



shaping your dreams



Environmental
Report

2017

OSG Corporation



OSG is striving to reduce the environmental impact of its business activities in order to foster a culture that cares for the environment and provide products which contribute to the reduction of environmental impacts at the new stage as an eco-friendly company. We will develop mutual understanding with our stakeholders through communication and contribute to the sustainable development of society.



OSG Corporation
President and CEO

To support the manufacturing industry on a global scale, OSG is constantly on the move, researching and developing new cutting tool solutions. Our corporate tagline “shaping your dreams” summarizes our passion for new challenges and commitment to transforming each and every one of our customers’ ideas into reality. To make further progress in a new era, we will continue to provide the best tools and machining solutions for our customers with our global network spanning 33 countries.

OSG is committed to conducting transparent and fair corporate activities in accordance with environmental laws and social standards, pursuing “Global expansion”, “Health-consciousness”, and “Eco-friendliness” through manufacturing and human resources development. To continuously develop the company and increase the corporate value, we will strive to provide environmentally friendly products and protect the environment through the energy and resource conservation and waste reduction at every stage from development and design of products which contribute to the global industry to their disposal.

In energy saving, we are actively improving the production efficiency with minimal energy consumption, by switching the energy source from heavy fuel oil to electricity and also by reducing the electricity consumption.

In addition, we are promoting to develop environmentally friendly products which enable high-efficient, and high-precision machining, and long tool life in order to help our customers to reduce their environmental impact. We aim to establish a structure that can flexibly respond to both mass-produced and customized products.

In our manufacturing, we are keeping over 99% recycling rate by actively promoting the recycling of waste in our production activities as well as the conservation of energy and resources. We will further promote the environmental activities in cooperation with our group company which manufactures carbide tool materials . We look forward to your continued support.

shaping your dreams

OSG introduced its new brand statement and tagline “shaping your dreams” toward the 100th anniversary.

The power of OSG lies in our assured innovative technological know-how for producing high-quality and high-performance products; our exceptional services to respond to situations diligently; and our out-of-the-box thinking to provide total solutions that anticipate our customers’ needs.

As a comprehensive cutting tool provider with operations spanning across the globe, we are committed to contribute to the advancement of the manufacturing industries by shaping our customers’ dreams into reality.

<http://www.osg-global.jp/brand/>



shaping your dreams



Fundamental Business Policy

- Always aware that our corporation is an institution that serves society, we provide products that are appreciated by our customers.
- We assign our employees appropriate jobs and strive to improve their daily lives.
- We strive to provide stable dividends to our stockholders.
- We implement sound business practices that earn enhanced social trust and develop the corporation into a worldwide business.

Basic Environmental Ideas

- All will work to maintain the global environment in harmony with OSG's basic business policies.
- OSG publicizes information on its three declarations made in October 1996 (i.e., Global Expansion, Health-consciousness, and Eco-friendliness).
- OSG conducts activities with consideration of the environment while offering products and services that contribute to society.
- Following societal norms, OSG promotes communication with the local community.

Environmental Policy

OSG strives to protect the global environment and act in harmony with nature under OSG's slogans of "an Eco-friendly Company" and "a Culture That Cares for the Environment."

Sixth Mid-Term Plan—Sixth Stage Slogan (From FY2015 through FY2017)

- **To the Next Stage of Energy-Saving Activities**
[Priority] Improvement of Energy Conservation

FY2016 Targets and Results, FY2017 Targets

Environmental Objectives		FY2016 Target	FY2016 Result	FY2017 Target
Energy Conservation	Total Energy Use Reduction (Energy sources: Electric power, Fuel oil and LPG) Total use of energy BM: 85,018 GJ/month	1.0% reduction 850 GJ/month reduction	1.0% reduction 854 GJ/month reduction	1.0% reduction 850 GJ/month reduction
	Basic unit of production BM: 20 GJ/million yen	1.0% reduction 0.20 GJ/million yen reduction	2.5% reduction 0.51 GJ/million yen reduction	1.0% reduction 0.20 GJ/million yen reduction
Eco-Products	Eco-Friendly Product Development	16 cases	16 cases	39 cases
Eco-Factory	Eco-Friendly Production	19 cases	22 cases	24 cases



An important task for OSG is to address environmental issues, which will impact future generations. We aim to reduce environmental impacts and build a recycling-oriented society, while making efficient use of resources, promoting eco-friendly production and providing eco-friendly products and services to our customers.



