

# 1

Material CSR Issues

## Innovation for the future

[Message from the Responsible Person]



Executive Officer  
In Charge of New Business Creation  
Department  
**Yoshihiko Okubo**

We believe that our most important social responsibilities are to provide new products and services that meet society's needs, help solve issues facing the world in order to pave the way to a sustainable society, and create economic value. In the midst of the increasingly demanding environments, particularly, in terms of development speeds and research quality, we aim at building the fifth business pillar with the key phrases of (1) environment/energy, (2) improvement of social infrastructure, (3) health/medical, (4) IoT society, and (5) electrically-powered motor vehicles, while considering collaboration with universities and other companies, as well as M&A options. Working against this backdrop, we will think outside the box and push the envelope in our aluminium-based business as we move ahead at full speed to build a brighter future and create value.

OUR APPROACH  
Approach

The Toyal Group moves ahead with the R&D and commercialization of products by harnessing its core technologies at its Advanced Technologies Division and New Business Creation Department in response to current and potential issues facing society as well as changes in the market environment. We divided target markets into three types, i.e. existing, new, and next-generation markets, and invest R&D resources in each category. We actively promote open innovation, partnering with startups, universities, research institutions, etc. across the globe, to tackle challenges we cannot overcome alone. Taking the Creating Shared Value (CSV) approach, we focus on R&D projects that will create value for both society and the Toyal Group while staying in close touch with stakeholders. We will think outside the box and push the envelope of our aluminium-based business to lead the world.

OUR PERFORMANCE

Examples

Exploring new possibilities of aluminium applications by Introducing "Aluminium continuous casting facility" (Kanbara Works)

Toyo Aluminium K.K. introduced the continuous aluminium casting facility at its Kanbara Works in October 2018. The continuous casting method not only improves manufacturing efficiency, as compared with conventional methods, but also is expected to, among other things, enhance hardness, reduce pinholes, and reduce molding defects due to improved rolling ratios. Furthermore, in our newly introduced continuous casting facility, detailed settings can be made for manufacturing conditions, enabling us to develop products that can satisfy customers' needs. We will explore aluminium's unbound possibilities through development of functional products that can help people live more comfortably.

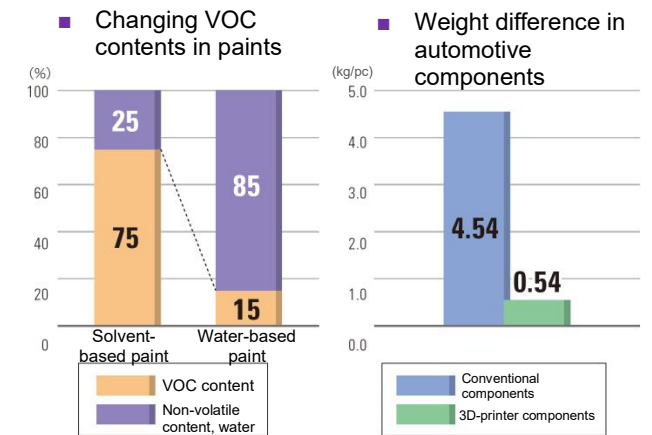


Aluminium continuous casting facility introduced at Kanbara Works

Reducing environmental loads through new technological developments, including water-based paint and metal 3D printers

Metallic pigments used for automobile paints were conventionally applicable only to solvent-based paints containing significant VOC\* contents. The surface finishing technologies of Toyo Aluminium K.K., however, has made it possible to reduce VOC contents in paints by about 80% by making such pigments compatible with various water-based paints<sup>\*1</sup>.

We also develop and manufacture aluminium-alloy powder for metallic 3D printers for manufacturing automobile components. By using designs optimized for 3D printers and our proprietary high-strength aluminium-alloy powder (Scalmaalloy<sup>®2</sup>), we have been able to reduce weights of components by more than 80%, which is reported to have contributed to improved mileage of vehicles, the end products<sup>\*3</sup>.



