

Riken Kogyo will contribute to the SDGs through innovation.



The Sustainable Development Goals (SDGs) are international goals for the period from 2016 to 2030 that not only developing countries but also developed countries themselves will tackle, as described in the "2030 Agenda for Sustainable Development" adopted at the United Nations Summit in September 2015 as a successor to the Millennium Development Goals (MDGs) formulated in 2001.

It consists of 17 goals and 169 targets to realize a sustainable world, and pledges to "leave no one behind" on the planet.

★ Improving road traffic safety ①



Our main product, snow fences, protect road traffic in cold regions from blizzards and improve safety (Goal 11), thereby reducing the number of casualties in winter traffic accidents (Goal 3) and supporting the effective use of road infrastructure that supports economic development (Goal 9).

Snow fence



The road transportation network in the northern part of the country is developing day by day. It can be said that it is the most important lifeline that occupies a large position in our lives.

Snow fences protect this road from severe snow and wind damage.

We utilize valuable data obtained from rigorous surveys, research and development, wind tunnel tests, and field experiments to commercialize products.

★ Improving road traffic safety②



Our new product, the light-guiding type gaze guidance mark, reduces the number of casualties in traffic accidents (Goal 3) by improving the safety of road traffic at night (Goal 11), and supports the effective use of road infrastructure that supports economic development (Goal 9).

Light-guiding type gaze guidance mark



Gaze guidance mark for wire rope



Gaze guidance mark for guardrail



Gaze guidance mark for snow pole



Gaze guidance mark "ZERO" for parallel wind direction

This is a light-guiding type gaze guidance mark that allows the driver to recognize "lines".

Compared to conventional products that recognize "points", it is easier to check the position of curves and shoulders, and road traffic safety is improved.

In addition, the structure that does not look directly at the LED prevents glare and is not affected by blue light, making it a human-friendly product.

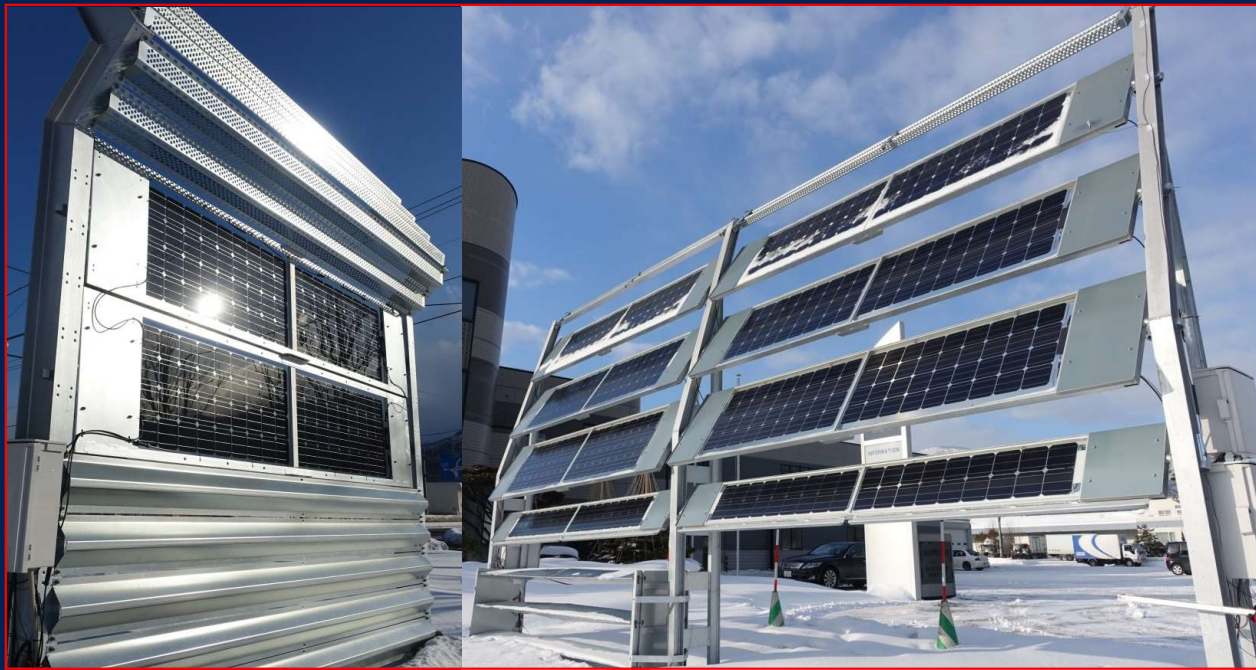
★ Expanding the use of renewable energy①



Our products will contribute to mitigating climate change (Goal 13) by combining snow fences with renewable energy power generation systems to expand the use of renewable energy (Goal 7).

Next-generation snow fence: Snow fence with solar power

Scheduled for commercialization in 2022



Due to climate change in recent years, what is currently called abnormal weather is expected to become the norm in the future.

We are developing environmentally friendly products that utilize renewable energy to curb further climate change and adapt to climate change.

We are researching and developing new snow prevention measures, such as reducing enormous snow removal costs by melting snow around snow fences by utilizing wind power, solar power, and geothermal heat.