Material Balance

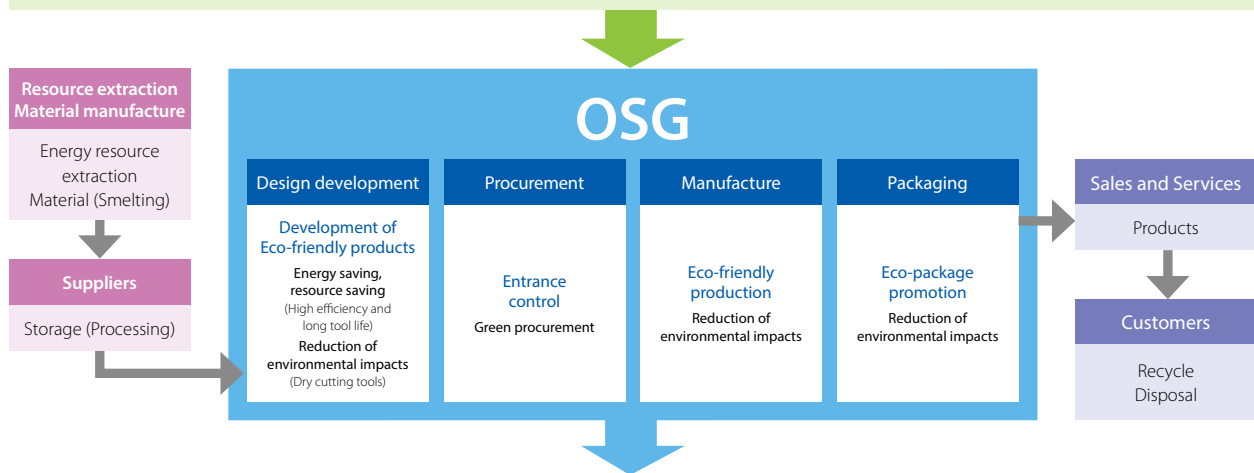
In order to contribute to the realization of a low-carbon society and the creation of a resource recycling society, OSG understands and manages the various environmental impacts of our business activities. We remain committed to initiatives such as reducing energy use and using waste from our manufacturing processes as recycled materials.

INPUT

(Natural resources, Energy)

Energy	
Purchased electric power	93,000,000 kWh
Crude oil power generation	1,299 kl
Air conditioning	794 kl
Gas (LPG)	446 tons
Water supply	110,763 m ³
Water for industrial use	32,061 m ³
Well water	6,074 m ³
Paper: Copy paper (A4 size)	3,720,000 sheets

Resources	
Raw Materials (Metal)	1,826 tons
Oils (Cutting fluid, Grinding fluid)	483 kl
Others	Sub-materials



OUTPUT

(Waste materials, Emissions to water and atmosphere)

Manufactured Products	
Production	51,229 million yen
Packaging supplies	174 million yen

Subjected Material of PRTR	
Chromium (metal content)	81.5 tons
Cobalt (metal content)	53.5 tons
Manganese (metal content)	5.6 tons
Molybdenum (metal content)	68.1 tons
Vanadium (metal content)	31.2 tons

Water Emissions	
Drainage water	148,898 m ³
* Most drainage water is domestic drainage water. * We have balanced our water use so that the amount of drainage water equals our water usage. 50-60% of actual drainage water is estimated to be from the use of water-soluble coolants and the evaporation from air conditioning, etc.	

Atmospheric Emissions	
CO ₂ emissions	
Production	53,321 tons-CO ₂

Emissions Waste Material	
Amount for re-use	1,125.5 tons
Recycled amount	1,053.4 tons
Reclaimed amount	2.2 tons
Total output	2,181.1 tons



Promotion of Resources Recycling

OSG has promoted zero emission activities to reduce waste. We developed a system to recycle reusable and recyclable resources, and established a structure to ensure the proper disposal of waste from our operations. Therefore, our recycling rate has been over 99% since 2005.



