilled labor, particularly overseas, because capital investment plans have been excessively concentrated.

Amid this environment, the JGC Group in fiscal 2006 focused on ensuring steady project implementation through strengthened partnerships with customers, suppliers, and subcontractors, and enhanced resources both within and outside the Company. We also worked to minimize project execution risks when winning new project orders by being selective and diversifying contract formats with customers.



OIL AND GAS DEVELOPMENT PROJECTS

We executed numerous projects in the oil and gas development field in response to strong and active capital investment on the part of oil-producing nations, led by those in the Middle East.

In Saudi Arabia, we are currently constructing a large-scale natural gas liquids (NGL) recovery plant for the state-run oil company, Saudi Aramco, with a target completion in the first half of 2008. As explained in our Special Feature 1 “Contributing to Prosperity in the Kingdom of Saudi Arabia, the World’s Largest Oil Producer” (page 6), for over 20 years JGC has been deeply involved in important projects in Saudi Arabia’s energy development strategy, from upstream to downstream, contributing greatly to that country’s development.

Meanwhile, in Iran, JGC is constructing a large-scale natural gas processing plant for Petropars Ltd., a subsidiary of the National Iranian Oil Company, with completion scheduled for the latter half of 2007.

In Qatar, we are working on another large-scale natural gas processing facility for Dolphin Energy Limited, with the first and second trains completed in mid-2007 and construction continuing on the third and fourth trains.



PETROLEUM REFINING PROJECTS

During the year, JGC won orders for, and has been engaged in, a large number of petroleum refining projects both in Japan, where accelerated efforts are being made to increase heavy oil refining capacity and expand production of petrochemical products, as well as in other parts of Asia and in the Middle East, where new refining facilities are being built and existing facilities are being improved to become more environmentally friendly.

JGC won an order for an oil refinery upgrade project from the Singapore Refining Co. Pte. Ltd. in Singapore. This project will construct an ultra-deep diesel oil desulfurization unit conforming to EURO-IV regulations (sulfur particles 50 ppm or less) within a petroleum refinery that JGC previously constructed.



Petroleum Refinery for the Sohar Refinery Company, Oman

In Vietnam, we are constructing that country's first large-scale petroleum refinery and offsite facilities for the state-run oil company, Vietnam Oil and Gas Corporation (Petrovietnam), with completion scheduled for early 2009. JGC is also positioning Vietnam as a future growth market, and opened a Hanoi office in April 2007 as part of our efforts to strengthen sales activities.

In Japan, we are engaged in a number of construction projects for heavy oil upgrading facilities for domestic petroleum refining companies.

In Oman, JGC completed a new petroleum refinery for the Sohar Refinery Company in June 2006. The refinery began operations in 2007.

In 2007, JGC completed an petroleum refinery modernization expansion project for the state-run oil company, Bahrain Petroleum Company (BAPCO) in Bahrain.



LNG PROJECTS



3D View of LNG Plant for Yemen LNG Co., Ltd., Yemen

With demand expanding in the U.S., Europe and China, LNG projects are being planned and initiated worldwide. It is hoped also that LNG projects will be realized in the future in Africa, Oceania, and Southeast Asia.

As the leading engineering contractor for LNG plants, JGC has executed projects around the world, as well as participated in many feasibility studies and Front End Engineering Design (FEED) work.

In Yemen, JGC continues to work on that country's first-ever LNG project. The plant, for the Yemen LNG Co., Ltd. will have two trains and an annual output of 3.35 million tons per train. The first train is scheduled for completion at the end of 2008, followed by the second train in mid-2009.

In Indonesia, we continued to work toward completion of the Tangguh LNG plant for BP Berau, Ltd., scheduled for the second half of 2008. This project is a major element of BP's LNG strategy and will also play a significant role by contributing to the further development of Indonesia's economy.

In Nigeria, we are working on construction of Train 6 of an LNG plant for Nigeria LNG Ltd., with completion scheduled for the second half of 2007. JGC is also working on a FEED project for the world's largest LNG plant with two trains and an annual output of 8.5 million tons per train, for Nigeria LNG.



CHEMICAL PROJECTS



Petrochemical Plant for TPPI, Indonesia

In the chemical field, JGC worked on numerous petrochemical and chemical projects in Japan, Asia, and the Middle East, supported by increased capital investment in response to rising demand for petrochemical and chemical products.

