COVID-19 continues to be a worldwide pandemic. We have been required to change our lifestyles in various ways. For example, traffic and direct meetings of people have been regulated both domestically and internationally, or we have been required to refrain voluntarily from nonessential and nonurgent activities. At Tungaloy, we postponed face-to-face communication with our customers and client companies and various seminars for a while, and now we are resuming such activities with thorough infectious disease control measures or shifting to online. Also, within the company, we are making efforts to prevent the spread of COVID-19 by conducting temperature checks of our employees every morning, distributing masks according to the number of working days, installing acrylic partitions in the office spaces, and partly conducting teleworking. I am sure that everyone is spending more or less uneasy days with no prospect for the future, and I hope that peaceful days will return as soon as possible.

Even when our everyday life is filled with news of the infectious disease, natural disasters do not wait for us. Again in 2020, our Kyushu Campus was closed twice when there were concerns about flooding in the campus and disasters on the way to work due to torrential rain and typhoon. In February 2021, 2021 Fukushima Earthquake occurred, causing damage to some buildings and equipment at Iwaki Headquarters. Fortunately, no human damage was caused and there were no problems with product supply. Tungaloy has established a safety confirmation system and has built stockpiles for disasters based on our Business Continuity Plan (BCP), and will continue to strive for maintenance and management of them.

As for global warming which is thought to be the cause of meteorological disasters, it seems that carbon dioxide emissions have decreased due to economic stagnation and travel restrictions caused by the COVID-19 epidemic, but the extent of the influence is unclear. As a business operator, Tungaloy continues to perceive our efforts to achieve 2050 Carbon Neutral Declaration and SDGs as our responsibilities, positioning them as priority issues.

Tungaloy acquired ISO 14001, the international standards on environmental management system, in 1997, being the first manufacturer to acquire it in the cemented carbide tool industry in Japan, and this year marks the 24th anniversary of the acquisition. In order to continue being a brand that can respond to customer’s expectations and safety, all Tungaloy employees will unite to continue and promote our environmental conservation activities.

This report outlines the environmental conservation activities carried out in 2020. Your kind understanding and honest opinion would be very much appreciated.

May 2021

Satoshi Kinoshita

President & CEO

Tungaloy Corporation

Tungaloy’s Policy (Quality / Environment)

Tungaloy is an international company that contributes to the development of industry, local communities and society by producing cemented carbide tools as well as by providing technical service based on excellent material technology.

Tungaloy contributes to customers and society via ideas that alter the common sense of the manufacturing industry and through the strength of its products.

Tungaloy aims to enhance corporate value through sustainable growth, based on the principle of compliance and consideration for the environment.

Tungaloy regards the workplace as a place for personal growth and each employee strives for self-sustaining growth with pride and responsibility.

- Tungaloy will fully stand behind its commitments in the communication between Tungaloy and customers.
- Tungaloy is committed to continually improve the effectiveness of both the quality control system and the environmental control system according to AS9100, ISO 9001 and ISO 14001, while upholding all applicable international standards, laws, regulations and agreements.
- Tungaloy views product quality and environmental protection as important as ensuring the company’s success and profit.
- Tungaloy will convey this policy to its stakeholders, including all of its employees.

- Tungaloy will address the following items in order for the policy to come into fruition:
  - Execution of requisite education and provision of qualifications as required, in order to meet product quality standards and environmental standards.
  - Supervising inspection, production and control methodologies at each and every stage of the processes in order to continue improvement.
  - Tungaloy will contribute to the realization of a sustainable society by promoting the following environmental conservation activities that contribute to SDGs.
    - To mitigate climate change, in addition to energy conservation activities within our company, we will reduce the energy burden of our customers by supplying a large number of new high-performance products.
    - To prevent environmental pollution, we will set voluntary control standard values, and continue zero emission, chemical substance management, etc.
    - Each employee strongly recognizes their responsibility with regards to the quality of the processes / products they are in charge of and the accountability as a corporation to conserve the environment on a global scale.
  - Tungaloy’s management will provide the necessary human resources and equipment and will make them available.
  - Tungaloy’s management shall set objectives, monitor achievement and periodically audit and evaluate quality management and environmental management with measurable criteria.
Tungaloy develops and releases many new products every year. We implement evaluation based on the industry standard, “the Japan Cutting & Wear-resistant Tool Association Standard for Environment-Conscious Products” for all of our products and we well the products that comply with the standard.