Waste Recycling

Metal scrap	892.7 tons
Cardboard boxes (sold for re-use)	46 tons
Waste oil (sold for re-use, recycled)	439.5 tons
Oil sludge (sold for re-use, recycled)	112.6 tons
Diatomaceous soil (sold for re-use, recycled)	467.4 tons
Waste grinding wheels (recycled)	42.5 tons
Waste plastic (recycled)	46.8 tons
Wood chips (recycled)	64.6 tons
Others (recycled)	48.1 tons
Total	2,178.9 tons



Reductions in Environmental Impacts

OSG has strived to reduce energy consumption, CO₂ emissions and waste output. Focusing on efficient energy use and switching to energy-saving equipment, we have worked to promote continuous improvement in environmental impact throughout the entire company.

■ Reductions in Energy Use

In FY2016, although OSG continuously encouraged the switch to LED lighting across the entire company, our energy consumption increased due to temperature control in summer. In addition, along with a 4% decrease in production, our energy consumption per unit of production increased 14% compared with FY2015.

■ Reductions in CO₂ Emissions

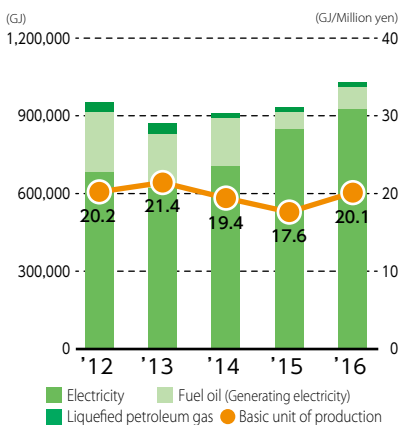
OSG's CO₂ emissions per unit of production increased 27% compared with FY2015. This is because the rate of production decreased 4% and the CO₂ emissions increased 23%. This year's summer was hotter than the previous years and as a result, the CO₂ emissions associated with energy use for cooling increased during the summer season.

■ Rate of Valuable Resources Recovered from Waste

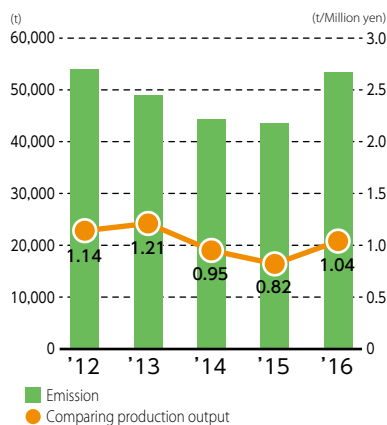
OSG continued to promote the recycling of valuable resources in industrial waste.

Although, with the increase in waste such as diatom earth or oil mud, our waste emissions increased 9%, through efforts to increase valuable resources in waste, the rate of valuable resources recovered from industrial waste was a 3% increase from last fiscal year.

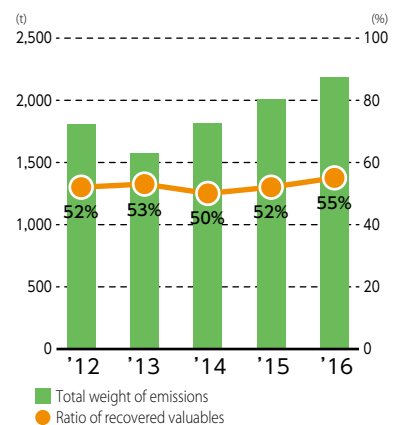
Energy Use



Carbon-Dioxide Emissions



Waste Output and Ratio of Recovered Valuables





Eco-Friendly Products and Services

OSG is striving to produce eco-friendly products and provide them to our customers. We are actively working to reduce environmental impacts by enhancing regrinding services and developing energy-saving products and high-efficiency products that enable high speed and long-life.