\* VOC: Volatile Organic Compound. Because it causes photochemical smog, it is restricted by regulations in many countries.  
<sup>\*1</sup> Onoyama, Paint Technology; October 2006, Special Number 43 (2006)  
<sup>\*2</sup> Scalmaalloy<sup>®</sup> is a registered trademark of APWORKS.  
<sup>\*3</sup> Jon Meyer, Metal additive Manufacturing, Spring 2019 Vol.5 No.1

We are determined to enhance partnerships with various industrial fields, expand our technological bases to new areas in close collaboration with stakeholders, so that we can contribute more to reduction of environmental loads.

Full-scale manufacture/sale of products contributing to dissemination of renewable energy

In fiscal 2018, Toyo Aluminium K.K. started the full-scale manufacture/sale of "Hane<sup>™</sup> Module" (hereafter, "Panel"), a super-light-weight solar battery panels. The Panel weighs about half of conventional solar battery panels (6 kg/m<sup>2</sup>), making it possible to be installed on roofs, which used to be impossible due to weights. By taking advantage of the special features of the Panel, we started manufacture/sale of a solar battery panel, "ENESTAND<sup>™4</sup>," a two-pillar solar battery stand that can be installed in a limited space. ENESTAND<sup>™</sup> is expected to be used widely at various locations, as a weather protection in an automobile/bicycle parking spot,

in front of a guard station, or over a sidewalk, etc. We will make the full use of our proprietary technologies for a society where renewable energy is nothing special in our daily life.



"ENESTAND<sup>™</sup>" is a small-footprint solar battery stand equipped with "Hane<sup>™</sup> Module," super-light-weight solar battery panel

<sup>\*4</sup> ENESTAND<sup>™</sup> is a registered trademark of Sky Japan Co., Ltd.



# 2 Environmental protection

Material CSR Issues

[Message from the Responsible Person]



Executive Officer  
In Charge of Engineering Center

Masahiro Takahashi

As we process aluminium produced from mineral called bauxite for various purposes, we recognize that our manufacturing processes require large amounts of resources, energies, and chemicals, etc., causing significant impact on environment. We are thus aware of the needs to promote business operations harmonious with the global environment.

Specifically, "reduction of CO<sub>2</sub> emission from business activities," "establishment of recycling systems," and "waste reduction" are duties to be fulfilled by any aluminium manufacturer. There may be many difficult obstacles to be tackled, in terms of engineering, economic, internal/external systemic aspects, etc.; but we will move forward from broader perspectives encompassing the entire product life cycles and industry.

OUR APPROACH

Approach

Environmental preservation is an important field of our business activities, to which we contribute not only by means of our products but also through reduction of environmental loads in our operations. In our daily operations, for example, we promote reduction of energy used in each manufacturing process, and recycling of generated wastes. For prevention of global warming, in particular, we have set a long-term target of reducing CO<sub>2</sub> emission by 30% (compared with the 2013 level) by 2031, the centennial year for the Toyo Aluminium Group, based on the Paris Agreement and SDGs, and will promote specific actions to attain the target. We have also obtained ISO14001 certifications at 15 business locations, which are mostly production sites. Through effective implementation of the environmental management system, we will prevent environment-related problems and comply with the relevant laws and regulations, reduce environmental loads, and promote sustainable business activities that are harmonious with the global environments.

OUR PERFORMANCE

Examples

Active promotion of recycling activities (Yao Works)

In March 2018, Toyo Aluminium K.K. dismantled an incinerator at the Yao Works. Despite the elimination of the environmental loads due to the discharges of traces of dioxins within the legally approved limits, the total amount of wastes has become a new problem. To reduce the final waste amounts (landfill amounts), recycling activities are aggressively promoted. For example, in fiscal 2018, 11 tons of paper wastes were recycled into toilet paper; as many as 2,400 rolls were used in a year at the Yao Works.



