MOCCA (Timber Solutions) Business

MOCCA (Timber Solutions) Business — Nurturing a New Earnings Pillar

The Group is applying its expertise in wood, accumulated from its diverse businesses, and its technological and design capabilities, built up in the Housing Business, to grow the MOCCA (timber solutions) Business, which promotes the use of wood in non-residential building fields such as commercial facilities and public buildings.

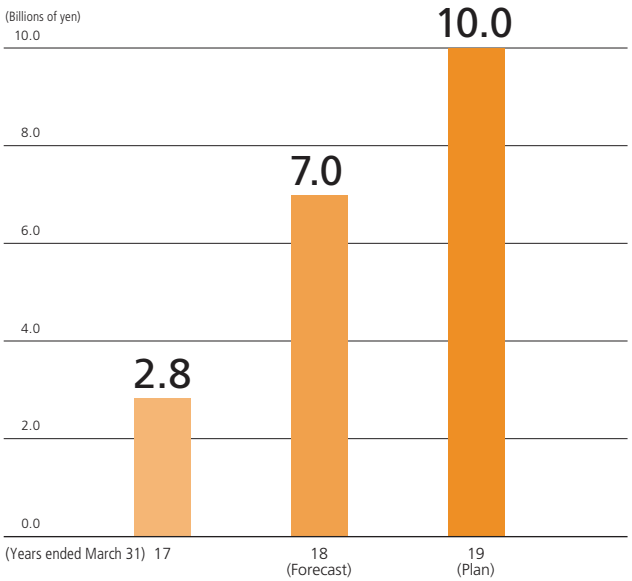
Since the Act on Promotion of Use of Wood in Public Buildings took effect in 2010, there has been a noticeable increase throughout Japan in wooden buildings used for various purposes, mainly public facilities. The Sumitomo Forestry Group has accumulated a track record using wood to build elderly care, education and commercial facilities.


Tully's Coffee Itami


Wooden elderly care facility operated by the Group (Gran Forest Gakugei Daigaku)

Timber is being used to build the New National Stadium Japan, the main venue for the 2020 Tokyo Olympics and Paralympics Games. Many local governments have singled out the revival of their forestry industry as a pillar for regional revitalization, raising expectations that the use of wood in buildings will become more common. Positioning the MOCCA (Timber Solutions) Business as a New Earnings Pillar, the Sumitomo Forestry Group targets orders received of ¥10 billion by fiscal 2018 (The year ending March 31, 2019).

Orders Received



Completion of Company's first timber elementary school building


Miyanomori Elementary School in Higashimatsushima City, Miyagi Prefecture

Design and supervision: Sakari Sogo Plan and Coelacanth K&H Architects, Inc.

In December 2016, we completed construction on the wooden Miyanomori Elementary School in Higashimatsushima City, Miyagi Prefecture. It is the first wooden elementary school constructed by Sumitomo Forestry, and one of the largest wooden structures we have ever built. The approximately 5,000 pieces of solid wood used in the structure were carefully selected from local forests. The school building is remarkable for bringing out the beauty of the natural wood, which fills the air with the scent of wood.

Miyanomori Elementary School was a reconstruction project related to the move of an elementary school to higher ground after being devastated by the tsunami after the Great East Japan Earthquake. The children who entered the school after the earthquake have spent the last five years at a prefabricated temporary school set up for them. The new school was completed without incident in December 2016, coalescing the wishes of local residents and other people involved in the project to give the children an opportunity to learn at their new school before moving on to junior high school. The opening ceremony for the third academic term was held at the new school built out of wood.


Classroom wing


Gymnasium


Flavor Life Co., Ltd. headquarters building

Photo provided by: Studio-Kuhara-Yagi

Hybrid wooden buildings in cities

New efforts are underway to build wooden buildings of medium height on small narrow plots of land in cities for use as business offices or tenant buildings. In Kokubunji, Tokyo, we built a seven-story office building with a steel frame coated in fire-proofed timber. As a symbol of the community, the building is a beautiful sight to behold on a narrow slice of land in front of the train station, attracting people and creating a flow of people.