This report introduces the state of Tungaloy’s approaches to Sustainable Development Goals (SDGs) which have achieved global consensus toward 2030, using icons.

**Introduction of Environment-conscious Products**

**Face milling cutter with extremely low cutting force**

TungEMill

Face milling cutter with 5-10% lower cutting force than conventional products. Stable and light cutting by securing cutting edge strength and generating ideal chips with the two-stage flank on the side of the insert. In addition, corner change is possible without fully removing screws.

https://tungaloy.com/product/milling/tungeight-mill/

**Coating grade for steel turning**

T9200 Series

Al₂O₃ layer with excellent heat resistance has been highly homogeneous structured and thickened by changing the material of the outer coating layer to high hardness ceramics. Furthermore, evolution of coating treatment technology to reduce defects in alloy base materials and to restrain progress of cracks gives this product excellent wear and fracture resistance.

https://tungaloy.com/product/turning/tungboremini/

**Small-diameter high feed milling cutter**

TungFfeed

Low-resistance insert with thick corner and large-sized insert fastening screws that can withstand highly-efficient machining have been set. Positive inclination angle has improved chip treatment, which enables use in a wider application range as compared with conventional products.

https://tungaloy.com/product/milling/tungforce-feed/

**Economical with 10-cornered insert**

TurnTFeed

Economical with 10-cornered insert. Furthermore, adopting dovetail clamping for insert clamping has enabled stable highly-efficient machining. HD type holder with maximum 7-mm depth of cut and HF type holder with maximum 2-mm/rev feed are available, which enables use in a wider range of applications.

https://tungaloy.com/product/turning/turnten-feed/

**Face milling cutter designed to avoid tool interference**

DoQuadMill

Face milling cutter designed to avoid tool interference. Even though the negative insert with double-sided specification is thick and has a strong cutting edge, it has low cutting resistance equivalent to a positive insert, which enables use in workpieces with thin wall/base or when the fixture is weak.

https://tungaloy.com/product/milling/doquad-mill/

**Multifunctional tool capable of drilling holes in flat surfaces**

TungzMill

Multifunctional tool capable of drilling holes in flat surfaces, and capable of internal, end-face and external turning as a normal lathe tool. After drilling a hole in the center of a workpiece, the same tool can be used to shift to turning. The number of tools used, and the time required for changing tools can be reduced.

https://tungaloy.com/product/turning/tungboremini/

**Face milling cutter for ultimate clearance**

DoQuadFeed

Face milling cutter designed to avoid tool interference. Even though the negative insert with double-sided specification is thick and has a strong cutting edge, it has low cutting resistance equivalent to a positive insert, which enables use in workpieces with thin wall/base or when the fixture is weak.

https://tungaloy.com/product/milling/doquad-mill/
Environmental Conservation Activities by Tungaloy

Global Warming Prevention / Energy Conservation Activities

We aim to prevent the global warming by reducing CO₂ emissions through energy-saving activity.

<table>
<thead>
<tr>
<th>CO₂ emission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared with 2019, it decreased about 5%. However, due to the decrease in production caused by the influence of COVID-19, CO₂ emission is increasing in terms of emission intensity (ratio to production).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratio of energy used</th>
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</thead>
<tbody>
<tr>
<td>When energy used is compared by the type by converting the amount into crude oil, electricity accounts for approximately 90%.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount of electricity used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared with 2019, it decreased about 5%.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount of kerosene used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared with 2019, it increased about 1%.</td>
</tr>
</tbody>
</table>

Management of chlorofluorocarbons
Tungaloy surely manages and inspects products using various refrigerants according to laws and regulations. Furthermore, we have started to adopt green refrigerants with low ozone depletion potential and global warming potential.

