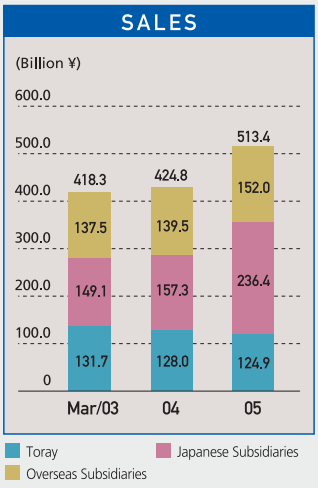
Review of Operations

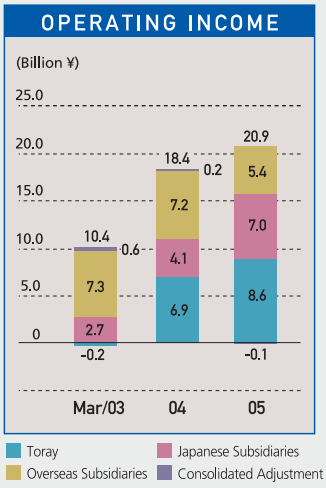
Fibers and Textiles

Nylon sales in Japan increased thanks to a shift to high-margin products in apparel applications as well as efforts to expand sales for air bags in industrial applications. Overall sales of *Tetoron** polyester fiber increased as robust sales of filament yarn in both apparel and industrial applications compensated for lower sales of staple fiber caused by a downturn in the futon pad market. Moreover, higher sales of *Ecsaine** synthetic suede and apparel products, and sales at Chori Co., Ltd., which became a consolidated subsidiary in the fiscal second half, also contributed to significant sales growth in Japan.

Overseas sales increased as a result of growth in the staple fiber and filament fabric businesses in Thailand, filament fabric business in China, and polypropylene spunbond business in South Korea.

Responding to sharp increases in raw material and fuel prices worldwide, we have also sought to increase sales prices to cover higher costs.





Topics in FY Mar/05

Expanding Nylon 66 production facilities in Thailand

Toray has decided to expand its production facilities for Nylon 66 used in air bags by about 6,000 tons annually at Thai Toray Synthetics Co., Ltd., a manufacturing and sales subsidiary in Thailand that handles synthetic fibers, resins, and films.

The new facility will double our current production capacity to about 12,000 tons annually, and we aim to launch operations in spring 2006.

The Toray Group's air bag business manufactures filament yarns at the Okazaki Plant in Japan and at Thai Toray Synthetics in Thailand. The expansion will increase the Group's annual production capacity for air bag filament yarn by 40% from its current 14,000 to about 20,000 tons.

The global air bag market is expanding year by year, and we expect demand of yarns to grow at an annual rate of 8% from 2003 to 2010. Heightened safety awareness has also helped drive demand by leading to an increase in the number of cars equipped with side curtain air bags, contributing to a greater number of air bags per car.

Growing demand for air bags

Amid this trend, automobile and auto parts manufacturers have located their Asian production facilities in Thailand, and given that Toray also has a long history of producing filament yarn and fabrics in Thailand, we are expanding our production facilities there to meet growing demand not only locally, but also in other ASEAN countries, the U.S., Europe, and particularly China, which is expected to see the highest growth in demand.

New Textile Processing Technology Based on Nanotechnology

Toray has developed *NanoMATRIX**, a nanoscale processing technology for forming a functional material coating comprised of a nanoscale molecular assembly that can be applied to individual fibers of woven and knitted fabrics. This technology makes it possible to develop new functions, create complex functions, improve existing functions (such as performance and durability), and expand the number of materials to which it can be applied and their applications—all without sacrificing the texture of the fabrics.

To help spread the word about the advantages and functionality of nanotech materials among distributors and consumers, Toray established the Toray Nanotechnology Symbol Mark as a guarantee of the quality of materials that use our nanotechnology to provide sophisticated functions. *NanoMATRIX** is already used in *ROUGEOFF**, a new material that allows the easy removal of lipstick, foundation, or other cosmetic smudges at home, and *Anti-Pollen** *NT*, a new material whose properties limit pollen accumulation.

