

CSR Activity Action Plan

The Toyal Group set five key challenges of CSR (materiality), and has been working on them with the Toyal Group Sustainability Vision in mind, which was established toward 2031, the year of our 100th anniversary. The results of activities in fiscal 2022 are shown in the table below. As mentioned above, we started to review materiality in fiscal 2022. We will work to contribute to the realization of a sustainable society by redefining material issues that more closely match the current situation.

Key CSR Challenges	Relations with the Main SDGs	Main Activities	Activity Results of Fiscal 2022	Long-Term Targets (Fiscal 2031)
1 Innovation to Shape the Future		Existing business: Increase the proceeds of products that contribute to SDG 3, 7, 9, 11, and 12	Proceeds of products that contribute to the SDGs decreased 1.2% from fiscal 2019	Triple the proceeds of products that contribute to SDG 3, 7, 9, 11, and 12 (compared to fiscal 2019)
		New business: Create the 4th pillar (business)	Prospect: Commercialization of one item	Commercialization of two items
2 Environmental Protection		Reduce CO ₂ emissions from business activities (compared to fiscal 2013)	23.2% reduction compared to the fiscal 2013	40% reduction (compared to fiscal 2013)
		Establishment of a system to recycle solar cells	A recovery and processing scheme for recycled modules is currently being considered with a partner company	Establish a system to recycle solar cells and start the recycling
		Establish a system to recycle aluminum	Started recycling of surplus materials for some customers Started development of technology to extract aluminum from processed foil	Generalize aluminum recycling (with the established system)
		Establish a system to recycle paper containers	Succeeded in significantly reducing the film mix ratio, which was an issue for repulping Verification for the introduction of dedicated research equipment for repulping	(Depending on the system built) Generalize paper container recycling
		Reduce industrial waste from business activities	3.5% reduction compared to the previous fiscal year	Zero industrial waste sent to a landfill (All recycling is zero emission)
3 Active Roles of Diverse Human Capital		Increase the rate of women in hiring	Rate of women in new hires: 41.6%	Rate of women in new hires: 30%
		Active roles for senior human capital	Considering a gradual increase in the retirement age	Complete organizing a system centered on the mandatory retirement age of 70
		Active roles for autonomous human capital	Implementation and operation of professional evaluation under the new personnel system	Constructively continue autonomous human capital development
		Promotion of healthy management	Promotion of anti-smoking programs by the Health Management Business Promotion Committee	Constructively continue health management
4 Quality and Safety		Reduce the number of serious quality complaints	Number of serious quality complaints: 0	Zero serious quality complaints
		Reduce lost-time injuries, non-lost-time injuries, and fire accidents	Lost-time injuries: 1, non-lost-time injuries: 13, fire accidents: 5 Minor injuries: 17 (16 in the previous fiscal year)	Zero lost-time injuries, zero non-lost-time injuries, zero fire accidents, and 50% reduction of minor injuries (compared to the previous fiscal year) Priority initiatives: Strengthen measures against accidents related to rotating objects, delivery equipment, and on-site tip-over accidents
5 Collaboration with Stakeholders		Improve reliability and satisfaction through dialogues with various stakeholders (regions, customers, employees, etc.)	Two shareholder dialogues Focus on dissemination of information through media and online, and internal communications	Build good relationships with various stakeholders and play a part in resolving issues

Innovation to Shape the Future



In order to respond to social challenges, potential problems, and changes in the market environment that have become apparent, the Advanced Technology Division and the New Business Creation Division have classified the target markets into the following three categories: “existing market,” “new market,” and “next-generation market,” and are devoting resources to research & development and commercialization for each category. When it is difficult to find solutions on our own, we actively promote open innovation through alliances with venture companies, universities, research institutes, and other organizations, both in Japan and overseas. We incorporate the concept of “Creating Shared Value (CSV),” deepen communication with our stakeholders, and work on development that can realize the creation of shared value between the Toyo Group and society. We also aim to lead the world with new ideas, being based on aluminum, but not limited to it.



Strengthening open innovation and interaction with business divisions. Taking on new themes that can contribute to social issues and creating the future of the Toyo Group

SDGs and solutions to social issues are an important aspect of manufacturing. With that in mind, we believe that our mission is to improve people's lives by developing products that can help protect our environment.

