June 30, 2023

Green x Digital Consortium Releases CO₂ Visualization Framework (Edition 1.0)

The Green x Digital Consortium, for which the Japan Electronics and Information Technology Industries Association (JEITA; chaired by Keiji Kojima, President & CEO, Hitachi, Ltd.) serves as secretariat, today released its CO_2 Visualization Framework (Edition 1.0), which indicates methods of calculating and sharing CO_2 data[1] exchanged in the supply chain using digital technology (data quality disclosure methods). The first effort in Japan to visualize CO_2 data across the supply chain, the Framework is designed to enable global-level cross-industry CO_2 data exchange and presents an internationally-consistent methodology for data calculation and sharing.

There is a strong call to achieve decarbonization throughout supply chains in all industries so as to realize carbon neutrality by 2050. This will require the accurate assessment and reduction of CO_2 across the supply chain, including not just direct emissions (Scope 1) and indirect emissions from the generation of purchased energy (Scope 2) but also all indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (Scope 3).

However, there has previously been no common methodology for exchanging CO_2 data premised on the provision of data from suppliers, disparities in data collection and calculation arising from different boundaries[2] have resulted in CO_2 data of uneven quality. Precise CO_2 data enables visualization of which stages in the supply chain have the greatest CO_2 emissions, as well as of the results of emission reduction efforts, while circulating examples of emission reduction within the industry and then spreading them industry-wide as well as to other industries will contribute to the reduction of greenhouse gas emissions across Japan as a whole.

The Green x Digital Consortium's Visualization Working Group (led by Koichi Inagaki, NEC Corporation) accordingly launched a Methodology Sub-Working Group (led by Masahiko Shibata, Mizuho Research & Technologies, Ltd.) in April 2022 to create a common methodology for CO_2 data calculation premised on CO_2 data exchange that would be based on primary data and reflect suppliers' emission reduction efforts. The CO_2 Visualization Framework (Edition 1.0) created by the Methodology Sub-Working Group was released today as a methodology based on the Pathfinder Framework, an international framework developed by the WBCSD Partnership for Carbon Transparency (PACT) [3], that also takes into account the needs of companies participating in the Consortium as well as domestic systems.

The CO_2 Visualization Framework (Edition 1.0) assumes utilization by all businesses engaged in supply chain CO_2 data visualization and exchange using digital technology. In particular, the Framework's detailed explanation of how companies in the supply chain can realize high-level CO_2 data calculation and sharing should open the way for utilization of

the Framework by many companies in the supply chain and, consequently, an accurate understanding of supply chain CO_2 data. Please see the following website for more information.

CO_2 Visualization Framework:

https://www.gxdc.jp/pdf/CO2_VisualizationFrameworkEdition_1.0_en.pdf

In addition, the Data Format and Linkage Sub-Working Group (led by Takuya Nagamiya, Fujitsu Ltd.), which was established at the same time as the Methodology Sub-Working Group, has developed Technical Specifications toward Data Exchange that lay out specifications and formats for data exchange. These are currently being reviewed toward public release. Phase 1 of proof-of-concept work on both the Framework and the Technical Specifications began in September 2022, followed by Phase 2 in October 2022. With this work now successfully concluded, details of the results will be released in early August this year.

[1] CO_2 data

Refers in the press release and in the CO_2 Visualization Framework to CO_2-equivalent greenhouse gas emissions (expressed as kg CO_2e, etc.) as stipulated by the IPCC.

[2] Boundary

Indicates the scope within which CO_2 data is calculated. May also indicate the boundary for product systems and processes not included in those systems, as well as for specific processes. Examples include manufacturing process boundaries, use process boundaries, and boundaries for the scope of collection of CO_2 data at manufacturing sites, offices, and factory grounds, etc.

[3] WBCSD Partnership for Carbon Transparency (PACT)

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net-zero, nature positive, and more equitable future. The Partnership for Carbon Transparency (PACT) seeks to accelerate decarbonization through the creation of transparency on emissions in the value chain. The PACT community defines and publishes the necessary methodological and technological basis for emissions data exchange, integrating existing standards and approaches and creating a trusted and holistic foundation. The PACT is hosted by the WBCSD. The Green x Digital Consortium participates in the PACT ecosystem.

Website: https://www.carbon-transparency.com/

Green x Digital Consortium

The Green x Digital Consortium (Chair by Noboru Koshizuka, Professor, Interfaculty Initiative in Information Studies, The University of Tokyo) was launched in October 2021 with the aim of realizing carbon neutrality across society by 2050. The consortium brings together companies from all business types and industries that use digital technologies to work on carbon data visualization and introduction of renewable energy. The number of members reached 151 members (as of May 26, 2023).

Website: https://www.gxdc.jp/

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