

## The Mitsubishi Chemical Group's Initiatives to Combat the Year 2024 Problem as a Chemical Manufacturer, Which Is a Starting Point of Manufacturing, Towards Building a Sustainable Supply Chain

The Year 2024 Problem may arise due to the application of restrictions on overtime in the construction and logistics industries from April 2024. It has become a major social problem in Japan, and there are concerns that it will have a major impact not only on corporate activities but also on people's lives. Against the backdrop of an aging population and a shortage of workers, the sustainability of construction and logistics is in jeopardy due to the addition of the Year 2024 Problem, and industry reforms with sustainability in mind are required. This newsletter introduces the Mitsubishi Chemical Group (MCG Group)'s initiatives to date to combat the Year 2024 Problem as well as the future outlook.

The National Sustainable Logistics Committee estimates that if nothing is done to address the Year 2024 Problem, the transportation capacity of commercial trucks could fall by 14.2% in 2024 and by 34.1% in 2030. In addition, the Ministry of Land, Infrastructure, Transport and Tourism announced in March 2018 the "Accelerated Work Style Reform Program for the Construction Industry," which includes measures such as "restricting long working hours" and "improving productivity" in order to ensure the five-day work week system and accelerate work style reform.

Sources: Japan Trucking Association website, freee K.K. website, the Ministry of Land, Infrastructure, Transport and Tourism website



### content 1. The MCG Group's initiatives to combat the Year 2024 Problem



In order to make logistics sustainable in the chemical industry, which is the starting point of manufacturing that supports all industries and people's lives, the MCG Group has participated in the Chemicals Working Group as a member of the secretariat. Some of the initiatives are introduced in this newsletter.

- Voluntary action plan by the Chemical Working Group
- Concrete initiatives that have already begun
- Future roadmap

### content 2. Make scheduled maintenance and repair at plants smarter by utilizing DX to combat the Year 2024 problem in the construction industry



The MCG Group has implemented DX reforms for scheduled maintenance and repair in collaboration with the Okayama and Ibaraki Plants since 2021. This newsletter introduces the Group's efforts to reduce overtime hours by increasing the efficiency of construction work, eliminating significant loss and waste, and increasing worker utilization by approximately 16%.

Images included in this newsletter include illustrations.

**For further  
information,  
please contact:**

Media Relations Department, Corporate Communications Division,  
Mitsubishi Chemical Group Corporation : +81-3-6748-7140

**content 1. The MCG Group's initiatives to combat the Year 2024 Problem**

The chemical industry is a starting point of manufacturing. As a chemical manufacturer that supports all industries and people's lives, the MCG Group is taking the lead in solving the Year 2024 Problem in logistics.

**■ In view of the special nature of chemical logistics, the initiatives commenced between the two companies**

Chemicals include dangerous goods such as hazardous materials, poisonous substances, and high-pressure gases, as well as heavy goods that are difficult to move with human power, and they vary in shape such as liquids, powders, and gases. In the chemical industry, there is a relationship that both parties can be a consigner and a consignee, and there is a limit to how many problems can be solved by individual companies. For this reason, in fiscal 2022, the MCG Group and Mitsui Chemicals began studying ways to standardize and improve the efficiency of chemical logistics, including the mutual use of transport networks, the improvement of loading rates through the lending and borrowing of chemical tankers, and the establishment of BCPs.



Joint logistics with Mitsui Chemicals (loading)