Dismantled incinerator at the Yao Works



Toilet paper produced from recycled paper

Establishing a system to recover and reuse exhaust heat (Gumma Works)

At the Gumma Works, aluminium foils are colored and films are combined. As these operations require organic solvent, VOC processing devices are installed; the heat energy produced in the process used to be wasted as exhaust heat. In 2018, an exhaust heat recovery boiler was introduced to recover the exhaust heat generated from the processing device as steam, which is then reused as a heat source for drying and oven heat source at production facilities. As a result, the electric power usage has been reduced by 2%; the city gas usage has been down by 4%, respectively in a year.



Gumma Works: Exhaust heat recovery boiler

Development of entirely biodegradable paper containers and consideration of possible future alliances (Toyo Aluminium Ekco Products Co., Ltd.)

To solve the problem of plastic wastes in the sea, which has become a global challenge, significant efforts are now required, including proper management of wastes, enhancement of 3Rs (Reduce, Reuse, Recycle), and development and dissemination of highly biodegradable plastics, paper, and other alternative materials.

Against this global background, Toyo Aluminium Ekco Products Co., Ltd. has made consistent corporate efforts for sustainable development through enhanced manufacture/sale of paper-based containers, including development of pulp-mold(\*1) containers and other types of paper containers.

Currently manufactured/sold paper containers cannot be entirely returned to the soil, as they are coated with plastic materials. One of our new initiatives includes development of paper containers based on biodegradable plastics, which is scheduled to be launched in fiscal 2019.

We are also planning to participate in "Clean Ocean Material Alliance"<sup>2</sup> established as a forum to accelerate these innovative initiatives.

In order to solve the problem of plastic wastes in the sea, we would like to further promote our business of paper containers, expected to replace disposable plastic containers, and contribute to global environmental preservation.

\*1 Molded pulp: A paper mold products made of pulp solved in water, strained with wire work, and dried: It is easily molded into various shapes, and capable of satisfying a wide variety of needs as plastic food trays, etc.

\*2 Clean Ocean Material Alliance: Established by the Ministry of Economy, Trade and Industry, participated by 159 companies and associations (as of January 11, 2019); aimed at promoting various alliances among companies and associations to solve the problem of plastic wastes in the sea. More details are presented in a news release of the Ministry (January 18, 2019) titled, "Clean Ocean Material Alliance Established." <https://www.meti.go.jp/press/2018/01/20190118007/20190118007.html>



# 3

Material CSR Issues

## Human resources diversity

[Message from the Responsible Person]



Managing Executive Officer  
Managing Executive Officer in Charge of Personnel Affairs Department

Masashi Yamamoto

There are three key phrases representing the major business trends in Japan: "Globalization," "Decreasing working population," and "Diversifying personal values."

Against this background, the Toyol Group promotes health-oriented management for employees to maintain their good physical and mental health, and also systemic reforms to improve labor productivity and to nurture autonomous human resources.

We continue to create an engaging environment where individual workers can find meaningful and satisfying jobs in which they can perceive their personal growths, and provide diverse work approaches in which they can fulfill their potential, while contributing to sustainable society and sustainable corporate activities.

OUR APPROACH  
Approach

We are a company that values people, and that's why we value employee diversity as well as individual personalities and characters, and aim to foster human resources diversity. As our operations quickly expand across the globe, we are actively hiring workers from overseas, including foreign nationals, and equipping employees with skills needed to work in the global arena through various training programs, including long-term and short-term programs for studying abroad. We have built a work environment where all employees can reach their full potential regardless of gender or disabilities by enhancing the child-care leave program and shortened work hour program for employees with child care responsibilities, promoting barrier-free work environments, and implementing other measures to address Japan's declining working-age population due to the falling birth rate and the graying of society. We also provide female employees with career support by assigning them to career-track positions. We are also focusing on reducing total working hours per year by reducing meetings, making them more efficient, and boosting communication through the use of a new IT system as part of our work reform initiatives, which also include introduction of the flexitime system. We continue to create an engaging environment where people from diverse backgrounds can fulfill their potential while ensuring that all employees maintain a healthy work-life balance.

