June 28, 2024

Green Bond Reporting

(JGC Holdings Corporation Eighth Series of Unsecured Straight Bonds)

1. Allocation Reporting (as of March 31, 2024)

The funds raised by the Eighth Series of Unsecured Straight Bonds (with inter-bond pari passu clause) (Green Bond) issued by the Company on September 19, 2023, have been applied to qualified projects as follows.

(Unit: Billions of yen)

Target Projects	Appropriation
Sustainable Aviation Fuel (SAF)	19
Bio Manufacturing	10
High Thermal Conductivity Substrates	0
Total Appropriation	29
Unappropriated Amount	71
Total Amount Raised	100

There is no refinancing applicable.

2. Impact Reporting

The following is a summary of each qualified project to which a portion of the funds raised through this Green Bond were allocated and various indicators of the environmental improvement benefits of each project.

＜Sustainable Aviation Fuel (SAF)＞

- Project Summary

Using waste cooking oil as a raw material, the company produces Sustainable Aviation Fuel (SAF), a highly sustainable fuel that is not expected to compete for food or cause deforestation. Like fossil fuels, bio-based fuels emit carbon dioxide (hereafter referred to as CO_2) during combustion, but they are regarded as carbon-neutral fuels because they absorb CO_2 through photosynthesis in the growth process of the plants used as raw materials. In order to use SAF as a fuel that contributes to the decarbonization of aviation, it is necessary to obtain certification of compliance with sustainability standards from a third-party organization in accordance with the sustainability certification scheme defined by CORSIA (Carbon Offsetting and Reduction Scheme for International Civil

Aviation). In obtaining certification to these standards, there is a process in place to verify the CO_2 reduction benefits of a project using life cycle-based CO_2 emission intensities defined by ICAO (International Civil Aviation Organization) based on raw materials and manufacturing technologies. The project will be led by SAFFAIRE SKY ENERGY, a joint venture established by Cosmo Oil Co, Ltd., REVO International Inc., and our company, and will be the first large-scale domestic SAF production project in Japan, using only waste cooking oil produced in Japan as feedstock. The production equipment is under construction at the Sakai Refinery of Cosmo Oil, and is working to demonstrate a supply chain model for SAF production from waste cooking oil through the supply of approximately 30,000 kiloliters of SAF per year. One of the major challenges of this project is to secure waste cooking oil as a raw material, and we believe that it is essential to cooperate with many stakeholders in order to secure a stable supply of domestically generated waste cooking oil. The "Fry to Fly Project" was launched in April 2023 with the aim of realizing a decarbonized society through domestic resource recycling. At present, about 120 organizations, including local governments and companies, are participating in the project to create value by realizing a decarbonized society through resource recycling, starting with the production of domestically produced SAF from waste cooking oil.

- Project Progress

The groundbreaking ceremony for the construction of the manufacturing equipment was held in May 2023, and construction has begun as scheduled. The manufacturing equipment is scheduled to be completed by the end of 2024, with production and sales of products scheduled to begin in early 2025, when the Osaka-Kansai Expo is scheduled to be held.

- Expected GHG Reduction Contribution after Production Starts

	Total Project Cost	CO_2 Emission Reduction Contribution (Estimated)*1
Entire Project	18.5 billion yen	73,687 t-CO_2 /year
Allocation of Green Bond Funds	5 billion yen	19,915 t-CO_2 /year

*1 Estimated using life cycle CO_2 emissions intensity published by ICAO (International Civil Aviation Organization) for certification of compliance with CORSIA (Carbon

Offsetting and Reduction Scheme for International Civil Aviation) sustainability standards.

<High Thermal Conductivity Substrates>

- Project Summary

Silicon nitride substrates are used as substrates for power modules equipped with power semiconductors such as silicon carbide (SiC), which are used for DC/AC power conversion and control. This project is a capital investment in silicon nitride substrates to be used in power modules for electric vehicles. The practical application of power semiconductors such as SiC will enable downsizing of equipment and higher output of electric vehicles, contributing to the spread of electric vehicles by improving their cost and extending their cruising range. Silicon nitride substrates are indispensable for improving the performance of power semiconductors such as SiC used in electric vehicles and expanding their use.