Based on TORAY Nano Technology

The Toray Nanotechnology Symbol Mark shows an atom passing through a barrier as representative of the wide-ranging ability of nanotechnology to overcome a variety of problems.

Cross-section of a functional material-coated fibers using NanoMATRIX technology*

Business Environment and Outlook in FY Mar/06

In Japan, though underlying demand is largely unchanged, we anticipate growth in demand for automotive and other industrial applications. We are also continuing to expand advanced materials businesses such as 3GT fiber, PLA fiber, and PPS fiber, shifting to high-margin products to expand our New Value Creator concept. After becoming a consolidated subsidiary in the second half of FY Mar/05, we expect Chori to contribute to earnings growth in its first full-year as a consolidated subsidiary, thanks in part to steadily generating synergies with Toray.

Overseas, despite an uncertain business environment, including the impact of quota-free markets, we seek to restructure our China business, expand advanced materials businesses for air bags and other applications, and increase earnings in our ASEAN businesses.

We anticipate a challenging business environment as a result of higher raw material and fuel costs caused by the surge in crude oil prices. However, we are working to minimize this impact by steadily passing on higher costs and shifting to high-margin products, and we target sales and profit growth in the overall fibers and textiles segment.

Review of Operations

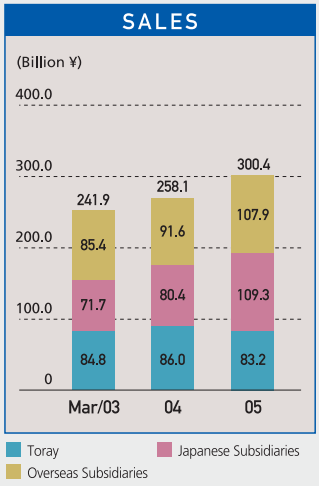
Plastics and Chemicals

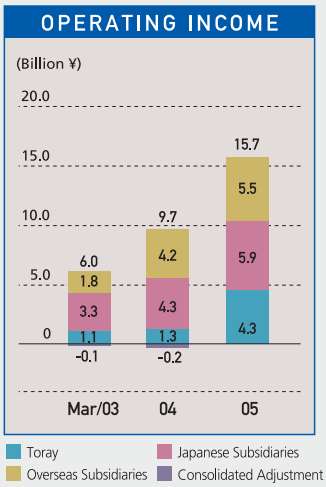
Overall sales in the resins business increased as a result of strong growth for *Amilan** nylon resin, *Toraycon** PBT resin, *Torelina** PPS resin, and other engineering plastics used in both automotive and electrical applications, as well as robust sales of *Toyolac** ABS resin both in Japan and overseas.

The films business also reported higher sales thanks to growth in mainstay *Lumirror** polyester film, aided by increased sales for packaging and industrial materials applications both in Japan and overseas and a shift to higher value-added products, and to healthy demand for *Torayfan** polypropylene film for packaging and industrial materials applications in Japan and overseas.

Sales in the chemicals business decreased, due mainly to consolidating the production of caprolactam at the Tokai Plant and to curbing low-margin exports.

Responding to sharp increases in raw material and fuel prices worldwide, we have sought to increase sales prices to cover higher costs.





Topics in FY Mar/05

Plant-based polylactic acid plastics

Amid an increase in the number of countries passing legislation intended to reduce environmental burdens, polylactic acid (PLA), a plant-based biodegradable plastic material, is attracting attention as a substitute for petroleum. Toray positions PLA as an environmentally-friendly advanced material, and we are marketing fiber and plastic products under the *Ecodear** brand name while developing high-performance PLA technologies.

Toray, in cooperation with Fujitsu Ltd. and Fujitsu Laboratories Ltd., developed the world's first large plastic case using PLA resin. This case is used in Fujitsu's FMV-BIBLO NB80K notebook computer released in spring 2005. Additionally, based on our unique film microstructure control technology, we also developed the world's first flexible PLA film for use as wrapping film and other applications.

