Environmental Regulations and Conservation Implementations in OKI

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Global warming and environmental destruction are just two of the many challenges our planet is facing in the future. OKI Data, OKI Group responsible for printer business, positioned “environmental protection” as one of most important issue on the company’s business agenda. Under the slogan “be kind to people while taking care of nature”, we are expanding our efforts globally, so that we can leave behind a rich and beautiful earth for the children of the 21st century.

Like other electronic products, printers/MFPs and toner cartridges that we develop, manufacture and sell contain many chemical substances. Manufacturing and use of these products also consume energy. The issue of global warming is drawing great attention, and many countries are enacting tighter regulations on chemical usage. In order to continue our business, it is necessary to consider environmental protection measures that cover the entire lifecycle of a product from the development/manufacturing stage to customer use to disposal. Since our business spans the globe, we must take into consideration the environmental regulations of each country and find measures that will be accepted by people around the world. This article describes the trends in global warming, management of chemical substances, and regulations related to environmental certification and the measures we are implementing to conserve the environment.

Addressing Global Warming and OKI Data's Corporate Strategy

(1) Global warming trends

As the most important issue facing humanity, global warming is being discussed in countries and international organizations resulting in the adoption of stricter regulations to combat the problem. Especially, 2010 being the halfway point of Kyoto Protocol’s first commitment period (2008-2012), activities to meet the Kyoto target and discussions for post-Kyoto (beyond 2013) have been extensive. In Japan, laws for both global warming measures and energy conservation have been revised. CO_2 emissions not only for factories, but also of the entire enterprise must be reported and reduction efforts have been mandated. Furthermore, in response to measures beyond 2013, a specific goal of 25% reduction by 2020 has been proposed and new approaches such as domestic emissions trading and environmental taxes are being discussed. Under the circumstances described above, the effort to quickly formulate and put into practice a CO_2 emission reduction policy is becoming an important factor in corporate strategy.

(2) OKI Data Initiatives

At OKI Data, we have taken three initiatives worldwide, 1) CO_2 reduction in business activities, 2) creation of environmentally friendly products, and 3) environmental protection.

With regard to CO_2 reduction, using 2007 as the base year, our goals are to cut OKI Data Group’s overall emissions 6% by 2012 and 50% by 2050. To achieve these goals, we are making reforms in manufacturing and logistics, adopting green energy and introducing energy saving activities at all of our locations worldwide.

To make OKI Data products more environmentally friendly, standby power consumption in the new C610dn/C711dn printers have been reduced to 1/20 of previous models. We are also developing models with five-year warranties.

Our environmental protection activities include long-term cooperation with forestation activities in Fiji, United Kingdom, Thailand and Malaysia.

To further contribute to the prevention of global warming, we have adopted carbon offset. The mechanism of carbon offset and our involvement is described below.

(3) Carbon offset

Carbon offset is an important means of transitioning to a low carbon society. First, community members including citizens, corporations, NPO/NGO, municipalities and government recognize their own greenhouse gas emissions and conduct proactive efforts to reduce those emissions. When there is difficulty in reducing greenhouse

gases, you purchase reductions/absorptions (credits) made elsewhere or you implement emission reducing projects and activities elsewhere to offset all or part of the emissions that you cannot reduce[1]. Highly efficient CO_2 reduction activities that take into consideration the entire world will be possible, and by selecting appropriate projects, contributions can be made to improving living conditions in developing countries.

We have contracted co2balance as the provider, and for 3.5 years from second half of fiscal 2009 to fiscal 2012, offset will be conducted every six months. The flow of our carbon offset is illustrated in **Figure 1**.

