

Environmental Reporting Guidelines

– Towards a Sustainable Society –

(Fiscal Year 2007 Version)



Provisional Translation

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Ministry of the Environment

Government of Japan

Committee for the Revision of the Environmental Reporting Guidelines

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Introduction

It is becoming increasingly apparent that a wide range of global environmental problems- such as global warming, depletion of energy resources, water resources and natural resources, and the loss of biodiversity- are rapidly worsening. With the world's population continuing to grow, the expansion of the global economy, and the ever-increasing globalization of human activities, there are growing threats to the very foundations of human existence on Earth, and such issues will have a major impact on the future sustainability of human society.

In acknowledgement of the reality, in April 2006, Japan's Cabinet set the direction for future environmental policy development, with their approval of the Third Basic Environment Plan, and Integrated Improvements of the Environment, Economy and Society.

The Ministry of the Environment has encouraged the dissemination of environmental reporting using a variety of methods including the publication of the *Environmental Reporting Guidelines: Fiscal Year 2003 Version*" (March 2003). As a result of these plans and promotional activities, by 2005, the number of organizations publishing environmental reporting regularly had increased to 933, according to *the Survey on Corporate Activities Amiable to the Environment*¹. In future, even more organizational initiatives can be expected.

Also, Specified Corporations become legally obliged in 2005 to publish environmental reports to comply with a Law; the "Law Concerning the Promotion of Business Activities with Environmental Consideration by Specified Corporations, etc. by Facilitating Access to Environmental Information, and Other Measures" (Law No. 77 of 2004: Environmental Consideration Law, enforced in April 2005).

In Japan, manufacturing and commercial activities are becoming increasingly globalized, while at the same time the impacts on the environment are becoming increasingly complicated. Accordingly, not only is environmental conservation focusing on compliance with regulations required, but new initiatives are also needed based on the concept of "environmental management," whereby environmental considerations are integrated into corporate management. In such a climate, organizations are increasingly recognizing the importance of the social accountability and environmental communications, for gaining or maintaining a good reputation and benefiting from the feedback received for their environmental management. It is therefore becoming increasingly more important for organizations to properly disclose information concerning their environmental initiatives, which is consequently increasing the value of environmental reporting.

It is also expected that consumers and investors will take this information into account

¹ "Survey on Corporate Activities Amiable to the Environment"

Every year since 1991 a survey has been conducted among the companies listed on the first and second sections of the Tokyo, Osaka and Nagoya stock exchanges, and unlisted companies with more than 500 employees. The survey is concerned with the corporations' environmental management initiatives, disclosure of information on the environment and publication of corporate environmental reports. In fiscal year 2005, questionnaires were sent to a total of 6,444 companies and 2,691 companies responded.

URL : <http://www.env.go.jp/policy/j-hiroba/kigyo/index.html>

when making purchasing and investing decisions. There is growing awareness that environmental reporting is an invaluable information tool for such parties because it provides useful information concerning the environmental initiatives of organizations. In particular, environmental reporting is valuable as an evaluation tool when corporations and individual investors, as well as financial institutions make investment and financing decisions.

Corporate Social Responsibility (CSR) is attracting growing interest both in Japan and abroad, and good progress is being made both here and internationally, such as the publication of a new set of guidelines by the Global Reporting Initiative (GRI). Against this background, Japan is being called upon to play a leadership role.

Under these circumstances, the Ministry of the Environment has established the Committee of Revision of Environmental Reporting Guidelines, consisting of report writers, report users, and other knowledgeable persons of environmental reporting, and as its subcommittee, the Working Group of Revision of Environmental Performance Indicators Guideline to carry out detailed examinations of individual matters concerning the environmental performance indicators for organizations set out. Both the committee and its working group have conducted five and four examinations respectively, and the result is this publication of the *Environmental Reporting Guidelines: Fiscal Year 2007 Version* by the Ministry of the Environment.

In the revised guidelines, changes were made after a review of other published environmental reporting guidelines and an examination of the progress and trends in Japan and abroad since the publication of the *Environmental Reporting Guidelines: Fiscal Year 2003 Version*. As well, information from the *Environmental Performance Indicators Guideline for Organization (Fiscal Year 2002 Version)* was integrated into the newly revised guidelines.

With reference to the Japanese language versions of the “Sustainability Reporting” and “Social and Environmental Reporting” that covers social and economic fields, and the “CSR Reporting” which publicizes the achievements of initiatives based on CSR, the titles and contents of environmental reporting are very diverse; therefore, as guidelines for the periodic publication of environmental reporting, the title of the document has been fixed to the *Environmental Reporting Guidelines*.

Key points in the revision of the *Environmental Reporting Guidelines* include the following:

- (1) Introduction of lists and tables for major indicators and the like
- (2) Recommendation of measures for improving the reliability of environmental reporting
- (3) Recommendation of environmental reporting with more emphasis on the viewpoints of stakeholders
- (4) Promotion of investments and financing that take the environment into consideration
- (5) Promotion of biodiversity conservation and the sustainable use of biological resources

Also two related publications were selected as annexes to the *Environmental Reporting*

Guidelines; the Guide for Environmental Report Recording Guidelines, and the Guide for Self-Assessment to Increase the Reliability of an Environmental Report (Trial Version).
(These are only available in Japanese.)

Preface: Revision of the Environmental Reporting Guidelines

A growing number of organizations are publishing their sustainability reporting or social and environmental reporting, which includes the information of various social and economic fields. Regardless of the actual title or term used, the inclusion of information from a field other than the environment, or the publication medium, the Environmental Consideration Law defines “environmental reports” as reporting periodically released by an organization that is concerned with the environmental impacts and status of that organization’s environmental activities. In view of the diverse nature of the names and titles used in environmental reporting and the wide range of reported contents, this revision has been made so that the Guidelines can give direction on how to publish a regular report containing environmental information. For this reason, the title of the Japanese language version of the Guidelines has been fixed to the *Environmental Reporting Guidelines*, clearly indicating that this document is not limited to just drawing up environmental reporting under the heading of “Environmental Reports.”

1. Objectives and Contents of the Guidelines

In the Environmental Reporting Guidelines (hereinafter, the Guidelines), environmental reporting is defined as the periodic publication of environmental reporting concerning organizational activities and the status of their environmental impacts and environmental considerations. The set of guidelines is designed for those organizations that are planning their first environmental reporting publication or organizations that have already published one, and also offer improved and practical guidance for carrying out *environmental management*. Consequently, the Guidelines summarize the preferred directions and contents, based on the current domestic and international trends of environmental reporting.

Those planning an environmental reporting publication might refer to Chapter 1, which gives the definition of environmental reporting and its fundamental functions and principles. Chapter 2 and Chapter 3 describe the key components necessary for comprehensive environmental reporting.

Chapter 2, Framework of Components for Environmental Reporting, and Chapter 4, Status of Social Initiatives, list five categories and 29 items that should be considered for inclusion in any effort of environmental reporting. Chapter 3, Information and Indicators for Each Component of environmental reporting, further subdivides the five categories and 29 items and then describes the following two types of information and indicators for each item of environmental reporting.

(1) Information and indicators to include

Environmental information and indicators that shall be included by all organizations

(2) Information and indicators to include as appropriate

Information and indicators that are to be included as the need arises, grounded on the fundamental functions of environmental reporting, and the construction of a sustainable

society.

Chapter 4, Status of Social Initiatives, describes information and indicators for reporting on social aspects, and Chapter 5 describes upcoming issues involved in environmental reporting.

The Guidelines provides information and indicators that should be included in environmental reporting and specific examples for each item are given. They explain environmental issues, their significance and matters to be considered when estimating numerical data for each indicator, so it is anticipated that stakeholders will use the Guidelines as a reference when reading or evaluating any environmental reporting.

Note, however, that the items, information and indicators described here are not meant to be strictly limiting; they were selected as being the most convenient at the present stage of our studies. Regarding some of the latest issues attracting the interest of stakeholders, the authors of an environmental reporting publication must decide on the “materiality” of an issue, including those issues which at present the scientific community has yet to reach a consensus on in terms of the significance of their environmental impact. Thus, even if an item or issue is not mentioned here, it is still important to include them if they appear significant.

2. Intended Audience of the Environmental Reporting Guidelines

The number of organizations in Japan that regularly publish environmental reporting continues to increase, but, they still only represent only a small portion of the entire organizational community. Initially, it is expected that those major organizations with more financial and human resources will take up the challenge that environmental reporting represents. In the future, ideally every all organizations will do so.

The fundamental Plan for Establishing a Sound Material-Cycle Society (March 2003, Cabinet decision) declared as one of its goals that about 50% of the listed companies and about 30% of unlisted companies with more than 500 employees would conduct environmental reporting. This is well-supported by the Environmental Consideration Law, which stipulates that large companies should address the publication of environmental reports and the status of environmental considerations and other related matters.

Although the Guidelines are written for all organizations, the major ones are particularly expected to publish high quality environmental reporting which would include the items and information described here. Organizations that have recently begun environmental reporting or small and medium-sized enterprises (SMEs) (including site units) could phase in the activities by gradually adopting the contents of the Guidelines, where possible.

With regard to those Specified Corporations under the Environmental Consideration Law that are required to publish environmental reports, it is expected that they will refer to the Guidelines and the *Guide for Environmental Report Recording Guidelines* and write an environmental report that contains all of the *Recording Guidelines* given in the *Notification*

of Environmental Report Recording Guidelines.

The Ministry of the Environment has separately issued *Eco-Action 21 (Guidelines for Environmental Management Systems and Environmental Activities Report: Fiscal Year 2004 Version)*, a publication aimed at enabling SMEs to design and operate environmental management programs, to carry out conservation activities, and to publish “environmental activities reports” with relative ease. The resulting published materials would satisfy the requirements of “environmental activities reports” under that category stipulated by the *Eco-Action 21*, and qualify as a type of environmental reporting. Since fiscal year 2004, the Institute for Global Environmental Strategies (IGES) has conducted a certification and registration system, which publicizes the names of certified and registered organizations and their environmental activities reports.

3. Tips for Creativity and Originality in Environmental Reporting

The purpose of environmental reporting is to fulfill an organization’s obligation to society to be accountable in regards to the environmental impacts caused by its activities and to provide stakeholders with useful information for decision-making. As an important tool for environmental communication, therefore, there are certain common items and contents that should be included in all environmental reporting.

Simultaneously, it should reflect an organization’s own management policies, its corporate ethos, and corporate culture and characteristics, while taking into consideration the appropriate approaches to communicating with stakeholders through its environmental reporting. From this perspective, each organization should feel free to express its own creativity and originality when writing the headings or the contents in their environmental reporting and in choosing the media (print publication, the Internet, etc.).

Thus, organizations are expected to publish their environmental reporting based on the Guidelines, while reflecting their own character and circumstances.

Finally, when the Guidelines are used as a reference in the publication of any environmental reporting, it would be appreciated if acknowledgment in the publication would be given to the Ministry of the Environment, to assist collection of information on the spread and adoption of the Guidelines and to guide efforts to continue making improvements. Note that when all of the five categories and 29 items outlined in the Guidelines are included, or when some of them are not included, but the reason is mentioned, then the environmental reporting can be considered to conform to the Guidelines. It is also expected that the relation between the written contents and the 29 items given in the Guidelines is clearly described.

4. Relation to Existing Guidelines

The guides and guidelines relating to the contents of environmental reporting are as follows :

- ***Guide for Environmental Report Recording Guidelines (December 2005)***, (available only in Japanese.)

The Environmental Consideration Law was passed in May 2004 to promote environmentally conscious activities through the spread of environmental reporting. The 2nd Paragraph, Article 9 of the Law stipulates that specified corporations that have an obligation to publish environmental reports and fulfill prescribed requirements shall make efforts to publish them, in accordance with the items that shall be included in an environmental report and the method for recording (hereinafter referred to as the *Recording Guidelines*) provided in *Notification*. The guide has been prepared mainly for specified corporations to give a detailed and easy-to-understand explanation of the *Recording Guidelines*, but, the guide is also useful for those organizations that have just started preparing and publishing environmental reporting. The table for comparison between the items provided in *Notification of Environmental Report Recording Guidelines* in accordance with the Environmental Consideration Law and the items that should be reported based on the Guidelines are shown on page 97.

Guide for Environmental Report Recording Guidelines:

http://www.env.go.jp/policy/hairyo_law/index.html

- ***Guide for Self-Assessment to Increase the Reliability of an Environmental Report (Trial Version) (March 2006)***, (available only in Japanese.)

This guide was prepared for all organizations planning to conduct a self-assessment, in order to increase the reliability of their environmental reporting; the guide describes the concepts and procedures for self-assessment, and a sample method for presentation of the results.

Guide for Self-Assessment to Increase the Reliability of an Environmental Report (Trial Version):

http://www.env.go.jp/policy/hairyo_law/index.html

- ***Guidelines for the Environmental Performance Indicators***

In respect to the concept of environmental performance and the estimation methods that are provided in “Guidelines for the Environmental Performance Indicators: Fiscal Year 2002 Version”, they have been integrated into The Environmental Reporting Guidelines after taking into account the latest situation. In the *Guidelines for the Environmental Performance Indicators: Fiscal Year 2002 Version*, the indicators that were considered to be common to nearly all organizations and important in Government’s environmental policies were classified as core indicators and other indicators were classified as sub-indicators. The core indicators and other sub-indicators stated in the *Guidelines for*

the Environmental Performance Indicators: Fiscal Year 2002 Version fall under the items described in Chapter 3, Section 3, “Information and Indicators that Describe the Status of Activities for Environmental Impacts and Reduction Measures.”. The sub-indicators are mainly included in Chapter 3, Section 2, “Information and Indicators that Describe the Status of Environmental Management.”

There are several other guidelines relating to environmental reporting, such as *Environmental Reporting Guidelines 2001 – With Focus on Stakeholders* – issued by the Ministry of Economy, Trade and Industry, and *Sustainability Reporting Guidelines G3: 2006 Version* published by the Global Reporting Initiative (GRI). In addition to these, by referring to the Reference Material 6 [Research Results of Domestic and International Research Organizations], it can be expected that the environmental reporting will be improved.

In addition, the following guidelines are strongly connected to environmental reporting and related to organizational environmental management and the provision of information.

○ ***Environmental Accounting Guidelines 2005 (February 2005)***

Environmental accounting is defined as having the aim of achieving sustainable development, maintaining a good relationship with the community, and the pursuit of effective environmental conservation activities. Following these accounting procedures allow a company to identify the cost of environmental conservation taken during the normal course of business, identify the benefits gained from such activities, provide the best possible means of quantitative measurement (in monetary value or physical units) and support the communication of its results.

Environmental accounting information is very effective for communicating an organization’s environmental conservation initiatives to stakeholders, if it is published along with their stance on environmental conservation and the specific environmental measures taken by them through environmental reporting. The publication of such information helps organizations to boost the public trust in them and also establishes social recognition. In other words, the publication of environmental accounting information demonstrates accountability to consumers, investors and local residents, and it can also be expected to play a leading role in the fair social recognition of organizations, including the trust in their environmental conservation initiatives.

Environmental Accounting Guidelines 2005

<http://www.env.go.jp/policy/kaikei/guide2005.html>

<http://www.env.go.jp/en/businesses/>

○ **Eco-Action 21**

Eco-Action 21 consists of guidelines to allow small-to-medium sized corporations (SMCs) to deal more easily with environmental management systems and environmental activities reports. It also explains the understanding of environmental impacts and the setting of environmental goals in an environmental management system, and requires

such organizations to examine, and set goals in regards to the following three aspects as mandatory:

--Amount of carbon dioxide emission,

--Amount of waste generation and

--Amount of waste-water generation.

The Eco-Action 21 initiatives taken by organizations can be examined by an Eco-Action 21 Examiners. Then, Secretariat for Eco Action 21 (the Centre for Sustainability, the Institute for Global Environmental Strategies) issues the certificate and register their names.

Environmental activities reports shall include the following information;

--Environmental policy

--Environmental objectives and their performance

--Outlines of major environmental action plans

--Evaluation of the results of environmental activities

--Information of nonconformance to environment-related laws and regulations and litigation if there is any.

The report must be placed in organization's premises and be freely available to the public;

and the report must be sent to the Secretary for Eco-Action 21 (the Secretariat publicizes

the name of the organization and its environmental activities report on the web-site).

<http://www.ea21.jp/>

<http://www.env.go.jp/en/businesses/>

○ ISO14001

ISO14001 (JIS Q 14001) (Environmental management systems– Requirements with guidance for use) is based on the principle of continual improvement by constructing and operating environmental management systems with the Plan-Do-Check-Act (PDCA) cycle. Continual improvement is defined as “any enhancement of the environmental management systems resulting in an improvement to the overall environmental performance, as stipulated in the environmental policies of the organization.”