When the output of electricity is increased in electric vehicles, heat is generated in power semiconductors, and failure to properly cool and dissipate the heat can cause problems such as reduced semiconductor performance and substrate damage due to thermal stress. Conventionally, aluminum nitride, which has high thermal conductivity, has been used as an insulating heat-dissipating substrate, but its low mechanical strength has caused reliability problems. Compared to aluminum nitride and other ceramic substrates, the silicon nitride substrates manufactured by the JGC Group have both higher heat dissipation performance and mechanical strength, making them indispensable for increasing the performance and popularity of power semiconductors such as SiC used in electric vehicles.

- Project Progress

The land was handed over in January 2024 as scheduled, and construction of the factory building began. The plant building is scheduled for completion in January 2025, followed by the sequential introduction of manufacturing facilities, with production and sales of products scheduled to begin in the fall of 2025.

➢ Expected GHG Reduction Contribution after Production Starts

	Total Project Cost	CO_2 Emission Reduction Contribution (Estimated)*2
Entire Project	7 billion yen	360,000 t-CO_2 /year
Allocation of Green Bond Funds	4 billion yen	206,000 t-CO_2 /year

*2 Estimated reduction in CO_2 emissions from electric vehicles (EVs) equipped with power semiconductors using the high thermal conductivity silicon nitride substrates produced by the project by improving the cost of electricity.

<Bio Manufacturing>

➢ Project Summary

Biomanufacturing is a technology that uses smart cells (artificially designed cells using genetic modification technology, mainly microorganisms) to produce a wide variety of substances and realize a recycling-oriented society. It is expected to be applied to a wide range of fields, including the medical and healthcare fields, materials, energy, and food, and its market size is projected to reach approximately 200 trillion yen by 2030[1]. The raw materials used in existing biomanufacturing products such as bioethanol and polylactic acid are mainly sugar and vegetable oils and fats, and although some inedible cellulosic biomass-derived products are being introduced to the market. However, Japan relies on imports of many of these biomass resources, which poses a challenge in terms of cost and economic security.

On March 22, 2023, Kaneka Corporation, Bacchus Bio Innovation Co., Ltd (Bacchus), Shimadzu Corporation, and our company made a joint proposal for the “Development of microbial polymer synthesis using CO_2 as a direct raw material” to the Green Innovation Fund Project in response to NEDO (New Energy and Industrial Technology Development Organization)’s public call for promotion of carbon recycling using CO_2 as a raw material in biomanufacturing, and this proposal was adopted. This project aims to develop technologies to realize various manufacturing processes from CO_2 to solve the problem of securing raw materials for biomanufacturing and to achieve the ultimate resource-recycling society (Figure 1).

[1] OECD, "The Bioeconomy to 2030: designing a policy agenda."