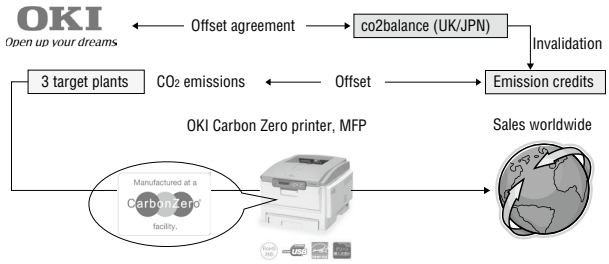

Figure 1. Flow of Carbon Offset

(4) Understanding CO_2 emissions

In carbon offset, the green house gases (GHG) that will act as the offset reference must be calculated and reported according to internationally recognized standards. In this activity, our power and fuel consumptions during 2007 productions were surveyed at 45 offices and 6 plants across the globe and CO_2 emissions were calculated based on GHG Protocol/ISO 14064. To ensure objectivity, this calculation was commissioned to UK's CAMCO.

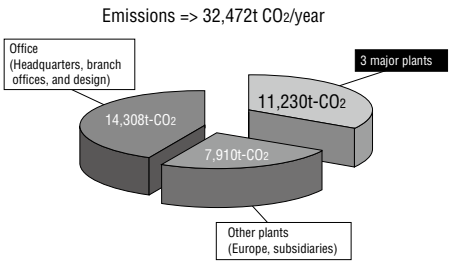

Figure 2. OKI Data Group's CO_2 Emissions

The results of the calculations are shown in **Figure 2**. Our group's total emissions in 2007 were 32,472t CO_2 of which 35% or 11,230t were from the three major plants (Fukushima, China, Thailand) responsible for main product assemblies.

During the first period of activities, which was the second half of fiscal 2009 (October 1, 2009 – March 31, 2010), we offset 5,616 tons of CO_2 emissions from the three major plants mentioned above. The selected projects were wind powers in China and India, and offset was accomplished through the purchase of Certified Emission Reductions (CER) certified by the UN. This activity was submitted to the Japanese Ministry of the Environment's Carbon Offset Model Project and was accepted.

For the Fukushima factory offset, credits were transferred to the Japanese governments' account on March 26, 2010.

Awareness of these activities and the importance of CO_2 reduction were spread to our employees through the display of carbon offset logos in the plants and conducting educations on environment. Consumers were made aware of our activities through logos on products, Web, press releases and Eco-Product exhibitions.

(5) Future actions

Until the end of Kyoto Protocol's first commitment period in 2012, OKI Data will continue to perform carbon offset every six months purchasing emission credits equivalent to CO_2 emissions produced the previous year. As a future offset material, we are supporting Kenya's high efficiency stove project. As shown in **Figure 3**, this project has the benefit of significantly improving living conditions in addition to reducing CO_2 emissions. Since the project contributes to sustainable growth in developing countries, we plan to continue our support as we monitor the progress of future credits.

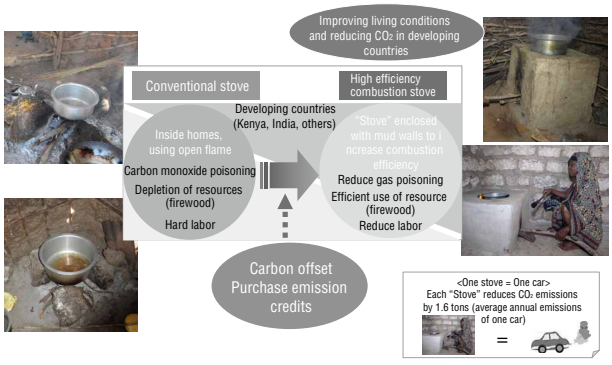

Figure 3. Overview of Kenya's Stove Project

In parallel with this activity, we are complying with the domestic revised energy conservation law and have completed collecting energy data for 2009. From our energy consumption, it is expected that we will be designated as a specified enterprise. Therefore, we are formulating/implementing a management body and energy reduction plans focusing on energy management regulations and standards.

Chemical Substance Regulations and OKI Data Initiatives

(1) Chemical substance regulation trends

Progression of humanity has been supported through numerous inventions and use of chemical substances. It is also a fact that some of chemicals are toxic causing environmental pollutions and creating issues. Chemical substance regulations are rooted in the measures against these environmental pollutions and issues.

