

FOR IMMEDIATE RELEASE:

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Green Earth Institute Co., Ltd.
Nippon Paper Industries Co., Ltd.
Sumitomo Corporation

NEWS RELEASE

"MOU Concluded on Collaboration for the First Commercial Production of Cellulosic Bioethanol from Woody Biomass in Japan and Its Development into Bio-chemical Products"

Green Earth Institute Co., Ltd. (Head Office: Shinjuku-ku, Tokyo; CEO: Tomohito Ihara; hereinafter "GEI"), Nippon Paper Industries Co., Ltd. (Head Office: Chiyoda-ku, Tokyo; President: Toru Nozawa; hereinafter "Nippon Paper"), and Sumitomo Corporation (Head Office: Chiyoda-ku, Tokyo; Representative Director, President and CEO: Masayuki Hyodo) agreed to begin trilateral consideration of the first commercial production of cellulosic bioethanol from woody biomass in Japan and its development into bio-chemical products.

Bioethanol is currently attracting attention in countries worldwide striving for carbon-neutral societies as a renewable energy source and as feedstock for biofuels such as SAF^{*1} and chemicals with low environmental impact. Cellulosic ethanol made from woody biomass is classified as second-generation ethanol^{*2} and has the potential to resolve various problems in Japan, a country with abundant forest resources, by allowing it to utilize its domestic forest resources to ensure its energy security and energy self-sufficiency.

Accordingly, the three companies will be studying the possibility of starting production of several tens of thousands of kiloliters per year of bioethanol derived from domestic timber at Nippon Paper's mills in fiscal 2027. With the idea of utilizing domestic timber to help bring about a decarbonized society in mind, the bioethanol produced will be mainly used as feedstock for domestically produced SAF, etc., while at the same time consideration will be given to carbon recycling initiatives that contribute to the realization of a decarbonized society, such as CCU^{*3} using carbon-neutral CO₂ generated collaterally during bioethanol production and effective utilization of residues from the fermentation process.

Nippon Paper will accelerate its market entry into the bio-chemical field as a "comprehensive biomass company shaping the future with trees" by quickly establishing mass production technology and a full-



scale supply system for wood-based bioethanol of several tens of thousands of kiloliters, utilizing the pulp and paper manufacturing technology it has cultivated over the years in order to help build a decarbonized society and fight against global warming.

Sumitomo Corporation is making multifaceted efforts to develop businesses that will serve as the foundation for a sustainable energy cycle in society, with the aim of making its business activities carbon-neutral by 2050. The company will contribute to this study by consolidating the knowledge and skills of the Sumitomo Corporation Group acquired through various businesses, including the development and deployment of carbon-free energy using hydrogen, ammonia, and next-generation biomass raw fuel gas, and by promoting the use of green chemicals to construct a circular economy.

GEI will contribute to realize a decarbonized society as a company "Fostering Green Technology and Walking with the Earth" by utilizing the biorefinery*⁴ technology it has cultivated to date to establish a commercial production plant for the bioethanol from non-edible biomass of several tens of thousands of kiloliters, a capacity not currently available domestically, and thereby promote the social implementation of bio-manufacturing in Japan.

The three companies will leverage their mutual strengths to realize Japan's first entirely domestic cellulosic bioethanol commercial plant utilizing domestic timber with the aim of assisting Japan with integrating low-carbon biofuels into society and ensuring its energy security.

※1 SAF : Abbreviation for Sustainable Aviation Fuel, a sustainable aviation fuel that emits significantly less CO₂ than conventional fuels throughout its life cycle, from production and collection to manufacturing and combustion, and that can be used with existing infrastructure without modification

※2 Second-generation ethanol : Ethanol made from non-edible biomass that does not compete with food; by contrast, bioethanol produced from edible parts of biomass such as sugar, starch, and vegetable oil is called first-generation ethanol

※3 CCU : Abbreviation for Carbon dioxide Capture and Utilization, which refers to the separation and recovery of CO₂ and its effective utilization as a resource in crop production and the manufacture of chemical products

※4 Biorefinery : The creation of chemical products from biomass by utilizing the microorganisms

GEI is listed on the Tokyo Stock Exchange.

Corporate Website: <https://gei.co.jp/en/>