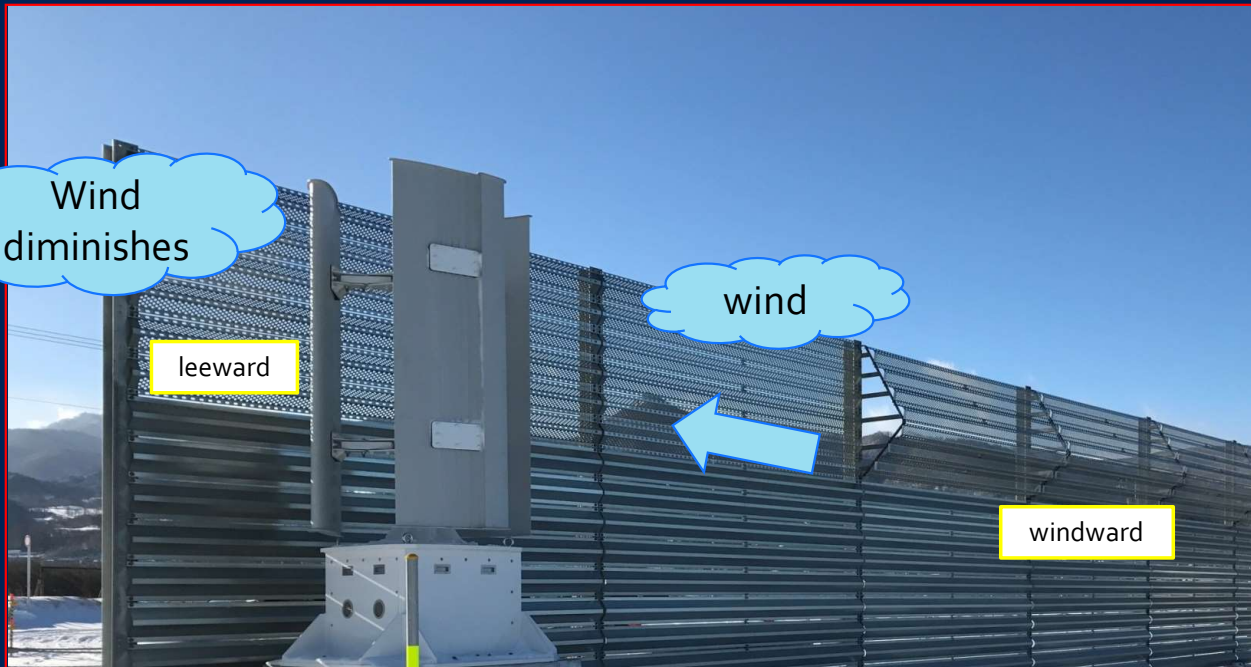
★ Expanding the use of renewable energy②



Our products will contribute to mitigating climate change (Goal 13) by combining snow fences with renewable energy power generation systems to expand the use of renewable energy (Goal 7).

Next-generation snow fence: Snow fence with wind power

Scheduled for commercialization in 2022



We are developing snow fences that combine snow fences and wind power generators.

Wind power generators not only generate electricity, but also have the effect of weakening the wind on the leeward side. By utilizing this effect, power generation and snowstorm countermeasures can be performed at the same time.

The obtained electricity is used for electric lighting and gaze guidance technology to contribute to traffic safety, and we aim to build a resilient infrastructure that can cope with recent large-scale natural disasters.

★ Expanding the use of renewable energy ③



Our products will contribute to mitigating climate change (Goal 13) by combining snow fences with renewable energy power generation systems to expand the use of renewable energy (Goal 7).

Next-generation snow fence: Geothermal heat collection system using foundation piles of snow fences

Scheduled for commercialization in 2024



We are developing a system that uses steel pipe piles used for the foundations of snow fences to measure and utilize geothermal heat. The heat obtained is circulated to a heat pump and operated, and the area around the snow fence is used for snow melting, thereby improving the safety of winter roads and reducing snow removal costs. By cooling and operating heat pumps in summer, we will suppress the heat island phenomenon and contribute to the creation of resilient cities that can cope with global warming caused by climate change.

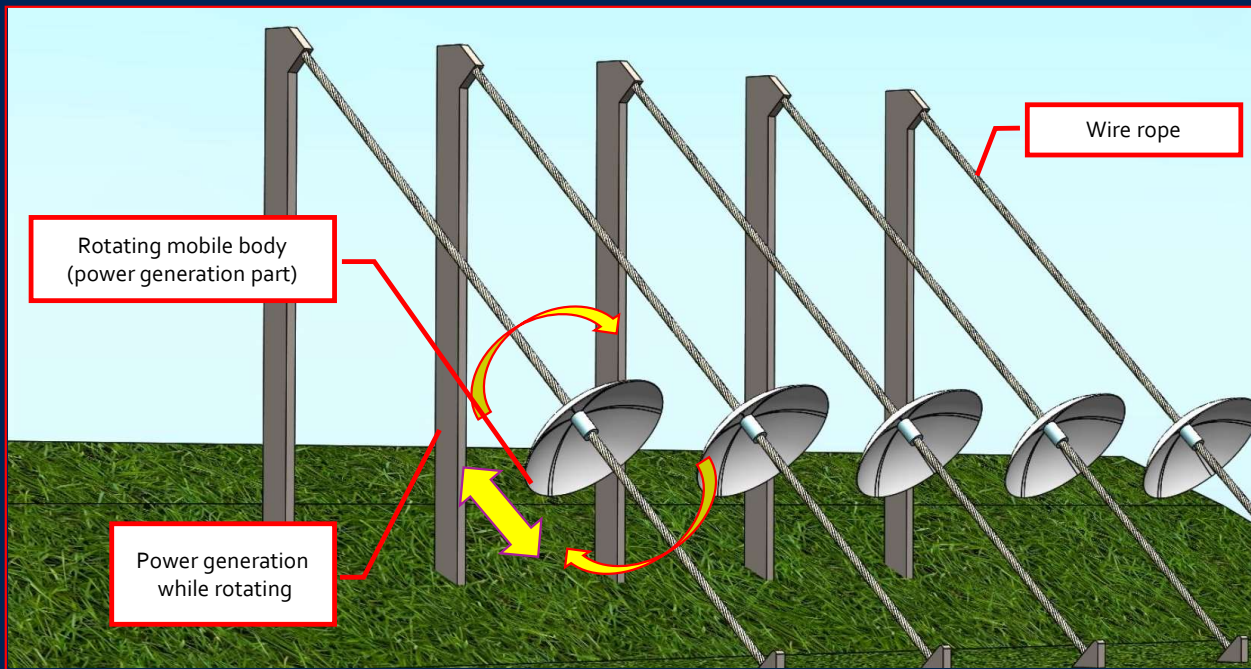
★ Expanding the use of renewable energy④



We will contribute to mitigating climate change (Goal 13) by expanding the use of renewable energy (Goal 7) through power generation equipment that utilizes Riken spindle®.