Improvement in production efficiency
Each of our plants and production lines has been making efforts to reduce environmental burdens such as use of electricity and emission of CO₂ through improvement in production efficiency.

Energy Conservation Promotion
The Energy Conservation Promotion Committee is held at least once a year for the purpose of rationalizing efficient and effective use of energy in our plants. Since it was difficult to hold a face-to-face meeting due to the influence of COVID-19, we connected our offices remotely and held a meeting on September 18, 2020. Within the Committee, reports were made on the status of energy consumption at each plant, and consultations and discussions were held on matters related to specific energy conservation methods.

Received JTA Environmental Special Award
In recognition of our achievements in reducing carbon dioxide and waste emissions in fiscal 2019, we received the 6th Environmental Special Award from Japan Cutting & Wear-resistant Tool Association (JTA), an industry group. The award lecture was given remotely on March 18, 2021.

Use of natural energy
We introduced a solar power generation system in 2015 and, furthermore, installed a wind generator system in 2017 to raise environmental awareness of our employees. Our solar power generation system produces approx. 170 MWh of electricity per year, and all the electricity is used at our Iwaki Campus. The status of power generation is displayed on a monitor at the entrance of the building, or all employees can view the status on the company’s PCs or other devices via our internal network line. This has led to raising employees’ awareness of energy conservation.
Management of Chemical Substances

Chemical substances may cause harmful effects on the ecosystem and the human race. To prevent the leakage of these chemical substances to the environment, we aim to totally abolish the use of the harmful substances or replace them with alternatives, while implementing thorough management of the specified harmful substances.

Status of handling of PRTR Law-related substances

In 2019, we handled 7 substances more than 1 t in the year, among the 462 substances specified by the PRTR Law. Of these substances, 4 substances shown in the graph were transferred or emitted into the environment. n-Hexane is solvent, and others are raw materials.

Assessment

We have been continually performing assessments for new buildings, facilities, and chemical substances prior to the implementation to avoid risks. As for newly purchased chemicals, we implement measures and call attentions as needed in addition to the periodic collection of Safety Data Sheet (SDS) after assessment evaluations. We reject the adoption according to the risk level and the difficulty of the measure and examine alternatives in some cases.

| Newly purchased | Examining of alternatives | Rejected | Rejected |
| chemicals       |                          |          |          |
| Submission of   | Chemicals assessment     | Accepted | Accepted |
| application     | evaluation               |          |          |
| Registration to | The Safety and Environment | Periodic update control of the SDS |          |
| the SDS         | Assessment Committee is held. | Thorough notification of the SDS contents |          |
| management      |                          | Environmental education / Training for accidents and emergency situations |          |
| system          |                          |          |          |
| Implementation of | Implementation of control banding |          |          |
| risk assessment |                          |          |          |
| Adopting /     | · Specifying of protection equipment | · Measurement of emissions (water quality inspection, etc.) |          |
| Measures        | · Setting of abatement equipment | · Notice to customers (in the case of adhesion to / containing in the product) |          |
Waste and Recycling

We promote proper segregated disposal of waste. Since 2004, we have been keeping “the ratio of landfill disposal rate to the total waste less than 1% (Zero Emission)”.

### Total waste

Compared with 2019, it was almost no change.

### Landfill disposal rate

It was 0.20% in 2020.

### Visit to our waste disposal contractor

We visit our waste disposal contractor on a regular basis to check the disposal status and ensure the compliance. We visited the limited number of our waste disposal contractors while taking into consideration COVID-19 infection control.

### Collection of used products

Measures have been taken for collecting and recycling of used products.

The collecting service of the used products is available only in Japan.

### Recycling of used products

Compared with 2019, the amount of used products collected decreased about 12%.
Environmental education and training for accidents and emergency situations are provided to all employees to continuously improve the environmental conservation activities.