ISO 14001 requires organizations to establish procedures for internal and external communication. When external communications are examined, the opinions and information needs of all stakeholders should be taken into account, and the following means of communication are described: an annual report, newsletter, Internet information, and meetings with the local community.

The Environmental Reporting Guidelines shall not make any change to the conformity requirements and criteria set for the examination and registration of the environmental management systems.

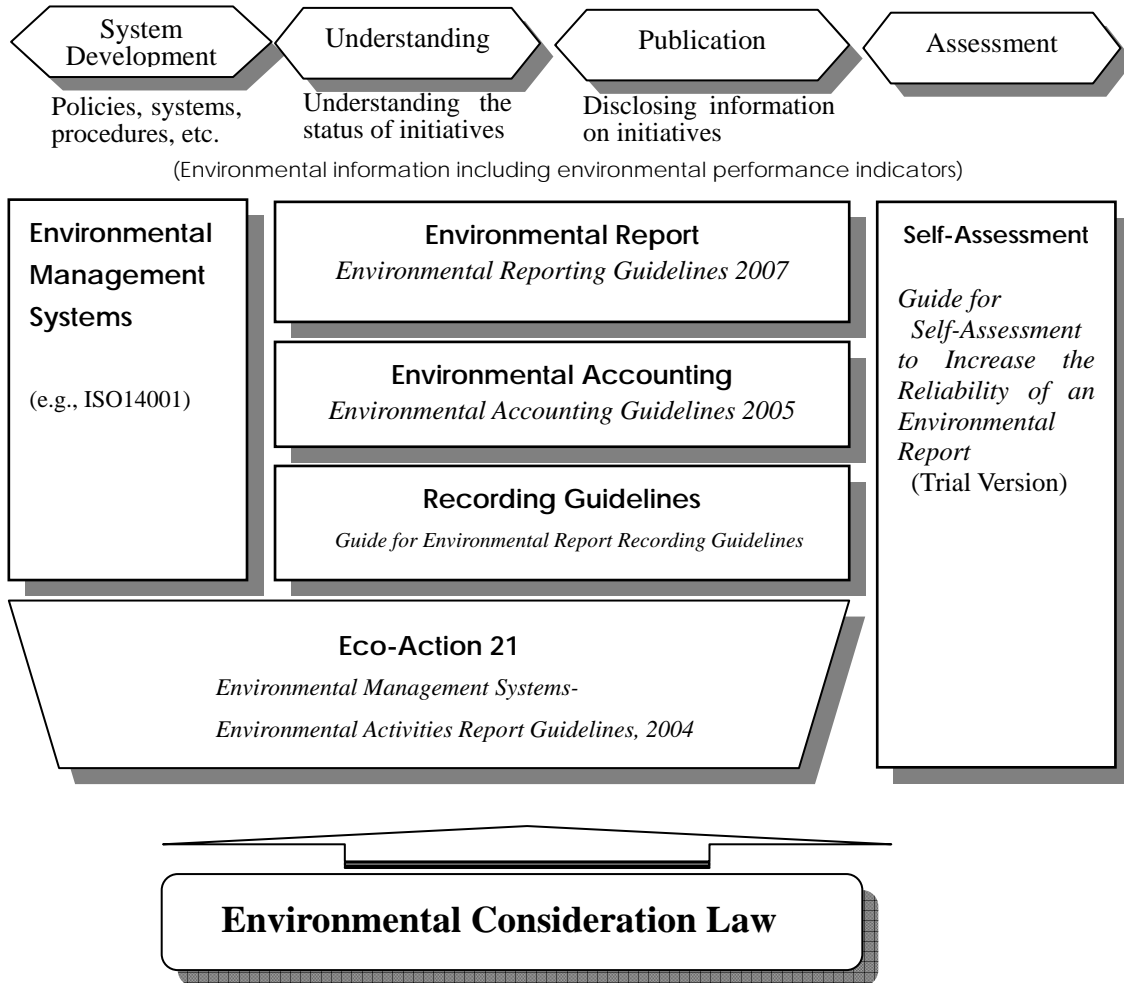
○ **ISO14063**

ISO14063 (JIS Q14063) (Environmental management – Environmental communication – Guidelines and examples) is an environmental communication standard. Environmental communication is defined as the “process that an organization conducts to provide and obtain information, and to engage in dialog with internal and external interested parties² to encourage a shared understanding on environmental issues, aspects and performance.”

Environmental communication aims to deepen mutual understanding and assent by providing information on the environmental impacts and conservation activities, along with listening to and discussing the opinions of interested parties, in order to establish a partnership with them for constructing a sustainable society. Environmental communication covers a wider range than environmental reporting, and environmental reporting is only one of the environmental communication tools.

² Interested parties: in this section the term "interested parties" is used with the same meaning as stakeholders.

Relation to Existing Guidelines



Along with the revision of The *Environmental Reporting Guidelines*, the *Guide for Environmental Report Recording Guideline*, and *Guide for Self-Assessment to Increase the Reliability of an Environmental Report (Trial Version)* will be revised successively so as to make them compatible and consistent.

What is Environmental Reporting?

1. Definition of and Guidelines for Environmental Reporting

Environmental Reporting is a tool for organizations to fulfill their obligations to be accountable regarding their environmental impacts and the environmental aspects of their activities, to provide useful information for the decision making by stakeholders, and to promote environmental communication. The fact is true even though environmental reporting may come by different names, it may include information on topics other than the environment, and various media may be used to distribute the information,

The Environmental Reporting Guidelines, as a guide, has been designed to be used as a reference, for when organizations want to plan periodically reporting on their environmental performance to the general public. In Environmental reporting, organizations clarify their environmental policy and the objectives of their environmental initiatives and express the status of their environmental impacts and environmental considerations in their activities, such as programs and outcomes, organizational structures and management systems.

When planning to conduct environmental reporting, it should be approached and described in a systematic and comprehensive manner, and in accordance with the general principles of environmental reporting provided in the Guidelines.

Commentary: Other Terms Used for Environmental Reporting

“Environmental reporting” can be called different names depending on its purpose and contents, but they are similar in essence. For example, there is “sustainability reporting,” which includes social and economic aspects or “social and environmental reporting,” and “CSR Reporting,” which describes activities based on corporate social responsibility (CSR). The type of environmental reporting defined in the Guidelines refers to the publications that are periodically released, and systematically and comprehensively disclose the status of the environmental impacts caused by organizations’ activities and their environmental initiatives. In other words, any reporting that includes information about corporate social responsibility or sustainability is considered to be environmental reporting.

It is expected that organizations will publish environmental reporting periodically that describe their initiatives to reduce its negative environmental impacts and implement other organizational initiatives for environmental conservation.

Commentary: Media Used to Release Environmental Reporting

The media used currently to release “environmental reporting” vary from brochure or printed material to Internet and compact disc (CD). Regardless of the media used, environmental reporting as defined in the Guidelines includes all those statements which are in accordance with the general reporting principles of environmental reporting and which contain comprehensive information about

the status of the environmental impacts caused by organizations' activities, as well as their initiatives for environmental conservation.

Commentary: Periodic Publishing and Reporting of Environmental Reporting

Generally, environmental reporting should be presented at least once every fiscal year or business year of the organization. For example, environmental reporting may be presented at an appropriate time for providing stakeholders with information, such as just after the end of a fiscal year or for a general meeting of shareholders. Depending on the disclosure media, such as the Internet, it is effective to increase the frequency of publication according to the content to be disclosed.

2. Fundamental Functions of Environmental Reporting

The Environmental Reporting has two fundamental functions, an external (or social) function, as a communication tool between an organization and society, and an internal function, which promotes environmental initiatives in the organization's activities. They play a very important role in promoting voluntary environmental initiatives in the organization's activities.

The following three are external functions:

- (1) Disclose information based on the social accountability of organizations
- (2) Provide useful information for stakeholders making decision
- (3) Promote environmental initiatives by "a pledge and review" between the organization and society

The following two are internal functions:

- (4) Establish or revise the environmental policy, objectives and action plans of the organization
- (5) Motivate and encourage the environmental activities of managements and employees

When presenting environmental reporting, it is important to design the environmental reporting to properly achieve these functions.

Commentary: Function as a tool for environmental communication between an organization and society

Environmental reporting can be considered as "the open-window of an organization and an important tool for environmental communication." Stakeholders are able to "view" the intended organization's ideas and measures toward environmental issues through this "window." Organizations can also understand the needs and the ideas of stakeholders through this "window".

Commentary: Function to disclose information to fulfill the obligation of organizations to be accountable to society

Organizations, playing the main part in socio-economic activities, generate considerable environmental impacts through their operations. The environment is the global public goods and the common heritage of all living creatures. Therefore, it could be considered that organizations should fulfill their accountability by reporting the information of their environmental impacts, mitigation methods and environmental conservation initiatives. Environmental reporting is one of the most important methods to fulfill such a responsibility.

Commentary: Function to provide useful information for stakeholders making decision

When stakeholders look to make choices from among products and services or where to invest, they need a variety of product information and management information. Information on risk management and environmental information are important in such decision making. Organizations need to provide useful information that helps this kind of decision making.

When choosing products and services, many stakeholders have come to start using information concerning an organization's environmental considerations, including the publication of environmental reporting. Moreover, not only rating agencies that give a rating to organizations, but also corporations that make decisions concerning trade, investment and financing, based on the status of an organization's environmental considerations, are increasing. Accordingly, organizations with a commitment to environmental considerations will be given the higher evaluation they deserve, and further promotion of voluntary environmental initiatives by organizations would be expected in the market mechanism. Particularly, environmental reporting will play a significant role as information media for the labor market and capital market, while eco-labeling plays an important role in the market of goods and services. This is gradually becoming the reality as Socially Responsible Investment (SRI), such as the CSR fund and eco-fund in Japan, is rapidly becoming popular.

In recent years, in Europe and North America, there are movements where public pension funds as well as individual investors are willing to invest in "business organizations which are actively committed to environmental efforts." In Japan socially responsible investment (SRI) is becoming popular and under these circumstances, Japan's business organizations which disclose their environmental initiatives by environmental reporting will lead to an expansion of green investments or green money, which will contribute to promote the integration of the economy and the environment; this will in turn lead to the construction of a sustainable society.

As more people are concerned about green purchasing and procurement, more information is required on contractors' or suppliers' environmental efforts, and environmental reporting can be used as a source of reference, especially in the selection of partners.

Commentary: Function to promote environmental activities by a "pledge and review" between the organization and society

When an organization pledges and reports its policy and targets of environmental considerations in its activities, steady improvements in these activities would be expected. This is because the disclosure drives an effect known as "pledge and review," in which organizations commit to policies and targets on environmental conservation activities and then society, in turn,

evaluates them.

When an organization presents environmental reporting, it may lead to progress in environmental conservation throughout the whole of society, if it makes positive efforts by considering external interests or comparing itself to other organizations in the same sector.

Moreover, the practice of “environmental communication” among broader stakeholders increases the environmental consciousness of the whole society. If it deepens the understanding of the state of each actor’s activities and the difficulties faced, it is expected that environmental communication can be useful for the “sophistication” of the environmental activities of whole society within the partnership and in accordance with each actor’s role.

Commentary: Function to establish or revise the environmental policy, objectives and action plans of an organization

By disclosing environmental reporting, it is expected that organizations will voluntarily improve the contents and quality of environmental conservation initiatives, because they want to enrich the contents of the environmental reporting. In addition, the improvement of an internal collecting system of environmental information will provide the organization opportunities to revise or establish the policy, objectives, targets, and action plans concerning the environment.

Commentary: Function to motivate and encourage the environmental activities of managements and employees

Employees may not know well the details of an organization’s environmental conservation initiatives, and environmental reporting can be used for training employees in order to increase their awareness of its initiatives, and enhance their environmental consciousness. Furthermore, the pride which employees have in the organization would be increased through environmental conservation activities.

By including the commitments by the top management in environmental reporting, it could potentially enhance the environmental awareness of the CEO, as well.

3. General Principles of Environmental Reporting

Environmental reporting is published as a tool for environmental communication from the perspective of social accountability and the provision of information useful to stakeholders when making investment decision. Complying with the following four general principles is essential to ensuring environmental reporting is an effective tool for fulfilling its fundamental obligations. Environmental reporting which does not comply with these principles will be unable to fulfill the functions expected of it. This section describes the general reporting principles that should be used when engaged in environmental reporting.

(1) Relevance

Environmental reporting needs to be issued at an appropriate time and provide material information, such as the environmental impacts caused by an organization as well as the environmental initiatives and activities, which could affect the decisions of stakeholders.

Commentary: Materiality and Timeliness

When information for environmental reporting is compiled, it is crucial to sufficiently consider the expectations and needs of stakeholders toward the organization and its environmental reporting.

To meet this condition, it will be effective to identify who the stakeholders are, and to understand their expectations and needs by engaging in a process of dialog with them. Environmental reporting should meet the expectations and needs of stakeholders and include relevant and material information as appropriate.

Whether a piece of information is material or not should be assessed by referring to the results of engagement with stakeholders; this assessment should be based on the degree of impacts such information will have on stakeholders' decision. The 29 items of environmental reporting provided in the Guidelines cover material matters common to all organizations. See "(1) Information and indicators that shall be included" for each item. If, based on a decision made by an organization, any of the items is not included, the reason needs to be mentioned, and if, due to the nature of the organization's business or the relationship with stakeholders, there are material matters not covered by the 29 items, such issues need to be disclosed.

In order to be useful, environmental reporting needs to be issued to stakeholders at the appropriate time. It is also important to report on environmental initiatives in the operation, any accidents concerning the environment, and the establishment or revision of environmental policy and objectives, after due consideration of the appropriate time to release such information. In addition, it is best to include any information on significant environmental incidents that occur after the specified reporting period (refer to 4. Fundamental Requirements of Environmental Reporting, (2) Clarification of the Reporting Period).

(2) Reliability

In order to be reliable, information provided in proper environmental reporting needs to be complete, accurate, impartial, and must be verifiable.

Commentary: Completeness, accuracy, impartiality, and the possibility of the verification of material information is required in order to ensure reliability

In order to ensure that the various stakeholders accept and trust the information produced for environmental reporting and consider the publication a useful tool, it is important for organizations to make every effort to increase the reliability of their reporting.

In order to ensure the reliability of environmental reporting, it is necessary to completely cover all material information which will truly explain the environmental, economic, and social impacts of an organization's activities and its initiatives on those issues. Moreover, it is important to make every effort to include all necessary data so that the information included in the reporting is accurate and the contents to be presented are clearly laid out, with no possibility of any misunderstanding. In particular, for extremely sensitive or important data, it is essential to ensure that it is detailed and accurate, and well presented so as to preclude any misunderstandings. In addition, the information provided needs to be impartial and verifiable.

Implementing the following measures increases the reliability of environmental reporting: (1) conduct self-assessment using checklists and a set of processes' flow sheets; (2) allocate the self-assessment procedures within the organization, such as the auditing of the accuracy of environmental information by the corporate auditor; to bring in an appropriate body from outside the organization, such as inspection and guidance by an independent third party; (3) and indicate conformity to the Guidelines. In selecting measures that will further increase the reliability of reporting by combining several of them, it is preferable to use the measures most appropriate to the capacity of the organization.

In addition, the information in environmental reporting needs to be verifiable from an objective viewpoint. In order to be verifiable, first of all, the estimation method and aggregate range need to be clarified for each piece of information in the environmental reporting and presented in a manner that allows verification. Second, evidence and data need to exist for each piece of information in the environmental reporting; an aggregate system needs to have been established; and a means to confirm the reliability of the information by a third party must be in place.

(3) Clarity

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|---|
| Environmental reporting needs to provide the necessary information with clear and easy-to-understand expressions to avoid misunderstandings among stakeholders. |
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Commentary: Easy-to-understand expressions

The potential readers (stakeholders) of environmental reporting are varied and it is important to take the need for clarity and the need to avoid misinterpretation into account when organizations publish environmental reporting. Although it is important that any expressions or terms are as simple as possible, and thus easy to understand, even when the contents are complicated, it is nonetheless essential that all the information required needs to be supplied in a satisfactory manner.

For example, if providing information that is uncertain, then the nature of that uncertainty, the scope to which the statement applies, and the facts that lead to the decision should be clearly stated.

It is important to show the annual changes for several years in order to promote audiences' fuller understanding.