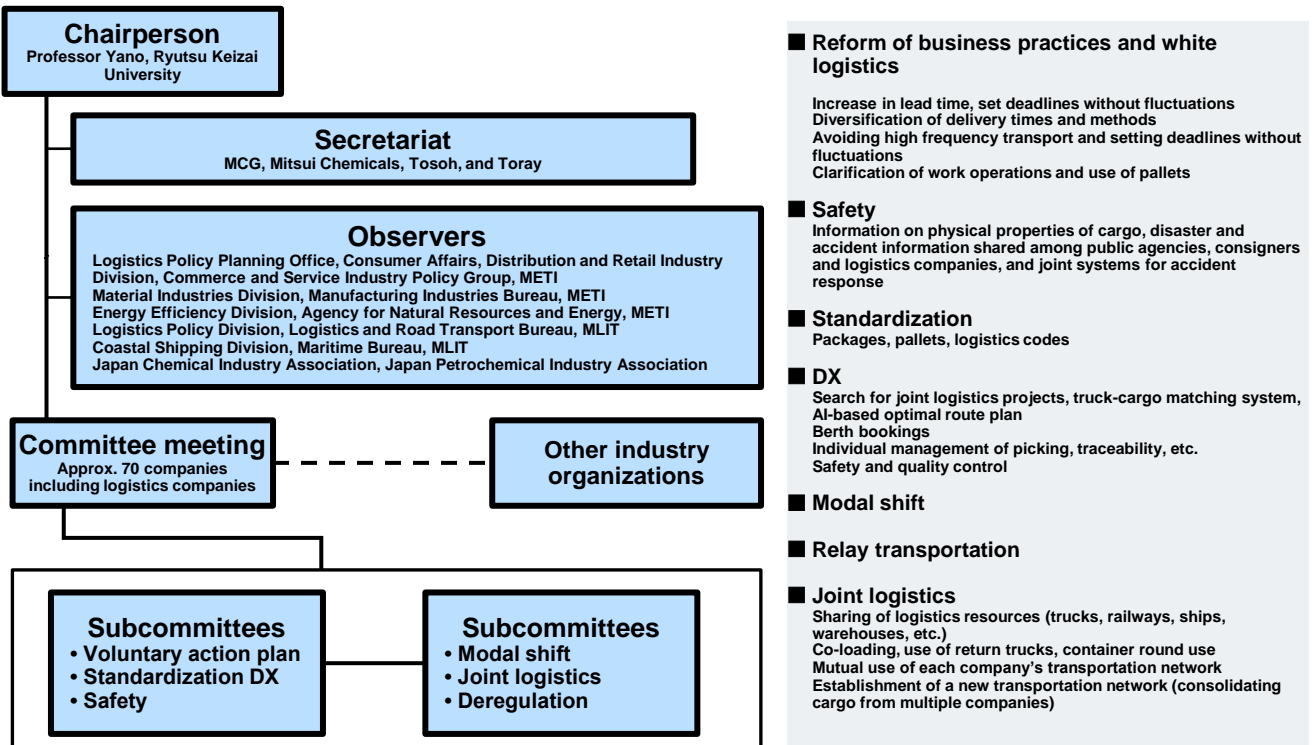
**■ Establishment of the Chemicals Working Group to expand the joint logistics to the industry-wide activities**



In July 2023, the chemical industry voluntarily raised its voice and established the Chemicals Working Group within the Physical Internet Realization Conference led by the Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). The MCG Group, together with Mitsui Chemicals, Tosoh, and Toray, serves as the secretariat. Today, more than 70 companies, mainly consigners and logistics companies, are taking part in efforts to address various issues related to chemical logistics.