Japan has implemented chemical substance regulations ahead of the rest of the world, and around 1970 began regulating emissions of harmful substances into the environment with the Air Pollution Control Act and Water Pollution Control Act. These were followed in 1973 with the "Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc." that regulated the manufacturing and use of hazardous substances. In 1999, "Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof" was enacted mandating the usage report on a number of chemical substances and disclosure/management of information using MSDS.

In Agenda 21 meeting at Earth Summit, 1992, "Proper Management of Environmentally Harmful Chemical Substances" was presented and clearly addressed the specific initiatives that must be taken. This became the foundation for international efforts to manage chemical substances. Ten years later at the 2002 Johannesburg Summit, "Johannesburg Plan of Implementation", which serves as a guideline for implementing the contents of Agenda 21, was adopted along with "Johannesburg Declaration on Sustainable Development".

To respond to the initiatives, the RoHS directive, which controls harmful chemical substances contained in European sold electronic products, was announced in 2003 and enacted in 2006. The directive restricts the use of six specific hazardous substances. This was followed by the REACH regulation in 2007. As opposed to RoHS, which restricts the use of specific chemical substances, REACH applies to a number of chemical substances that are potential risks for environmental pollution and may impact humanity. The regulation is aimed at comprehensively managing chemical substances throughout the entire supply chain by requiring registration, evaluation, authorization and restriction of chemical substances. Companies exporting products to Europe must consider chemical substances during the entire process starting from development and continuing through to parts procurement, production, and shipping. Since the basic concept of REACH covers regulations focused on specific hazardous substances to control pollution (hazard management) and regulations considering both toxicity and potential exposure of various chemical substances (risk management), it can be thought of as the current trend of chemical substance regulations.

Regulations similar to RoHS and REACH are being implemented in Asian countries like China and Korea calling for responses similar to that taken in Europe.

(2) OKI Data initiatives

In our product development and manufacturing, we have complied with chemical substance regulations both domestically and internationally. Based on lessons learned and improvements made while complying with RoHS, we started a project to support REACH in May 2007. We are deploying systematic activities with cooperation from both inside and outside the company.

When procuring materials for products, as part of our environmental protection effort, we follow our green procurement standards and conduct "Assessment of Environmental Management Systems", "Assessment of Chemical Substance Management System", and "Assessment of Deliverables", which evaluate the delivered goods' degree of environmental consideration. After an overall assessment, we give purchase priority to goods with the least impact on the environment.

Chemical substances contained in the delivered goods are checked using survey tools prescribed by JGPSSI and AIS issued by JAMP.

Table 1. Classification and Response Format to Chemical Substances

Classification	Response Format
Prohibited substances	Non-containing guarantee, JGPSSI survey tools
Inhibited substances	JGPSSI survey tools
Controlled substances	JAMP AIS
Reported substances	JAMP AIS

Table 1 shows our classification and response to chemical substances.

Responses submitted by suppliers are maintained in COINServ®*1-COSMOS-R/R (Product Chemical Substance information System) according to the Product Chemical Substance Management System (CMS) specified by OKI. This enables the exchange of information within the supply chain, disclosure of information to European consumers*2 and monitoring of exports for REACH SVHC.

*1 : COINServ is a registered trademark of Oki Electric Industry Co., Ltd.

*2 : In Europe, responses to information requests from consumers are mandated within 45 days.

Figure 4 shows an overview of the management flow for REACH regulation.

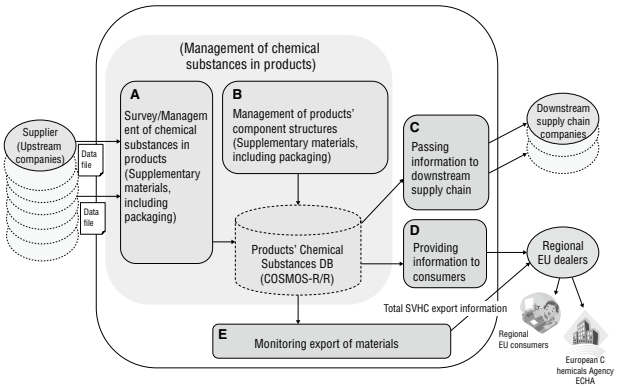

Figure 4. Overview of REACH Regulation and Required Management Information

Worldwide Environmental Certifications

In addition to complying with aforementioned environmental regulations, we are designing and manufacturing products that are highly energy efficient and environmentally friendly. As evidence of environmental friendliness, our products have obtained environmental certifications from programs in several countries including Germany's "Blue Angel", "International Energy Star Program", and Japan's "Eco Mark".