When providing sectional information, simply listing of environmental initiatives is not sufficient. It is important to state what portion each of the environmental initiatives represents within the whole organization, so that audiences understand the ratio of the section in relation to the whole organization.

Some environmental reporting only mentions organizations' environmental activities qualitatively. They may provide little quantitative data (results and targets) and the state of environmental impacts caused by their activities. To accurately inform audiences of the facts, it is essential to provide as much quantitative data and actual numeric data as possible.

After that, environmental reporting should be easy to access, read, and understand as a communication tool. It is also necessary to devise particular expressions that attract the interest of stakeholders to read more.

In order to promote the clarity of environmental reporting, it is desirable to carry out the following:

- Enhance the use of straightforward sentences and styles
- Use graphs or pictures in addition to text
- Fully explain the meaning of initiatives reported or quantities mentioned

Expressions and terms that can only be understood by someone in the same circle should be avoided wherever possible, or if unavoidable, explanatory notes should be added.

(4) Comparability

Environmental reporting needs to be comparable between different reporting periods of the organization. Even among different organizations, information that enables certain comparison should be provided.

Commentary: Information that enables reliable comparison

First of all, information included should not be from a single year; it should enable comparison of historical trends within the organization. If there is a significant increase or decrease in data compared to the previous year, the reasons and explanations should be included.

Second, although environmental impacts vary in accordance with the nature of operations or sectors, it is desirable that environmental reporting can be comparable among organizations in both the same and different sectors. For example, providing figures that could be compared to the figures of the relevant industry, such as industry averages, would be effective. When comparing to the figures of other organizations or industry averages, any reasons and explanations should be included, if significant differences in environmental performance are

found.

When environmental reporting is presented in an easy-to-compare format, it serves as a useful tool for stakeholders when they look to select organizations that have a positive attitude toward environmental considerations.

Implementing the following measures will result in enhancing the reliability of environmental reporting and comparability among organizations will result;

- i . Clearly describe data and methods of data measurement,
- ii . Publish environmental reporting that conforms to the socially accepted environmental reporting guidelines, including the Guidelines, and
- iii . Employ commonly agreed methods within the sector to measure environmental performance.

In principle, the same estimation methods and coefficients should be used continually. When estimation methods and coefficients need to be changed for rational reasons, however, and after they have been changed, it is necessary to describe such changes, as well as the reasons and the impact of such changes.

4. Fundamental Requirements of Environmental Reporting

(1) Full Description of the Organization Covered by the Reporting

When compiling environmental reporting, it is essential that the boundary of the reporting organization is made clear.

Commentary

The state of an organization's environmental impacts and initiatives should be taken into consideration when defining the parameters or boundary for reporting.

Many organizations carry out their activities outside their sole unit of operations. They may, for example, use domestic or international subsidiaries or contract out to other transportation sections. It is therefore expected that the activities in all related units should be covered in the environmental reporting to properly, fairly, and accurately evaluate the environmental performance of such operations. Thus, it is a fundamental principle to include the entire group in consolidated accounts using the aggregate methods of financial accounting. Note, however, that the cost of collecting and comparing data should also be taken into account when determining the reporting boundary and consideration should also be given to how far the control of the management can reach. Nonetheless, it is essential to define the boundary area in any environmental reporting and the reasons why the boundary has been defined.

There are many cases when the boundaries to be reported differ depending on the contents, for example, when a corporate profile applies non-consolidated financial data, environmental performance refers to data collected at principal sites but not all sites, or statements on environmental conservation activities include overseas sites or subsidiaries. First of all, it is important to define the entire group for the consolidated accounts that will be reported. It is then necessary to specify the boundaries applied to each component, should they be different from those applied to the whole environmental reporting, and any differences need to be explained..

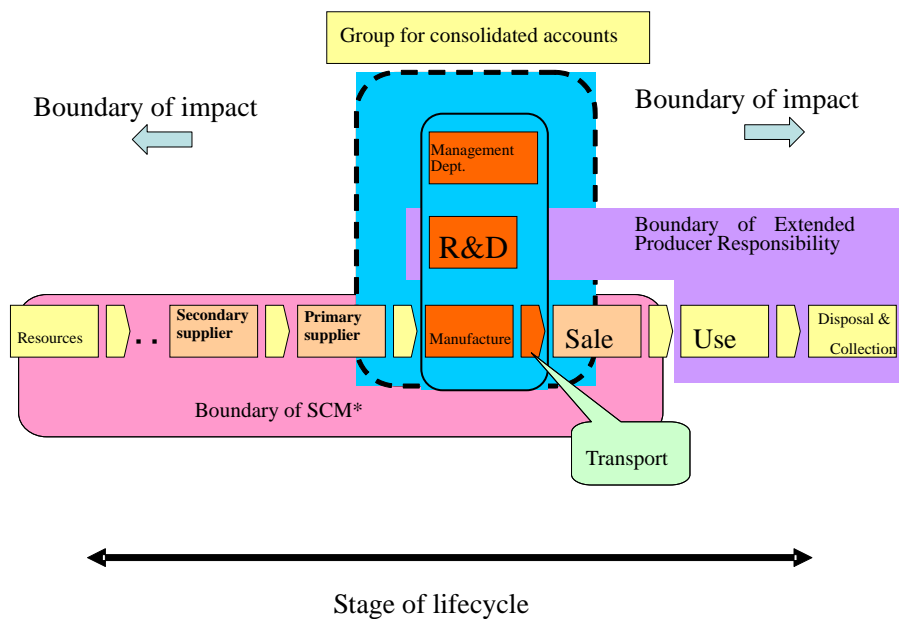
If the boundary of this year's reporting is different from the previous year, the difference should be stated and comparability between the two periods should be considered.

When describing the boundaries, the use of a chart providing an outline of the whole organization, statements about the strategy of the whole organization, and explanations of the position of each internal organization will help audiences better understand the organization reporting.

[Expansion of required boundaries for environmental considerations]

As shown in the figure below, as an example, when an organization provides products, it is preferable that, as much as possible, it makes every effort to understand the overall environmental impacts of its activities. This should cover the entire product lifecycle, including the supply chain, and go beyond the boundaries of the entire group expressed in the consolidated accounts.

Figure: Expanded boundary of environmental considerations according to the concept of environmental management



* SCM = supply chain management

(2) Clarification of the Reporting Period

It is essential that organizations clarify the period covered by the environmental reporting.

Commentary

The reporting period for the various data in environmental reporting, such as organizational profile, financial information, and environmental performance information, should be unified wherever possible. If the reporting periods are different for various components, it is crucial to clearly mention the difference(s).

The period of environmental conservation activities or period of data collection on the environmental impacts should be consistent with the applied period of the environmental reporting. Not all initiatives may be finished within a fixed period, however, such as previous environmental initiatives that may continue over a period of time, and reported environmental

initiatives carried out within a fixed period may not accurately reflect all of the organization's environmental conservation activities. In such cases, it is essential to clarify the differences.

It is necessary to publish environmental reporting about an organization's environmental conservation activities at least once every fiscal or business year and give notice of the proposed publication schedule.

Even after the reporting period has ended, if a serious incident or accident that might affect stakeholders' decisions occurs, or if a significant subsequent event that would affect environmental performance the next year arises before the publication of the environmental reporting, then such events, if possible, should be included in environmental reporting.

(3) Clarification of Reporting Areas

It is essential in their environmental reporting that organizations clarify the areas of reporting.

Commentary

Organizations need to clarify which areas will be reported in their environmental reporting (e.g., whether to include only environmental information or social initiatives as well).

In modern society, environmental, economic and social aspects are intricately linked, and it is necessary to incorporate environmental considerations into a socio-economic system, in order to reduce environmental impacts and construct a sustainable society. To ensure sustainability from an environmental perspective, social and economic aspects must also be sound and sustainable.

In recent years, not only in Western countries, but also in Japan, an increasing number of organizations are expanding the fields reported from the purely environmental to the wider fields of social and economic reporting; organizations are publishing this expanded reporting under the titles of "sustainability reporting," "social and environmental reporting," or "CSR reporting." The social area refers to, for example, occupational health and safety, employment, human rights, contributions to the local community and society, corporate governance, corporate ethics, compliance, fair trade, personal information protection, the broad range of consumer protection and product safety, and so on (refer to Chapter 4). The economic area refers to, for example, net sales and profits, assets, the amount of investment, wages, labor productivity, employment creation, and so on.

In contrast to the environmental area, the reporting of social and economic areas is still under development and a social consensus has not yet been reached. In future, it will be essential to accumulate and examine a variety of relevant research in order to determine what and how each element in those areas should be treated in reporting, and with the passage of time the practical application of these new areas of reporting will mature. In addition, social initiatives have been developing from the viewpoint of an organization's social responsibility. As well, the International Organization for Standardization (ISO) has started the development of standards, so it is important to pay attention to domestic and international trends in this field.

As issues considered being a part of an organization's social responsibility, in addition to the environment, *ISO26000 Social Responsibility Standard (draft)* includes human rights, labor practices, organizational governance, fair business activities, community participation, social development, and consumer issues.

With reference to the information and indicators mentioned here in the Guidelines, Chapter 4, "Status of Social Initiatives," it is expected that the areas covered by such reporting will expand.

5. Points to Note for Utilizing Environmental Reporting

(1) Relation with stakeholders

1) What is a stakeholder?

A stakeholder is a party or person who has a direct or indirect interest in an organization's activities, including environmental initiatives. Parties interested in the organization may be consumers, investors, business partners, employees, local residents, administrative organizations and so on.

Good environmental reporting should include quality information useful for a variety of decision making needs and for helping stakeholders to make their own assessments.

2) Concept of material items

Environmental reporting is an important tool for communication between an organization and society, and the audiences of such reporting will include a variety of different stakeholders. The contents and quality of information to be reported will vary depending on the target audience. The promotion of consultation with stakeholders and stakeholder engagement³ is an effective means of ensuring they receive appropriate information in environmental reporting.

3) Intended stakeholders of environmental reporting⁴

Stakeholders as consumers of environmental reporting come in many different guises, such as clients, consumers, ordinary citizens, shareholders, financial institutions, investors, business partners, employees and their family members, academics and experts, environmental non-governmental organizations (NGOs), consumer groups, students, local residents, administrative organizations, and so on. Environmental reporting enables these many different stakeholders to receive efficient and effective explanations about the environmental initiatives of an organization. Moreover, it can be expected that environmental reporting will help stakeholders to be more aware of the environment and will promote environmental conservation activities. In addition, environmental reporting is not prepared solely for stakeholders outside the organization; the management, directors, employees and their family members are also important target audiences of environmental reporting.

It is essential to thoroughly examine the audiences or stakeholders targeted by environmental reporting; a general audience or a more specific group of audiences will affect the style of reporting. *The Guidelines* publication has been designed with an audience of general readers in mind, and the following section describes the major groups of readers in no particular order.

³*Stakeholder engagement* is a comprehensive term that includes any initiative made by an organization to understand stakeholders, and ensure they are engaged in the organization's activities and decision making process. (Stakeholder Research Associates Canada Inc., UNEP & AccountAbility, *The Stakeholder Engagement Manual Volume 1: The Guide to Practitioners' Perspective on Stakeholder Engagement*, 2005, p.13) This refers to a relationship of mutual and positive cooperation involving the provision of information, consultation, dialog and partnership with stakeholders.

- **Clients, customers**

As environmental problems become more critical and tangible, clients and customers are becoming more aware of the environment and in addition to paying attention to prices and quality, environmental considerations are now another factor they take into account when choosing products and services.

- **Shareholders, financial institutions, investors**

More than ever, shareholders, financial institutions and investors are becoming important stakeholders as audiences of environmental reporting. Now, not only in Western countries but also in Japan, the status of an organization's initiatives involving environmental considerations is considered to be one of the elements to examine when making decisions concerning investment and financing.

More specifically, the following concepts are spreading: the concept that organizations committed to environmental issues should be supported, as seen in socially responsible investment (SRI); and the concept that an organization's response to environmental issues can be perceived by the public in a positive or negative light and consequently, the organization's attitude can have an influence upon its future performance results.

These stakeholders have a strong interest in an organization's compliance with environmental regulations and its environmental initiatives.

- **Business partners (companies or persons who purchase, procure or supply)**

As a part of environmentally friendly supply chain management by recipients and ordering parties, a movement is growing in which appropriate and responsible actions to deal with environmental issues are written into trade contracts or deals (e.g., bid tenders and ordering). The status of environmental management, and the status of the use and control of chemical substances and so on are all environmental concerns now attracting the attention of business partners, such as recipients and ordering parties.

- **Employees and their family members**

In order to hire competent employees, improve their enthusiasm and cultivate their pride in an organization, it is important to present environmental policies and the organization's attitude to the environment, so as to promote better understanding among the employees and their family members. Environmental reporting can be used as an educational or training tool for employees.

- **Academics and experts, environmental NGOs, consumer groups**

As opinion leaders on environmental issues or from a specialist point of view, these different groups evaluate an organization's environmental initiatives. They also play the role of interpreter in presenting often complicated information in an easy-to-understand way to the public. They have a strong influence on general consumers and the mass media.

With regard to environmental initiatives and the environmental impacts caused by an organization's activities, it is essential to indicate yearly changes and differences and present data to such stakeholders in a format that allows comparisons within the industry.

- **Students**

In recent years, the number of universities with a faculty, department or regular courses relating to environmental concerns is increasing; consequently there are many student bodies interested in researching environmental issues and they are becoming very active. If an organization is highly rated by students playing an active part in the environmental field, this can only be a positive factor in the acquisition of future customers and the hiring of informed and competent employees.

- **Local residents**

Local residents have a keen interest in what kinds of initiatives are implemented by nearby factories and industry, especially what preventive measures for pollution and environmental accidents are put in place. In particular, with regard to site environmental reporting issued by an operation site unit, it is good practice to assess the materiality of information by paying close attention to the interests and concerns of local residents.

- **Administrative organizations**

Administrative organizations need to understand the state of the environmental impacts within their jurisdictional area, and therefore organizations are required to present the results of their environmental reporting in accordance with environmental regulations. There is a movement among regional public bodies where they target local organizations as major subjects in regional basic environmental plans and action plans for instituting preventive global warming measures. And they are aiming to promote environmental reporting through the voluntary initiatives of organizations and to reduce the environmental impacts caused by their business activities. In addition, along with the increase of green purchasing, a growing number of cases are found where the acquisition of a certificate for an environmental management system (e.g. ISO14001 or Eco-Action 21) or the publication of environmental reporting is required as a condition for participation in a bid tender or an order for a project.

(2) Utilization of environmental reporting

1) Media for disclosure

When disclosing environmental reporting, it is important to deepen communication with stakeholders who are involved and interested in an organization and also create opportunities for as many stakeholders as possible to make use of the reporting. In addition, environmental reporting information should be widely disseminated using a variety of media, such as the Internet or mass media.

In addition to the periodic publication of environmental reporting, it is also effective to distribute additional information via the Internet or similar media of environmental performance information and environmental initiatives for which more frequent disclosure is both appropriate and important. The quality of such reporting must not be reduced, however, and several kinds of disclosure media should be used in a cooperative presentation

of the material.

The Internet enables an organization to provide current information in an easily accessible format and allows such information to be readily updated. Information concerning environmental activities should not only be presented in environmental reporting in book form, but also be released at an appropriate time in combination with the Internet. For example, important information included in environmental reporting such as the List of Major Indicators (BI-4-1) in the Summary of Environmental Reporting (BI-4) provided later in the Guidelines, and other detailed data can be released on the Internet.

When both a printed version and the Internet are used, however, it is necessary for the information on the Internet to clearly indicate the reporting period and be clear how it relate to information included in the printed version; for example, devising an easy-to-understand way to indicate the differences of the information among media, or showing the URL of the web-site in the printed version when one is available. Moreover, historical information should be available as a reference.

As the environmental activities of many different organizations develop, the volume of published information on environmental matters tends to increase. In order to ensure the dissemination of the contents of environmental reporting to many stakeholders as possible in a comprehensive manner, one effective method is to create an easy-to-understand digest edition for wider distribution, in which the main points of environmental reporting are summarized.

For communication with the local community, it is effective to publish a regional edition of environmental reporting (environmental site report) that focuses on information relevant to the local community in the vicinity of an organization's operational site. For environmental site reports, it is important that they are concisely compiled with a focus on environmental performance and activities in the region, such as input of water resources, air pollution, residents' living environment, emissions of chemical substances, and total water discharge; such information is essential to local residents.

When considering the means to present environmental reporting, it is necessary to take into account the most effective and convenient medium or media, as well as the best format and drafting for all parties, and ensure the reporting is understandable to the intended audiences.