Ecodear*

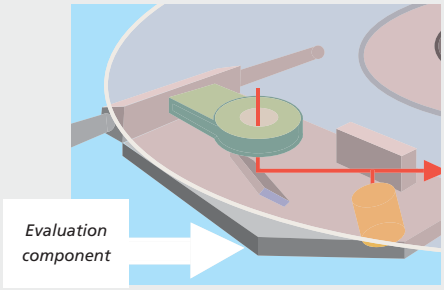
*Ecodear** logo

*Toray's Ecodear** PLA resin used for case of Fujitsu's FMV-BIBLO notebook computer

Developed high-thermal conductive thermoplasticity plastic

Toray developed a thermoplasticity plastic with the world's highest thermal conductivity at more than 100 times higher than conventional plastics. This high-thermal conductive thermoplasticity plastic is capable of diffusing and releasing heat due to its high thermal conductivity. We anticipate its use in a wide range of products in which conventional plastics cannot be used.

Compared to metals such as aluminum, ceramics, and other materials, this thermoplasticity plastic is lighter in weight, lower in cost, quieter because a cooling fan is not required, and can be molded efficiently into complex shapes. Taking advantage of these features, we expect it to be used as a metal substitute in optical disk pickups, internal cases, and other components in office automation and audio-visual equipment. We also believe it holds promise as a substitute for ceramic components, including fiber optic connectors, thanks to its high dimensional stability. We have developed a pilot production system and started sample testing and market evaluation with the aim of commercializing products within one year, primarily parts and materials used in electrical and electronic equipment and in automobiles.



Example of anticipated optical component application

Business Environment and Outlook in FY Mar/06

We believe worldwide resin demand will continue to expand favorably thanks to an increase in car production volume, an increase in the amount of resin used per car, and to higher global demand for use in electrical machinery. In Toray's resins business, we target sales and profit growth as a result of higher demand as well as our efforts to introduce new products and develop new applications.

Worldwide demand for industrial and packaging films is growing steadily. In Toray's films business, we are working to increase sales and profits on the back of higher global demand as well as growth in capacitor films used in environmentally-friendly hybrid cars and films used in solar batteries.

At overseas film subsidiaries, we are pursuing restructuring and shifting from magnetic recording material applications to packaging and industrial material applications.

Though affected by the rapid increase in raw material and fuel prices, we target sales and profit growth in the overall plastics and chemicals segment as a result of steadily passing on higher costs and shifting to high-margin products.

Review of Operations

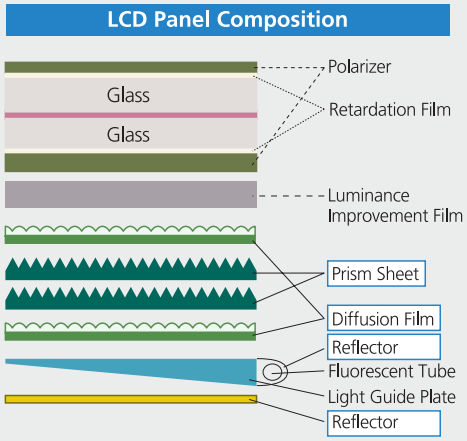
IT-related Products

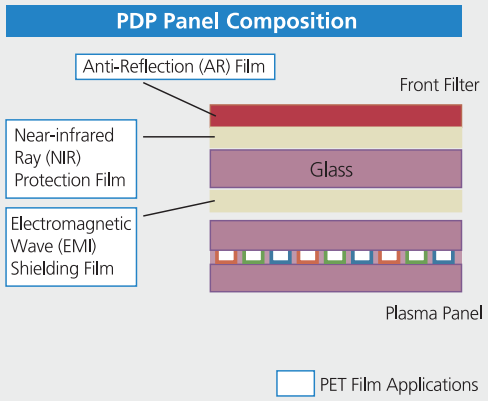
Though the IT-related resins and films business was affected by an adjustment in supply and demand in the information and communications equipment market during the fiscal second half, sales increased as a result of efforts to expand sales for applications, including LCDs, mobile phones, and digital consumer electronics.