Wind power generation system using Riken spindle®

Scheduled for commercialization in 2028



The rotating moving body mounted on the wire rope is shaped like a parabolic antenna that is easily affected by the wind.

When it receives the wind, it rises while rotating, and when the wind stops, it rotates and descends naturally.

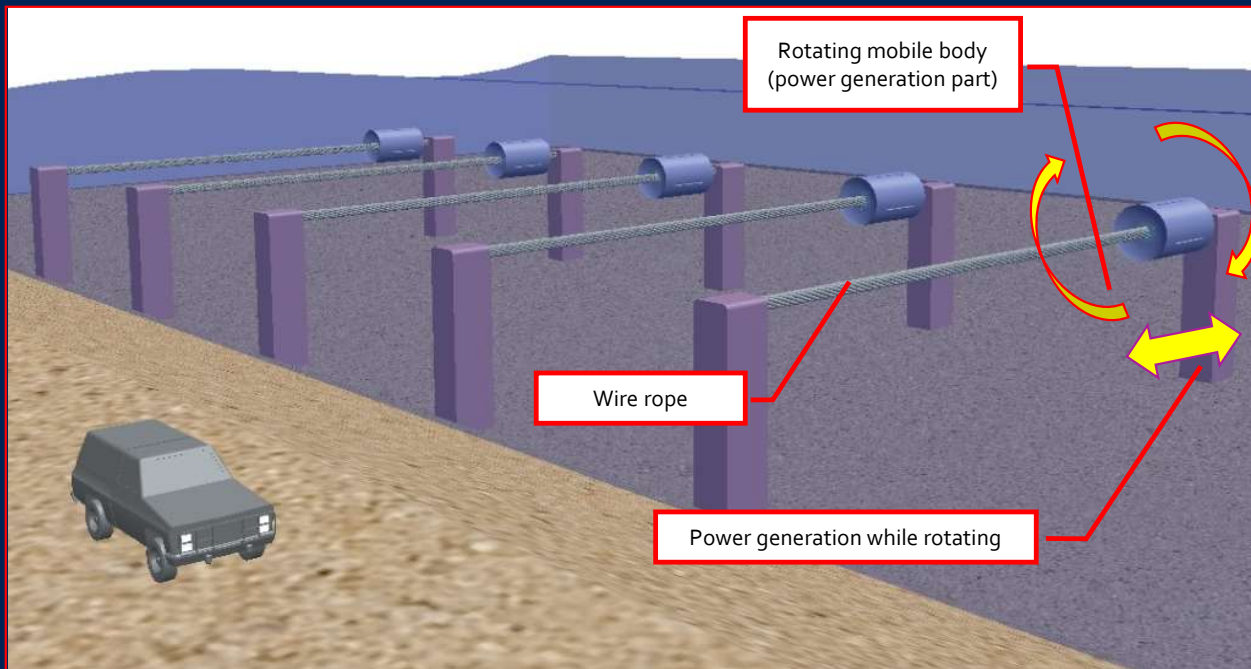
It repeatedly rises and falls, and generates electricity by the rotational motion at this time.

★ Expanding the use of renewable energy⑤



We will contribute to mitigating climate change (Goal 13) by expanding the use of renewable energy (Goal 7) through power generation equipment that utilizes Riken spindle®.

Ocean current power generation system using Riken spindle®



Scheduled for
commercialization in
2028

The rotating moving body mounted on the wire rope is shaped like a dish that is easily affected by current.

Depending on the tide, waves, and tides at low and down, power is generated by repeating forward and back movement while rotating.

