

November 15, 2023

For Immediate Release

Sumitomo Forestry Co., Ltd.
Green Earth Institute Co., Ltd.**Started R&D of wood biomass chemicals***~Promoting cascade use with the development of wood component separating technologies~*

Sumitomo Forestry Co., Ltd. (President and Representative Director: Toshiro Mitsuyoshi; headquarters: Tokyo; hereinafter, Sumitomo Forestry) and Green Earth Institute Co., Ltd. (CEO: Tomohito Ihara; headquarters: Tokyo; hereinafter, GEI) are pleased to announce that on November 15, 2023, they signed a business and capital alliance agreement to advance the wood biomass biorefinery business.*¹ The two companies will now begin research and development of wood biomass chemicals to expand the use of forest resources, first by developing wood component separating technologies. These technologies will create new applications for wood and promote the cascade utilization of timber. By encouraging the transition from petrochemicals to biomass chemicals, the companies are seeking to reduce CO₂ emissions and contribute to the decarbonization of society.

■Collaboration details

Wood is formed primarily of cellulose, hemicellulose and lignin, and these components must be separated to produce biomass chemicals. Sumitomo Forestry, with its wealth of knowledge about wood, and GEI, with its expertise in biomass chemical manufacturing, will conduct joint R&D to establish component separation technologies and launch new businesses that effectively utilize each component.

Cellulose and hemicellulose can be used to make bioplastics, sustainable aviation fuel (SAF), foodstuffs, bio rubber, and other products. For lignin, R&D to commercialize advanced utilization technologies is underway.

■Background

Approximately half of Japan's planted forests developed after World War II are more than 50 years old and have reached the optimal age for harvesting. Because trees absorb less CO₂ as they grow older, it is important to rejuvenate forests and increase CO₂ absorption levels by harvesting and replanting trees. On the other hand, with a wood self-sufficiency ratio of 40 percent, there is an urgent need to increase the use of domestic wood by creating a stable supply system where forestry workers, wood manufacturers, wood processors and builders can secure steady profits.

In May 2019, the Japanese government announced its Circulation of Plastic Resources Strategy and implemented a plan to promote the use of bioplastics with a goal to introduce approximately 2 million tons of bioplastics by 2030. In addition, the government set out a 2030 target to begin replacing 10 percent of conventional petroleum-derived jet fuel used by domestic airlines with SAF, which significantly reduces CO₂ emissions. With projections that the Japanese SAF market will be approximately 2.3 trillion yen by 2050, the demand for biomass chemicals is expected to grow.

The development of ways to commercially manufacture wood biomass chemicals, in other words, chemicals and fuel derived from wood as a raw material, will increase the use of wood resources and reduce CO₂ and other greenhouse gases. Because Sumitomo Forestry and GEI share similar strategic directions, the two companies decided to enter this partnership with the belief that they can maximize each other's corporate value.

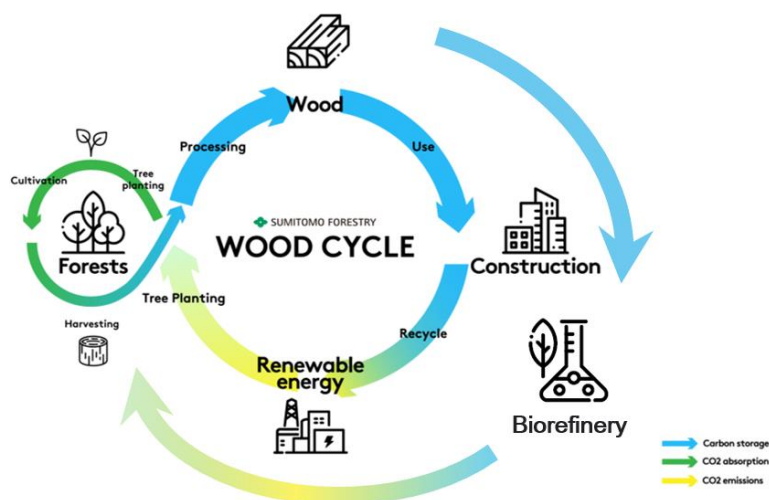
■Each company's role

To secure the success of this collaboration, the two companies have launched a project team. Sumitomo Forestry will provide Tsukuba Research Institute's wood-related research results and GEI will provide its R&D of biorefinery technologies.

In the future, Sumitomo Forestry aims to utilize GEI's highly productive bacteria and production process technologies^{*2} to manufacture chemicals from wood biomass at its timber industrial complexes, which are currently in the preliminary stages of establishment.

Sumitomo Forestry Group is engaged in a broad range of global businesses centered on wood, including forestry management, the manufacture and distribution of wood building materials, the contracting of single-family homes and medium- to large-scale wooden buildings, real estate development, and wood biomass power generation. In our long-term vision Mission TREEING 2030, we are seeking to promote the Sumitomo Forestry Wood Cycle, our value chain to contribute to decarbonization for not only our own company but also for the whole of society by increasing the CO₂ absorption of forests and popularizing wooden buildings that store carbon for long periods of time.

Timber industrial complexes, which we are working to establish, will advance the cascade use of timber, including the production of wood biomass chemicals, to revitalize the forestry industry and timber manufacturing in Japan. By stimulating the transition from petroleum-derived to wood biomass-derived materials, we are creating a new Wood Cycle that will reduce CO₂ emissions and increase carbon fixation.



<Reference: Sumitomo Forestry' Long-Term Vision, Mission TREEING 2030>

<https://www.youtube.com/watch?v=xsKRGn0Jyyw>

GEI is striving to build a biorefinery platform for the manufacture of biomass chemicals using the power of microorganisms. The company is skilled in developing technologies that effectively use non-food biomass, creating highly productive bacteria and production processes, and expanding operations for commercialization. With these strengths, GEI hopes to contribute to Sumitomo Forestry's new Wood Cycle as well as create and expand the biorefinery business in Japan and overseas.

^{*1} Producing chemicals and fuel from plants, crops and other biomass, which is expected to replace petrochemicals.

*² Technologies to produce chemicals from biomass using the function of microorganisms.

■GEI overview

Company name	Green Earth Institute Co., Ltd.
Headquarters	3-5-6 Shinjuku, Shinjuku-ku, Tokyo
Representative	Tomohito Ihara
Establishment	September 2011
Capital	1,600 million yen (for the fiscal year ended September 2023)
Employees	43 (as of September 30, 2023)
Business description	Development and commercialization of green chemicals utilizing innovative bioprocessing refinery technologies