In fiscal 2022, we stepped up the businesses we planted in fiscal 2021 to solve social issues. Mass production began of powder laminated foil (winding type) used in aluminum electrolytic capacitors, and the product is now ready for market. In partnership with 24M Technologies, Inc., a battery technology venture company in the US, we are developing next-generation EV batteries and are working to further improve the performance of battery components. In addition, the research of the Toyo Aluminium Joint Research Course on Semiconductors, established with Osaka University, was selected as a “Leading Research Program on New Energy and Environmental Technologies” by NEDO (New Energy and Industrial Technology Development Organization), and progress has been made toward practical application.

In addition, joint research with universities on tritium decontamination technology for ALPS treated water^{*1} has passed secondary evaluation, and is now entering the feasibility study^{*2} stage for evaluation and consideration for practical applications.

In fiscal 2023, we will further advance the results of fiscal 2022. Specifically, we will devote human capital and concentrate our efforts on commercializing foil for aluminum electrolytic capacitors and battery components for electric vehicles, as well as to carry out demonstration tests for tritium decontamination technology. We are also pursuing new initiatives, such as research into low-temperature cured silver paste, which will contribute to a significant increase in the conversion efficiency of solar cells.

On top of that, as one solution to the environmental issues for which market

demand is high, we will focus on the development of biodegradable plastic packaging materials that can prevent marine pollution.

Development of human capital is important to promote this research & development. The Advanced Technology Division will utilize women and foreign nationals and foster development-based human capital through open innovation. At the same time, we will contribute to society by strengthening interactions with business divisions to share the growing environmental awareness of end users and developing products and new technologies that will help solve environmental and other social issues.

^{*1} ALPS treated water: Water containing radioactive material from the buildings of the Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi Nuclear Power Plant has been purified, removing the radioactive material other than tritium to meet safety standards. (Source: Ministry of Economy, Trade and Industry's “Let's get to know and understand about ALPS treated water.” https://www.meti.go.jp/earthquake/nuclear/hairo_osensui/hirou_alps.html)

^{*2} Feasibility study: A verification of practical suitability based on specific conditions



Sensor that detects using frictional power generation

In recent years, a technology called “energy harvesting,” in which small amounts of environmental energy such as the heat and vibration around us are collected and used, has attracted much attention. In collaboration with Kansai University, we are currently developing a detection sensor that uses friction energy generated when a person passes by for wireless communication. This technology makes it possible to use energy effectively by eliminating sensor batteries.



The sensor communicates wirelessly to a PC using electricity generated when a person passes by

Reducing food loss with “LOTUS · FLOW BOTTLE®”

Inspired by the water repellency of lotus leaves, a unique surface treatment has been applied to the inside of the bottle. This makes it difficult for the contents to stick to the bottle, allowing for every last drop to be used. This product, developed in collaboration with Kyoraku, aims to contribute to a sustainable society by reducing food loss, while at the same time enhancing consumer convenience and enriching lives.

No inner surface treatment With inner surface treatment



Pest repellent products that are friendly to humans, animals, and the earth

We have developed a pest repellent product that uses highly safe biodegradable resins and natural ingredients. The damage to health caused by blood-sucking pests can be a big problem for both people and animals. By using ingredients that are safe to eat, this product can be safely used in nurseries, nursing homes, for livestock and in zoos, etc., to prevent health hazards caused by blood-sucking pests. In addition, the raw material resin used is biodegradable resin that decomposes naturally in the soil, making it an insect repellent with little impact on the environment.



Pellets for pest repellent products

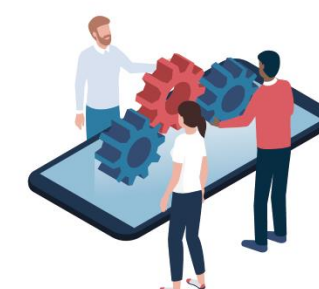
Silver paste for next-generation perovskite tandem solar cells

Expanding renewable energy is one of the major challenges in preventing global warming. Next-generation perovskite tandem solar cells have been reported to have a high conversion efficiency of more than 30%, but the technology for forming electrodes to extract electricity industrially has not yet been established. We are collaborating with research institutions around the world to develop silver paste as an electrode-forming material that can be commercialized. Next-generation solar cells using this technology are expected to be deployed in mobility applications such as automobiles and drones, where the mounting area is limited.