OUR PERFORMANCE

Examples

Promoting uses of the child care leave program - the first male employee who took child-care leave in the Toyol Group -

The entire company is fully supportive of employees raising children, and creates the work environment where they can sustain a good balance between work and child-raising.

The usage ratio of child-care leave by female workers in the Company has nearly 100%; but the leave has never been taken by male workers. While male participation in child-raising has been in one of the current trends, in fiscal 2018, the child-care leave was taken by a male worker for the first time. We are dedicated to maintaining the work environment where employees, regardless of their sexes, can easily take child-care leave, work comfortably, and have meaningful and rewarding work experiences.

Comment from the male employee who took the child-care leave

At first, I was a little embarrassed because there had been no precedence in a male worker taking the child-care leave. But, because I took the leave, I was able to know how hard it was to raise a child, and at the same time, to have a wonderful and intimate time in which I could feel my child growing day by day.

Because I was the first male worker taking the child-care leave, I can feel that I did something encouraging other male workers to take more active roles in raising children. I wish my tiny step could contribute to creating workplaces where many workers can feel more comfortable working.

It would be nice to see many male workers naturally take the child-care leave for taking care of their children.

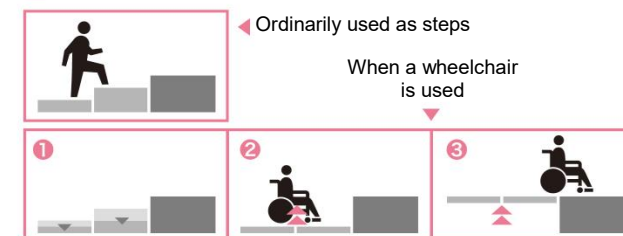
Building work teams and starting to build the work environment where we can work with disabled people (Yao Works)

At the Yao Works, based on the recognition that making the best use of diverse values would contribute to improving business performances, a certain Work Team activities have been introduced by departmental representatives to "create a workplace where disabled people can work comfortably and safely by 2021" since July 2018.

The Work Team has discussed how to realize barrier-free plants where various physically handicapped employees can comfortably work, despite the different types of disabilities, and is now taking systematic 3-to-5-year actions for coping with both tangible (elimination of steps and introduction of automatic doors, etc.) and intangible (flexible work hours and raising managers' awareness, etc.) issues. In fiscal 2019, a work environment improvement initiative will be put into action, as the first step, to enable wheel-chaired visitors to enjoy plant tours comfortably.

Furthermore, based on the activities at the Yao Works, the Toyol Group will roll out the idea, so that diverse human resources can contribute to creating active work environments.

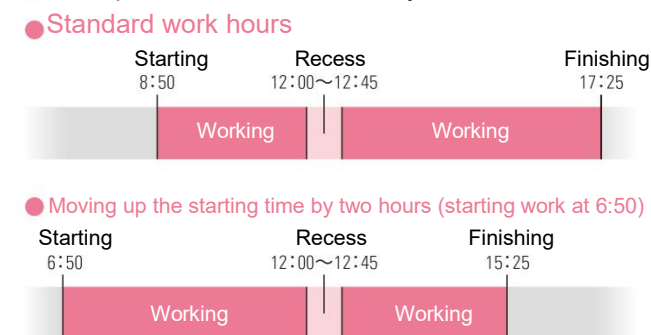
Lifting platform currently planned



Toward reforming work-styles - introduction of the flexitime system -

In July 2018, Toyo Aluminium K.K. introduced the flexitime system in which each employee can choose the starting time for a workday. The system allows each employee to shift the work hours forward or backward by one or two hours without changing the day's entire work hours. Each worker can choose the starting time suitable for his or her needs not only for childrearing or nursing care, but also for avoiding congested traffic in the morning, self-development needs, or participating community activities, etc. Because the procedures have been simplified, the use ratio\* from the introduction of the system has reached as high as 37.8% in total, realizing more flexible work-styles for many workers.