If a significant event relating to the environment occurs, relevant information should be immediately released via the Internet or similar media.

2) Topics and special features

When considering an organization's environmental activities, if a specific event or activity draws attention socially (including information unfavorable to the organization) or information that is considered to be material due to the relationship with stakeholders, the organization is expected to develop some way to respond to audiences' interests, for example, by setting up pages for specific topics and special features in environmental

reporting. As appropriate, it is best to offer audiences an explanation to the background of an event and why it is being featured, or to give an easy-to-understand description by making use of charts and photographs.

However, systematic information and data cannot simply be replaced with topics and special features. It is essential to ensure not too much space is allocated to topics and special features; attention must be paid to maintaining a balance between news items, and important and essential environmental data.

6. Preparation Process and Measures to Improve Reliability and Content of Environmental Reporting

In the process of preparing environmental reporting, organizations are required to make every effort to improve the content, and increase its “reliability.” In other words, this means preparing appropriate environmental reporting from the viewpoints of completeness, accuracy, impartiality and the possibility of verification of important information. To fulfill these requirements, first of all, the organization itself should evaluate the contents of the reporting and strive to ensure that the information and data, which are the basis of the reporting, are accurate. In addition, the involvement of parties from outside the organization is effective, e.g., the participation of stakeholders in the preparation process of environmental reporting, the attachment of a paper stating the opinions of stakeholders about environmental reporting, or examination by an impartial third party. By taking such measures, any possible overlooked points can be made clear, and the contents and reliability will be improved.

Each of these measures is important and organizations should take steps to use them in combination as the need arises, and according to the involvement of stakeholders, the necessity of external examination by a third party, the management resources of the organization, and its degree of experience in the preparation of environmental reporting.

The following are examples of measures taken by an organization to increase reliability.

(1) Implementation of self-assessment

Self-assessment means that by using a checklist to ensure the reliability of reporting, an organization reviews its environmental reporting, and when self-assessment is carried out, the method, procedure and results need to be published.

The Ministry of the Environment has published the *Guide for Self-Assessment to Increase the Reliability of an Environmental Report (Trial Version)* and hopes it will be a useful tool. (Refer to Preface 4. Relation to Existing Guidelines)

Guide for Self-Assessment to Increase the Reliability of an Environmental Report (Trial Version):

http://www.env.go.jp/policy/hairyo_law/index.html

(2) Thorough implementation of internal management

This measure is needed to ensure the thorough implementation of an environmental

management system (e.g. ISO14001 or Eco-Action 21) within an organization and conduct strict internal audits or similar measures; the organization must confirm the comparability and the reliability of all information. An internal audit should confirm the methods and procedures used to collect, aggregate, evaluate, and disclose numerical data in environmental reporting. It should also confirm the utilization of environmental reporting in external communications, and the status of communication with stakeholders.

(3) Disclosure of internal audit standards and environmental reporting preparation standards

This is an effort of an organization to disclose its internal audit standards and environmental reporting preparation standards. Especially, it makes possible for an external third party to conduct a review based on the standards, when the standards to create environmental reporting are made public.

(4) Utilization of an in-house audit system or similar system

This measure is needed to verify environmental reporting from an objective viewpoint by utilizing in-house organizations other than the section that prepared the environmental reporting; such in-house organizations can include directors, the audit section, corporate auditors, or external directors.

The following are examples of measures that can be implemented by a third party from outside the organization to increase reliability.

(1) Incorporation of interactive communication methods

Regarding environmental conservation initiatives and the information included in environmental reporting, it is good practice to establish a system or create opportunities where both the organization and stakeholders exchange opinions, and this need not be limited to the organization simply responding to the questions and opinions of stakeholders. As an example, an organization and stakeholders may hold a discussion meeting or briefing session, and any relevant concerns are then included in the environmental reporting.

(2) Opinions of a third party

A third party, other than the publishing organization, expresses its evaluation and recommendation concerning the information included in environmental reporting and gives advice and opinions about the organization's environmental initiatives. It is best practice to include a description of the procedures used to gather the opinions of any third party, e.g., the criteria used to select the third party, or any involvement of the third party in the preparation process. The organization should give a clear commitment to take action in response to the third party's opinions.

(3) Examination by a third party

This measure involves a third party other than the organization that has prepared the

environmental reporting, such as an examining institution or an audit corporation. This party examines whether the information included in the reporting and any environmental initiative results (environmental performance indicators) are in accordance with the proper preparation criteria, and confirms the examination results with a focus on the accuracy of the information provided. In this case, the organization selects appropriate items from the Guidelines and other guidelines, or it follows its own preparation standards for environmental reporting. The examining institution then inspects the reporting using the same preparation standards as the judgment criteria.

(4) Preparation of environmental reporting in cooperation with NGOs and NPOs

A procedure whereby NGO or not-for profit organization (NPO) staff, students or general consumers are directly involved in the process of planning and preparation of environmental reporting and through cooperative work with an organization, they prepare environmental reporting. The methods for cooperation can vary from the simple exchange of opinions through to the checking of information included in the reporting.

Furthermore, indicating conformity with the Guidelines by using Reference Material 7 [Checklist] (in Japanese only) or similar, will contribute to an increase of credibility.

In addition to the above-mentioned measures to improve the contents and increase the reliability of environmental reporting, the response status to the results and opinions of such measures should be included in the environmental reporting.

Framework of Components for Environmental Reporting

1. Overall Structure of Environmental Reporting

The *essential items of environmental reporting* are the key items that make environmental reporting work as a tool for environmental communication; such communication should provide information useful for stakeholders when making decisions, and for fulfilling an organization's obligation to be socially accountable. All these items are included in the most current environmental reporting. The information and indicators that should be included in environmental reporting can be classified into the following five categories (refer to Chapter 3).

- (1) Basic information (BI)
- (2) Status of environmental management
- (3) Status of activities for reduction of the negative environmental impacts
- (4) Status of relationship between environmental considerations and management
- (5) Status of social initiatives

Each category of environmental reporting should include the following items:

(1) Basic Information (BI)

Basic information includes the CEO's statement, the fundamental requirements of reporting (including a percentage breakdown of the environmental impacts caused by the reporting organization), a summary of the organization's business including management indices, and list of major indicators; these are the fundamental contents which will ensure the reporting can function well as a communication tool between the organization and society to help them establish a partnership. They will also allow the organization to fulfill its obligation to be environmentally responsible, and provide useful information to stakeholders for decision-making.

The CEO's statement should include not only a greeting, but also a summary of the organization's environmental activities and commitments to society. Moreover, this gives an overall picture of the status of the environmental impacts caused by the organization's activities and environmental initiatives. Targets, plans and results should be compiled as a list or in a similar format and should include the status of the environmental impacts.

The following five points should be included as basic information:

BI-1: CEO's statement

BI-2: Fundamental requirements of reporting

BI-2-1: Organizations, periods and areas covered by the reporting

BI-2-2: Boundary of the reporting organization and coverage of environmental impacts

- BI-3: Summary of the organization's business (including management indices)**
- BI-4: Outline of environmental reporting**
 - BI-4-1: List of major indicators**
 - BI-4-2: Summary of objectives, plans and results regarding environmental initiatives**
- BI-5: Material balance of organizational activities (inputs, internal recycling, and outputs)**

**(2) Information and Indicators that Describe the Status of Environmental Management
(MPI = Management Performance Indicators)**

This section is concerned with the policies, targets, plans, and the results of an organization's environmental activities.

It describes the general status of the organizational environmental management and includes environmental management systems, compliance with environmental regulations, environmental accounting information, environmentally conscious investment or financing, supply chain management for environmental conservation, research and development of new environmental technologies, response to biodiversity, environmental communication, products and services that contribute to a reduction of negative environmental impacts (including intangible services and labor).

The following 12 points should be included as management performance indicators:

- MP-1: Status of environmental management**
 - MP-1-1: Environmental policy in organizational activities**
 - MP-1-2: Status of environmental management systems**
- MP-2: Status of compliance with environmental regulations**
- MP-3: Environmental accounting information**
- MP-4: Status of environmentally conscious investment or financing**
- MP-5: Status of supply chain management for environmental conservation**
- MP-6: Status of green purchasing or procurement**
- MP-7: Status of research and development of new environmental technologies and DfE**
- MP-8: Status of environmentally friendly transportation**
- MP-9: Status of biodiversity conservation and sustainable use of biological resources**
- MP-10: Status of environmental communication**
- MP-11: Status of social contribution related to the environment**
- MP-12: Status of products and services that contribute to the reduction of negative environmental impacts**

(3) Information and Indicators that Describe the Status of Activities for Environmental Impacts and Reduction Measures (OPI = Operational Performance Indicators)

Based on the concept of material balance and by understanding the input and output of materials and energy in the activities of the entire business, the environmental impacts caused by the organization's activities will become clear.

The current status of the organization's policies, targets, plans, environmental performance and achievements in reducing negative environmental impacts should mainly be stated. From the viewpoint of the reduction of negative environmental impacts, it is important to disclose in detail the status of environmental considerations. In addition, measures should be mentioned in this section which reduces the environmental impacts in the upstream and downstream of the business, such as the reduction of negative environmental impacts by producing or selling products that cause less environmental impacts throughout their lifecycle.

The following 10 items should be included as Operational Performance Indicators:

(Inputs)

OP-1: Total amount of energy input and reduction measures

OP-2: Total amount of material input and reduction measures

OP-3: Amount of water input and reduction measures

(Internal recycling)

OP-4: Amount of materials recycled within an organization's operational area

(Outputs)

(Products)

OP-5: Total amount of manufactured products or sales

(Discharge and emissions)

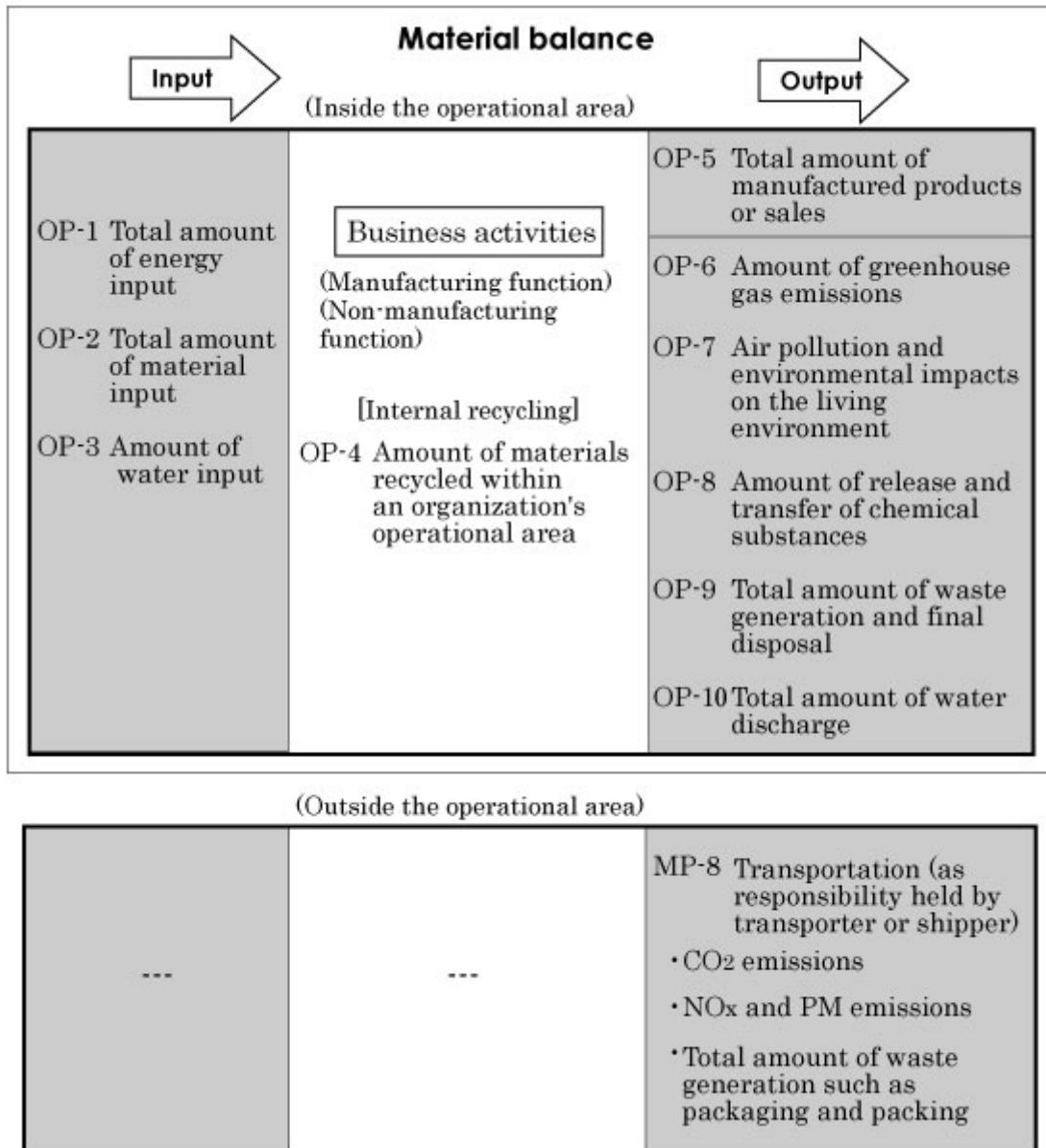
OP-6: Amount of greenhouse gas emissions and reduction measures

OP-7: Air pollution, its environmental impacts on the living environment, and reduction measures

OP-8: Amount of release and transfer of chemical substances, and reduction measures

OP-9: Total amount of waste generation and final disposal and reduction measures

OP-10: Total amount of water discharge and reduction measures



(4) Information and Indicators that Describe the Status of the Relationship between Environmental Considerations and Management
(EEI = Eco-Efficiency Indicators)

Organizations are required to reduce the total amount of their environmental impacts. From the viewpoint of business management, highly cost-effective environmental initiatives are required, accordingly, when an organization's environmental performance and initiatives are recognized and evaluated. It is essential to understand and manage not only indicators that give the total amount of environmental impacts, but also those indicators that show the efficiency of its environmental initiatives and the economic value produced by the organization (hereinafter referred to as "Eco-Efficiency Indicators").

The Guidelines introduce some representative examples with reference to the “comprehensive environmental indicators” mentioned in the *Third Basic Environment Plan*.

Note

From the above four categories, the information and indicators mentioned in (2), (3) and (4) – Management Performance Indicators (MPI) in (2), Operational Performance Indicators (OPI) in (3) and Eco-Efficiency Indicators in (4) – are to be called collectively Environmental Performance Indicators (EPI).

(5) Information and Indicators that Describe the Status of Social Initiatives (Chapter 4)
(SPI = Social Performance Indicators)

In recent years, the scope of environmental reporting has widened, and information on the social aspects of an organization’s activities has come to be included as a part of social and environmental (CSR) reporting. However, reporting in this social field is still at an early stage of development and a social consensus has not yet been reached. The Guidelines, therefore, describe representative information and indicators discussed in the social and environmental (CSR) reporting published in Japan, gives information that is required to be disclosed under current laws and regulations, and summarizes information that will be important in the future.

- 1) Information and indicators for occupational health and safety**
- 2) Information and indicators for employment**
- 3) Information and indicators for human rights**
- 4) Information and indicators for contributions to local communities and society**
- 5) Information and indicators for corporate governance, corporate ethics, compliance and fair trade**
- 6) Information and indicators for personal information protection**
- 7) Information and indicators for the broad range of consumer protection and product safety**
- 8) Economic information and indicators for an organization’s social aspects**
- 9) Information and indicators for other social matters**

Chapter 3

Information and Indicators for Each Component of Environmental Reporting

The previous chapter described the overall structure of environmental reporting (five categories) and gave a summary. This chapter describes each individual item and the essential information and indicators that should be included with regard to the areas related to Basic Information (BI) and the Environmental Performance Indicators (EPI) of environmental reporting. Social Performance Indicators (SPI) is described in Chapter 4.

[Classification of information and indicators in environmental reporting]

- (1) In this chapter, the information considered to be important for all organizations in environmental reporting is found under the heading, “**(1) Information and indicators to include**” and listed using a., b, c, etc. Based on the principle functions of environmental reporting and the construction of a sustainable society, the information that are to be included as appropriate to an organization’s situation is found under the heading, “**(2) Information and indications to include as appropriate,**” and indicated by the use of this symbol “> .”
- (2) Examples for “**(1) Information and indicators to include**” and “**(2) Information and indicators to include as appropriate**” are indicated by the use of this symbol: •.