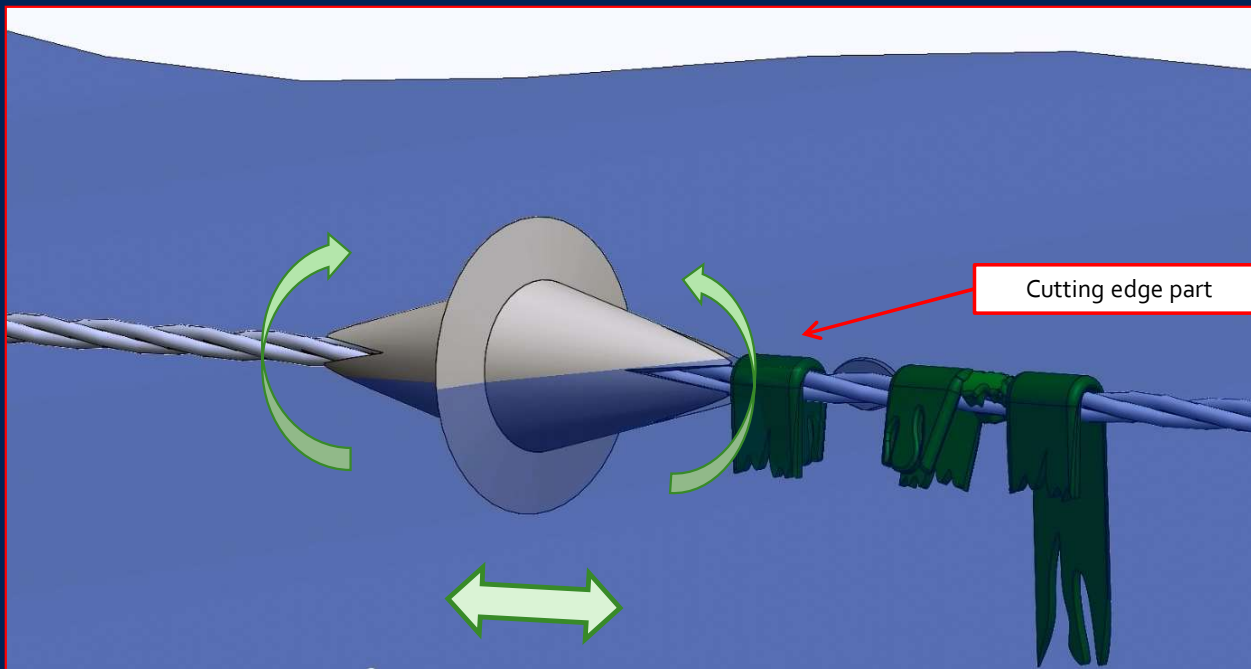
★ Building resilient infrastructure



Adherent removal device using Riken spindle® protects the ocean by preventing rope deterioration and damage. (Goal 14)

Scheduled for commercialization in 2022

Adherent removal device using Riken spindle®



By using Riken spindle®, we are developing technology to remove deposits on the surface of wire ropes used at sea and in the sea.

As the cutting edge provided at the tip of the Riken spindle® moves through the groove, it makes easy to remove shellfish and seaweed that mainly adhere to the grooves.

It prevents rope deterioration and damage due to adhesion of foreign matter and various damages due to increased rope weight, and is contributing to marine pollution countermeasures.

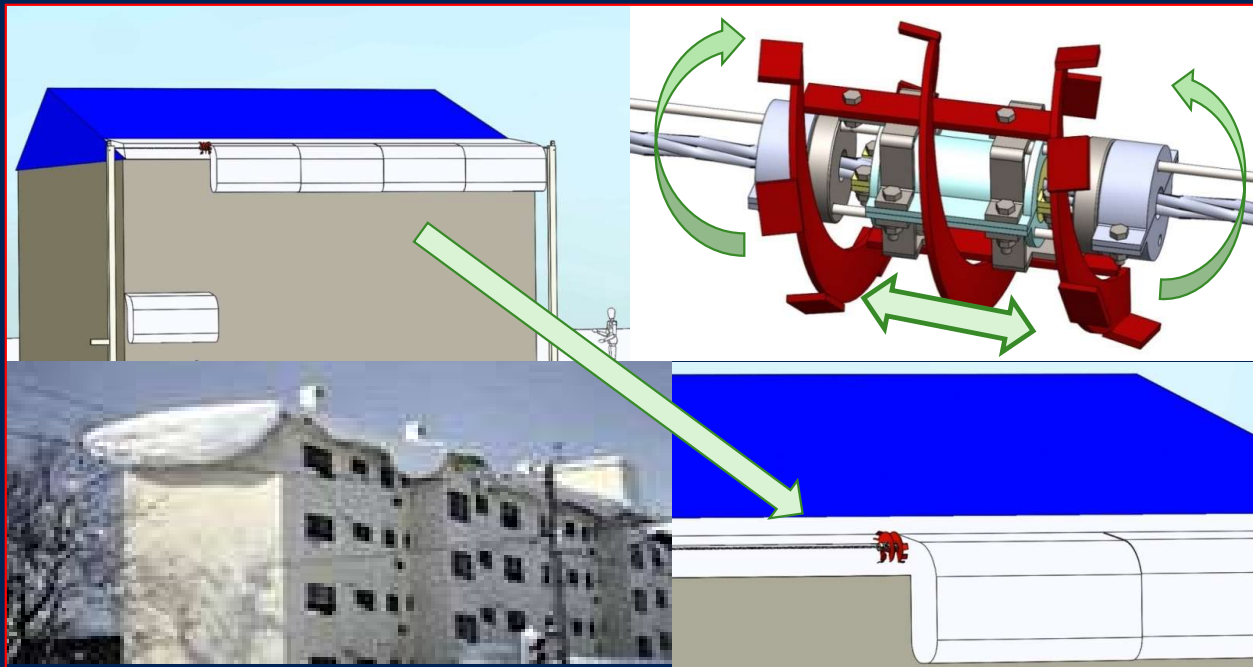
★ Building resilient infrastructure



We will realize sustainable cities (Goal 11) and contribute to adaptation to climate change (Goal 13) by using snow eaves removal equipment using Riken spindle®.

Snow eaves removal device using Riken spindle®

Scheduled for commercialization in 2022



Snow eaves are chunks of snow that accumulate on the roof and slowly protrude from the eaves when they are blown away by the wind.

If left undone, it will crack due to its own weight. If it falls, it will lead to a serious accident.

By using Riken spindle®, we are developing technology to remove these snow eaves.

The blade on the screw provided at the outer edge of the Riken spindle® moves while rotating, making it possible to remove hard and heavy snow eaves.

It eliminates dangerous high place work in winter and contributes to the creation of safe cities.