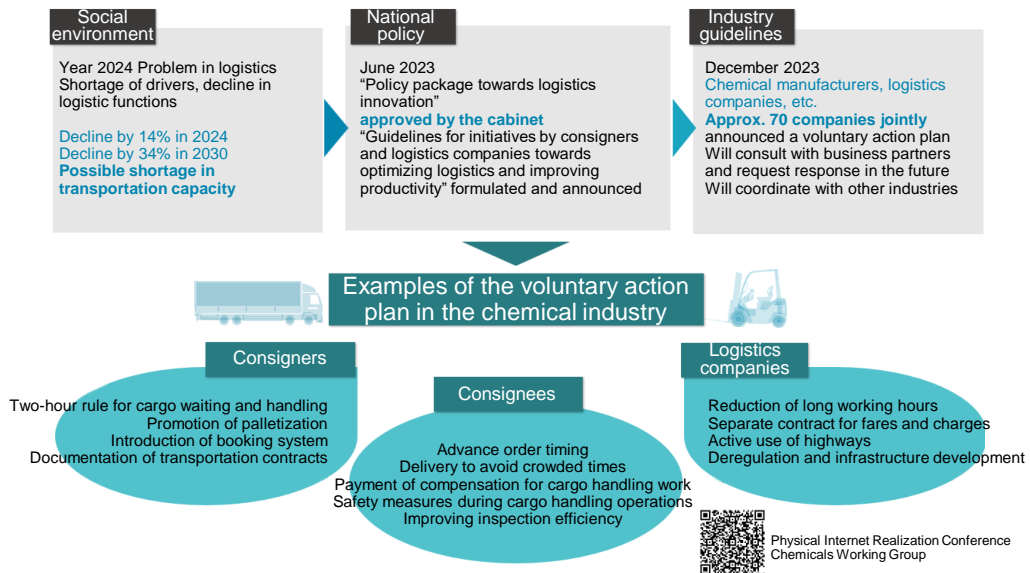
Chemicals Working Group

**Chemicals Working Group: Structure (since June 2023) and consideration items**

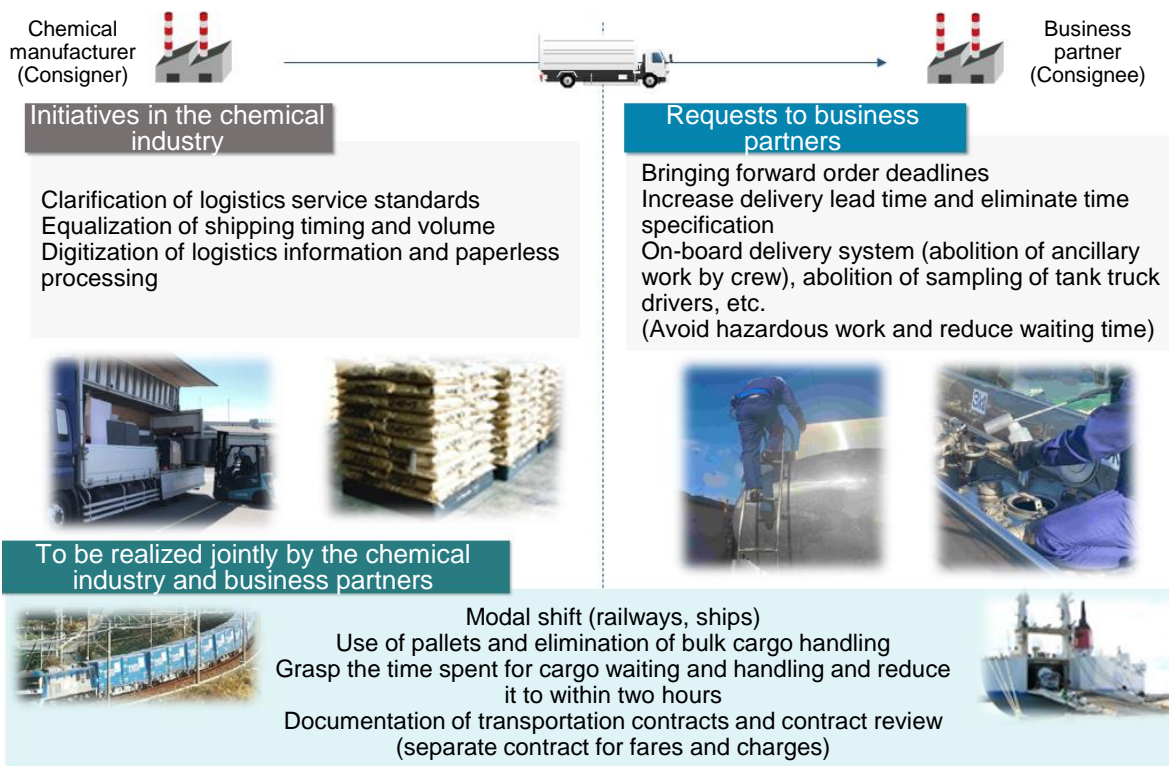


## Voluntary action plan by the Chemical Working Group

The Chemicals Working Group announced a voluntary action plan on December 20, 2023. With a focus on the 13 items that need to be implemented by consigners as outlined in the government guidelines, such as reduction of time spent for cargo waiting and handling, the plan includes measures to make logistics sustainable in the medium to long term by promoting coordination and cooperation between consigners and logistics companies, modal shift to railways and sea transportation, cooperation in logistics such as long-haul transportation and area collection and delivery, standardization of materials and equipment and codes, and digitalization of logistics including paperless processing. The Working Group is also considering requesting related ministries and agencies to relax laws and regulations in order to improve logistics efficiency.



## Concrete initiatives that have already begun





### ■ Roadmap for joint chemical logistics

In response to the voluntary action plan by the Chemicals Working Group, we plan to draw up an action plan through 2030 in cooperation with industry groups and other organizations, and to draw up separate action plans in the short and medium term.

Consideration items	2023-25	2026-30	2031-35
	Preparation	Implementation	Rollout
Standardize and improve the efficiency of chemical logistics	<b>Coordination and cooperation</b> • Framework for cooperation within and outside the industry • Promotion of joint logistics • Development of common infrastructure • Establishment of the Chemicals Working Group • Roadmap and target setting • Development of information infrastructure ⇒⇒⇒	• Joint logistics within the industry • Functional reinforcement ⇒	• Joint logistics across industries • Global rollout
	<b>Supply chains (SC)</b> • Partial optimization • Rollout within and outside the company • Visualization of SC logistics information • Policy for optimizing SC logistics	• Promotion of internal SC coordination • Introduction of forecast management - information infrastructure development	• Promotion of external SC coordination