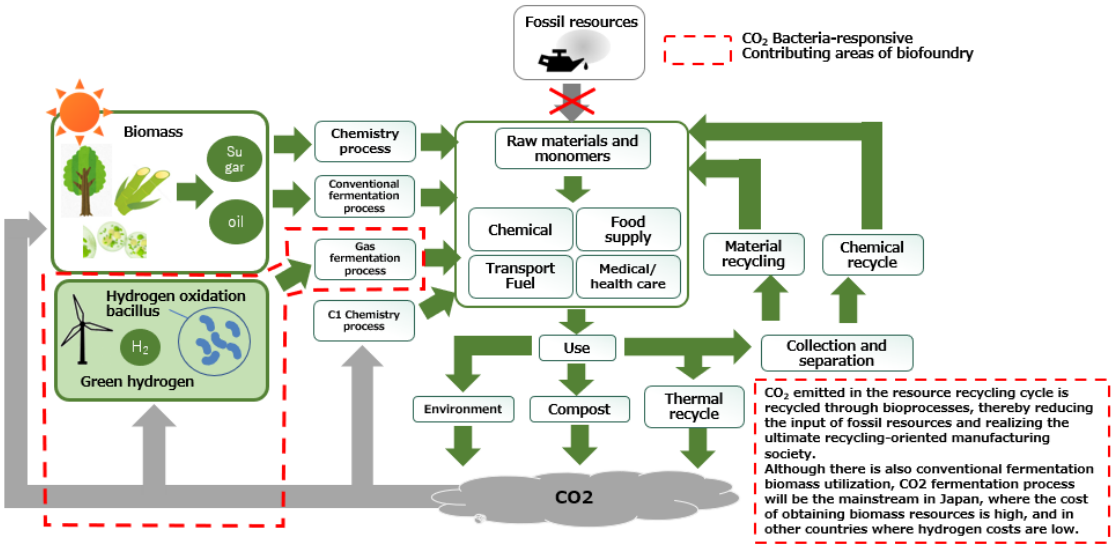

Figure 1. Ultimate Recycling-Oriented Manufacturing Society in 2050

Our company has a great deal of knowledge in safe gas handling gases, for example hydrogen gas, and process scale-up, which it has cultivated through its EPC (engineering, procurement, and construction) business in the oil and gas field, as well as in optimized design technology for culture tanks in the life science field. In this project, in addition to the development and scale-up of a safe handling system for mixed gases including CO_2, hydrogen (H_2), and oxygen (O_2) and a highly efficient gas fermentation process together with Bacchus, we will establish integrated biofoundry® that provides a one-stop service from microbial breeding to process development (Figure 2).

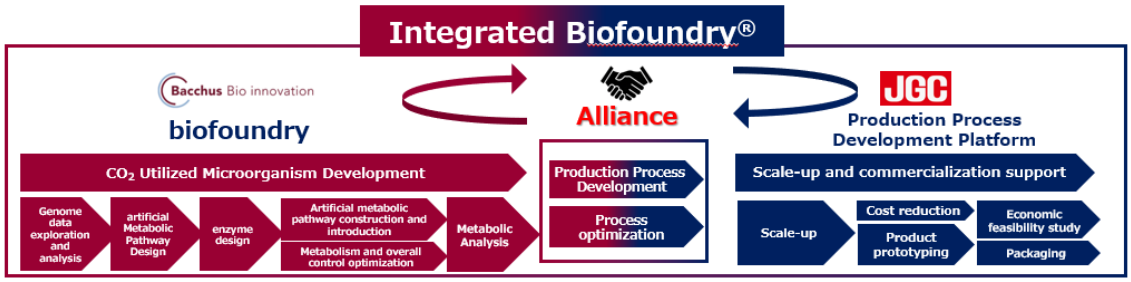

Figure 2: Integrated Biofoundry® that JGC HD and Bacchus are Aiming for

This project will utilize hydrogen-oxidizing bacteria as microorganisms that make things from CO_2. Hydrogen-oxidizing bacteria require hydrogen as a reducing force for

CO_2 and hydrogen, and oxygen for energy. Since mixtures of hydrogen and oxygen can form explosive mixtures depending on the ratio of the two gases, it is important to establish gas handling technology that can avoid the formation of explosive mixtures in order to achieve safe and highly efficient gas cultivation. We will promote the development of elemental technologies and scale-up of gas cultivation, which will be the basis of this project, by utilizing the engineering expertise of our group in the oil and gas field.

- Project Progress

We have secured a site on Kobe Port Island for the construction of a research infrastructure for an integrated biofoundry®, and the design of the research building is underway. Construction is expected to begin in the summer of 2024 and be completed in the winter of 2025.

The technical development of the project is also progressing well, with the design and production of a small but highly difficult to develop gas culture tank, which has been installed and is now in operation at the Company's Oarai Research Centre.