Image of solar cell use

Link to solar cell introduction page

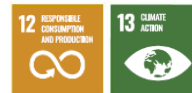


Environmental Protection



We are working on environmental protection from the perspective of reducing the environmental loads of our business activities as well as contributing to the environment through our products. In our business activities, we are making efforts to reduce energy use in each process in manufacturing, and promote the 3Rs* for waste. In addition, 15 of our offices (mainly production bases) have the ISO 14001 certification. Through the effective operation of the environmental management system, we will prevent environmental troubles, comply with laws and regulations of each kind, reduce environmental loads, and promote management activities that are sustainable and in harmony with the global environment.

* 3Rs: Reduce, Reuse, and Recycle



We will support business sites and step up environmental activities throughout the Group to achieve CO₂ emission reduction targets

As extreme weather events occur more frequently due to global warming, the demand for corporate activities that contribute to environmental conservation, including the realization of a decarbonized society, is growing year by year. The Toyal Group aims to reduce CO₂ emissions from its business activities by 40% (compared to fiscal 2013) by fiscal 2031 and is working to reduce its environmental impact as much as possible. It is our role to coordinate with each business site and carry out the PDCA cycle to realize these goals.

In fiscal 2022, we were able to reduce CO₂ emissions and industrial waste from our business activities compared to the previous fiscal year. However, this was largely due to a decline in operating rates at manufacturing sites as a result of worsening market conditions. The ideal situation is to realize reductions even when manufacturing sites are operating at full capacity. In addition to planning environmental investments at each business site, such as replacing old equipment with energy-saving equipment and switching from fossil fuels to energy that does not emit CO₂, we are reducing CO₂ emissions and industrial waste through a variety of ideas and initiatives, such as by recycling materials that would originally have been discarded.

Ideas that change the conventional way of thinking are also being born. For example, energy conservation in equipment that heats or cools objects has traditionally been achieved by finely adjusting the temperature settings to an optimal level. By changing our perspective from the optimization of temperature settings and questioning and confirming the systems that have been used in the past, in some cases we have been able to fundamentally reconsider temperature control, leading to more energy savings in the long term.

In addition to collecting and developing effective examples through study sessions and free discussions with business sites, we support each business site in achieving its CO₂ emission and industrial waste reduction targets through new proposals based on the knowledge of outside experts and research on new technologies.

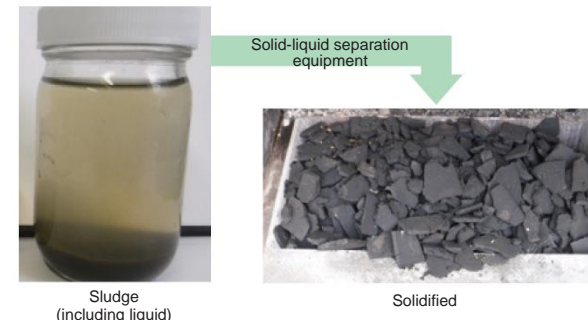
When we hear the words "environmental conservation," we sometimes feel like it's someone else's business, but the reduction of CO₂ emissions and industrial waste are very familiar issues that are closely related to our daily lives. We will step up the environmental activities of the Toyal Group and raise awareness of these issues as issues close to us that will change our future.



Engineering Center
Unit Leader
Corporate Division
Keiichi Watanabe

Reducing sludge industrial waste

All sludge discharged from the cleanup of separation tanks at the Shinjo Works was treated as industrial waste by an outside company. Since fiscal 2022, we have been able to reduce the amount of sludge-related industrial waste by 81.3% by solidifying the sludge in a solid-liquid separator with a low operating rate. We will continue our efforts to reduce industrial waste by effectively utilizing equipment with low operating rates.