Sales in the electronic materials business increased thanks to growth in circuit materials in South Korea and in PDP-related products.

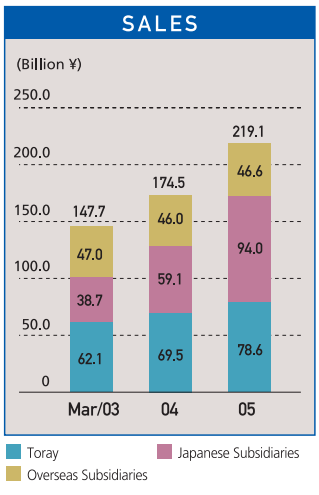
In the LCD materials business, overall sales increased thanks to continued strong sales of LCD color filters used in high-performance small and medium-sized LCDs used mainly in mobile phones.

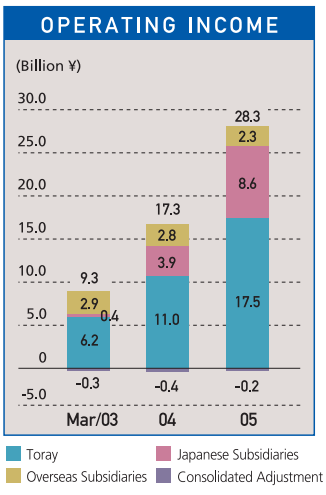
Sales in the IT-related equipment business increased, driven mainly by growth in liquid crystal coating equipment.





Toray's Lumirror PET film is used in a variety of LCD and PDP components, for which demand is expanding. Going forward, we are looking to enhance synergies with our film processing business and to expand and strengthen our LCD film materials business.*





Topics in FY Mar/05

Expanding *Metaloyal** production facilities

Toray Advanced Film Co., Ltd. (headquarters: Chuo-ku, Tokyo; president: Yuji Takita) has decided to increase its production capacity by 50% for *Metaloyal**, an electrolytic plated two-layer flexible substrate film used in high-density electronic circuits. The company will build two state-of-the-art plating facilities at its Fukushima Plant in Kagamiishi, Fukushima to expand annual production capacity to 1 million m² by January 2006.

*Metaloyal** is a two-layer flexible substrate film with a 2-18-micron copper layer formed on the surface of polyimide film through electrolytic plating. The copper-plated layer and high adhesion of the base film enable superior fine pitch etching capabilities, flexibility, and heat resistance. Demand is expanding rapidly for use in circuit boards and high-density connector materials installed on semiconductor chips used to drive LCD panels in notebook computers, LCD televisions, and mobile phones.

To meet growing demand, Toray Advanced Film expanded its annual production capacity to 700,000 m² in March 2005 after commencing operations at a third plating facility under construction since last year, but because it will be unable to meet demand as early as 2006, the company has decided to build two additional facilities.

*Metaloyal** used as substrate for LCD drivers

Reorganizing and expanding Asian production of polyester film

Toray's *Lumirror** enjoys the top share of the global market for polyester (PET) film. Growth in the digital consumer electronics and information communications equipment markets has fueled a rapid increase in demand for thick PET film in Asia. In response, we have developed a plan to expand the capacity of our Asian production facilities located in South Korea, Malaysia, and Japan.

At Toray Saehan Inc. in South Korea, we are converting existing thin film facilities to produce thick film used as an industrial material. At Penfibre Sdn. Bhd. in Malaysia, in addition to increasing the capacity of existing facilities, we are installing new facilities to produce industrial thick film with the aim of launching production at the end of 2006. Further, at the Gifu Plant in Japan, we are converting existing thin film facilities into optical thick film facilities equipped with the latest technology. We are investing a total of about ¥15 billion in an effort to increase our thick film production capacity in Asia from 70,000 tons currently to 110,000 tons in 2006, and to create an optimal industrial film supply system through global operations.