Examples of uses of flexitime system



\* The use ratio: Based on the result of questionnaires conducted by a union of Toyo Aluminium K.K.



# 4

Material CSR Issues

## Quality and safety

[Message from the Responsible Person]



Executive Officer  
In Charge of Quality Assurance  
Department  
**Norio Kasetani**

We are committed to making and providing products that are safe, satisfying to customers, and beneficial to society.

Our workplace motto, "no safety, no production," instilling a safety-first attitude in our employees sums up the foundation of our operations. Ensuring both product and workplace safety is job one for manufacturers who are responsible corporate citizens.

In our business environment, we are constantly required to present new products, and respond to existing customers' needs with innovation as to currently available products. Our activities also need to be performed in increasingly global setting. In the midst of the changing business environments, we are committed to maintenance and improvement of safety and quality at high levels.

### OUR APPROACH

Approach

We have obtained ISO 9001 certification at 17 locations, including our affiliates across the globe, and are working on the continuous quality improvements.

In order to ensure safety, a safety and health office has been set up at each production site while CSR Promotion Office plays a central role in maintaining a safety management system. This allows for concerted efforts between the head office and production sites in implementing safety and health initiatives.

We also ensure that subcontractors who provide us with the processing services that support our daily operations fulfill their quality and safety responsibilities in order to prevent accidents and problems from occurring at production sites other than ours. We actively help them with monitoring quality control, conducting safety inspections for equipment we lend, and more while respecting their autonomy.

We are committed to not only complying with social norms but also making continuous improvements to further enhance quality and safety with an aim of earning greater customer trust.

### OUR PERFORMANCE

#### Examples

##### Development of activities for learning from mistakes

The most important point for presenting products that can satisfy customers would be to "eliminate serious quality incidents." However, quite regrettably, one serious quality accident occurred in fiscal 2018. As our sincere response to the latest accident, in order never to repeat the same mistake, we have compiled the "Case Studies on Past Problems" by collecting past incidents.

The "Case Studies on Past Problems" sums up details of the problems that took place at the Yao Works, the incident progress, the backgrounds, the causes, and the countermeasures.

In the latest compilation process, arrangements were made to enable points requiring careful attention to be surmised from the case study titles and to add succinct lessons to be learned, so that it can be used more easily as a tool for preventive actions.

We are scheduled to issue a revised version by re-editing the current one by adding examples collected at other business sites. We will put our forces together to realize an environment/system in which "eliminating serious quality incidents" is achieved as a matter of course.



Case Studies on Past Problems

##### Workshops held for on-site patrols by inviting external consultants (Yao Works, Shinjo Works)

In Toyal Group, in order to ensure safety, on-site patrols are conducted at each manufacturing site, in addition to the safety audits held by CSR Promotion Office and President's site visits. In the past, the results of the on-site patrols were heavily dependent on the personal capabilities of each inspector because the inspection points were not specified or properly shared in detail. To rectify the situation, in fiscal 2018, external consultants were invited to study sessions where participants learned about important points in on-site inspections both at class sessions and on site. From the consultants, we learned a reverse perspective of "How to cause a serious accident, instead of how to prevent an accident," and other crucial points based on practical insights. We will not only immediately put the lessons we have learned to actual inspection tours and other safety activities, but also further enhance the Group-wide safety activities by incorporating more external instruction sessions, as required.



Instruction session for points to be checked on-site inspection tour

##### Compilation of BCP suitable for business characteristics (Shinjo Works)

Toyo Aluminium K.K. compiles BCP (Business Continuity Plan) for unforeseen contingencies, including major earthquakes, and has established the BCM (Business Continuity Management) system.

In fiscal 2018, primarily at the Shinjo Works of Powder & Paste Headquarters, more practical BCP was re-compiled by eliciting the business characteristics with the help of external consultants. The progress of actions for the elicited issues is now regularly reviewed by the Work Team composed of managers and general managers at the Shinjo Works.