(1) Blue Angel Program

Germany's Blue Angel program has been a leading and central presence in the certification of environmentally friendly products. The certification is granted to products that exhibit comprehensive care to environmental protection and meet standards that ensure high-level of occupational health & safety and usage quality. The Blue Angel printer standards (RAL-UZ122) cover all copiers, printers, MFPs and faxes. The current version has been in effect since January 2007. We have actively come to pursue certification for new products that meet Blue Angel standards.

(2) International Energy Star Program

Based on agreement between the Japanese and U.S. governments, Energy Star Program was launched in October 1995 in an effort to reduce the standby power consumption of electronic equipment. Since then, EU, Canada, Australia, New Zealand and Taiwan have also become participants. The standards were significantly revised after April 2007, and standards/reference values related to imaging equipment such as copiers, printers, MFPs and faxes have been completely renewed. Specifically, the standards cover requirements for total power during printing operation, standby (waiting for print instructions) power, and sleep power. Since the standards now encompass all major operation modes, a reduction in overall power consumption becomes necessary to satisfy the standards' requirements. For this, attention is focused on the power consumption of electrophotographic printer's fuser component. Nearly all of our products satisfy the standards' requirements thereby contribute significantly to energy conservation.

(3) Eco Mark Program

Japan's Eco Mark is a label placed on products certified to contribute to the preservation of the environment by minimizing environmental impact throughout the entire product lifecycle from production to disposal. Participation in the program is voluntary, and Japan Environment Association certifies the use of the labels based on numerous standards. Acceptances for printer certification were started on October 1, 2001, and at present about 100 models have been certified. As of August 2010, we have fourteen models that are Eco Mark certified.

Conclusion

As mentioned above, we have continued with efforts to reduce environmental impact. However, the world's environmental regulations and product certifications are ever changing, and the demands are becoming increasingly stringent. Consumers' attention toward the environment is also on the rise, and a product's environmental friendliness is beginning to factor into purchasing decisions. Therefore, it is vital that we 1) quickly obtain and support updates to environmental regulations and certifications that change/expand year to year. 2) Assess and reduce the environmental impact of a product during its design process and continuing through to parts procurement, production, customer use and disposal. 3) Promote the details and results of our environmental actions internally and externally. We hope to raise awareness of our company through these activities and further promote environmental protection activities to the environmentally focused society. ◆◆

References

1) Ministry of the Environment, “Performing Carbon Offset in Japan (Guideline)”, P3, February 7, 2008

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TIPS

【Glossary】

RoHS directive
Abbreviation for Restriction of Hazardous Substances.
The directive bans the use of hazardous chemicals in computers, printers, communication equipment and household appliances.

REACH regulation
Abbreviation for Registration, Evaluation, Authorization and Restriction of Chemicals.

SVHC
Abbreviation for Substances of Very High Concern.
As of August 2010, it applies to 38 substances and expected to eventually cover 1500 substances. It is one of the U-T’s multimedia H-series recommendations.

MSDS
Abbreviation for Material Safety Data Sheet.
It describes substances included in chemical products, impact on people and environment, and handling precautions.

JGPSSI
Japan Green Procurement Survey Standardization Initiative.
The organization is standardizing the survey response format to ease the burden imposed on companies researching chemical substances included in their components and materials, and to improve the quality of response.

JAMP AIS
JAMP is an abbreviation for Joint Article Management Promotion-consortium.
Council was established to facilitate a mechanism for proper management of chemical substance information and for smooth disclosure/exchange of information within the supply chain.
JAMP AIS (Article Information Sheet) is an information exchange sheet proposed by JAMP to transfer information on chemical substance contained in the products.