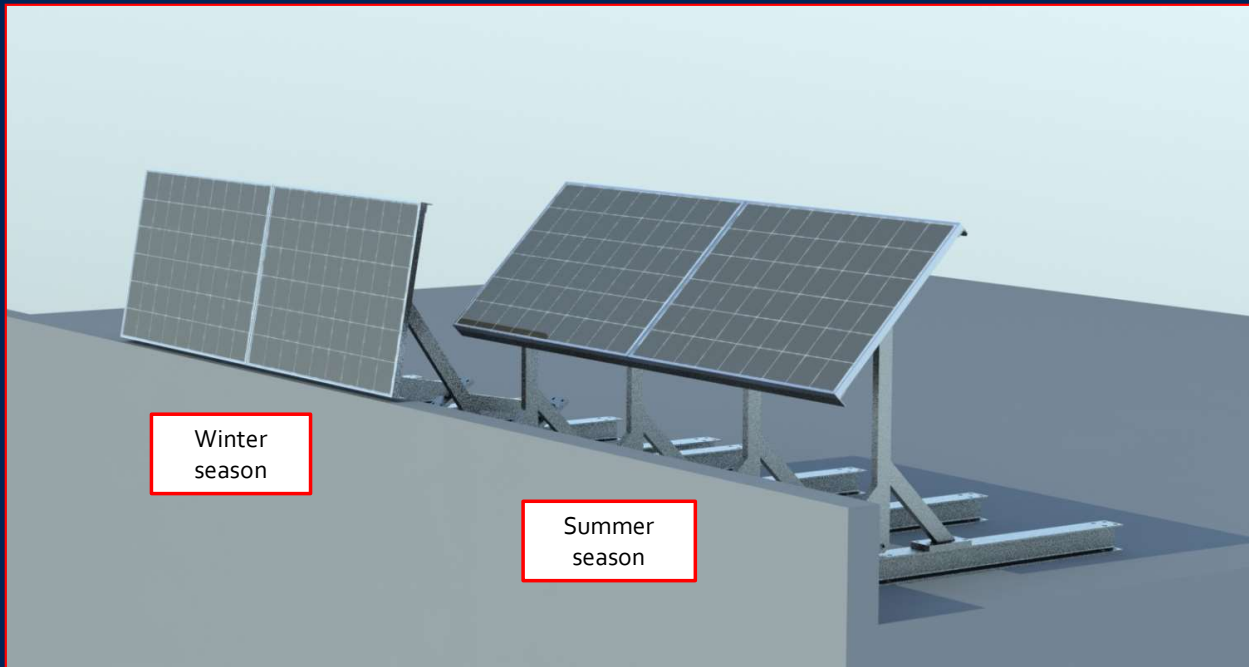
★ Building resilient infrastructure



We will contribute to mitigating climate change (Goal 13) by expanding the use of renewable energy fences (Goal 7) with adopting solar panels for snow eaves prevention.

Snow eaves prevention fence with solar panel

Scheduled for commercialization in 2022



We are developing products that use solar panels for snow eaves prevention fences.

In winter, it functions as a snow eaves prevention fence + solar power generation system at a near-vertical angle.

In summer, the panels are tilted to a vertical angle to receive sunlight, generating electricity more efficiently than in winter.

The generated power can be used to supply power to facilities or as an emergency power source in the event of a power outage for charging the battery.

★ Building resilient infrastructure



We will contribute to the development of sustainable and resilient infrastructure (Goal 9) and the mitigation of climate change (Goal 13) by providing evacuation guidance in disaster using LED-compatible luminescent resin paint and LED-compatible luminescent resin light covers, that does not require a power supply.

LED-compatible luminescent resin paint
LED-compatible luminescent resin light covers

Scheduled for commercialization in 2022



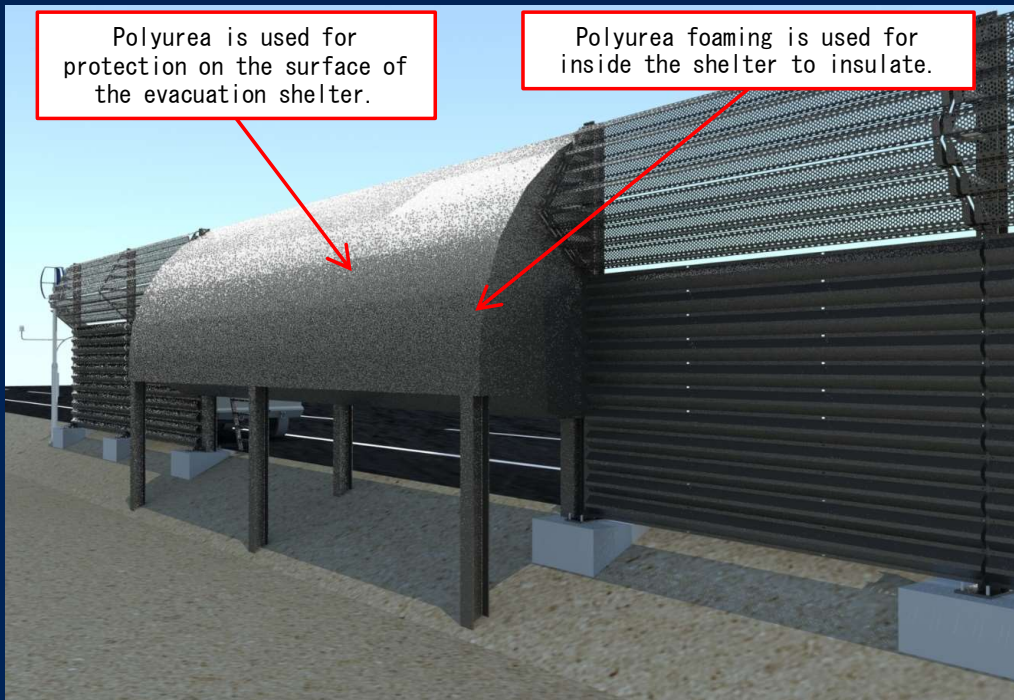
We are developing various products using luminescent materials that efficiently absorb LED light and block blue light. 100% of lights in Japan will become LED by 2030. As a result, the function of evacuation guidance signs using normal luminescent materials will be reduced. We will solve this problem with LED-compatible luminescent materials and develop a resilient infrastructure. In addition, since it emits light without the need for a power supply, it also leads to energy saving.

★ Building resilient infrastructure



We will contribute to adaptation to climate change (Goal 13) by developing snow evacuation shelter.

