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ENEOS Corporation
WasteBox Co., Ltd.
NTT DATA Corporation

**A first in the domestic petroleum industry
Joint study launched on per-product CFP calculations and development of
entity-level GHG emission management system
- Study aims to visualize the CFPs of petroleum products and provide data to
customers during FY2023 -**

From March 2023, ENEOS Corporation ("ENEOS") WasteBox Co., Ltd. ("WasteBox") and NTT DATA Corporation ("NTT DATA") launched a joint study into the calculation of per-product carbon footprints (CFP) for ENEOS petroleum products and the development of an entity-level greenhouse gas (GHG) management system.

The joint study aims to calculate the CFPs of ENEOS petroleum products and manage the GHG emissions of more than 100 sites. The study's aim is to build the system during FY2023 and provide customers with CFP data for some of the products ENEOS provides, including lubricants, petrochemical products and functional materials.

[Background]

Achieving carbon neutrality requires the disclosure of CFPs as a measure of GHG emissions for each product over their lifecycles from the procurement of raw materials through to disposal. However, when calculating the CFP of a petroleum product, it is necessary to develop a logic for properly allocating GHG emissions based on the complex manufacturing processes that are unique to the petroleum industry.

[Outline of the Initiative]

The joint study will pursue the following activities.

1. Developing the Logic for Calculating Complex CFPs Unique to the Petroleum Industry

Through collaboration between ENEOS, which possesses knowledge of GHG emissions management in the manufacturing of petroleum products, and WasteBox, which has the insight to develop the logic for CFP calculations, a study will be conducted into the development of logic for CFP calculations compliant with the draft CFP Guidelines^{*1} announced by the Japanese government in January 2023, ISO standards and other requirements. Specifically, in the petroleum refining process, multiple products are produced simultaneously from the same processes and same raw materials, and the study will consider how to allocate GHG emissions for those products, and how to approach the recycling of semi-finished products. Note that this is the first such initiative in the domestic petroleum industry using actual data acquired from refineries.

2. Developing a CFP Calculation and GHG Emission Management System

Through collaboration between ENEOS and NTT DATA, which has a track record in the development of CFP management systems, a study will be conducted into the development of a system to support CFP calculation and management. The development of this system aims to "achieve unified monitoring and management of carbon information on a per-product basis," "analyze the impact that decarbonization initiatives in manufacturing has on CFP and visualize CFP at the new product planning stages," and "create business opportunities by highlighting the environmental value of low-carbon products." In addition to per-product CFP, the management of entity-level GHG emissions released by business sites and other locations will also be targeted, with the aim of "streamlining statutory GHG reporting," "managing the implementation of carbon neutrality plans through monthly forecasting and result management" and "optimizing the costs of emission reductions."

[Status of the Joint Study]

One of the ENEOS Group's envisioned goals stated in our Long-Term Vision to 2040 is contributing to the development of a low-carbon, recycling-oriented society. ENEOS aims to reduce the Scope 1 and Scope 2^{*2} CO₂ emissions of the ENEOS Group for realization of net zero by FY2040 and to reduce emissions by 46% of the FY2013 level by FY2030. Furthermore, toward FY2050, ENEOS will work together with the government and other companies to reduce Scope 3^{*2} emissions and aim to achieve carbon neutrality. ENEOS will visualize its GHG emissions as the first step to reducing per-product GHG emissions, aim to start providing customers with CFP information on some of its petroleum products during FY2023, and in the future work towards the standardization of logic for CFP calculations across the petroleum industry.

As an expert in creating environmental value and ascertaining CO₂ and other GHG emissions, WasteBox has declared the goal of contributing to the development of a recycling-oriented decarbonized society by helping companies ascertain and disclose information about their environmental impact. WasteBox is familiar with international rules on carbon visualization, and including CFP in this study, has amassed a track record of more than 1,000 projects supporting the calculation of carbon emissions, with information provided to many companies including Prime listed companies and regional financial institutions.

NTT DATA uses the industry knowledge it has gained from participation in numerous initiatives in Japan and overseas combined with expertise in a wide range of solutions to provide the infrastructure to calculate and manage per-product CFP and GHG emissions to various businesses with a focus on the manufacturing industry. As a business transformation partner of ENEOS, NTT DATA will help ENEOS achieve carbon neutrality through the initiatives undertaken in this study, and

by providing solutions and consulting leading to GHG reductions which are expected to expand in the future, NTT DATA aims to further the realization of carbon neutrality for customers and society in general, ushering in a new society that responds to climate change.

Through their efforts in this study, the three companies will contribute to the development of carbon neutrality.

*1 Announced by the Ministry of Economy, Trade and Industry and the Ministry of the Environment on January 31, 2023

*2 Scope 1: Direct greenhouse gas emissions by the business itself (fuel combustion, industrial processes)
Scope 2: Indirect emissions from the use of electricity, heat, and steam supplied by other companies
Scope 3: Indirect emissions in the supply chain of the business other than those in Scope 1 and 2

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