Wood Biomass Power Generation Business

Growing Demand for Renewable Energy

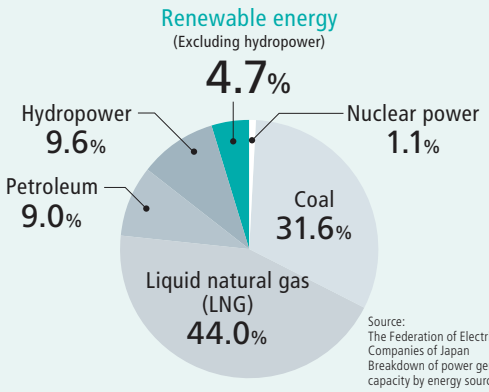
More than 80% of Japan's current power generation relies on fossil fuels such as natural gas, coal and oil, most of which is imported from overseas.

In recent years, the energy market has been destabilized against a backdrop of increased demand due to economic development in emerging countries and geopolitical problems. In Japan, a country with low energy self-sufficiency, diversifying its sources of energy and securing reliable supplies of energy have become major issues. Moreover, reducing CO_2 and other greenhouse gases, caused by the increasing use of fossil fuels, has become a pressing issue the world over. Use of renewable energies has increased and feed-in-tariff (FIT) systems have boosted this.

In the Japanese government's outlook for energy supply and demand in fiscal 2030, the nation aims to increase the ratio of renewable energy and decrease the ratio of nuclear power generation in the mix. Demand for biomass power generation is expected to strengthen.

Japan's Electric Power Generation Mix by Energy Source

(2015)



Source:
The Federation of Electric Power Companies of Japan
Breakdown of power generation capacity by energy source

2030 Renewable Energy Ratio

Energy source	Ratio
Hydroelectric	Approx. 8.8-9.2%
Solar	Approx. 7.0%
Biomass	Approx. 3.7-4.6%
Wind	Approx. 1.7%
Geothermal	Approx. 1.0-1.1%
Total	Approx. 22-24%

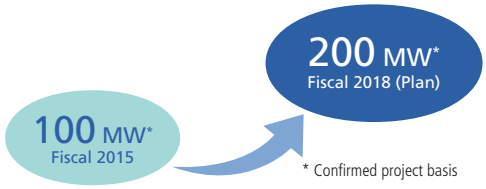
Source: Ministry of Economy, Trade and Industry's Long-Term Energy Supply and Demand Outlook (July 2015)

Wood Biomass Power Generation Business

The Sumitomo Forestry Group's Wood Biomass Power Generation Business procures fuel based on the characteristics of the region, such as wood waste generated by home building and remodeling in cities or unused wood materials from forests. Unused timber from domestic forests* is a resource that has been underused to date. Using these materials as fuel to generate power is a socially significant endeavor that should help maintain the environment in domestic forests, revive the forest industry, and revitalize regions through the creation of jobs.

Procuring fuel for wood biomass power generation is also a business field that can leverage the distribution network of the Group's Timber and Building Materials Business, which has been built up over many years both in Japan and overseas.

The Sumitomo Forestry Group is rolling out a business structure for expanding renewable energy power generation capacity to 200 MW by fiscal 2018. We intend to expand the renewable energy business, centered on wood biomass power generation operations, while encouraging a rethinking of the value of timber as a resource and helping reinvigorate the forest industry. At the same time, we aim to help solve energy problems.



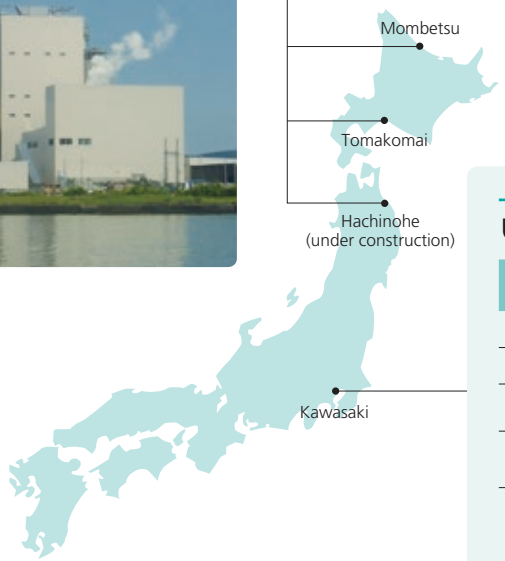
* Unused timber from forests
Timber from forest thinnings and timber left unused because of undesirable bending and small diameters after logging can degrade forest environments if left alone, making it harder to manage forests and plant new trees.