Snow evacuation shelter



Abnormal weather due to climate change is occurring frequently.

Especially in Hokkaido, the number of winter bombogenesis is on the rise, and fatal accidents have also occurred.

In order to adapt to this, we need completely new snow protection measures that have never existed before.

★ Ensuring a healthy lifestyle



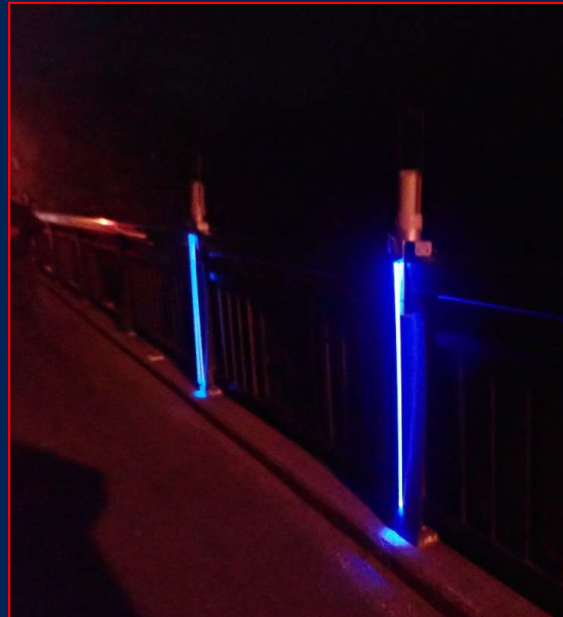
By placing blue light emitters (LED and luminescence) on platforms and in dangerous areas, it contributes to the reduction of premature mortality. (Goal 3)

Scheduled for commercialization in 2022

Measures to prevent personal injury



Image of installation on a railway station platform



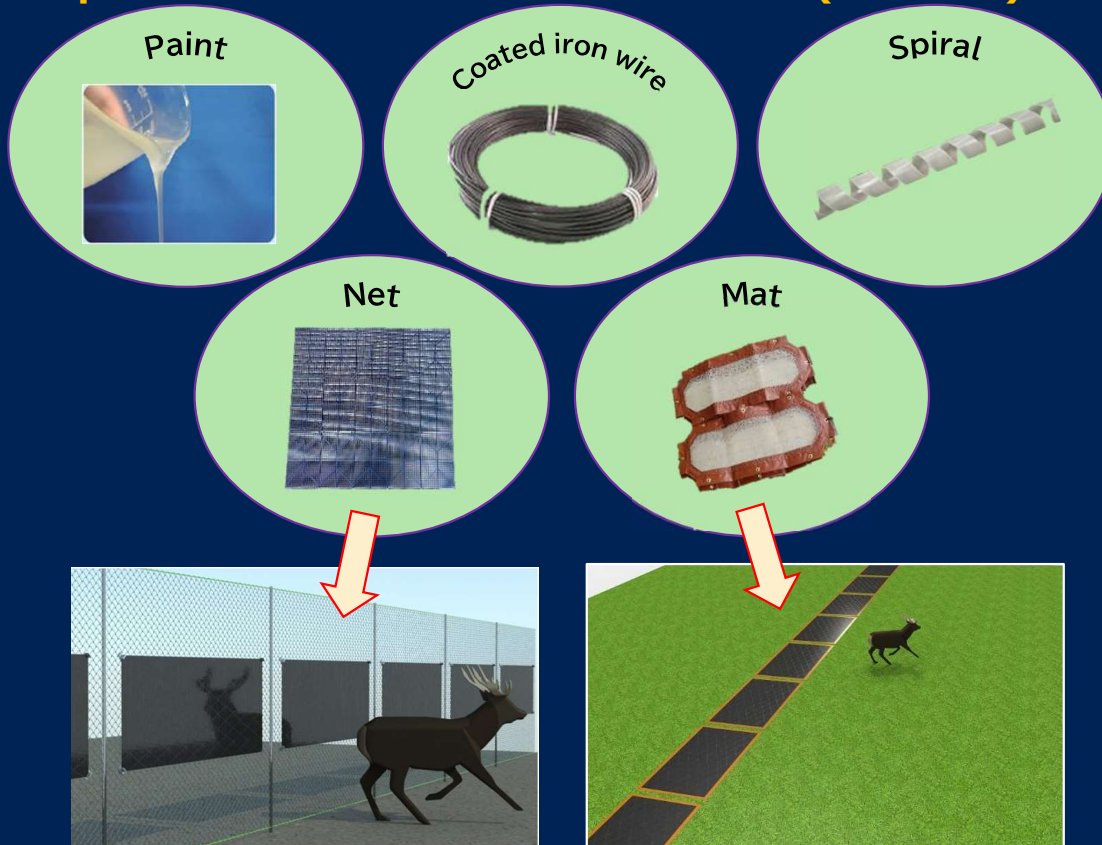
Test installation on the Bridge

In 2014, the study by professors at the Graduate School of Economics of Tokyo University found that simply attaching a blue LED light to the platform had a remarkable effect on preventing jumping suicides, and the number of suicides decreased by about 84%. It is also said that suicides see the entering train just before jumping in. From this, the effect of preventing personal injury is expected by attaching a blue LED and a light emitting object to the end of the fall prevention fence and making the surrounding area blue. In addition, by attaching a luminescent cover to the LED tube light to the ceiling light and applying luminescent resin paint to the ground, the chance to enter blue color into the view of suicides can be increased.