Expanding LCD color filter production facilities

In Toray's LCD color filter business, we are expanding production facilities for high-performance color filters used in small and medium-sized LCDs. To respond to changes in the business environment, we are gradually expanding facilities in three stages at the Shiga Plant in Otsu, Shiga. In the first stage of the expansion, we built new buildings in preparation for the second and third stages, boosted monthly production capacity by 15,000 sheets at a third-generation glass size (500mm×670mm), and launched operations in April 2005.

We have been restructuring our color filter business since 2002 in an effort to shift from large LCD applications to small and medium-sized LCD applications. During this process, we became the only company in this industry to develop a high-definition, high-visibility, transflective color filter suited for low-temperature polysilicon LCDs by using polyimide resin in color paste and black matrix. This new filter produces a bright and clear image both indoors and outdoors using technology that evolved from Toray's conventional polyimide-specific technologies.

We expect the overall market for small and medium-sized LCDs to grow by about 40% from 2005 to 2008 due to the rapid switch to color mobile phones.

Business Environment and Outlook in FY Mar/06

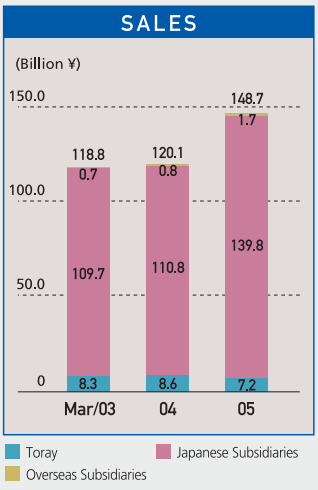
During the first half of 2005, despite an ongoing adjustment in demand for certain IT products, demand for flat panel displays, mobile phones, and other digital products remained strong, and overall demand continued to expand. Capital expenditures by LCD panel manufacturers in 2005 have slowed temporarily after brisk activity in 2004, and we expect demand for LCD color filter manufacturing equipment to decrease. We are working to increase earnings in Toray's IT-related products operations, primarily through growth in the IT-related films, electronic information materials, and LCD color filter and related materials businesses. We anticipate sales and profit growth in the overall IT-related products segment, thanks partly to increased production of two-layer circuit material used in COF applications and color filters used in small and medium-sized LCDs in response to robust growth in demand.

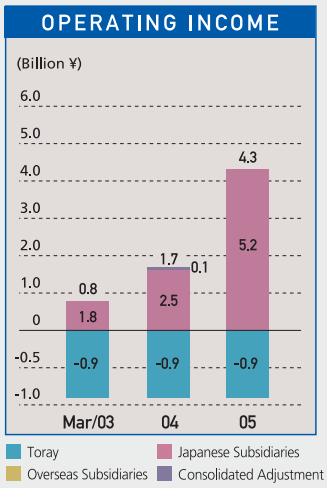
Review of Operations

Housing and Engineering

In the housing and engineering segment, both sales and profits increased year-on-year thanks to strong performance in the condominium business of Toray Construction Co., Ltd. and a contribution from Suido Kiko Kaisha, Ltd., which became a consolidated subsidiary in the fiscal second half.

Romembra Reverse-osmosis membrane elements*





Topics in FY Mar/05

Suido Kiko Kaisha becomes consolidated subsidiary

Toray increased its equity interest in Suido Kiko Kaisha from 20% to 51% in an effort to enhance cooperation in the area of water treatment. We also concluded an agreement to transfer the domestic water treatment systems and facilities businesses of Toray and Toray Engineering Co., Ltd. to Suido Kiko Kaisha.

We are consolidating the water treatment systems and facilities businesses of the Toray Group at Suido Kiko Kaisha so as to fully leverage our collective business and technology assets and expertise. Suido Kiko Kaisha is now positioned as the core water-related engineering business of the Toray Group, and we will strive to expand into new areas of business going forward. We are confident that strengthening cooperation between Toray and Suido Kiko Kaisha is the best strategy for quickly expanding this business, which is the goal of both companies.