Unused timber from forests (Hokkaido)

Mountainous biomass power generation

	Mombetsu Biomass Power Plant	Tomakomai Biomass Power Plant	Hachinohe Biomass Power Plant
Start of operation	December 2016	April 2017	2018 (planned)
Investment ratio	51%	20%	52%
Power generation capacity	50 MW	5.9 MW	12 MW
Fuel	Unused timber from forests, other (palm coconut shells, coal)	Unused timber from forests	Unused timber from forests, other (timber from forest thinnings, palm coconut shells)
Features	Use unused timber taken from forests within a 75 km radius of the power plant, which is turned into wood-chip fuel at a factory adjacent to the plant	Use wood chips that are 100% obtained from unused timber from forests in Hokkaido	Plan to use mainly timber from forest thinnings in the Sanpachi, Kamikita and Shimokita districts of Aomori Prefecture, timber scraps and timber from forest thinnings along railroad tracks or in the vicinity of railroad tracks


Mombetsu Biomass Power Plant (Hokkaido)



Urban biomass power generation

	Kawasaki Biomass Power Plant
Start of operation	February 2011
Investment ratio	34%
Power generation capacity	33 MW
Fuel	Waste wood materials from construction, other (discarded pallets, pruned branches)
Features	The urban biomass power generating Kawasaki Biomass Power Plant, Japan's largest plant generating power fueled solely by biomass, mainly uses recycled chips produced from waste wood materials from construction or discarded pallets from markets. Various types of environmental equipment have been installed and the facility clears the strict environmental standards set by the city of Kawasaki


Kawasaki Biomass Power Plant (Kanagawa)

Overseas Forestation Business (New Zealand)

Realizing a Sustainable Supply of Timber

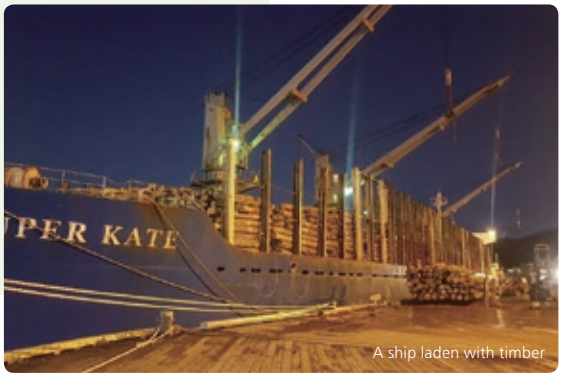
It is said that less than half of the timber used in industrial production around the world comes from sustainable plantation forests. The bulk of global demand for timber is likely to continue to be satisfied with supply from natural forests, in other words, sources other than plantation forests. The value of sustainable plantation forests is likely to be appreciated more as awareness of environmental preservation grows.

In June 2016, the Sumitomo Forestry Group purchased about 31,000 hectares of timberlands and related assets in New Zealand. The purchased timberlands comprise plantation forests of radiata pine located in Nelson, on New Zealand's South Island. Radiata pine is a fast-growing tree that can be harvested every 25 years or so, enabling a reliable supply. The tree features highly uniform quality and versatility, making it a price competitive timber. We expect the forests to be a stable source of long-term income, and through planned reforestation, a sustainable source of timber that can be used basically forever.

Nelson Pine Industries Ltd. (NPIL) is a Group company with a wood fiberboard and engineered wood production plant in Nelson. NPIL will be able to deliver high-quality products thanks to a reliable supply of quality timber from the acquired timberlands. The timber from the forests and NPIL's products will be sold through the Group's overseas distribution network based in Singapore to countries around the world, mainly in parts of Asia including China where strong demand is expected, India where the population is growing sharply, and Southeast Asia where economic expansion looks likely. Synergies across businesses are anticipated to emerge. We aim to increase the value added to the business as a whole by developing a business model contained entirely within the Group's network, from the supply of timber to production and distribution.


Nelson Pine Industries Ltd. plant


Acquired Timberland in New Zealand


A ship laden with timber