★ Our activities

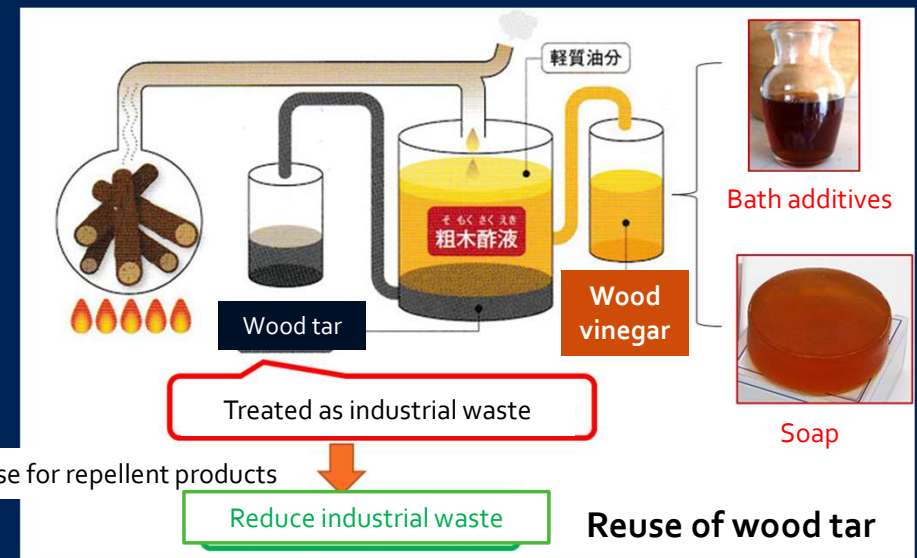


We will reduce the number of casualties in traffic accidents (Goal 3) by developing repellent products against harmful animals to reduce the entry of animals into roads and to improve road traffic safety (Goal 11). In addition, wood tar, which is industrial waste, is reused as a repellent material to reduce waste (Goal 11).



In recent years, various damage and obstacles caused by wild animals have occurred in living areas such as forests, crops, and transportation.

We are researching and developing products that aim to reduce damage and obstacles by installing this product in a specific place to prevent the movement of animals in the vicinity.



★ Our activities

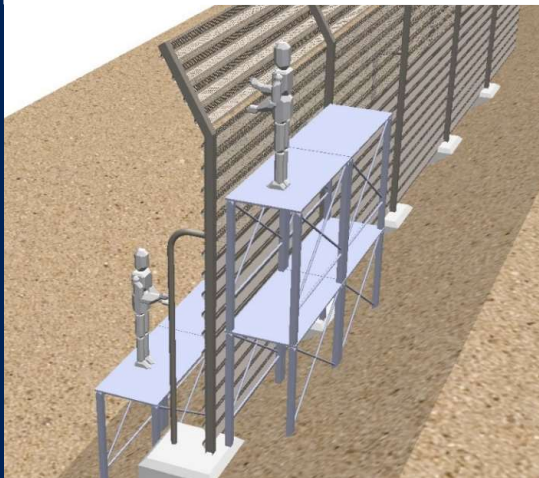


We will contribute to the promotion of the reuse of PET bottles (Goal 12) and the reduction of marine plastic rubber (Goal 14).

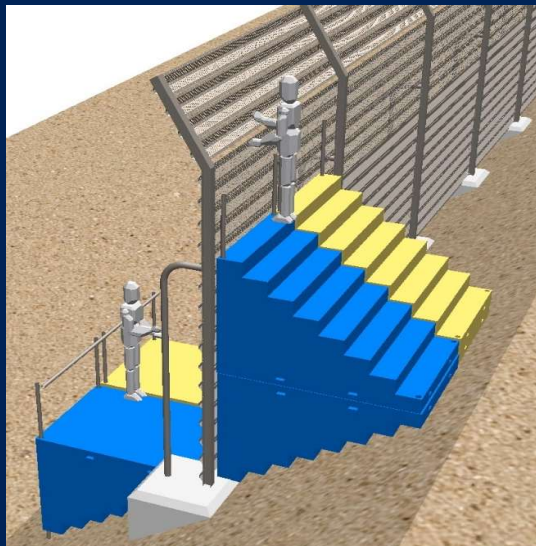
Lightweight mobile work staircase

Conventional scaffolding

- Made of iron, heavy and difficult to move
- It takes time to install.

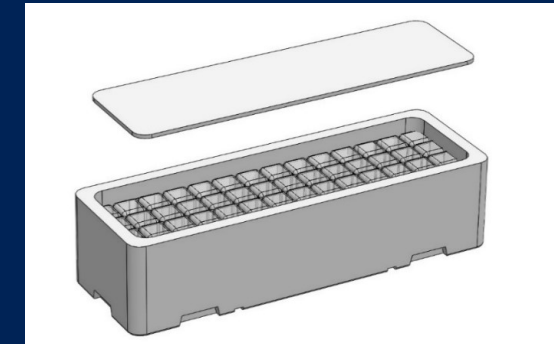


Difficulty in installing scaffolding on slopes



Fast and safe installation

Scaffolding for safer work on slopes "Lightweight mobile work staircase"



★ Our activities

We will contribute to the promotion of the reuse of PET bottles (Goal 12) and the reduction of marine plastic rubber (Goal 14).



Lightweight mobile work staircase

● Challenges

Iron scaffolding is heavy.
Installation takes a long time.
It is dangerous if you fall.