- Environmental education is provided to have each and every employee become aware of what influence is caused on the environment by Tungaloy’s businesses and the employee’s work, or of how the environmental change affects our business or work including the good and bad aspects.
- Trainings are held by setting accidents assumed for each facility and equipment owned. We use the actual things as much as possible for measuring instruments, collection materials for leaked substance, and protective equipment. After training, we also check the ease of use and handling.

Due to the influence of COVID-19, we changed part of the environmental education that had been usually conducted in the form of group training to allow the participants to take part in training sessions remotely and individually.
External Communication

To enhance mutual understanding with stakeholders surrounding Tungaloy (local residents, employees, customers, suppliers, stock-holders, etc.), we are carrying out the activities to coexist with local communities.

Inquiries from stakeholders

Many inquiries were received regarding the status of chemical substance management, such as the issuing of SDS (Safety Data Sheet).

Status of ISO14001 certificate acquisition 7%

Inquiries about RoHS Directive 17%

Other chemical substance related 26%

Issuing of SDS 40%

Others 10%

Chemical substance related 83%

Introduction of implementation examples of activities
It was conducted while taking into consideration COVID-19 infection control.

Kyushu Campus
We provide plant tours for local schools.

Nagoya Campus
We provide business explanations and environmental education to our affiliated companies.

Materials & Components Division
We provide work experience for students from local schools.

Materials & Components Division
We weeded and cleaned the slope named Hanezaka in Nirasaki city.

T-BCP

We have launched and made efforts for Tungaloy Business Continuity Plan (T-BCP) since 2016. We have been preparing for disaster prevention, disaster mitigation, evacuation and post-disaster recovery so that we can continue our business even in emergencies such as disasters.
Environment Conservation System

Tungaloy has been promoting the management system for systematically improving and understanding the influence of our corporate activities and products on the environment. The ISO audit in 2020 was conducted on-site at Iwaki Headquarters, and other sites were audited remotely from Iwaki Headquarters.

Company-wide management system

<table>
<thead>
<tr>
<th>Top management / President &amp; CEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment Management Representative</td>
</tr>
<tr>
<td>Representative Chief Environment Auditor</td>
</tr>
<tr>
<td>Internal Environmental Audit Secretariat</td>
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</tbody>
</table>

Site management system

Site management / Manager in charge of the site environment management / Person in charge of site environment conservation / Department managers / Departments

Site information

<table>
<thead>
<tr>
<th>Site information</th>
<th>Headquarters function</th>
<th>Production control / Purchasing</th>
<th>Development / Design</th>
<th>Production</th>
<th>Marketing / Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iwaki Headquarters</td>
<td>●</td>
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<tr>
<td>Materials &amp; Components Division</td>
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<tr>
<td>11-1 Yoshima-Kogyodanchi, Iwaki, Fukushima</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>Nagoya Campus</td>
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<tr>
<td>77-1 Chaen, Asada-cho, Nisshin, Aichi</td>
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<tr>
<td>Kyushu Campus</td>
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<tr>
<td>3-7-57 Miyanojin, Kurume, Fukuoka</td>
<td>●</td>
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<tr>
<td>Shin-Yokohama Office (Tokyo Regional Branch)</td>
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</tr>
<tr>
<td>Yugen Shin-Yokohama 1-Chome Bldg., 1-7-9 Shin-Yokohama, Kohoku-ku, Yokohama, Kanagawa</td>
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<tr>
<td>Nagoya Regional Branch</td>
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<tr>
<td>Osaka Regional Branch</td>
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<tr>
<td>2-1-10 Nankokita, Suminoe-ku, Osaka</td>
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Manufacturing bases

<table>
<thead>
<tr>
<th>Manufacturing bases</th>
<th>Sales bases</th>
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<tbody>
<tr>
<td>Iwaki Headquarters</td>
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Tungaloy Corporation
EC97J1123
ISO 14001:2015 - JIS Q 14001:2015