	<b>Correction of business practices and productivity improvement</b> • Promotion of white logistics • Correction of business practices from an efficiency standpoint • Promotion of 29 recommendations ⇒⇒⇒ • Formulation of efficiency improvement plans	• Thorough implementation ⇒ • Promotion of efficiency improvement plans	• Business practices from a logistics standpoint
	<b>Standardization</b> • Packaging • Logistics codes • Study on standardization of logistics standards • Study on introduction of common codes	• Promotion of standardization • Introduction of common codes	• Completion of physical internet infrastructure
	<b>DX promotion</b> • Automation and mechanization • Usage of digital technologies • Introduction of tools to support logistics work/operations • Introduction of logistics optimization tools ⇒	• Introduction of logistics robots and automatic delivery • Functional reinforcement ⇒	
	<b>GX promotion</b> • Usage of renewable energy • Energy-saving and decarbonization of vehicles • Promotion of modal shift • Energy-saving and decarbonization of distribution vehicles and equipment • Promotion of long-haul transportation and joint collection and distribution		• Certain achievements in CO2 reduction • Reinforcement of measures towards achieving carbon neutrality

Source: Summary created by the secretariat preparing the establishment of the Chemicals Working Group

**KAITEKI** Solution Center  
for the well-being of people and the planet

MCG Group owned media  
The KAITEKI Solution Center provides detailed information on joint logistics for the future of chemical logistics.  
[https://www.mcgc.com/english/kaiteki\\_solution\\_center/](https://www.mcgc.com/english/kaiteki_solution_center/)

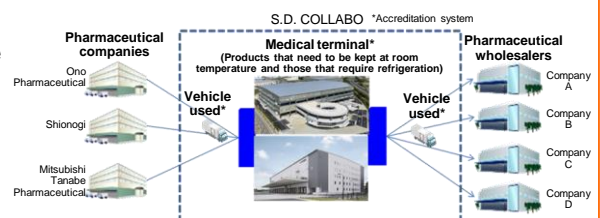


### <Topic> Initiatives for joint transport of ethical drugs based on GDP management standards

In January 2023, Mitsubishi Tanabe Pharmaceutical, which is part of the MCG Group, together with Ono Pharmaceutical, Shionogi, and S.D. COLLABO, began a joint transport initiative to improve quality assurance for ethical drugs in domestic distribution and to promote the integrity of distribution processes. This joint transport initiative is the first of its kind in the pharmaceutical industry to comply with Good Distribution Practice (GDP) guidelines.