Also at the Hino Works in charge of the Powder business, activities for re-compiling BCP started toward the end of fiscal 2018; in fiscal 2019, the Foil Headquarters started preparations.



BCP Compilation Workshop





Material CSR Issues

# Cooperation with stakeholders

[Message from the Responsible Person]



Executive Officer  
In Charge of General Affairs  
Department and Secretariat  
Office

Hideo Ishiguro

We place importance on working with all stakeholders, including customers, local communities, governments, NPOs, and employees, to create innovations and maintain sustainable business operations while helping to build a sustainable society. We actively engage in stakeholder dialogues with an eye to enhancing our corporate value.

In the first place, each employee needs to think how to contribute personally to the society. And, the Toyo Aluminium Group, as the group of the individual workers, should consider Why, Where, What and How we can contribute to the society.

OUR APPROACH  
Approach

We, at the Toyo Aluminium Group, contribute to social and economic activities of the local communities through our production and employment activities. Furthermore, in collaboration with the local community, we also support local cultural activities and environmental protection efforts, and are engaged in the Food Bank and other support activities through NPOs. We also emphasize contribution to nurturing the next-generation citizens through encouraging their company visits (accepting junior or senior high school students), planned by NPOs. Other activities include, for example, volunteer local clean-up activities by employees and volunteer help activities for communities hit by natural disasters; through these various activities, we will actively promote movements contributing to the sustainable society, so that we can enhance our corporate value.

OUR PERFORMANCE

Examples

Educational field trip for senior high school students as part of the initiative for nurturing the next-generation citizens

In October 2018, eight juniors of Moka High School of Tochigi Prefecture visited Osaka Office of Toyo Aluminium K.K. as part of their field trips. This project was realized in conjunction with "School Support Center," an NPO. The project is aimed at encouraging students to visit companies, learn about industrial activities in society and job diversities, so that they can acquire much broader and brighter visions about their future jobs, based on more knowledge and wider perspectives.

The students vastly learned not only about organizational activities and an overview of our aluminium products, but also joy of manufacturing products for customers, and how R&D systems work and how people actually work at work sites.

We will accept the students' visits so that these learning opportunities for the next generation will widen their options for their future careers, and seek every possibility for coordinating our efforts with NPOs.



Company visit for senior high school students

Comment of President of School Support Center, an NPO



Specified Non-profit Corporation  
School Support Center  
President  
Mr. Takeo Kimura

On-site "company visits" are valuable learning experiences for the students.

On these occasions, the students visits actual workplaces, listen directly to employees explaining company operations, products, and their tasks, have the first-hand knowledge about social roles of work, and think about what work is.

They learned that Toyo Aluminium K.K. was renowned for its high technology prowess, and that its products were widely used in many different fields, and were specifically surprised that no foodstuff was attached to the lids made of its water-repellant packaging material, and acquired the real feel of working. All things are real "educational assets."

As we intend to continue the company visit program we have continued for the past twenty years, we would appreciate it if you kindly proffer valuable opportunities for the next generation.

Participating in SDGs Workshop held at the sponsorship of a local environmental partnership conference (Yao Works)

"Environment Animated Yao" is an environmental conference engaged in activities for improving the environment of Yao City where the Yao Works is located, sponsored by the Environmental Preservation Section of Yao City as the secretariat, and performing its activities through the partnership of citizens, companies, educational institutions, and municipal government. On August 27, 2018, employees of Toyal Group participated in SDGs Workshop held by "Environment Animated Yao" to exchange opinions. After making a presentation about activities of the Toyo Aluminium Group, they participated in a card game work shop with other participants. They learned the importance of pursuing sustainable development in which not only the economic aspects but also the environmental and social aspects should be properly considered toward 2030, the target year for attaining SDGs, and deepened their understanding of SDGs, together with the 20 or so participants.



SDGs Workshop