Note

- 1) When describing information and indicators for Japan and overseas, it is good practice to describe them separately as the need arises.
- 2) General estimation formulas and units are used; however, estimation formulas and units commonly used in business practice may be included. It is necessary to describe the estimation formulas and coefficients used for creating an estimate.
- 3) The Guidelines do not prescribe the arrangement or number of items to be included in environmental reporting, or any particular order of information or indicators to be added for each item. When information and indicators are overlapping, there is no need to describe them for each item; they can be described collectively.
- 4) Information for all items mentioned in Chapter 3 should be included in environmental reporting. However, for any item judged as having none or a very small impact on the environment, reasons should be clearly stated for their omission.(refer to Reference Material 3 [Q&A].)
- 5) It is expected that all of the five categories and 29 items (Components of environmental reporting in Chapter 3 and status of social initiatives in Chapter 4 combined) are included in environmental reporting.

1. Basic Information (BI)

The following five items of Basic Information (BI) should be included in environmental reporting. This section explains the basic concepts for each item and specific information and indicators.

(BI = Basic Information)

BI-1: CEO's statement

BI-2: Fundamental requirements of reporting

BI-2-1: Organizations, periods and areas covered by the reporting

BI-2-2: Boundary of the reporting organization and coverage of environmental impacts

BI-3: Summary of the organization's business (including management indices)

BI-4: Outline of environmental reporting

BI-4-1: List of major indicators

BI-4-2: Summary of objectives, plans and results regarding environmental initiatives

BI-5: Material balance of organizational activities (inputs, internal recycling, and outputs)

BI-1: CEO's statement

The CEO's statement is presented at the front of the environmental reporting; it is extremely significant and should include the organization's own ideas, current status, as well as the CEO's commitment to the targets set for environmental conservation and management.

Furthermore, the contents of the statement need to be appropriate to the industry and the character and operational scale of the organization. General statements alone are not acceptable.

When the "status of social initiatives" is reported along with the above contents, it is necessary to include a commitment to fulfilling the social responsibilities of the organization.

(1) Information and indicators to include

- a. Environmental management policy
- b. The recognition of the status of the environment, the need for environmental initiatives within an organization, and the future prospect of the construction of a sustainable society.
- c. The environmental policy and strategies of an organization corresponding to the industry, operational scale, character and overseas development; status of environmental impacts (significant environmental aspects) and a summary of environmental initiatives which reduce the negative environmental impacts, including targets and results.
- d. A commitment to society concerning the implementation of such environmental activities, the achieving of targets by any promised time limit and the disclosure of results to the public.
- g. The signature of the CEO

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate.

- Management policies and targets to contribute to the realization of a sustainable society (including social initiatives)
- Accurate descriptions without any omissions of any significant environmental impacts caused by business activities and targets and initiatives for a reduction of the impacts.
- Impact on business caused by environmental changes
- CEO's philosophy and policy relating to the scope of the reporting
- CEO's philosophy and policy for initiatives relating to the guarantee of the reliability of the contents in the reporting
- A statement confirming an organization's reporting has been subject to external examination

(3) Commentary

The CEO's statement is an overview of the environmental reporting given by the CEO or an executive officer. Therefore, it should be brief rather than detailed, the CEO's philosophy to the environmental management should be frankly stated in his/her words, and the CEO should express his/her commitment to carry out the environmental management.

The CEO's statement should be:

- based on the nature of the industry, the operational scale, character and the organization's development overseas
- a clear and concise summary of the environmental impacts caused by the organization's activities, its environmental policy, environmental initiatives to reduce the impacts, targets and achievements; and
- a statement of the organization's commitment to its environmental activities and to achieve targets by the promised dates.

Additionally, the CEO's statement could include, if possible, statements that the environmental reporting accurately and without omission includes all aspects of the organization's environmental impacts and environmental initiatives, and that the organization will actively disclose environmental information and promote environmental communications with stakeholders. It is also good practice to give a summary of the scope of the reporting and a guarantee of the reliability of the contents.

The reason for this is that fulfilling the obligation to be accountable through the writing and publishing of adequate and accurate environmental reporting, and providing necessary information are an important part of senior management's duties, and senior managers themselves need to be responsible for the contents of environmental reporting.

BI-2: Fundamental requirements of reporting

BI-2-1: Organizations, periods and areas covered by the reporting

This section details the fundamental requirements of reporting, namely, the organizations, time periods and areas covered by the reporting, and the standards or guidelines referred to or conformed to when organizations publish environmental reporting.

In addition, it should be made clear which division is in charge of publication of the reporting and contacts. Furthermore, methods for receiving feedback and enquiries should also be established.

(1) Information and indicators to include

- a. Organizations covered by the reporting (Note: If environmental reporting has been published in the past, and changes were made in the organizations when compared to the latest reporting, such changes and their background need to be included.)
- b. Reporting time period, the date issued, and schedule for the next issue (Note: If environmental reporting has been published in the past, the issue date of the latest version needs to be included.)
- c. Reporting areas (environmental, social and economic fields)
- d. Standards or guidelines that are used in conformity to, or as a reference (including ones specific to the industry)
- e. The division in charge of the publication and means of contact
- f. URL of the organization's website

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate.

- Any feedback methods, such as the attachment of a questionnaire or postcard which states that the organization will reply to any correspondence from stakeholders (refer to MP-10.)
- Lists and outlines of major related materials which are also disclosed (e.g., company brochure, financial statement, environmental policies or communication materials concerning significant environmental aspects if ISO14001 or Eco-Action 21 certification is obtained, environmental brochures, or technical brochures and details of how these can be obtained)

(3) Commentary

Basic information, such as organizations, time periods and areas covered by the reporting, needs to be prominently displayed.

If the reporting organization includes units partially from the organizations that are the subject of consolidated accounting, the names of the units should be clearly shown to avoid

any confusion.

If the boundary of the organization differs depending on the reported items, the reported organization should be clearly mentioned (refer to Chapter 1, 4. Fundamental Requirements of Environmental Reporting). In particular, concerning the overseas businesses should be described and clearly separated from the domestic business in the reporting.

If environmental reporting is made public on the web-site, the URL should be provided.

If environmental reporting is made available in any other media, such as in book form or on CD-ROMs, a description of the contents and the means of obtain them should be included.

[Points to note for including information]

- (i) For the organizations covered by the reporting, the boundaries of the reporting, such as factories, operational sites, subsidiary companies, or the boundary of overseas offices and any differences with consolidated companies should be explained. If boundaries do not yet include the whole organization and the boundaries are due to be expanded, the schedule should be provided. If some sections of the environmental reporting have different boundaries, each section should mention the relevant boundaries of the reporting.
- (ii) For easier understanding it is useful to provide a table for comparison between standards or guidelines that were conformed to or referred to, and reported contents and items.
- (iii) Contact information should include telephone and facsimile numbers, as well as website address and e-mail address.

BI-2-2: Boundary of the reporting organization and coverage of environmental impacts

The boundary of the organizations covered by the environmental reporting, in principle, should be the entire group for consolidated accounts; however, if the boundary of the reporting organization is limited, it is necessary to describe the coverage. In other words, describe to what extent the environmental impacts caused by a particular organization account for the environmental impacts in the entire group for consolidated accounts.

In this case, an organization needs to establish an efficient means of describing the coverage, in order to inform audiences of what percentage of the environmental impacts caused by the reporting organization account for the total environmental impacts caused by the entire business. Moreover, the organization needs to clarify the reasons why the boundary of the reporting organization was limited and the basis of any calculations.

(1) Information and indicators to include

- a. Percentage of the impacts caused by the reporting organization compared to the total business environmental impacts (the entire group for consolidated accounts). (i.e., Status according to the coverage of the environmental impacts)

If the percentage breakdown of the environmental impacts cannot be accurately measured, however, it is a good practice to give approximate percentages of the environmental impacts of the entire group for consolidated accounts and gradually improve the accuracy.

The following information and indicators are examples of indicators that describe the coverage of the environmental impacts.

- Greenhouse gas emissions of the reporting organization as a percentage of the emissions of the entire group for consolidated accounts (Note: According to the amount of energy consumption and the nature of business, items that are easy to assess, such as electricity consumption can be substituted.)
- The resources input of the reporting organization as a percentage of the resources input of the entire group for consolidated accounts
- According to the nature of business, the percentage breakdowns of the representative environmental impact of the entire group for consolidated accounts
- In addition to the above, the organization can report the percentage breakdown of the environmental impacts of the entire business, in any appropriate way.

If sufficient information cannot be obtained for the above indicators and as the need arises, the following indicators should be combined as a supplement. In this case, the concepts for using such indicators should be described and it is necessary to explain the adopted indicators are used to clarify the approximate percentage breakdown of the environmental impacts.

- The sales of the reporting organization as a percentage of the sales of the entire group for consolidated accounts

- The number of employees in the reporting organization as a percentage of the entire group for consolidated accounts
- Other indicators that are given by the organization in their own way

(2) Commentary

The “coverage of the environmental impacts” of the reporting organization is an indicator that describes the environmental impacts caused by the reporting organization’s activities as a percentage of the environmental impacts of the entire business. The basic boundary of the financial report made by an organization is the entire group for consolidated accounts, and therefore in principle, the boundary of environmental reporting, which reports “environmental management,” should also be the boundary for the entire group for consolidated accounts, and the environmental impacts caused by the entire group should be reported. (refer to Chapter 1, 4 Fundamental Requirements of Environmental Reporting, (1) Clarification of the Organization Covered by the Reporting). However, when deciding the boundary of the reporting organization, if most of the environmental impacts can be recognized within a specific boundary of the entire group for consolidated accounts, reporting with such a boundary will not cause a serious problem. It is also possible to first start reporting for a limited organization and then gradually over time to expand the boundary of the reporting organization. Accordingly, there is a need to indicate the percentage breakdown of the environmental impacts of the organization covered by the reporting.

Under the existing circumstances, however, in most of environmental reporting, it is difficult to recognize the coverage; to what extent the environmental impacts within the reported boundary is covered in the entire group for consolidated accounts. This may cause the organization and stakeholders to make mistakes in their assessment and decision making; the percentage breakdown of the environmental impacts may be considered to be the most fundamental and important matter in environmental management.

Particularly, in view of the present circumstances where an increasing number of Japanese companies are promoting their business overseas, it is strongly expected that organizations will establish an efficient and effective system to measure and collect environmental impact data, so that they can accurately understand and manage the whole picture of the environmental impacts, not only in Japan but also in other countries.

To recognize the environmental impacts of the entire group for consolidated accounts, there is a method to calculate using the investment ratio; however, regardless of the investment ratio, the fundamental method is to assume 100% investment. If the calculation method using the investment ratio is adopted, this needs to be clearly stated.

BI-3: Summary of the organization's business (including management indices)

It is necessary to provide a summary of the organization conducting the environmental reporting, for example, the nature and size of the organization's business. If a summary of the organization is not provided, it is difficult to understand the likely environmental impacts and which environmental conservation activities are likely to be significant.

It is therefore necessary to include specific details of the organization's business, the products or services involved and management indices including financial data; it is especially important to record baseline data and any changes that have occurred in the reporting organization since the last reporting.

(1) Information and indicators to include

- a. Nature of the organization's business (kind of industry and type of operation)
- b. Major products and services (field of business)
- c. Amount of sales or production (consolidated or unconsolidated in the case of an entire group, or just the reporting organization).
Note: When a reporting organization's figures are used, if possible, remove any internal transactions.
- d. Number of employees (consolidated or unconsolidated in the case of an entire group, or just the reporting organization)
- e. Other information relating to management (e.g., total assets, total sales profits, operating profits, ordinary profits, net income and loss, and total value added)
- f. Details of significant changes in organizational structure, composition of shareholders, or products/services that have occurred in the reporting period (if significant changes to the environmental impacts have occurred due to events such as, mergers, company break-up, sale of a subsidiary or operating division, new business opportunities, or construction of new plants)

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate.

- Main fields in which the organization operates; number of factories and operating sites; locations of the headquarter and major factories; and major products of each facility
- Management policy of the organization (including future overseas development, where possible)
- Outline of the history of the organization and its environmental conservation activities
- Nature of markets or customers served (such as retailers, wholesalers, or governments)

(3) Commentary

A summary of the organization's business including management indices is given in this section. Management information and indicators, such as sales, output of products or services, and the number of employees, are essential for the estimation of environmental impacts per unit of product or service output (intensity of environmental impacts) or value of products or services per unit of environmental impacts (eco-efficiency). These pieces of information are called eco-efficiency indicators (EEI) – one of the environmental performance indicators (EPI) – and are described in detail later in the section of EEI. If there are indices that are commonly used in specific industries, those indices should also be reported.

In the description, the type of business (kind of industry), the principal areas of operations (locations of major offices and factories), their environmental impacts and those environmental activities that reduce the impacts, need to be discussed in a detailed and easy-to-understood manner.

[Points to note for including information]

- (i) With regard to the amount of sales or production, as well as the number of employees, historical trends for at least the previous five years should be included.
- (ii) When major products of the organization are reported, with regard to mining and the purchase of principal raw materials, or the selling of products and services, it should be mentioned whether those operations are carried out in Japan, specific regions, or also include overseas.

BI-4: Outline of environmental reporting

BI-4-1: List of major indicators

The following items need to be summarized and described in a concise and easy-to-understand way by making use of charts and diagrams covering about a two-page spread: summary of the organization's business (refer to BI-3), status of compliance with environmental regulations (refer to MP-2), amount of greenhouse gas emissions (refer to OP-6), total amount of waste generation and final disposal (refer to OP-9) and any other factors that are important for organizational activities.

(1) Information and indicators to include

- a. Summary of the organization's business, such as corporate name, sales figures, and total assets over the past five years or so (refer to BI-3)
- b. Status of compliance with environmental regulations (refer to MP-2)
- c. Changes in major environmental performance over the past five years or so
 - Total amount of energy input (refer to OP-1)
 - Total amount of material input (refer to OP-2)
 - Amount of water impute (refer to OP-3)
 - Total amount of products or sales (refer to OP-5)
 - Amount of greenhouse gas emissions (refer to OP-6)
 - Amount of release and transfer of chemical substances (refer to OP-8)
 - Total amount of waste generation and final disposal (refer to OP-9)
 - Total amount of water discharge (refer to OP-10)
 - Eco-efficiency indicators (refer to EEI)

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate.

- Issues relating to the environment that merit special mention (initiatives and achievements during the current period, for which special mention should be made, e.g., measures to reduce the environmental impacts such as the adoption of environmental equipment, or the detection of soil contamination)
- Organizations covered by the reporting

(3) Commentary

It is important to give a summary, allowing audiences to understand at a glance the status of the occurrence or control and reduction of the environmental impact according to the character of the organization. In addition, a short summary should be given of the status of compliance with environmental regulations, the amount of greenhouse gas emissions and waste generation, and items that are considered to be important from the viewpoint of an organization's character.

The "list of major indicators" is effective to make a time-series comparison of changes to the significant environmental impacts caused by the organization. Note, however, for

evaluation of significant environmental impacts, there are differences according to the characteristic of the industry and organizational scale. It can be assumed that the direct comparison of organizations is not easy and stakeholders will have different judgment criteria. In a case where audiences of environmental reporting compare organizations, it is necessary to pay careful attention to the specific character and limits of each indicator.

[Points to note for including information]

- (i) The description should be given in an easy-to-understand format by using tables, lists and graphs. “Reference Material” (omitted in the English version) gives examples of the descriptive methods.

BI-4-2: Summary of objectives, plans and results regarding environmental initiatives

The following items regarding an organization's environmental conservation policy need to be reported in a table format: long-term objectives and their progress, the current and following term's objectives, the plans of environmental initiatives for each term, the environmental impact for each term, the status of environmental activities, analysis and evaluation, and improvement measures. They need to be presented along with the base period data that enables the comparison of different terms.

A summary of all the environmental reporting will contribute to making it easier to understand.

(1) Information and indicators to include

- a. Summary of targets, plans, results, and improvement measures regarding initiatives for environmental conservation

For example, the following information and indicators can be used in a "summary."

- Results and trends of the environmental impacts over the past five years or so
(Note: The data can be described by combining with the data of BI-4-1)
- Analysis and evaluation of environmental impacts
- Medium/long-term objectives and current/next term targets for environmental conservation and changes (which should be appropriate to the scale and characteristics of the organization)
- Established time (date), base period, and intended duration of medium/long-term objectives
- Achievements by the end of the term
- Medium and long term plans for environmental conservation activities and their objectives, plans corresponding to the targets during the reporting term and following term, and the results of environmental impacts during the reporting period, and evaluation and improvement measures for the results of the initiatives for environmental conservation
- Data collected within the base period
- Summary of all the environmental reporting and the page number that correspond to each item of contents
- Challenging issues for environmental initiatives of the organization corresponding to the characteristics of the operation and particular products/services
- Characteristic initiatives made during the reporting period
- Additional or improved initiatives since previous reporting

(2) Commentary

In order to facilitate the audiences' understanding, it is good practices to use tables and charts to summarize all the environmental reporting, and explain the status of the relationship

between an operation and the environment, and future challenges and improvement measures.

