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Paramount Bed Co., Ltd.
Mitsui Chemicals, Inc.
Rever Corporation

Paramount Bed, Mitsui Chemicals and Rever Launch Chemical Recycling Demonstration for Polyurethane Mattresses

**Adopted by the Ministry of the Environment for the FY2023 Project to
Encourage Construction of Decarbonized Circular Economy Systems**

Paramount Bed Co., Ltd. (Tokyo: 7817; President & CEO: KIMURA Tomohiko), Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) and Rever Corporation (Tokyo: 9247; President: MATSUOKA Naoto/TRE HOLDINGS CORPORATION) today announced that the Ministry of the Environment (MOE) has selected their initiative aimed at the chemical recycling of polyurethane in mattresses for inclusion in the MOE's FY2023 Project to Encourage Construction of Decarbonized Circular Economy Systems.*¹ Following a call for submissions, the scheme has been adopted in the category for demonstration projects aimed at constructing plastic recycling processes and reducing CO₂ emissions.

*1 Ministry of the Environment FY2023 Project to Encourage Construction of Decarbonized Circular Economy Systems:
https://www.env.go.jp/press/press_01282.html

1. Background

Chemical companies overseas are already working on polyurethane recycling efforts, including the construction of a value chain and the establishment of consortiums for recycling mattresses requiring disposal. They are also exploring new techniques and technologies for using polyurethane as a recycled material.

In Japan, however, the polyurethane in mattresses is collected as waste and most is disposed of by incineration. The difficulty of processing mattresses containing materials other than polyurethane, such as polyester and metal springs, makes their disposal expensive for local governments and business operators generating industrial waste. In addition, growing demand for home care beds in Japan's aging society is forecast to increase the number of mattresses sent for disposal.

2. Purpose

Paramount Bed manufactures and sells beds and mattresses, while Mitsui Chemicals manufactures, sells and researches polyurethane materials and Rever undertakes recycling. As such, the three partners in this initiative aim to establish a recycling system covering everything through to low-carbon chemical recycling technology and collection. More specifically, the three companies plan to develop low-carbon technologies and processes for the chemical recycling and disposal of used mattresses over the course of this demonstration project, which is set to run until February 2025.

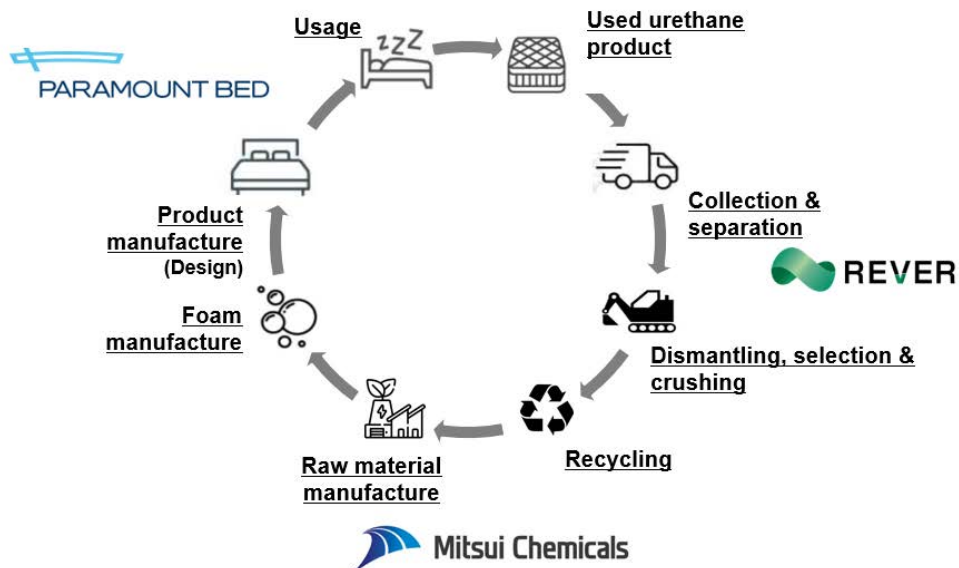
The partners also intend to work on creating a scheme for collecting used mattresses that have been reused as part of rental services covered under the nursing care insurance system. Aims are to achieve this by tapping into the wide area certification system^{*2} under which Paramount Bed has been certified.

3. Roles of each company and recycling model

■ Roles of each company

Company	Role
Mitsui Chemicals	<ul style="list-style-type: none"> • Project lead • Marketing of recycled polyols, deliberations on commercialization and establishment of chemical recycling technologies
Paramount Bed	<ul style="list-style-type: none"> • Project partner • Commercialization of raw materials resulting from chemical recycling • Construction of collection scheme for used urethane products
Rever	<ul style="list-style-type: none"> • Project partner • Establishment of techniques and procedures for dismantling, selection and crushing, among others

■ Recycling model



■ Examples of Paramount Bed mattresses eligible for collection

Everfit C3	Everproud	Crater	Stretch Fit
			

[Reference]

■ Polyurethanes

Polyurethanes are obtained through the reaction of two principal components, polyols and isocyanates, and are broadly classified into non-foamed and foamed polyurethane. The latter is available as either rigid or flexible foam. Polyurethanes have a wide range of uses, including in mattresses and other bedding, assorted household items, motor vehicles and ships, as well as having civil engineering and construction applications. However, chemical recycling of polyurethanes has not yet been achieved at the commercial level in Japan. Therefore, the development and commercialization of such technology is a pressing issue from the perspective of contributing to a circular economy.

[Company Profile]

■ Paramount Bed <https://www.paramount.co.jp/english/>

Established in 1947. Paramount bed has expanded its scope of business to include equipment for the elderly and home nursing care – such as developing home-care beds and various types of welfare equipment, while also offering sleep monitoring sensors and a variety of other solutions. Under the corporate slogan “as human, for human,” Paramount Bed intends to contribute to society through its business activities, aiming to achieve further improvements in both customer satisfaction and corporate value.

■ Mitsui Chemicals <https://jp.mitsuichemicals.com/en/index.htm>

Established in July 1955. Mitsui Chemicals is working to achieve carbon neutrality by 2050 through the two-pronged approach of recycling chemicals and plastics and transitioning to bio-based materials. Mitsui Chemicals has positioned resource recycling as a key strategic task in efforts to deliver a circular economy for society. This is because resource recycling not only helps reduce the use of fossil materials and fuels by efficiently utilizing such resources, but also decreases plastic waste and GHG emissions throughout the value chain.

■ Rever <https://www.re-ver.co.jp/english/>

Established in February 1904. A member of the TRE Holdings Group, Rever is one of the Kanto



region's foremost comprehensive recycling companies, handling the recycling of a wide variety of items, including metals, end-of-life vehicles, home appliance waste, small home appliances and industrial waste. Guided by its vision of turning Earth into a resource-rich planet, Rever aims to contribute to the achievement of a carbon-neutral circular economy.