In Saudi Arabia, we are constructing the core high olefin FCC (fluid catalytic cracking) facility and one of the world's largest ethane crackers for the integrated petroleum refining and petrochemical complex of Rabigh Refining and Petrochemical Company, a joint venture between the state-run oil company Saudi Aramco and Sumitomo Chemical Co., Ltd., aiming for completion in the second half of 2008. We are also constructing an integrated styrene facility for Jubail Chevron Phillips Company, with completion scheduled for the second half of 2007.

In Indonesia, we completed a petrochemical plant for PT. Trans-Pacific Petrochemical Indotama (TPPI) in July 2006, and commercial operations have begun.

In July 2006, we completed a chemical plant for the production of EVAL resin, a raw material for food packaging, etc., for EVAL Company of America, the U.S. subsidiary of leading Japanese chemical firm Kuraray Co., Ltd.

In China, the second phase of construction of a polycarbonate manufacturing plant for Teijin Polycarbonate China Ltd. was completed in December 2006.

In Japan, we are constructing a diphenylmethane diisocyanate (MDI) manufacturing facility for Nippon Polyurethane Industry Co., Ltd., with a target date for completion in the second half of 2007. MDI is the main raw material for urethane, which is used for insulating materials, for which demand is increasing, particularly in China.



POWER GENERATION, NUCLEAR POWER AND NEW ENERGY PROJECTS

In the new energy field, we were active in the area of gas to liquids (GTL), which is attracting attention as a source of clean energy, as well as in dimethyl ether (DME).

In February 2007, we won an order from Fuel DME Production Co., Ltd. for construction of a DME manufacturing plant. Fuel DME Production was established by nine companies, including Mitsubishi Gas Chemical and JGC, for the purpose of promoting the spread of DME, and will be striving to commercialize this new fuel by promoting its utilization for boilers, power generators (including fuel cells), and automobiles.

In Qatar, JGC is providing a project management service for the world's largest GTL project for Qatar Shell GTL Limited, a subsidiary of Royal Dutch Shell. JGC's role includes project management as well as the EPCM activities for the GTL synthesis.

In the nuclear power field, Japan Nuclear Fuel Ltd. (JNFL) has been constructing a spent nuclear fuel reprocessing facility in Rokkasho, Aomori Prefecture, since 1993. JGC has installed piping in the active galleries of the facility, and commissioning is now under way in preparation for the planned start of commercial operations in November 2007.



LIVING AND GENERAL PRODUCTION PROJECTS



Astaxantin Manufacturing Facility for Yamaha Motor Co., Ltd., Japan

As described in our Special Feature 2 "Expanding Non-ferrous Metal Refining Businesses" (page 8), we are focusing on expansion in the area of non-ferrous metal refining.

One recent success was recorded in fiscal 2006, when we won an order from Coral Bay Nickel Corp., led by Sumitomo Metal Mining Co., Ltd., for construction of Phase 2 of its nickel refining project in the Philippines, following our work on Phase 1.

In the pharmaceutical field, we won orders for, and are engaged in, a number of construction projects for production facilities for pharmaceutical companies, including a plant in Niigata Prefecture, Japan, for Denka Seiken Co., Ltd. We completed construction of the astaxantin manufacturing facility in Shizuoka Prefecture for Yamaha Motor Co., Ltd. at the end of 2006, as well as a multi-line health and nutritional drink production site

in Saitama Prefecture for Taisho Pharmaceutical Co., Ltd. in early fiscal 2007.

In addition to our existing wide range of services provided related to pharmaceutical production, such as the design and construction of pharmaceutical-related facilities and equipment, and good manufacturing practice (GMP) compliance, we are also focused on providing the fullest possible range of pharmaceutical services, from new drug development to clinical development and commercial production, areas where business is likely to expand in the future.



ENVIRONMENTAL PROTECTION, SOCIAL DEVELOPMENT AND IT PROJECTS



Hakodate Hospital for Hokkaido Shakaijigyo Kyokai, Japan

In the medical facilities field, we constructed high-quality medical facilities around Japan that were very favorably evaluated by our numerous customers.

Hakodate Hospital, for Hokkaido Shakaijigyo Kyokai (the Hokkaido Association of Social Welfare Organizations), for which JGC provided the design and construction supervision, was completed in October 2006. The Association's Furano Hospital was completed in March 2007. Since performing the design work for the Association's Iwanai Hospital in 2000, JGC has continuously participated in basic planning for moving the hospitals operated by the Association.