Business Environment and Outlook in FY Mar/06

We seek to increase sales and profits by reinforcing our business structure in this segment and working to expand sales primarily in the condominium business of Toray Construction and the plant engineering business of Toray Engineering.

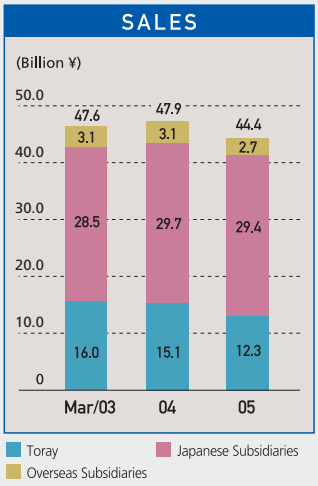
We endeavor to expand our water treatment business on the back of rising demand resulting from water shortages worldwide and through the synergies generated by making Suido Kiko Kaisha a consolidated subsidiary.

Pharmaceuticals and Medical Products

In the pharmaceuticals business, despite an increase in compensation revenue from the joint development and licensing of marketing rights to new drugs, including a new antipruritic medication, overall sales decreased as a result of lower sales of the natural interferon-*ß* drug *Feron** and cardiovascular drug *Dorner** due to a decline in prices. Sales in the medical products business also decreased as growth for *Toraymyxin**, a device for treating septicemia by removing endotoxins from the blood, was overshadowed by a decline in artificial kidney sales caused by a reduction in reimbursement prices.

*Toraymyxin** Blood purification device for treating speticemia

*Feron** Natural interferon-ß preparation



Topics in FY Mar/05

Joint development and marketing agreement for frequent urination and incontinence drug

Toray and Takeda Pharmaceutical Co., Ltd. concluded a joint development and marketing agreement for a frequent urination and incontinence drug candidate in FY Mar/05 (Toray's development code is TRK-130, Takeda Pharmaceutical's development code is TAK-363).

Under this agreement, development and marketing of the new drug will be carried out by Takeda Pharmaceutical overseas and by Toray within Japan. The two companies are currently preparing for Phase I trials in the US, but they plan to pursue development in Japan, the US, and Europe in an effort to enhance development efficiency and shorten the time to market.

Frequent urination, incontinence, and other urinary disorders are caused by an overactive bladder that contracts involuntarily. The elderly are more often afflicted by an overactive bladder, and it can seriously impair a person's quality of life by limiting the ability to travel for long periods or to get adequate sleep.

Currently, anticholinergic drugs are primarily used to treat an overactive bladder, but they can produce several known side effects, including dry mouth, a sensation of residual urine, and constipation. Testing to date has confirmed that the new drug has a new action mechanism to inhibit bladder sensation (inhibit bladder reflex). Moreover, because it shows high selectivity for bladder function, we anticipate a lower frequency of side effects than with anticholinergic drugs. We expect this drug to help significantly improve patients' quality of life as a new frequent urination and incontinence treatment.

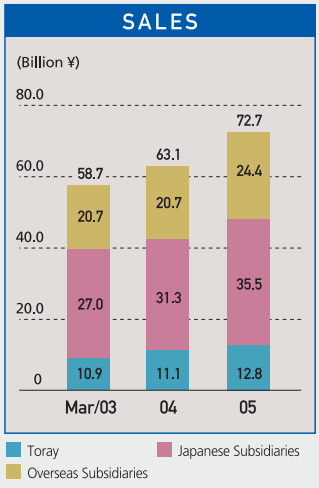
Business Environment and Outlook in FY Mar/06

