Jul. 22, 2024

Tire Denchi® Project Member Companies

Demonstration Testing Begins for Streetlights Equipped with “Tire Denchi®”

The 18 member companies of the Tire Denchi® Project, including Renaisis Co., Ltd. (CEO: Sadayoshi Yamasaki, Head Office: Miyaki-cho, Miyaki-gun, Saga Prefecture), have been working on the development of the world’s first next-generation storage battery, “Tire Denchi®,” which is made from recycled End-of-Life Tires (hereinafter, “ELTs”), with the aim of realizing a sustainable society. After 12 years of refinement since its invention, we are pleased to announce that we will begin demonstration testing of a stationary product (streetlight) equipped with the Tire Denchi®.

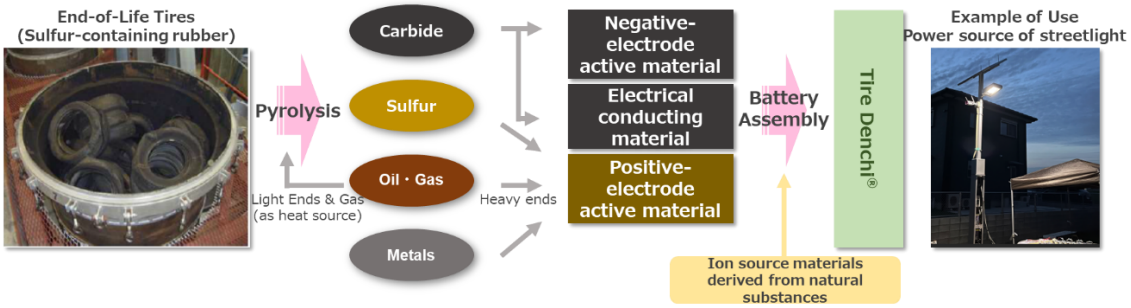
What is Tire Denchi®?

Our storage battery, named “Tire Denchi®,” is made from ELTs and was developed to respond to the need to reduce the industry’s environmental impact through both the reuse of ELTs and the use of ionic raw materials obtained from general-purpose resources.

Pyrolyzed[*1] ELTs are used as raw materials for the positive- and negative-electrode active material as well as the electrical conducting material of the storage battery, and these extracted materials are then combined with ionic raw materials derived from natural substances such as eggshells to produce the Tire Denchi®. Another notable feature is that the battery’s production does not require scarce resources such as rare metals, which are typically used in storage batteries, and the gas and light oil extracted from the pyrolysis of ELTs are reused for the pyrolysis process. Based on our assessment of the performance of the Tire Denchi® at its current stage, we are able to produce Tire Denchi® that can meet the electricity needs of 42 homes[*2] from 10 tons of ELTs. With future improvements and development, we plan to increase the capacity of the Tire Denchi® and further increase the yield.

*1 The rubber is converted into oil by heating in an oxygen-free condition

*2 Calculated based on 10kWh per household



The Society We Aim For

In Japan, approximately 1 million tons of ELTs are generated annually, and by utilizing 100 thousand tons of ELTs as raw materials for Tire Denchi®, we aim to create a resource-circulating society. In addition, by combining Tire Denchi® with renewable energy sources, such as solar, hydroelectric, wind, and biomass power generation sources, we will contribute to the further spread of renewable energy.

Details of the Demonstration Test

Period: Late July to late October 2024

1) Install Tire Denchi® on streetlights equipped with solar panels to store electricity.
2) Use the electricity stored in the Tire Denchi® to confirm continuous operation during the period.

Location: 875 Ichibu, Miyaki-cho, Miyaki-gun, Saga Prefecture

Content: Operation check of control circuit for Tire Denchi®

Division of Roles among Tire Denchi® Project Member Companies

Renaisis Co., Ltd.

・Intellectual property rights holding company

Kunimi Kogyo Co., Ltd.

・Intellectual property rights holding company

Tokyo Tanso Co., Ltd.

・Holding company of electrode materials (cathode and anode) manufacturing rights in Japan and battery manufacturing method rights in Europe

RIX Corporation

・Provide supports in introducing battery manufacturing equipment

Seiken Graphics Inc.

・Develop related manufacturing facilities to industrialize Tire Denchi®

Kouguchi Precision Industry Co., Ltd.

・Develop related precision parts and components to industrialize Tire Denchi®

Place Home Co., Ltd.

・Develop and sell residential storage batteries to industrialize Tire Denchi®

Sanko Dengyo Co., Ltd.

・Supporting the mass production of various control circuit components for various storage battery-mounted products to industrialize Tire Denchi®

Fujikura Co., Ltd.

・Cooperate in the construction of various manufacturing plants to industrialize Tire Denchi®

Denkosha Corporation

・Support the manufacturing and installation of original streetlights and peripheral battery equipment to industrialize Tire Denchi®

Sojitz Corporation

・Supports the entire tire and battery value chain, from upstream to downstream, leveraging its network and relationships with tire manufacturers to industrialize Tire Denchi®

Nirai Co., Ltd.

・Develop original products to industrialize Tire Denchi®

Dainichi Seiko Co., Ltd.

・Develop truck-related storage batteries to industrialize Tire Denchi®

Marubeni Corporation

・Support the procurement of raw materials derived from ELT and the development of sales channels for Tire Denchi® to industrialize Tire Denchi®

ENEOS Materials Corporation

・Provide battery binders for positive and negative electrodes to contribute to improving battery quality to industrialize Tire Denchi®

Kusumoto Chemicals, Ltd.

・Provide essential materials for improving battery performance (single-walled carbon nanotubes (SWCNT)) materials, and guidance on process technology for creating battery electrodes, basic design of various control circuits, and support the planning and development of special charging and discharging equipment to industrialize Tire Denchi®

Tanaka Ai Co., Ltd.

・Support the supply of related chemical materials and develop related products to industrialize Tire Denchi®

Maruei Paper Tubes Co., Ltd.

・Support the development of technology to collect battery status and cameras through its affiliated company’s communication technology to industrialize Tire Denchi®