Other medical facility orders won during fiscal 2006 include the Maikohama Hospital renewal project for the Iwaki Saiseikai Foundation, in Fukushima Prefecture, Japan, and the Okamura Memorial Hospital rebuilding project for the Kowakai Foundation, in Shizuoka Prefecture. The Saka General Hospital rebuilding project for the Miyagi Welfare Association, for which JGC provided the design, construction supervision and project management services, was completed in August 2006.



ENTERPRISE INVESTMENT BUSINESS



Power Generation and Water Desalination Facilities under Construction, Saudi Arabia

The JGC Group's new medium-term management plan, "Scenario 2010," which began in April 2006, calls for an expansion of the enterprise investment business into a second major earnings stream behind the E&C business, taking maximum advantage of our strong financial base.

During fiscal 2006, we invested in an ammonia manufacturing and sales business in Egypt, and participated in a bio-ethanol production business in the U.S. The bio-ethanol production business that JGC is advancing in the U.S. does not use crops or animal feedstuff such as sugar cane or corn as raw material, but instead processes woody waste and agricultural waste products into the clean energy source.

The large-scale power generation and water desalination projects we are currently working on in Abu Dhabi and Saudi Arabia are steadily progressing towards completion in mid-2008. Upon completion, these projects will supply electricity and water to the Abu Dhabi Government over a period of 20 years, and to one of the world's biggest integrated refining and petrochemical complexes being developed by Saudi Aramco and Sumitomo Chemical over 25 years.

The Juhua CDM (Clean Development Mechanism) Business that JGC is advancing in China has begun operating its greenhouse gas decomposition equipment from August 2006, as explained in our Special Feature 3 “JGC’s Expanding CDM Business” (page 10). Certified Emission Reductions (CERs) were issued ahead of schedule.

This project calls for the acquisition of greenhouse gas credits equivalent to a total of 40 million tons of CO₂, among the highest volumes in the world, over a seven-year period. In addition, JGC realized a waste-heat power generation CDM at a cement factory, and is currently developing numerous other CDM projects in China, such as a raw material replacement CDM at a cement factory, and a coal mine methane gas CDM, contributing to the reduction of greenhouse gases.



CATALYSTS AND FINE CHEMICAL PRODUCTS

The main trends seen in the catalyst and fine chemical products business were an increasing focus in the treatment of heavy oil, efforts to reduce environmental impact, increased production of petrochemical feedstocks, and stimulation of IT-related investment. Amid this environment, the catalyst and fine chemical products business posted sales and profit gains despite resource-related risks such as rising prices for raw materials and the need to secure raw materials themselves. The improved economics can be attributed to capacity expansion and cost reduction measures, as well as the strong performance of the market.

In the catalyst business, sales of FCC catalysts, —a product category where the Catalysts & Chemicals Industries Co., Ltd. (CCIC), a subsidiary of JGC, holds a domestic market share of about 75%—and hydrotreating catalysts were strong, both domestically and overseas. Following the expansion of our FCC catalyst manufacturing plant in 2005, we embarked on an expansion of our hydrotreating catalyst manufacturing plant at the end of 2006 in response to rising demand.

We introduced our De-NO_x catalysts and environmental catalysts to the Chinese market, and we are working to expand other overseas markets, including the U.S. and Europe. Sales of petrochemical catalysts grew steadily as our customized catalysts meeting customer needs for high value-added products and high functionality were well received.

In the fine chemical products business, sales of semiconductor abrasive materials and anti-reflective materials and antistatic materials for flat panel displays were strong due to active IT-related investment. We made a market launch of dielectric coating material, which is a next-generation semiconductor coating material, and captured the attention of the industry.

Sales of optical materials and raw materials for cosmetics have been expanded to not only domestic but also overseas markets, and are growing steadily. Sales of cathode materials for rechargeable batteries doubled thanks to strong cost competitiveness compared to rival products. Accordingly, we will boost our production capacity moving into the next fiscal year to expand the business.

Our wholly owned subsidiary CCIC is advancing a new business focusing on chemical products that are environmentally friendly as a third main business in addition to catalysts and fine chemicals, and is seeking to establish the fuel cell catalysts and adsorbents, and dye-sensitized solar cell (DSSC) material businesses as part of this strategy. We entered into an exclusive sales agent agreement for DSSC with Dyesol Ltd., an Australian maker of DSSC, and also plan to expand the sale of titania-based DSSC materials to Europe.