



September 1, 2025
Cosmo Energy Holdings Co., Ltd.
S-Bridges Corporation

**Cosmo and S-Bridges to Jointly Explore Technologies to
Produce Bioethanol from Food Processing Residues
~Aiming to Establish an Efficient Production Process Using Inedible Raw Materials
with S-Bridges, an Innovative Start-Up~**

Cosmo Energy Holdings Co., Ltd. (hereafter "Cosmo Energy Holdings") and S-Bridges Corporation (hereafter "S-Bridges") are pleased to announce that, on September 1, 2025, they entered into a joint study agreement aimed at developing technologies for producing bioethanol from food processing residues.

■ Study Background

S-Bridges, a start-up originating from Shizuoka University, aims to transform all waste into valuable resources by making use of unused plant materials. The company possesses the proprietary Cell Breaker® System (hereafter "CB System"), which extracts useful components—such as proteins and raw materials for liquid fertilizer—from materials that would otherwise be left unused, including food processing residues like tea and coffee grounds generated by food processing plants.

In the process of extracting these components using the CB System, cellulosic fibers are obtained as a by-product. Cosmo Energy Holdings has focused on utilizing these fibers as a feedstock for producing ethanol from inedible raw materials.

Bioethanol is widely used as both a fuel and a chemical feedstock, and is attracting attention as a key contributor to achieving carbon neutrality. However, since mainstream production methods rely on food crops such as corn and sugarcane, competition with food supplies remains a challenge. Meanwhile, next-generation methods that make use of raw materials like wood chips and paper pulp face challenges in terms of stable supply and cost, as these resources must be collected over a wide area.

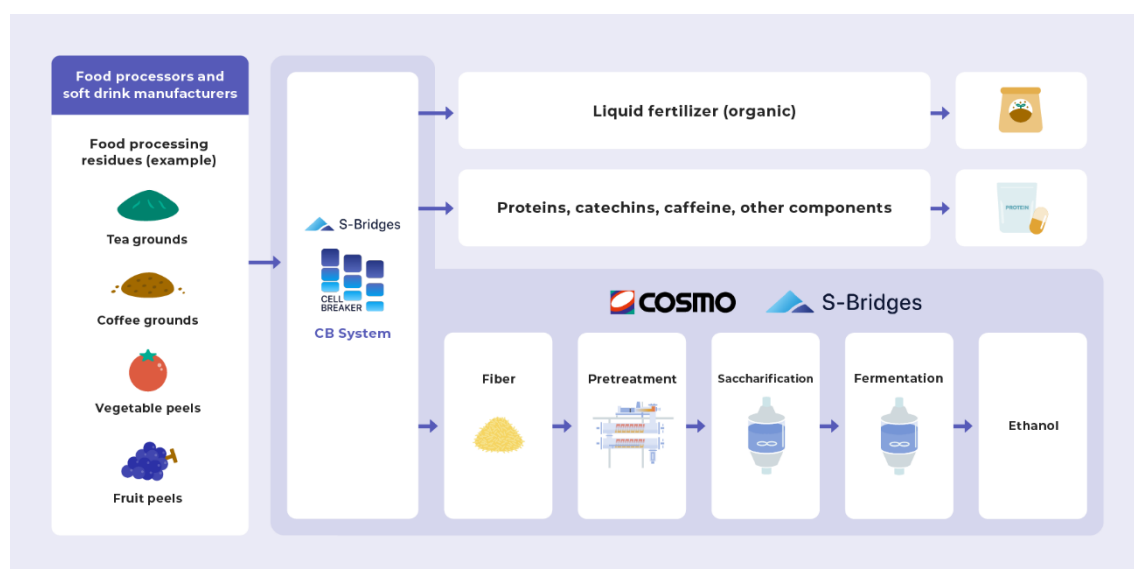
■ Joint Study Overview

Cosmo Energy Holdings and S-Bridges will jointly explore the possibility of producing bioethanol using by-product fiber derived from food processing residues—materials that would otherwise be discarded by food manufacturing plants—as feedstock. In this joint study, the use of food processing residues generated at such plants will eliminate the need to accumulate raw materials. Because cellulose can be obtained as a by-product alongside other useful components, a reduction in feedstock costs can also be expected.

Furthermore, as the CB System enables cellulose to be obtained in a form that is more readily saccharified, it can increase ethanol yield while reducing energy consumption in the

pretreatment and saccharification processes, thereby contributing to the development of a more cost-effective ethanol production process.