[Points to note for including information]

- (i) The actual results of environmental impacts mean the aggregates of major environmental performance indicators in the reporting period, such as the amount of total energy input, the amount of total material input, the amount of water input, the amount of materials recycled within an operational area, the amount of greenhouse gas emissions, the air pollution and its environmental impacts on the living environment, the amount of release and transfer of chemical substances, the total amount of products or sales, the total amount of waste generation and final disposal, and the total amount of water discharge (refer to OPI, mentioned later). These indicators need to be accompanied by performance analysis and evaluations so that stakeholders can make informed decisions. For example, information, such as the analysis of significant changes, drops or spikes in an indicator, and information on new technologies and new equipment that could have a significant impact on performance indicators needs to be stated in environmental reporting. In addition, if environmental reporting mentions issues concerning the future, it should be stated that the issue is based on a decision made at the time of the environmental reporting publication.
- (ii) Environmental reporting should describe medium/long-term objectives (goals of environmental activities), the targets in the present term (reporting period) and in the following reporting term, their attainment, and issues that should be improved. These are binding targets that should be actually achieved. They should be as concrete and measurable as possible, so they should be stated concretely and quantitatively, and if numerically measurable, done so as much as possible. Analysis and evaluation of the extent that objectives and targets have been achieved should be provided, including, for example, analysis of the cause of a failure to achieve an objective or a target, the chronological background, and information on the next policy as well as new objectives and targets. These should be stated in a concrete and easy-to-understood manner.
- (iii) These objectives and targets need to be established with consideration to the concept of lifecycle analysis. It is necessary to include not only operational areas within the organization, but also operations in the upstream and downstream (e.g., purchase of (raw) materials, transportation, use and disposal of products/services), when setting objectives and targets, thereby taking the whole business lifecycle into account. Each organization should set its own objectives, based on the goals mentioned in the Fundamental Plan for Establishing a Sound Material-Cycle Society (e.g. resource productivity or rate of recycling).
- (iv) Furthermore, summarized data should also be mentioned, such as an outline of plans corresponding to targets; records, evaluation and improvement measures for environmental impacts taken during the reporting period; status of initiatives to reduce the impacts; and environmental accounting information (costs of environmental conservation, namely, “environmental costs” and economic effects). This could best be presented through the use of a table format.

- (v) In order to clarify the progress of environmental initiatives, it is necessary to include records of the environmental impacts during the set time period (e.g., a calendar or financial year used to measure their progress).
- (vi) Because the components of environmental reporting are so varied, potential audiences may find it difficult to assess the extent to which business operations are related to environmental issues and the initiatives taken to mitigate the environmental impacts. It is also anticipated that report authors will briefly mention the characteristic initiatives and results compared to the previous environmental reporting.

BI-5: Material balance of organizational activities (inputs, internal recycling, and outputs)

In order to ensure external stakeholders understand an organization, the organization itself needs to know how much energy and materials it uses (the input to organizational activities) and how much environmental impacts (including waste) it produces. The organization needs to summarize these and also to disclose its productions and sales figures (the output of organizational activities) from the viewpoint of material balance. Additionally, information needs to be included, regarding the amount of materials and resources that are subject to the cyclical use within the operational area (e.g., energy, wastes, and water resources).

This material balance needs to be reported for both manufacturing activities and non-manufacturing activities, but, for output, only tangible products, discharges, and emissions should be included. Intangible output – services and labor – needs to be reported separately in the section for status of products and services that contribute to the reduction of negative environmental impacts (MP-12).

(1) Information and indicators to include

- a. An overall picture of the environmental impacts caused by the organization's activities

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- In addition to the overall picture of the environmental impacts the environmental impacts measured from the viewpoints of environmental supply chain management and the lifecycle of products should also be included, if possible.

(3) Commentary

When summarizing the material balance, it is expected for the material balance associated to the organizational activities to be shown in charts with figures and actual measurements for easy understanding, by using the ten operational performance indicators (OPI) described in the Guidelines.

Additionally, it is important to take into consideration not only direct inputs and outputs of organizational activities, but also the amount of materials and resources subject to the cyclical use within the operational area (e.g. energy, wastes and water resources). It is also important to understand and evaluate the environmental impacts generated by the extraction of raw materials, the production of supplied goods, such as raw materials and parts purchased from other organizations and the environmental impacts generated in the use, consumption and disposal of products, thereby taking the whole lifecycle of the products into account.

To efficiently and effectively improve the environmental activities of the organization, it is

necessary to take the environmental impacts into account from the viewpoint of the material balance and lifecycle of products, etc.; this contributes to the prevention of global warming and ensures the circulation of materials and the construction of a sustainable society.

[Points to note for including information]

- (i) Information needs to be provided in a concise and easily understood manner, if possible using figures and charts, in regards to the status of material input into business activities, the status of output such as the shipment of products and goods from the business, and the cyclical use of energy, wastes and water resources within the operational area (material balance of business activities).
- (ii) For the concept of material balance, refer to the “Material Balance” table in Chapter 2, (3) “Information and Indicators that Describe the Status of Activities for Environmental Impacts and Reduction Measures.”

[Points to note for calculating indicators <How to consider input>]

The total of purchases can be taken to be the amount of input into the operational area. When no stock is held, e.g. electricity and gas, input is equal to the amount purchased or used; however, when there is stock, such as fuel oil, total material or water resources, the amount purchased and the amount used are different. When there is stock, in order to calculate the input amount that corresponds to the output of materials and emissions that contribute to the environmental impacts, the following formula should be used: input amount = stock amount at the beginning of a term + purchased amount - stock amount at the end of the term. Therefore, in a case where there is stock, the amount of use (or issuance) should be mentioned in the amount of input. If there is little difference between the stock amount at the beginning and end of the term, however, the amount of input and amount of purchase can be regarded as equal.

2. Information and Indicators that Describe the Status of Environmental Management (MPI)

The following 12 items should be included in environmental reporting, as the information and indicators that describe the status of environmental management (MPI = Management Performance Indicators). This section explains the basic concepts of each item and gives an explanation of the information and indicators.

(MPI = Environmental Performance Indicators)

MP-1: Status of environmental management

MP-1-1: Environmental policy in organizational activities

MP-1-2: Status of environmental management systems

MP-2: Status of compliance with environmental regulations

MP-3: Environmental accounting information

MP-4: Status of environmentally conscious investment or financing

MP-5: Status of supply chain management for environmental conservation

MP-6: Status of green purchasing or procurement

MP-7: Status of research and development of new environmental technologies and DfE

MP-8: Status of environmentally friendly transportation

MP-9: Status of biodiversity conservation and sustainable use of biological resources

MP-10: Status of environmental communication

MP-11: Status of social contribution related to environment

MP-12: Status of products and services that contribute to the reduction of negative environmental impacts

MP-1: Status of environmental management

MP-1-1: Environmental policy in organizational activities

When implementing environmental initiatives in organizational activities, it is important to properly establish environmental conservation policies (fundamental policy and concepts for environmental initiatives) and they need to be included in environmental reporting.

Environmental policy in organizational activities should be described with specific contents that correspond to an organization's business activities and should be compatible with the CEO's statement.

(1) Information and indicators to include

- a. Environmental policy in organizational activities

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Environmental policy; date established, establishing methods, consistency and positioning of the environmental policy within the total management policy, and relation to corporate governance
- Easy-to-understand and detailed explanations, concerning the contents of which the environmental policy has intended, future vision, and the background of the establishment of the environmental policy
- Names and contents of environmental charters or agreements which the organization has agreed to comply with

(3) Commentary

It is important to not only describe the environmental policy in organizational activities, but also explain the background and reasons for the establishment of the policy, for example, what kinds of environmental impacts exist, in the characteristics of the organization and what kinds of environmental initiatives are required.

In addition, the environmental policy in organizational activities needs to be established with consideration to the concept of the whole lifecycle analysis. It is necessary to include not only activities in the operational areas of the organization, but also operations in the upstream and downstream (e.g., purchase of [raw] materials, transportation, use and disposal of products/services).

Furthermore, environmental policy in organizational activities should be established based on the Basic Environment Plan and the Fundamental Plan for Establishing a Sound Material-Cycle Society in Japan.

ISO 14001, an international standard for environmental management systems, and

Eco-Action 21 also require the establishment of an environmental policy when an environmental management system is established. Therefore, the same environmental policy must be used if the organization covered by the environmental reporting and the organization that acquired the certification are the same.

[Points to note for including information]

The environmental policy needs to correspond to the nature of the business, characteristics and scale of products and services, and significant environmental impacts caused by business activities.

MP-1-2: Status of environmental management systems

Environmental reporting needs to provide information on issues, including the structure of an organization's environmental management systems (EMS), the method of implementing the environmental management system, the status of ISO 14001 and Eco-Action 21 certification, education provided for employees, and environmental auditing.

It should also provide plans for the introduction or expansion of an EMS.

(1) Information and indicators to include

a. Status of environmental management systems

For example, the following information and indicators may be used to report the status;

- Status of establishment and operation of an organization-wide environmental management system, evaluation of the system, and future direction based on the evaluation results (including explanations about the system and PDCA cycle)
- Organizational structure of the EMS (including internal control systems such as details of responsibility, authority, and explanation of the organization) and a chart showing the organization's governance structure
- Status of environmental risk management
- Number and proportion of sites included within the EMS, and plans for the introduction or expansion of an EMS, and the status of preparation for such plans
- The number and percentage of employees working at the certified sites against the total number of employees, and the period of the certification(s) Note: If the EMS has been awarded ISO 14001 or Eco-Action 21 certification (or if the organization has made a declaration of conformity), this should be mentioned.
- Status of education and training program(s) for employees in regards to environmental conservation, e.g., the number of implemented programs, number or percentage of employees who have received environmental education and training, and average hours per employee over the year
- Details of environmental emergency plans and the status of emergency preparedness
- Status of the implementation of monitoring and measurement of environmental impacts
- Standards for EMS audit, the status of implementation (number of internal and external audits), results of the audits and responses to the audits
- A flow chart which gives an overall view of the EMS
- Use of the results of environmental conservation in personal achievement evaluation
- In-house commendation/award programs

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of the incorporation in the SRI index and status of commendations and evaluations such as the ranking of environmental management levels.

(3) Commentary

In order for an organization to continually improve its environmental performance, it needs to establish and implement a recognized environmental management system (EMS) that will be the basis for all of activities. Details of the establishment and implementation of the EMS are significant information that should be mentioned in environmental reporting. Plans for the introduction or expansion of the EMS and the status of preparation of such plans should be included, because they are related to the reporting boundaries and the range of data collection of the environmental impacts.

The way in which the EMS is established and implemented is likely to differ among organizations, largely depending on the type and the size of an organization. It is necessary, however, to concretely describe the current status of the EMS which, again, depends on the characteristics of the organization.

MP-2: Status of compliance with environmental regulations

The status of compliance with environmental regulations and of any violations, fines, accidents, or complaints, and the status of response and improvements related to such events need to be included in environmental reporting.

(1) Information and indicators to include

a. Status of compliance with environmental regulations

For example, the following information and indicators may be used in reporting;

- Methods to verify whether activities are conducted in accordance with laws and regulations relating to organizational activities, and the results of the verification (description of periodic or non-periodic internal checking system)
- Any violations of major laws and regulations over the last three years or so. (If the organization has been subject to directions, recommendations, orders, or penalties from any authority for a major violation of such laws or regulations, a description of the violation, the response to the incident and any measures to prevent any recurrence should be stated. If no violation has occurred, this should be stated along with any measures and systems used to confirm such facts.)
- Number of fines or penalties and the amounts paid for environmental violations
- If the organization is a party of a lawsuit concerning environmental issues, describe the contents and response to the lawsuit
- Contents and frequency of complaints and demands received from stakeholders relating to environmental issues (including noise, vibration, and odor complaints)
- If there are any violations of laws, regulations, or agreements, or there are accidents, incidents or complaints as mentioned above, describe the status of any specific responses and improvement measures (including the management level)
- If the organization has higher standards than those stipulated in environmental regulations, include a statement of its policy
- Violations or untruthful statements in eco-labeling, environmental advertisements and environmental information on products

(2) Commentary

In order for organizations to implement initiatives to conserve the environment and to win the confidence of society, they need to be active in promoting environmental communications. At the same time, they also need to comply with laws, ordinances, agreements and promises, and to disclose information on their adherence to such laws (as well as violations of such laws). In particular, the status of compliance with laws and regulations, violations, accidents and complaints is important information that needs to be included in environmental reporting and the availability of such information is necessary to increase the confidence of the public.

Moreover, if there are violations of laws, regulations or agreements, or there are accidents,

incidents or complaints as mentioned above, the status of any specific responses to them and improvement measures (including at the management level) should be described.

[Points to note for including information]

- (i) If there is any significant information that would influence the decisions and opinions of stakeholders, such as any events or changes to laws and regulations, customary recognized trading rules, management policies and litigation- they need to be described in a factual, easy-to-understand and unbiased way. If there are no such issues, this should be stated; however, as well as a simple statement, any organizational measures and systems used to confirm such issues should be included.
- (ii) As a practical point to note, when an organization requests an environmental measurement certification body to take measurements and the results exceed any regulatory limit, it is common practice to order a second test. If the results of the re-measurement are found to be within the regulatory limits, some organizations have requested the body not to issue certification for the first measurements. Unless the environmental measurement certification body approves such a request as reasonable, the organization needs to accept the issue of the measurement certification and treat the case as a violation of regulatory limits, and notify the relevant authorities. In order to comply with environmental regulations, it is expected that from now on, internal control and audit systems will be developed and operated to ensure the implementation of measurements to prevent environmental pollution, and the correct management of measurement results and measurement certification.

MP-3: Environmental accounting information

Referring to the *Environmental Accounting Guidelines 2005* published by the Ministry of the Environment, an organization needs to assess (measure) and analyze the costs incurred and the environmental and economical effects achieved through the environmental conservation initiatives, and then provide the information as a whole.

(1) Information and indicators to included

- a. Costs of environmental conservation initiatives
- b. Environmental effects relating to environmental conservation initiatives
- c. Economical effects associated with environmental conservation initiatives

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- The environmental management accounting information that was used for an organization's internal control

(3) Commentary

It is important to promote efficient and effective environmental initiatives through appropriate management decisions, supported by the management and analysis of environmental costs and benefits. Further, the disclosure of environmental accounting information provides stakeholders with an effective means of gaining an impartial understanding and evaluation of the state of environmental conservation initiatives.

In this context, it is expected that many organizations will implement environmental accounting systems, and disclose the quantitative information estimated as a whole and in an easy-to-understand way in their environmental reporting.

An organization can disclose environmental accounting information as a whole by using the announcement formats shown in the *Environmental Accounting Guidelines 2005*.

It is also effective to explain material flow cost accounting and environmental management accounting for internal control, such as investment in environmentally friendly plants and equipment, and to disclose environmental accounting information by combining it with the Eco-Efficiency Indicators that will be mentioned later.

(Reference) Environmental Accounting Guidelines 2005

<http://www.env.go.jp/policy/kaikei/guide2005.html>

<http://www.env.go.jp/en/press/2005/0215a.html>

“Workbook on Environmental Management Accounting Methods” published by the Ministry of Economy, Trade and Industry

http://www.meti.go.jp/policy/eco_business/sonota/policy1-01.html

[Points to note for including information]

The costs of environmental conservation are the amount of investment and money spent by the organization for the purpose of prevention, control and/or avoidance and elimination of the environmental impacts within the organization, and damage restoration or initiatives to support these matters. (Note that the amount of investment mentioned in this section refers to investment made within the organization. Investment and financing in “MP-4 Status of environmentally conscious investment or financing” refers to the investment in and financing other organizations and/or projects or the purchase of shares.)

MP-4: Status of environmentally conscious investment or financing

The Environmental Consideration Law (Article 4) requires not only financial institutions but also all organizations to take account of environmental information when carrying out investments and other actions.

It is expected that not only the product and service markets, but also the financial markets will evaluate environmental considerations when making decisions.

Financial institutions are required to take environmental considerations into account when conducting their main business. On the other hand, when organizations other than financial institutions effectively manage a pension fund or other funds, they should as general investors; conduct environmentally conscious investment in securities and any other investments and financing. This is different from the investment and financing of regular organizational activities.