Introduction of forest certified products

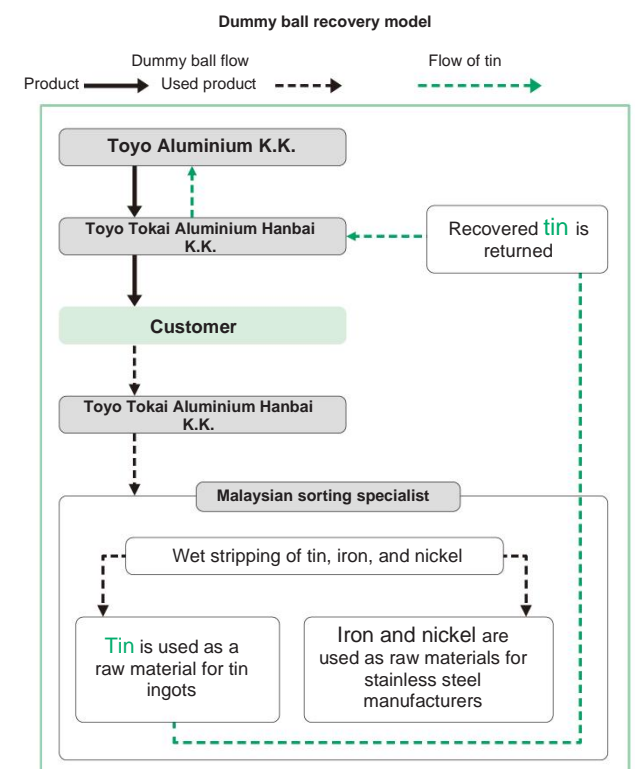
Forest certification systems are systems for promoting the sustainable use and protection of forests by issuing certification marks to wood cut from properly managed forests. It is said that the world is currently losing forest land equivalent to two Tokyo Domes per minute, and it is expected that sustainable procurement of raw materials will become difficult in the future. Toyo Aluminium K.K. and Toyo Aluminium Ekco Products Co., Ltd. are actively participating in the forest certification system and are encouraging consumers to purchase forest-certified products (environment-friendly products) that are manufactured, distributed, and sold using wood cut from certified forests and bearing a certification mark. In addition to supporting the protection of forests and preserving the global environment, we will continue to promote environmentally conscious corporate management and CSR (corporate social responsibility) initiatives.



antibacterial bento cups, deep type (side dish cups)
*Bento cup series made from forest certified paper

Dummy ball recycling business

Toyo Tokai Aluminium Hanbai K.K. sells dummy balls manufactured by Toyo Aluminium K.K. as process materials for the manufacture of electronic parts. Collection operations were started in September 2022, and in fiscal 2022, 19 tons were collected. The ultimate goal is for a partner company in Malaysia to extract the tin, iron, and nickel from the collected dummy balls and recycle them as ingots, and then reuse them as raw materials for manufacturing dummy balls. Making reuse a reality will complete the cycle of recycling from product to product for everyone from Toyo Aluminium K.K. to customers, contributing significantly to a recycling-oriented society.



Dummy balls

Quality and Safety



We have been continually working on quality improvement, and 16 domestic and overseas companies of our Group have the ISO 9001 certification. For safety, a Safety and Health Secretariat is assigned to each production site and the Group Safety Management Team serves as the center of the management. This allows the Head Office and the production sites to work together to implement activities for occupational safety and health. In addition, in order to fulfill our responsibilities for the quality and safety of the contractors that support us, we actively support their quality patrols and on-site safety attendance for leased facilities, while still respecting their autonomy, working to prevent accidents and troubles outside the production sites of our Group. We will continue to comply with social norms and strive to further improve quality and safety, aiming to be a Group that is even more trusted by customers.



● Building a quality system to deliver safe and secure products to customers

In fiscal 2022, we achieved zero serious quality complaints. I would like to assert that this is the result of enhancing change control in light of the serious quality complaints made two years ago and verifying the effectiveness of measures to prevent recurrence through mutual audits between our business sites. I believe that this can only be true if we continue to maintain zero serious quality complaints. The Quality Assurance Division is an organization that is independent of the business divisions, but is actually stationed at each business site. It is therefore our role to support business divisions based on an understanding of the strengths and weaknesses of each business site. We aim to be an organization that can take the initiative to support improvement activities and the formulation of measures to prevent recurrence, and offer support at the design and development stage. We will continue to build a solid system for delivering safe and secure products to our customers while maintaining both business support and independence.

● Serious risk reduction activities for business continuity

As an organization under the direct control of the president, the Group Safety Management Team aims to ensure that the Toyol Group continues to contribute to society, working to reduce risks that could have a significant impact on society and risks that could cause business losses. Based on the idea that "risks can be reduced just by recognizing them," the team worked to extract the risks of serious disasters. Specifically, they reviewed the safety assessment methods at each business site, and have been working to reduce risks at each site by focusing on activities specific to serious risks and explaining serious risks that are difficult for each site to recognize based on scientific and technological necessity. In addition, a system has been established to minimize the impact on the company by training all of our domestic business sites to ensure that everyone at each workplace can move flexibly and respond within three minutes in the event of a disaster. Training issues are identified and then applied in the next training session. We will continue to make tireless efforts keeping in mind that safety is the top priority.