Both companies ultimately aim to expand this production process to food and beverage manufacturing plants across Japan, enabling ethanol production at each site and establishing a business model that ensures a stable supply of affordable ethanol derived from inedible domestic sources. In doing so, they seek to advance resource recycling through the effective use of materials sourced within Japan and strengthen energy security by supplying domestically produced energy.



Conceptual diagram of the joint study

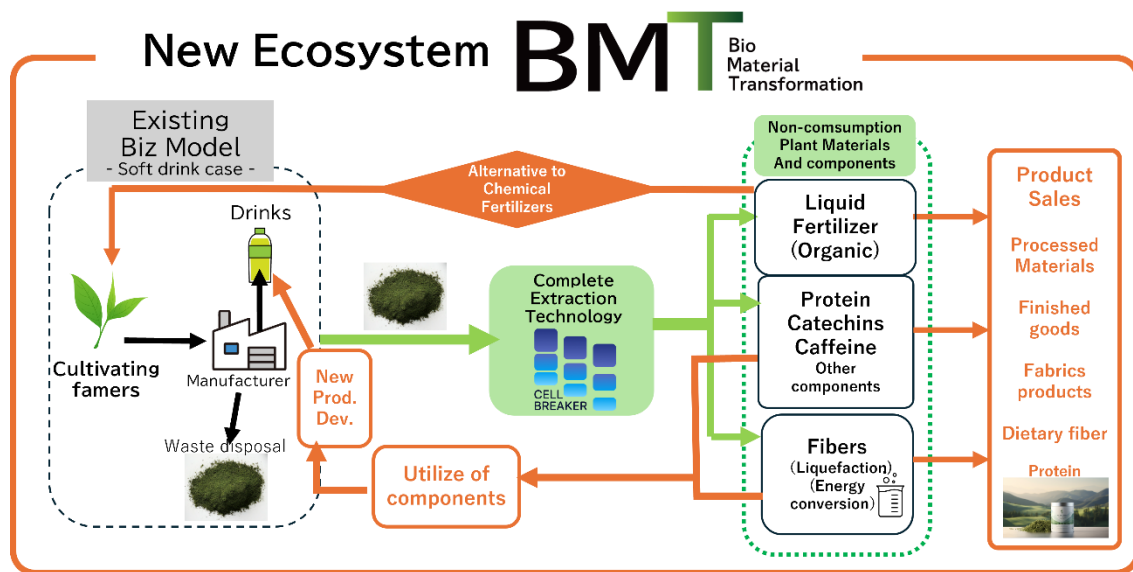
Corporate Profiles

● Cosmo Energy Group

The Cosmo Energy Group announced its 2050 Net Zero Carbon Declaration and is accelerating decarbonization-related initiatives under its Vision 2030 and Seventh Consolidated Medium-Term Management Plan *Oil & New ~Next Stage~*. This initiative is one of the concrete measures that the Group is implementing to "strengthen competitiveness of the *Oil* Business and pursue low carbonization" as set forth in Vision 2030. It is being carried out with the goal of addressing societal challenges and achieving sustainable corporate development under the Group Management Vision: "Striving for an infinite tomorrow, developing sustainably in harmony with humanity, society, and our planet."

● S-Bridges Corporation

S-Bridges, a start-up originating from Shizuoka University, is dedicated to creating a fully circular platform in the soft drink raw materials market through its Bio Material Transformation (Green Tech) business, which enables complete utilization of plant materials. The company remains committed to building a platform to realize a nature-positive world and seeks to contribute to the development of a sustainable society.



Overview of the Bio Material Transformation (BMT) process

<S-Bridges Corporate Profile>

Company name	S-Bridges Corporation
Head office	209 3-1-7, Wachiyama, Chuo-ku, Hamamatsu City, Shizuoka 432-8003
Established	February 10, 2022
Capital stock	150,020,800 yen (as of March 13, 2025)
Representative	Takashi Nagato
Description of business	<p>Bio Material Transformation (BMT) business for realizing a circular economy</p> <ul style="list-style-type: none"> -Component research and technology development to effectively utilize all plant components -Research, development, and commercialization of processes for practical application (including equipment, enzymes, etc.) -Research and development of programs related to artificial intelligence and information technology -Research in collaboration with National University Corporation Shizuoka University <p>Corporate website: https://www.s-bridges.com</p> <p>*BMT and Cell Breaker are trademarks of S-Bridges Corporation.</p>

(End)

(The official language for Cosmo Energy Group's filings with the Tokyo Stock Exchange and Japanese authorities, and for communications with our shareholders, is Japanese. We have posted English versions of some of this information on this website. While these English versions have been prepared in good faith, Cosmo Energy Group does not accept responsibility for the accuracy of the translations, and reference should be made to the original Japanese language materials.)