In environmental reporting, the status of environmentally conscious fund flow needs to be included. In addition, with regard to new investment and financing activities such as emission trading, the status of such activities should be included.

(1) Information and indicators to include

- a. Environmentally conscious policy, targets, plans, status of initiatives, and results related to investment and financing

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

When conducting investment or financing

- Status of investment and financing for projects that contribute to environmental conservation or companies that carry out such projects
- Status of investment and financing for projects or companies that conduct their business while considering environmental conservation
- Status of investment in carbon funds and similar funds
- Status of investment where external environment indices are used

When receiving investment or financing

- Status of environmental investment or financing of funds the organization received from financial institutions

Other

- Amount of SRI in fund management and corporate pensions

Note: Environmentally conscious financing made by financial institutions or financial products such as investment funds also fall under the “MP-12 (Status of products and services that contribute to the reduction of negative environmental impacts) mentioned later.

(3) Commentary

From the perspective of an integrated improvement of the environment and economy, the financial market should positively evaluate the value of the environment. As a first step, it is preferable that financial institutions conduct investment and financing based on the evaluation of the environmental activities and projects that contribute to environmental conservation.

Organizations other than financial institutions are expected to manage their funds by taking account of the environment. Particularly, when an organization invests or loans funds to a business partner or in other situations, such as when a company is acquired, the Environmental Consideration Law requires such organizations to take into consideration the other party's environmental information.

It is strongly expected that funds not directly associated with the organization's business, such as pension funds, implement environmentally conscious investment or financing, because as institutional investors, pension funds or similar funds carry out medium/long-term investment and financing, which account for the major percentage of funds in the capital market at home and abroad.

Examples of direct finance for environmental conservation include SRI where a direct investment is made to environmentally aware companies, and green funds where investment is made to environmentally friendly projects. In the future, investment for business activities that contribute to environmental conservation is anticipated. On the other hand, examples of indirect financing are as follows: (1) financing that gives preference to those projects that attempt to recover contaminated soils by incorporating the status of soil contamination and the prospects for its recovery into the appraisal of security value; (2) financial products that have incentives such as interest rates for environmental initiatives; (3) financing to projects for which standardized environmental considerations are required for development; and (4) financing to projects that promote environmental business leading to the reduction of negative environmental impacts.

Among some financial institutions there is a trend where finance is made available to projects that contribute to the reduction of negative environmental impacts and reduce greenhouse gas emissions over the life of the project, and such improvements are then announced to the public. Financial institutions should positively disclose information with regard to the status of investment in and financing of environmentally conscious projects and companies. (refer to MP-12.)

[Points to note for including information]

The amount of environmentally conscious investment in plants and equipment within an organization corresponds to "investment" in the costs of environmental conservation, which is a component of "MP-3: Environmental accounting information." (refer to MP-3.)

MP-5: Status of supply chain management for environmental conservation

The status of supply chain management for environmental conservation concerns the demands or requests made by an organization to their business partners regarding their environmental activities, and how the organization manages them. It is important information to be included in environmental reporting.

Including a summary of supply chain management is needed.

(1) Information and indicators to include

- a. Environmentally conscious policy, targets, plans, status of initiatives, and results related to the supply chain management

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Environmentally conscious procurement as a percentage of all procurement
- Notification policy and the status of environmental initiatives from upstream to downstream regarding information on harmful chemical substances and environmental information such as site locations for mining or extracting natural resources, and environmental considerations at those sites, .

(3) Commentary

When environmentally conscious organizations think about their activities, they should pay attention not only to their own business activities but also to their business partners, in terms of issues ranging from which raw materials and parts are purchased, to which products are sold, and the provision of transportation and waste disposal. It is strongly encouraged to promote the greening of supply chains by talking with a wide variety of business partners.

It is an effective strategy to utilize certificate programs such as ISO14001 and Eco-Action 21 for supply chain management.

Recently, against the background of procurement of materials and parts from overseas, or operations overseas, the viewpoint of including such social aspects as fair trade and CSR procurement as well as environmental considerations is broadening; supply chain management should be considered from a social viewpoint too.

[Points to note for including information]

As the most efficient system of supply chain management will differ according to the kind or size of business activities, each organization should develop its own unique version of supply chain management.

MP-6: Status of green purchasing or procurement

In addition to promoting environmental activities within an organization, organizations should work with upstream business partners, such as suppliers of products and raw materials/parts and services (hereinafter, products and services), in order to reduce the negative environmental impacts and promote cyclical use of resources and energy. This will actively promote environmental activities in the upstream of the business, and an important method is the priority purchase of products and services that contribute to the reduction of the negative environmental impacts (green purchase or procurement).

How an organization is implementing green purchasing or procurement, progress to date, future targets, and development plans needs to be included in environmental reporting.

(1) Information and indicators to include

- a. Fundamental policy, targets, plans, status of initiatives and results of green purchasing or procurement

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Expenditure and quantity, the number of categories for purchasing or procurement of products and services that contribute to reducing negative environmental impacts (Note: refer to MP-12: Status of products and services that contribute to the reduction of negative environmental impacts)
- Purchasing or procurement of products and services that contribute to reducing negative environmental impacts as a percentage of the total purchasing or procurement
- Status of environmental conservation requests and requirements made to suppliers

(3) Commentary

Depending on the type and the size of an organization, the purchasing or procurement of products and services differs greatly, so it is necessary to clearly mention the state of green purchasing or procurement according to the characteristics of each product and service (including green purchasing as a percentage of all purchasing). The following information may be included:

- Paper containing wastepaper or legally confirmed wood pulp (e.g. wood pulp with forest certification)
- Office supplies: recycled materials and/or refillable types of product used
- Office equipment with high energy efficiency
- Low-emission vehicles
- Raw materials in which recycled materials are used, etc.

Reference: Green Purchasing Network <http://www.gpn.jp/English/index.html>

MP-7: Status of research and development of new environmental technologies and DfE

This section includes details of the status of research and development of technologies for environmental conservation and environmentally conscious products/services (DfE = Design for Environment).

(1) Information and indicators to include

- a. Policy, targets, plans, status of initiatives and results of research and development related to environmental technologies, engineering methods, and DfE

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of research and development by using the life cycle assessment (LCA) method
- Ideas for environmentally sound operations and sales and business models that contribute to the conservation of the environment
- Funding used for research and development such as design for the environment, DfE)

(3) Commentary

In order to encourage environmental initiatives in organizational activities, it is good practice for organizations to promote environmentally sound research and development, to employ ideas for environmental operations and sales, and to develop business models that contribute to the conservation of the environment, such as environmentally conscious methods of production, research and development of DfE technologies for environmental products and services. These research and development activities will lead to the development of an organization's eco-business, as well as future improvements in environmental performance.

The methods employed in promoting research and development of technologies for environmental conservation, environmentally friendly products/services, etc., and the resulting outcome is significant information, and it should be mentioned in environmental reporting.

MP-8: Status of environmentally friendly transportation

Emissions of energy-induced CO₂, nitrogen oxides (NO_x), and particulate matter (PM) produced by transportation, and the environmental impacts caused by transporting raw materials to manufacturing sites, shipping products, services and waste to external sites, and transporting passengers, and reduction measures need to be included in environmental reporting.

(1) Information and indicators to include

- a. Policy, targets and plans for environmentally friendly transportation
- b. Total volume of transportation and reduction measures: current status and results
- c. Energy-induced CO₂ emissions attributable to transportation, and reduction measures, the current status and results

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of initiatives in metropolitan areas to conform to the Law Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides and Particulate Matter
- Percentage of recycling of packaging materials attributable to transportation and the amount of waste

(3) Commentary

In Japan, the real-time data revealed that CO₂ emissions in fiscal year 2005 totaled 1,297 million tons of CO₂ (13.3% up compared to 1990). Emissions produced by the transportation sector were 257 million ton tCO₂ (18.1% higher compared to 1990), which accounts for 19.8% of Japan's total of emissions. In addition, as automobile transportation increases and concentrates in particular areas, air pollution caused by NO_x and PM in city areas needs to be improved. In order to reduce CO₂ emissions and air pollutants caused by transportation, it is necessary to reduce the volume of transportation itself as much as possible,, in conjunction with the promotion of a modal shift to railroad and ship transportation, the selection of efficient routes by taking into account traffic congestion, reorganization of collection and distribution centers, and the improvement of transportation efficiency through joint delivery and return cargo arrangements.

When organizations deliver their parts and products, they use their own or a carrier's vehicles; in either case, it is their responsibility to control or reduce greenhouse gas emissions, NO_x and PM, and waste generation from things such as packaging materials used in transportation.

The revised Law Concerning the Rational Use of Energy, which was enforced in April 2006, requires cargo distributors, passenger transport companies and freight companies above a certain

size, to establish plans for the more rational use of energy and report the amount of energy they consume.. Organizations engaged in transportation activities are now required to promote the effective use of energy resources and to further control the generation of energy-induced CO₂ caused by transportation.

[Points to note for calculating indicators]

- (i) Major indicators for environmentally friendly transportation are the total volume of transportation and the emissions of energy-induced CO₂ caused by transportation. When calculating the total volume of transportation, assess both the volume of in-house transportation and the transportation of products and services by external operators (consignment etc.) for each means of transportation (automobile, ship, railroad, aircraft, etc.), and then calculate the sum total. The unit should be in ton-kilometer (t x km) or person-kilometer (persons x km).
- (ii) When energy-induced CO₂ emissions are estimated, the amounts of fuels used should be assessed; emissions should be expressed in tCO₂ and estimated by using the emissions coefficients, as stipulated in “the Enforcement Order of the Law Concerning the Promotion of the Measures to Cope with Global Warming.”
- (iii) Although it is difficult to accurately monitor and estimate the transportation of products and services by external operators (consignment), it is best to assess it as accurately as possible. If accurate assessment is difficult, it is acceptable to make estimations for the major products only, or use simulation models for estimations; however, the basis of the estimation needs to be stated.
- (iv) For the transportation of raw materials, fuels etc., it is good practice to separately disclose this information if they are separate to other general cargoes and are delivered by exclusive, chartered or other transportation means. It is good practice to separately disclose the proportion of transportation provided in-house and the proportion provided by external operators, and also give a breakdown of transportation means.
- (v) Improvement of transportation efficiency (unit: % {[transportation t×km] / [capacity t×km] or [transportation person× km] / [capacity person× km]}) through joint delivery and return cargo arrangements also contributes to reducing CO₂ emissions and air pollutants; this should also be disclosed.
- (vi) Refer to Material Reference 5. [Common Estimation Examples of Indicators] (available in Japanese only.).

MP-9: Status of biodiversity conservation and sustainable use of biological resources

In the light of the Convention on Biological Diversity (Japan signed in 1993) and the New National Strategy on Biological Diversity (agreed in 2002), policies, targets and results for conservation of ecosystems, prevention of extinction of species and their restoration, and sustainable use of biological resources need to be included in environmental reporting.

(1) Information and indicators to include

- a. Policies, targets, plans, status of initiatives, and results related to conservation of biodiversity

For example, the following information and indicators may be used in reporting.

- Major impacts on ecosystems and wildlife caused by business activities and their assessment (including overseas development conducted in regions with rich biodiversity)
- Major impacts on ecosystems and wildlife caused by procurement of raw materials and their assessment (Note if the industry sector has a great impact, include present and future impact of activities)
- Initiatives to avoid or mitigate any impact that may occur on biodiversity caused by organizational activities
- Information concerning biodiversity conservation on land owned, leased or managed, and in adjacent areas
- If an organization owns, leases back, or manages land in a region or area⁴ with abundant biodiversity or land with high protective value, the area of the land and status of conservation
- Programs that are carried out to conserve and restore ecosystems and their goals (including conservation activities such as purchase or donation of land with abundant biodiversity or with a high protective value)

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Products and services which take into account the mitigation of impacts on biodiversity in the process of production or procurement of raw materials, or the sustainable use of biological resources, and such products and services as a percentage of all products and services
- Policies for using organic products certified by the Japanese Agricultural Standards Association, and agricultural products involving no or minimal use of agrochemicals during cultivation, and the status of the initiatives.

⁴ The following regions fall under: National Park, Semi-national Park, sanctuary designated by a local government, area designated by international treaties such as the World Heritage Convention and Ramsar Convention and habitats of rare wildlife.

- Information concerning species that inhabit or grow on land owned, leased or managed, or in adjacent areas (especially, endangered species and endemic species in the area)
- Changes to habitats caused by organizational activities and percentage of protection or restoration of habitat
- Area of idle land in mountains, farmland or urban districts where nature has been restored to conserve biodiversity
- Assessment of impacts on biodiversity and ecosystems in the planning stage of a project, or in the process of development, and the results of measures for avoidance and mitigation of impacts
- Projects in the planning stage that will be carried out in a sanctuary, an area of fragile ecosystem, or adjacent areas, and impacts on biodiversity and ecosystems caused by such projects

(3) Commentary

Business activities including development and procurement of raw materials have a great impact on biodiversity, both directly and indirectly. Biodiversity and ecosystems which are one of the important components of biodiversity are a valuable source of biological and genetic resources and ecosystem services enable material recycling, create weather conditions and shape human culture; all human life and organizational activities are wholly dependent on them. The destruction of ecosystems caused by excessive use and development may result in the un-sustainability of human life and organizational activities; therefore, careful attention must be paid to their conservation.

Organizations need to recognize that the integration of considerations for biodiversity within a management system contributes to the reduction of risk and stabilization of sustainable corporate management from a long-term standpoint.

More specifically, it is preferable that organizations take into consideration the main causes of impacts on biodiversity, including those given below, not only in operational areas that may be affected by the organization, but also more broadly including upstream and downstream supply chain partners.

- Use of raw materials produced by using a method that may have an impact on biodiversity, such as excessive capture and collection
- Development (e.g., establishment of operation sites or facilities) and activities (leisure etc.) in habitats,
- Introduction of alien species (e.g., organisms that are used as raw material and have escaped into the wild; planting of vegetation without due care; parasites or diseases; etc.)
- Introduction of living modified organisms (LMOs), or genetically-modified organisms, GMOs)
- Changes of habitat and rearing environment (e.g., contamination caused by chemical substances and fertilizer)

To ensure conservation and sustainable use of biodiversity and ecosystems, specialist

knowledge and opinions are indispensable; therefore, it is effective to cooperate with experts outside the company such as researchers and highly specialized NGOs and NPOs, and make use of guidance designed for corporations such as *Business and Biodiversity: A Handbook to Work Together* published by the International Union for Conservation of Nature and Natural Resources (Japanese version, published by Biodiversity Network Japan).

These days, the number of organizations that are acquiring such certification as fisheries eco-labeling in order to ensure the sustainable use of biological resources is increasing.

[Points to note for including information]

When procuring raw materials, sometimes it might be difficult to assess the impact on biodiversity; however, from the viewpoint of supply chain management and green purchasing or procurement, it is expected that organizations will take steps to clarify their policies for purchasing or procurement. (refer to MP-5 and MP-6.)

MP-10: Status of environmental communication

How organizations exercise environmental communication and its effects is important information that should be included in environmental reporting. Implementation of environmental information disclosure through environmental reporting, environmental labeling, and the status of environmental communication with stakeholders need to be included.

(1) Information and indicators to include

- a. Policy, targets, plans, status of initiatives, and results related to environmental communication

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of environmental information disclosure through environmental reporting and environmental labeling
- Status of environmental communication with stakeholders (for example, surveys, meeting with local residents, periodic visits and reporting, meeting with business partners, stakeholder dialogue, communication through the publication of newsletters, the status of communication with stakeholders, and kinds and numbers of inquiries and responses)
- Status of offices that publish environmental reporting or site-specific environmental activity reporting
- Status of participating in exhibitions concerning environmental issues
- Policies and status of advertising concerning environmental issues
- Status of environmental considerations concerning methods and media for advertising

(3) Commentary

In order to win the confidence of society through the environmental consideration activities, an organization itself needs to disclose its environmental information and try to develop improved environmental communication, from the viewpoint of accountability and the necessity of providing useful information to stakeholders. Initiatives to transmit environmental information to stakeholders through environmental reporting, environmental labeling, advertisements and other means have become one of the responsibilities that organizations take on.

The ISO standardized general principles of environmental labeling and three types of environmental labels in the ISO14020 series – standards concerning environmental labeling. Organizations are expected to address such issues with reference to these standards.

In addition, *ISO14063, Environmental Communication: Guidelines and Examples* standardized a variety of means for environmental communication. (refer to Preface 4. Relation to Existing Guidelines.)