Scenes of initial training

● Insect control measures

Since foil products are used as packaging materials for food and pharmaceuticals, as well as cladding materials for lithium-ion batteries, quality control standards are becoming stricter every year. In particular, the contamination of products with insects could cause serious complaints if they are not caught, so we are strengthening outflow prevention and each business site is taking measures to prevent insects from entering the plant. The Insect Control Secretariat at each business site takes the initiative in sharing information on these efforts, efficiently and continuously improving insect control effectiveness by horizontally deploying effective countermeasures. This activity has also begun to be deployed at Powder & Paste Headquarters sites, contributing to the reduction of defects caused by insect contamination throughout the Toyol Group.

Quality

We have achieved zero serious quality accidents, and are working to create an environment that does not induce inappropriate behavior and a system that prevents inappropriate behavior

Our role is to improve the quality assurance level of the entire Group by supporting the quality assurance activities of each business site, so that we can achieve zero serious quality accidents. To this end, we have worked to strengthen change control, which tends to lead to serious complaints, and to improve the level of corrective actions that can be taken to reliably respond to general complaints. As a result, in fiscal 2022 we achieved zero serious quality accidents. This is not something we can be satisfied with for just a single year. It only becomes meaningful if we can continue the accomplishment. We will continue to work to strengthen change control and improve corrective actions.

As part of the measures announced in March 2023 to prevent the recurrence of "inappropriate acts related to quality, etc.,"

we are working to create both an environment that does not induce inappropriate conduct and a system that prevents inappropriate conduct. The President spoke directly with employees at 14 business sites across the country in order to convey his determination to prevent recurrence and to raise awareness of employee compliance. In developing the system, we established three defensive measures: a first defensive line in which workers in the field actively utilize the whistle-blowing system, a second defensive line in which audits are conducted by the Quality Assurance Division, and a third defensive line in which the internal audit team conducts wrongdoing hearings.

In order to avoid inducing inappropriate behavior, it is necessary to have human capital who can understand the concept of the process capability index* and negotiate with customers when concluding product specifications. The Quality Assurance Divisions at each business site are staffed with human capital who can understand and practice statistical quality management methods, and we are working to nurture human capital to further enhance them.

During ISO 9001 inspection, we received the opinion that quality needs to be considered in conjunction with carbon neutrality. Additionally, we are increasingly being asked about our human rights policy in questionnaires from customers.

Moving forward, we will consider activities that take advantage of sustainability in quality assurance as well.

*Process capability index: A quantitative measure of the process capability of a process

Quality Assurance
Unit Leader
Corporate Division

Tetsuya Yamakoshi



Safety

We are working together with our business sites to eliminate the risk of serious disasters and accidents that could have a significant impact on the company's survival

The Group Safety Management Team focuses on the significant risks that affect the continued operation of the Company and activities aimed at eliminating them. In response to fire, which is a typical risk of business interruption, we are working to prevent fire accidents and strengthen initial firefighting training to minimize damage if a fire does start. In addition to the training required by laws and regulations, we also developed training in small teams in which all participants have a role for each workplace at each business site. In the future, we will increase the frequency of training and aim to raise the level of initial firefighting training by toughening conditions, such as through simulated nighttime fires.

In addition to daily safety activities for operations, employees engage in activities with an awareness of serious risks, based on the idea that "risks can be reduced just by recognizing them."

To that end, we have started new activities to prevent disasters and accidents that happened in the past from becoming forgotten. These activities are meant to pass on the knowledge of serious disasters to future generations, such as by asking people to look back on a disaster on the day when it occurred. Our team has distributed about 30 safety videos so far, but we have also started distributing videos dedicated to preventing these memories from fading. We have produced three videos so far; regarding an oxygen deficiency accident, an oil leak accident, and a full body burn, in which we ask the people involved at the time to appear and tell future generations what to do and what not to do to prevent those accidents and disasters from happening again. The responses to these videos have been great, and they have become an opportunity for discussions within each business site, such as being reminded by watching the video, learning from the accident, and taking appropriate measures.

Accidents and disasters almost always come from ignorance of the risks. When people know about the risks, they naturally act to avoid them. Conversely, if people just follow the countermeasures and procedures without knowing about the risks, an accident or disaster will occur someday. As safety doctors, we diagnose the safety activities of each business site, and if there are any concerns or questions about the activities, we work with them

to consider ways to deal with the issues and support their implementation, thereby contributing to the maturation of the safety culture of the entire Group.