In the environment surrounding pharmaceutical logistics, stricter quality assurance in the transport and storage processes as well as the integrity of distribution processes are required pursuant to the GDP Guidelines issued in December 2018. The Year 2024 Problem in logistics was also a major issue in the transportation of ethical drugs.

Therefore, the four companies are working on efficient joint transport on the transportation route from the distribution center of each pharmaceutical company to pharmaceutical wholesalers based on the jointly formulated GDP management standards.



**content 2. Make scheduled maintenance and repair at plants smarter by utilizing DX to combat the Year 2024 problem in the construction industry**

**DX measures for scheduled maintenance and repair at the Okayama Plant implemented in 2023**

The chemical plant operates 24 hours a day for efficient operation, and maintenance and repair are carried out according to schedule to prevent problems. Many employees and workers of the Group's partner companies are involved in the scheduled maintenance and repair. The MCG Group is working to increase the utilization rate of on-site workers and reduce overtime hours through the use of digital technologies for scheduled plant maintenance and repair to combat the Year 2024 Problem, which poses overtime restrictions to address long working hours in the construction industry. The following section introduces the scheduled maintenance and repair reform at the Okayama Plant in 2023, which deepened the DX measures started at the Okayama and Ibaraki Plants in 2021.



Mitsubishi Chemical Corporation Okayama Plant (Kurashiki-shi, Okayama)  
With one of the largest ethylene plants in Japan at its core, the Plant produces plastic products essential for daily life, high performance chemical products, and information electronics materials.

**■ Introductory education on the web, centralized work process management, and increased worker utilization by approximately 16% to reduce overtime**

With the introduction of a process management system, applications and permits for each process can be checked from a smartphone app, greatly reducing the time required for checking. Process management, which used various tools in the past, has been centralized in a browser, and it has become possible to confirm progress in real time and to use emails for smooth transfers to the next process. This resulted in an approximately 16% increase in the utilization rate of workers of the Group's partner companies and a reduction in overtime work.

Before

Introductory education	Start time, permission for work operation	Required response	Daily reports and meetings
Half-day face-to-face education	Significant efforts required for presenting an on-site permit prior to commencing the work	Significant time spent for preparing documents and confirming safety of the work which is ready to commence	Significant efforts required for preparing and printing daily reports Documents are verified at the face-to-face meeting



After

Introductory education	Start time, permission for work operation	Required response	Daily reports and meetings
Registration, education and testing moved online*	Work hours in the morning are increased by bringing forward the work start time No need to present a permit (Verification using an app)	Process management system has been introduced to confirm the work that is ready to commence	No need to prepare and print daily reports Meeting time has been reduced with the usage of remote meetings

Illustration

**Former process management chart**  
AAプラント(B地区)

作業	作業種別	作業内容	作業日	作業時間	作業場所	作業内容	作業日	作業時間	作業場所
作業	C-1	A社 B社 C社	2023/03/01	08:00-17:00	AAプラント	2023/03/01	08:00-17:00	AAプラント	AAプラント
作業	C-2	A社 B社 C社	2023/03/02	08:00-17:00	AAプラント	2023/03/02	08:00-17:00	AAプラント	AAプラント

**Introduction of the process management tool**

名称	協力会社	指示書No	5	6	7	8	9	10	11	12	13	14	15	16	17
C-101		BT 001													
MCC確認	製造課	BT 001													
MCC確認	設備管理	BT 001													
現状点検	AN社	BT 001													
目視検査	BB社	BT 001													
非破壊検査	CC社	BT 001													

\* Introductory education is the induction training session to explain the plant characteristics, rules, and precautions to new workers who will work on scheduled maintenance and repair at the MCG Group's plant for the first time. In the past, the participants had to come to the plant to take the half-day session, but the entire processes, from registration to education and testing, have moved online to improve efficiency.