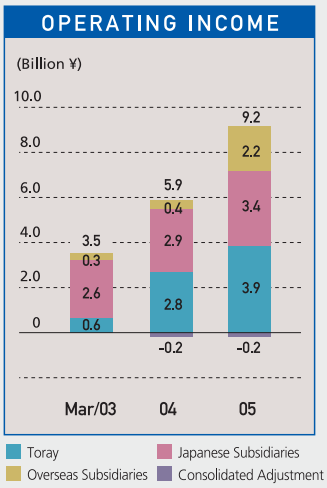
Though we expect both the pharmaceuticals and medical products businesses to be affected by intensifying competition, we look for increased production of a new dry type of artificial kidney to minimize any decline in earnings. We consider our life sciences business to be a strategic growth area and are working to develop DNA chips, protein analysis chips, and other products by combining nanotechnology and biotechnology. We anticipate sales and profit growth for these biotechnology tools going forward.

Review of Operations

New Products and Other Businesses

Sales in the mainstay carbon fiber composite materials business increased as a result of higher sales for aircraft applications and favorable growth in demand for industrial applications, including CNG tanks for natural gas-powered automobiles, turbine blades for wind power generation, and products used in civil engineering and construction. Overall sales in the new products and other businesses segment increased as a result.





Topics in FY Mar/05

Reached an agreement with Boeing to supply carbon fiber composite materials

Toray reached an agreement with The Boeing Company of the U.S. for the supply of carbon fiber composite materials to be used in the primary structural elements of the B787, a next-generation medium-size aircraft scheduled to enter service in 2008. Based on the agreement, Toray is to supply carbon fiber composite materials to Boeing from 2004 through 2021, a total of 18 years.

During the period, Toray will provide Boeing with carbon fiber prepreg, a sheet made from epoxy resin pregnated in carbon fiber. The total value of the supply is estimated to reach approximately 3 billion U.S. dollars. This figure will increase still further if another composite materials get approval from Boeing.

Boeing selected Toray as the sole supplier of carbon fiber reinforced plastics for the primary structures of the B787 aircraft. In 1982, Boeing adopted Toray's carbon fiber *Torayca** for the secondary structural elements of its B757 and B767, and since 1992 has been using *Torayca** prepreg for the primary structural elements of B777. These have been decisive factors in Boeing's project that Boeing's high evaluation for the superior performance of *Torayca** carbon fiber and *Torayca** prepreg, as well as the two companies' long reliable business relationship.

Boeing 787

Expanding carbon fiber and prepreg production facilities at the Ehime Plant

Toray has decided to augment its *Torayca** PAN-based carbon fiber production facilities in Japan. At the Ehime Plant, we plan to add two integrated production lines for carbon fiber precursor polymerization, spinning, and carbonization (total of 2,200 tons per year), and one production line for prepreg (5.8 million m^2 per year). These facilities are scheduled to come online in January 2007.

We are expanding our production facilities to accommodate growing demand for carbon fiber, including for general industrial applications, starting with the supply of *Torayca** carbon fiber composite materials for Boeing's new B787 passenger aircraft, which is scheduled to enter service in 2008. Toray is the only authorized supplier of *Torayca** prepreg for the B787, and we will launch full-scale supply from our U.S. production facilities in 2006. We decided to augment our capacity to supply carbon fiber and prepreg to be able to accommodate orders for the B787 (which are exceeding initial expectations) and increases in B777 production. This expansion will allow us to establish a dual-source supply structure with production facilities in Japan and the US and provide a stable supply of material to Boeing as well as to heavy industry manufacturers in Japan that supply main structural components for the B787.

*Torayca** PAN-based carbon fiber

Carbon fiber composite material (prepreg)

Business Environment and Outlook in FY Mar/06

Demand is robust thanks to continued growth in aircraft and general industrial applications. For aircraft applications, in addition to favorable production of current models, including the Boeing 777 and the Airbus A320 and A340, Airbus S.A.S. plans to boost production of the A380, which is scheduled to enter service in 2006. Moreover, demand is rising for general industrial applications, including CNG tanks, turbine blades for wind power generation, and breathing equipment for firefighters. We target sales and profit growth, aided by a contribution from Société des Fibres de Carbone S.A., a French subsidiary that began increasing production in October 2004.