Group Safety
Management
Team Leader

Masataka
Saruwatari



Collaboration with Stakeholders



The Toyal Group has been contributing to local socioeconomic activities through production activities and employment. We are also making active efforts in collaboration with local communities, supporting and sponsoring cultural programs, engaging in environmental preservation activities, and giving cooperation and support for food bank activities through NPOs. We are also making a strong effort to contribute to the development of the next generation by inviting junior and senior high school students to visit our companies. We work on various other activities as well, including volunteer cleanup activities by employees and support activities for areas affected by natural disasters. We will continue to promote active efforts through a variety of activities and contribute to a sustainable society, and thereby aim to further improve our corporate value.



We will strengthen our hub functionality for gathering internal and external information and promote initiatives to address the SDGs and social issues. We will increase our corporate value while emphasizing dialogue with stakeholders

We believe that our mission is to strengthen our ability to disseminate information both internally and externally, and to make our stakeholders aware of the Toyal Group and help them become fans. In fiscal 2022, we worked to ensure communication with stakeholders through media such as TV broadcasts and official YouTube posts. For products such as "TOYAL LOTUS®," which receive many inquiries from the media, videos have been made and uploaded to YouTube, and have even been featured in educational materials for elementary school students and quiz programs. In addition, there were 86 articles published in newspapers and other media, an increase of 50% from fiscal 2021, and an interview with the President was broadcast ed on a radio program for the first time. We also started once again accepting visits from high school students to our company, which had been suspended due to the COVID-19 pandemic, and have received favorable feedback from students who learned about the Toyal Group's principles and efforts to address the SDGs at our plants.

In fiscal 2023, we will further strengthen internal communications.

We would like to improve our internal newsletters and apply for awards such as the Internal Newsletter Award to receive external recognition. In addition, we are now in charge of "Join Together for Quarterly Reports," the President's live broadcast to employees, and will provide diversified internal information, including topics in addition to performance reports, making it a useful tool for dialogue between management and employees. We currently have 40 videos uploaded to the official YouTube channel, and we are continuing our efforts as we receive more inquiries from those who have watched our videos and requests for media interviews. At the same time, we would like to resume activities that help children learn about aluminum and our company from an early age, such as by directly interacting with them at events at science and technology museums, etc.

Medium- to long-term initiatives include public relations activities with a view to listing shares, such as preparing for information disclosure in order to list stock. In addition, we continue to work with consideration to contributing to society and interacting with local residents, such as collaborating with local governments, entering into partnership agreements with forest associations, and cooperating with food bank activities through NPOs.

We will continually work to improve the corporate value of the Toyal Group by promoting dialogues and collaboration with various stakeholders, developing activities that are conscious of the SDGs, and disseminating information.



Donation of medical service cars

On July 5, 2022, the Niramaya Charitable Trust, a non-profit organization based in Haryana, India, held a ceremony to begin operation of an eye care service car, and Svam Toyal Packaging Industries Pvt. Ltd., the company that donated the eye care service car, was invited as a guest. There are serious disparities in health care and education in developing countries, and Indian companies are legally required to spend at least 2% of their profits on CSR activities. It is not uncommon for poor and rural people in India to go blind because they do not have access to adequate eye examinations. It is our hope that we can help even just a few people who are going blind.



Eye care service car operation commencement ceremony

Planting of mangroves

Located 70 kilometers southwest of Bangkok, Thailand's capital, Khlong Khon is home to a mangrove forest. About 30 years ago, the mangroves were cut down and the area was turned into a shrimp farm. Then the sea became dirty and the farm was closed. Reforestation and tree-planting activities started on the site 24 years ago.

On November 26, 2022, five staff members of TOYAL (THAILAND) Co., Ltd. engaged in a tree-planting activity. Participants dig holes through the mud with their hands and carefully planted the saplings. It is a tree-planting activity in which hands and faces end up covered with mud, bringing back memories of childhood. It was a time to touch water, trees, and soil, and feel nature on the skin. We will continue to engage in social contribution activities such as these.



Mangrove planting

Disseminating to stakeholders through various media

While the "Free Study on Aluminum" website, which was established in 2017, has been popular with elementary school students and parents, it has recently received attention from the media and publishers of children's publications. This year, TOYAL LOTUS was featured in educational publications such as "Kodomo no Kagaku" and "Let's STEAM Challenge! Invention Edition" as an example of biomimetics inspired by nature, in this case, the lotus leaf. In order to make more people aware of the appeal of aluminum, we are focusing on a wide variety of media, from television to radio, online articles, children's publications, and more.



Company technology in educational publications