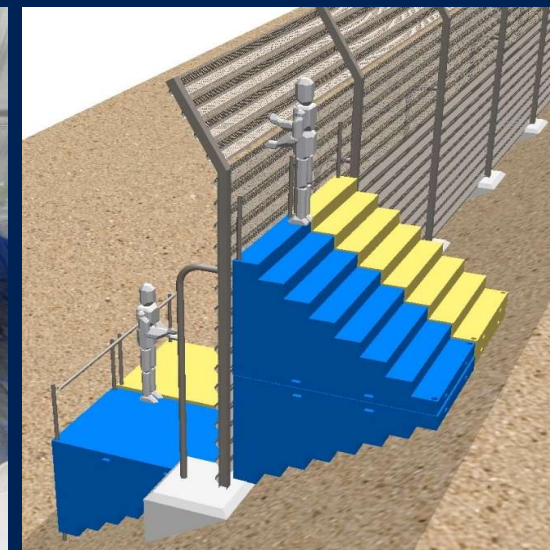
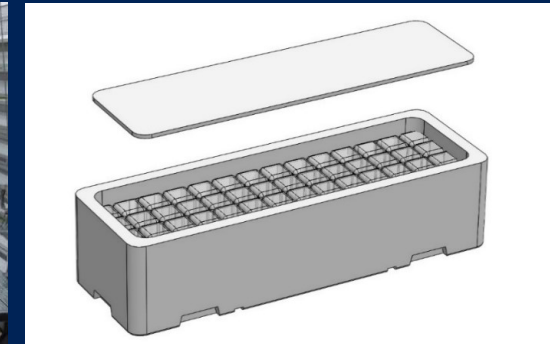
● Product Overview

Inside the expanded polystyrene box, used PET bottles are arranged vertically, covered with lids, and coated with polyurea on the entire surface. These are freely connected to create a work stand.

● Features

1. Contributes to the reduction of marine plastic waste.
2. Super light and easy to carry.
3. In addition to high strength of polyurea, it is held by the air pressure inside the PET bottle.
4. Expanded polystyrene makes it safe to fall.
5. Add height by combining them like Lego bricks.
6. Non-slip with anti-slip finish.
7. Flatten slopes to secure work space.
8. Safety is improved because an anti-fall fence can be installed.
9. Put the joint fittings and join the blocks.
10. It is possible to make a place to store bolts, tools, etc.

Combine the blocks according to the mounting height of the snow protection board.
PET bottles are collected from roadside stations and schools as part of volunteer activities.

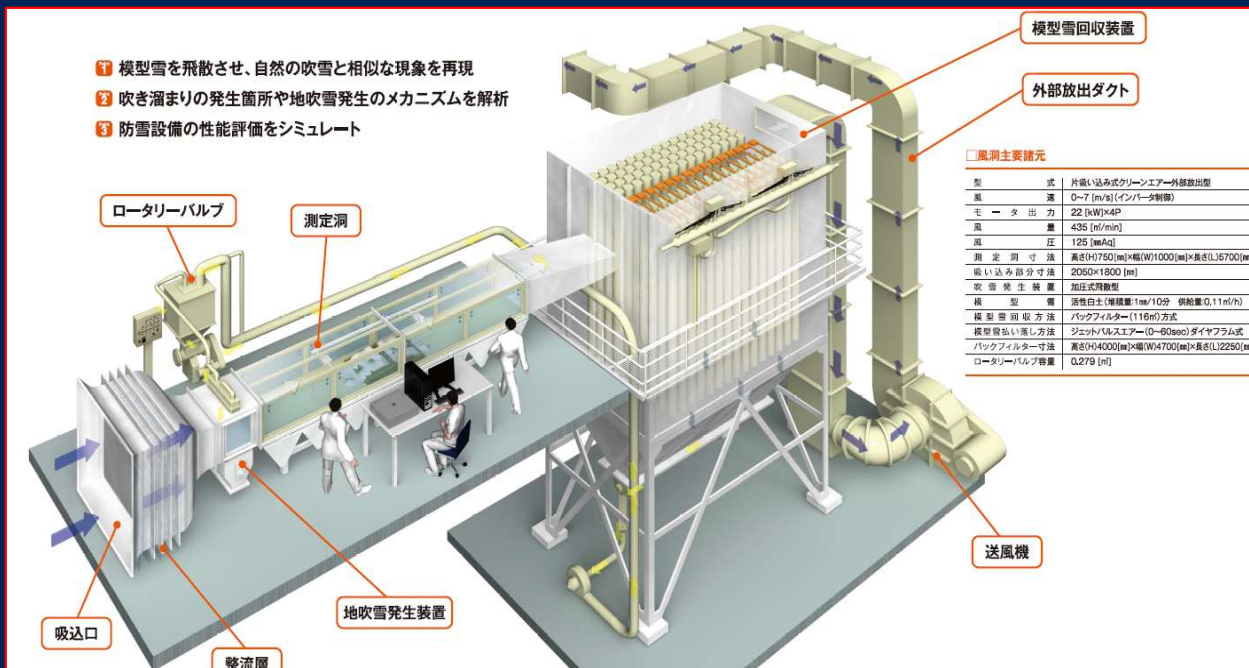


★ Our activities



The model snow reuse circulation system of the wind tunnel test facility contributes to the reduction of waste (Goal 12).

Reduction of consumption of model snow used in wind tunnel tests



We own wind tunnel test equipment that can reproduce blizzards and ground blizzards.

Equipment is used to verify the effectiveness of snowstorm countermeasures and to develop new products. However, activated white clay, which is a model snow, is used to reproduce snow. And a large amount of active clay is used for one test.

By operating this reusable circulation system, we can reduce consumption and reduce the outflow of activated white clay to the outside by more than 90% of conventional systems, and contributing to environmental conservation and resource conservation.

★ Our activities



Through wind tunnel test tours and workshops, we will contribute to ensuring high-quality education (Goal 4) and revitalizing global partnerships (Goal 17).

Acceptance of training, intern for students, and wind tunnel test tours



Regarding snowstorm countermeasures, which are very important in cold regions, We conduct daily research with wind tunnel test equipment.

We conduct tours and workshops of this experiment both in Japan and overseas.

We are actively engaged in education that makes effective use of our knowledge and experience in snow, by accepting intern for the growth of students and training for overseas road managers.

It is also open to the general public. Requests for observation of wind tunnel tests are accepted from our website.

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