■ Carbide Material Recycling

Raw materials of carbide tools include rare metals such as tungsten and cobalt.

OSG group promotes recycling of carbide tools. For customers' CSR activities and zero-emission promotion, we utilize these resources by collecting end-of-life tools from our customers and recycling rare metals.

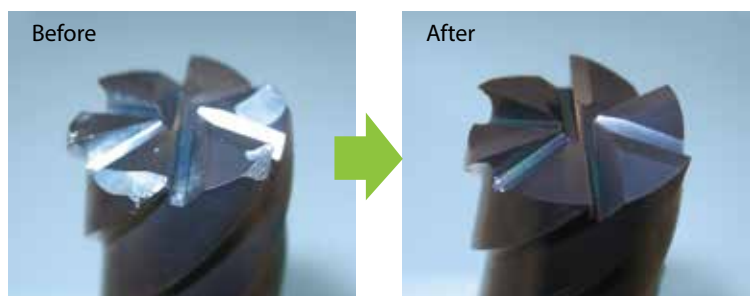
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■ Regrinding Services

Cutting tools such as taps, end mills and drills become worn and dull after repeated use.

These tools can be returned to their original as-new condition by regrinding. OSG group provides regrinding services and meets customer's various needs.



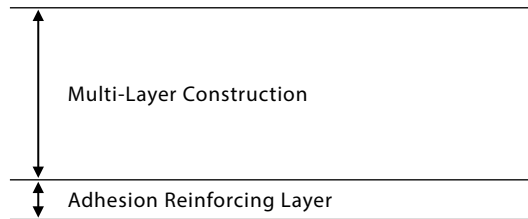
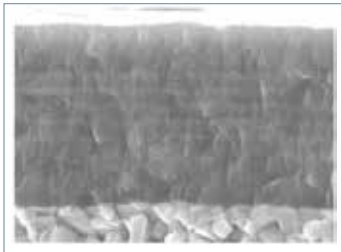


The New Standard for Milling. Anti-Vibration Carbide End Mill AE-VES Series

Features

• DUARISE Coating

"DUARISE coating" having multi-layer construction provides excellent lubricity, superior friction-resistance, and high oxidation temperature. Applicable for both dry and wet milling, a wide range of coolant. Smooth coating treatment ensures an excellent surface finish.

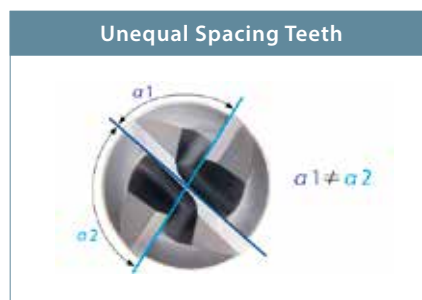
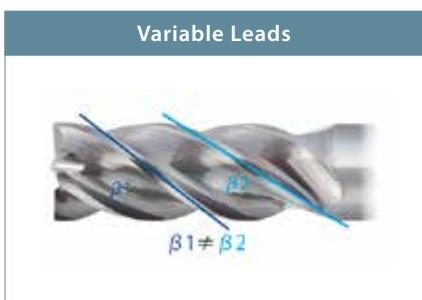


• Low Cutting Force

Sharp cutting edge reduces cutting force and enables stable milling.

• Suppression of Vibration

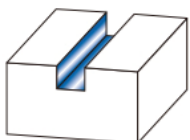
Unequal spacing of teeth and variable-lead geometry enable the suppression of vibration and high efficiency milling. A shorter milling time leads to a reduction in power consumption.



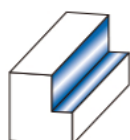
• Multi Functional Milling

Applicable for a multitude of applications.

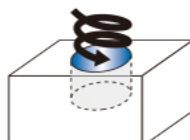
Application



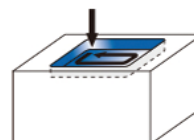
Slotting



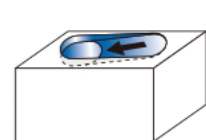
Side Milling



Helical Milling



Contour Milling



Ramping





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