[Points to note for including information]

- (i) When reporting the status of initiatives for environmental communication, it is expected to include printed matter (including advertising matter) that is outsourced to an external operator.
- (ii) It would be helpful to include information on the nature of inquiries made by stakeholders along with the organization's responses. It is desirable that not only environmental communication activities but also the effects of environmental communication and how the organization utilizes them are included.

In regards to the progress in the disclosure of environmental information through environmental reporting, environmental labels and other means, as well as environmental communication and partnerships with stakeholders, it is likely to differ largely depending on the type and size of the organization. However, it is necessary to clearly mention the status of environmental communication and other related aspects according to the characteristics of the organization.

As a practical point to note, it is important to produce accurate environmental labels, so that consumers will not misunderstand.

MP-11: Status of social contribution related to environment

With regard to environmental conservation, the activities of organizations and the voluntary social contributions of employees need to be included in environmental reporting.

(1) Information and indicators to include

- a. Policy, targets, plans, status of initiatives, and results of social contribution related to the environment

For example, the following information and indicators may be used in reporting.

- Employees' voluntary environmental activities compensated by the employer and total number of participants
- Membership or support of environmental organization(s) (e.g. NPOs, trade associations)
- Contents, amount of assistance and goods that are used for supporting NPOs or trade associations which promote environmental conservation
- Status of environmental education programs provided to local communities
- Status of environmental and social activities of the organization in cooperation with local communities
- Status of other activities of the organization in cooperation with stakeholders
- Status of the commendation for environmental conservation activities of the organization
- State of greening, planting of trees, and restoration of the environment
- Records of aid given by a foundation or other body in which the organization is involved in some way

(2) Commentary

It is desirable that organizations undertake environmental initiatives, and at the same time, make efforts to construct a sustainable society through cooperation with various other sectors. One of the specific methods of cooperation is by making a social contribution for the environment, which may include voluntary social contribution activities for the environment by employees and organizations, support for environmental not-for-profit organizations (NPOs), and the initiatives of industrial groups. It is necessary to voluntarily promote these kinds of positive social activities.

How social contributions for the environment take place is important information that should be included in environmental reporting.

[Points to note for including information]

In regards to the degree of social contribution for the environment, it is likely to differ largely depending on the type and size of an organization. However, it is necessary to clearly mention the state of social contribution according to the characteristics of the organization.

MP-12: Status of products and services that contribute to the reduction of negative environmental impacts

Reducing the negative environmental impacts caused by products and services that organizations produce or sell is an important social responsibility of organizations, and it is necessary to contribute to the construction of a sustainable environmentally sound society and recycling-based society.

Therefore, how an organization is actively engaging in the production and sales of products and services (including intangible functions and labor) that contribute to the reduction of negative environmental impacts needs to be included in environmental reporting.

(1) Information and indicators to include

- a. Policies, targets, plans, and the status of initiatives and results related to products and services that contribute to the reduction of negative environmental impacts
- b. Status of re-merchandizing (converting used items into marketable products) as stipulated by the Containers and Packaging Law, the Home Appliances Recycling Law, and the Automobile Recycling Law

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Amount of production or sales of products and services that contribute to the reduction of negative environmental impacts (e.g., products with certified environmental labels), and such products and services as a percentage of the total products or sales, and the status of the environmental effects
- Number of products that meet energy-saving standards
- Number of products designed with consideration for dismantling, recycling, reusing or saving of energy and resources
- Evaluation of major products for their environmental impacts from the viewpoint of lifecycle assessment (LCA)
- Energy consumption efficiency of each product group
- Amount of CO₂ emissions through the usage of a product (estimates of CO₂ emissions by the entire number of products shipped in the year; CO₂ emission coefficients of major products)
- Amount of sales of products and services that contribute to the reduction of greenhouse gas emissions and anticipated reduction amount of greenhouse gas emissions
- Status of environmental education and research in educational and research institutions
- Status of waste recovery logistics and distribution, e.g., transportation of waste
- Status of environmental financing transactions in financial institutions, e.g., financing

or trusts for environmental conservation projects, eco-funds or environmental liability insurance

- Status of initiatives for “servicizing” (offering services to replace the functions of products, a new trend toward creating a service economy)
- Sales of environmentally friendly products and measures to reduce packaging (e.g., activity to promote the habit of customers using their own shopping bag) by the retail industry
- Status of initiatives for ecotourism and eco-hotels in the travel and hotel industry

(3) Commentary

The following Laws (such as Law for the Recycling of Specified Kinds of Home Appliances [Home Appliance Recycling Law], the Law for the Recycling of End-of-Life Vehicles [Automobile Recycling Law] and the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging [Container and Packaging Recycling Law]) require organizations to recycle products that they have produced and sold. Organizations need to respond to so-called extended producers’ responsibilities (EPR). It is expected to report the status of initiatives to respond to these recycling laws and any other relevant recycling laws.

The reduction of the negative environmental impacts caused by products and services is a must from the viewpoint of environmental management and promotion of eco-business. Although the environmental products and services of organizations may differ significantly depending on the kind and size of organizations, each organization should report its own characteristic environmental activities. It is expected for the organization to include the information on the environmental products as a percentage of the total products or sales (discussed in OP-5) and include a summary of environmental effects (including estimates) of these activities with factual information.

Efforts made at the manufacturing stage of raw materials, parts and products is not sufficient to substantially reduce various kinds of negative environmental impacts; initiatives should be taken to reduce the negative environmental impacts throughout the lifecycles of all products and services, including the upstream stages (such as planning, development, design and procurement) and the downstream stages (such as transportation, sales, use, disposal and collection). Markets require organizations to reduce the negative environmental impacts caused by their products and services; this could be called the greening of the commodity market.

This indicates the future potential of environmental businesses in diverse fields. In recent years, in addition to devices, equipment and products that prevent pollution and contamination, a variety of environmental enterprises in the technical, software and service areas have become prosperous. These are all new environmental businesses. Specific examples are the introduction of ISO standards of environmental management, support for creating environmental reporting, consultation of environmental accounting, and environmental information and rating services. Verification of greenhouse gas emissions, emissions trading using Kyoto Mechanisms, or Clean Developing Mechanism (CDM) validation are services to minimize the costs of reducing

greenhouse gas emissions by society as a whole.

The following initiatives also contribute to the construction of a sound material-cycle society both directly or indirectly: waste recovery logistics such as wide-area transportation of wastes and collection of harmful materials; refilling; selling by weight; recycling sales of used goods; services such as repair of home appliances; lease of environmental apparatus; and rental of home appliances. Moreover, ecotourism is helping to increase people's awareness about the environment, and environmental education provided by educational institutions train personnel who are informed and highly conscious of the environment. It is not an exaggeration to say there is no end to business models of environmentally friendly services and labor.

In accordance with the Green Purchasing Law, Japanese government and administrative institutions have purchased and procured environmentally conscious goods and services on a preferential basis. In addition, in May 2007 the Environmental Contract Law was passed which requires the Japanese government and administrative institutions to consider the reduction of greenhouse gas emissions or the like, whenever they contract to purchase electricity or construct government buildings.

[Points to note for including information]

- (i) Initiatives to contribute to the reduction of the negative environmental impacts caused by the organization's products and services are to be included. The main business such as promotion of environmental business as well as its approach to recycling is to be reported.
- (ii) Examples of environmentally conscious financial products provided by financial institutions are environmental liability insurance for soil contamination offered by non-life insurance companies; preferential interest rates provided by banks to companies that undertake environmentally conscious activities; and projects for environmental conservation; and eco-funds (environmental investment trust). The amount allocated for these products may be used as an indicator.
- (iii) Financial institutions such as banks/security brokers/ insurance companies, wholesalers and retailers, transportation companies, and trading companies, are not engaging in production activities themselves; therefore these organizations need to be creative in order to report their own characteristic environmental activities. For example, financial institutions should report how they take environment protection into account when considering loans and investments. Recently, some financial institutions have started to quantitatively assess the reduction effect on negative environmental impacts that an organization has achieved through the environmental loan made by the institution.
- (iv) Regarding products with certified environmental labels, it is important to clarify the type of label and indicate the weight, the number of items, and size or volume of the relevant product.
- (v) Regarding the compulsory amount of merchandizing as stipulated by the Containers and Packaging Recycling Law, the production and usage amount of containers and packaging subject to the law should be estimated.

3. Information and Indicators that Describe the Status of Activities for Environmental Impacts and Reduction Measures (OPI = Operational Performance Indicators)

The ten items listed below need to be included in environmental reporting as information and “Indicators that Describe the Status of Activities for Environmental Impacts and Reduction Measures (OPI: Operational Performance Indicators). This section explains the basic concepts for each item and gives specific information and indicators.

(OPI = Operational Performance Indicators)

[Input]

OP-1: Total amount of energy input and reduction measures

OP-2: Total amount of material input and reduction measures

OP-3: Amount of water input and reduction measures

[Internal recycling]

OP-4: Amount of materials recycled within an organization’s operational area

[Output]

(Products)

OP-5: Total amount of manufactured products or sales

(Discharge and emission)

OP-6: Amount of greenhouse gas emissions and reduction measures

OP-7: Air pollution, its environmental impacts on the living environment, and reduction measures

OP-8: Amount of release and transfer of chemical substances and reduction measures

OP-9: Total amount of waste generation and final disposal and reduction measures

OP-10: Total amount of water discharge and reduction measures

Note

OP-3 (Amount of water input), OP-7 (Air pollution and Impacts on the living environment), OP-8 (Amount of chemical substances’ release and transfer), OP-10 (Total amount of water discharge) are considered to have significant impacts on the local community. Figures for each operation site should be disclosed with regard to these items,.

OP-1: Total amount of energy input and reduction measures

Consumption of fossil fuels such as oil, natural gas and coal produce carbon dioxide (CO₂), which causes global warming. Therefore, besides the amount of private power generation within the operational area, total energy input and the breakdown of fossil fuel consumption, and measures to reduce the input and increase energy efficiency need to be included in environmental reporting.

(1) Information and indicators to include,

- a. Policy, targets, plans, status of initiatives, and results of reduction measures related to total energy input
- b. Total amount of energy input (unit: joule)
- c. Breakdown of total amount of energy input (the amount used by type) (unit: joule)
 - Purchased electricity (excluding purchased new energy)
 - Fossil fuel (e.g., oil, natural gas, LPG or coal)
 - New energy (renewable energy, recyclable energy, new forms of using conventional energy)
 - Others (e.g., purchased heat)

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of heat-circulation type of private power generation, and its expansion measures, plans and targets
- Breakdown of the amount of self-supplied energy and collected energy, classified by energy source (joule or other unit)
 - Fossil fuel
 - New energy
 - Co-generation
 - Others
- Energy productivity, energy efficiency and measures to improve them

(3) Commentary

In Japan, the amount of CO₂ emissions attributable to fossil fuel accounts for 90 percent of the total CO₂ emissions. In order to prevent global warming, it is critical to reduce the total energy input, along with moving to change energy sources from fossil fuel to other energy sources which emit less CO₂, including the promotion of the introduction of solar power generation, wind power generation, and biomass energy.

For this reason, it is necessary to assess and manage the total amount of energy input. It is also important to assess the breakdown of input energy including environmentally friendly energy.

Recently, it has become more noticeable that companies are effectively harnessing

surplus energy or previously unused heat that used to be simply discharged, and using it as a source of energy on-site within an operation. Some organizations generate power privately by using various kinds of unused energy source within their operation sites; they use the generated power and sell surplus electricity to the power company. Thus, aside from buying electricity from external sources, private power generation is expected to lead to a reduction in energy consumption.

[Points to note for calculating indicators]

- (i) The total amount of energy input should be divided into the amount of electricity and the amount of each category of fossil fuel. For the measurements, the heat conversion rate based on the detailed enforcement regulations of the Law Concerning the Rational Use of Energy, Annexed Sheets 1, 2 and 3 should be used. If the Table of Heat Generation of Energy Sources does not provide a conversion rate, the source of the conversion rate used in the environmental reporting should be cited.
- (ii) When converting purchased electricity (kWh) into mega joules (MJ), the conversion rate is 9.97MJ/kWh for electricity used during daytime and 9.28MJ/kWh for electricity used at night, which is based on the detailed enforcement regulations of the Law Concerning the Rational Use of Energy, Annexed Sheet 3.
Daytime refers to 8:00 to 22:00 and night means from 20:00 to 8:00 the next day, according to the detailed enforcement regulations under Remark 2 of that specific section of the Law. If daytime and nighttime cannot be calculated separately, assume the total amount of electricity is used during the daytime. (From Guidelines for Writing Periodical Report based on Article 15 of the Law Concerning the Rational Use of Energy [April 2006] provided by Agency of Natural Resources and Energy.)
- (iii) In addition to the total amount of energy input, the breakdown of the consumption of electricity and fuels should be assessed.
- (iv) The total energy input should include energy that the organization consumed for transportation; however fuel consumption for transportation provided by contractors is classified as another category.
- (v) The amount of oil and coal consumed as raw material in the production process is considered as a part of the total material input.
- (vi) The amount of each energy source may be expressed in appropriate units.
- (vii) Purchased new energy (e.g., electricity from a wind generation facility) should not be included in purchased electricity, but counted as new energy.
- (viii) If an organization sold surplus electricity to another organization, the amount can be used to offset the purchased electricity, and the amount of fossil fuel that would have been used to generate the electricity should be estimated and it can be deducted from the fossil fuel consumption of the organization. However, if the kind of fossil fuel used for generating electricity is different from the kind of fuel that is used for generating the purchased electricity, then it should not be used for the offset and expected to be written separately.
- (ix) Refer to Material Reference 5. [Common Estimation Examples of Indicators] (Omitted in the English version.)

OP-2: Total amount of material input and reduction measures

The amount of resources (natural resources) extracted from the natural world has been increasing year by year, and it is necessary, from the viewpoint of the construction of a sustainable society, to reduce the total material input by using more renewable resources instead of exhaustible ones, reducing the consumption of exhaustible resources, and promoting the recycling-based use of used resources (reuse, recycling, and heat recovery).

Therefore, the total material input and its breakdown, measures to reduce the total material input, resource productivity, and a rate of recycled and reused resources need to be reported.

(1) Information and indicators to include,

- a. Measures to reduce total material input (or the purchased amount of main raw materials, etc. including containers and packaging materials) and policy, targets, plans, initiatives, results, etc. related to the effective use of renewable and recyclable resources
- b. Total material input (or the purchased amount of main raw materials including containers and packaging materials) (unit: ton)
- c. Breakdown of total material input (unit: ton)

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Resource productivity and improvement measures
- Rate of recycled and reused resources and improvement measures
- Resources consumed as consumables other than products or commodities (excluding containers and packaging materials)
- Amount of resources that are owned as capital goods to be input as investment in plant and equipment, etc.
- Amount of resources to be input in contracted civil engineering and construction works
- Percentage of reusable or recyclable components of each product line
- Collected amount of used products, containers, and packages
- Amount of reused, recycled, and recovered heat related to collected used products and containers and packages, and the percentage of each

(3) Commentary

The amount of resources (natural resources) extracted from the natural world has been increasing year by year. Japan's total material input in fiscal 2004 related to socio-economic activities reached 1.94 billion tons. The total of extracted natural resources of the amount mentioned above is 1.7 billion tons while recycled resources accounted for 0.25 billion tons; more than 10% of the total material input.

Because the total material input is a necessary indicator for the effective use of the recyclable resources, as well as the reduction of consumption of those natural resources, it is useful to know the kinds of resources included in the total material input, the state of resources when they are input, and each amount of input from natural and recyclable resources. In regards to natural resources, it is necessary to change the current situation to a new one where more renewable resources than exhaustible ones are used and to reduce the consumption of exhaustible natural resources reduced. And above all, it is necessary to reduce the total material input.

In addition, the Fundamental Plan for Establishing a Sound Material-Cycle Society promotes comprehensive and systematic policies on the formation of a sound material-cycle society, by aiming to change the current production and consumption systems to sustainable ones. Goals have been set whereby negative environmental impacts can be reduced while maintaining economic affluence; it is important to monitor the flow of materials in society, and to improve the current input of natural resources and their disposal. Furthermore, three objectives for managing the flow of materials have been established: resource productivity, rate of recycled and reused resources, and final disposal volume. All three should be paid the maximum amount of attention by organizations.

In addition, when organizations determine policies for environmentally friendly initiatives in their activities, they are required to adopt LCA based approaches. It is important to understand the whole picture of the material flow with each item examined at not only the output stage of materials but also the input stage.

From the viewpoint of controlling input resources and preventing more wastes from being generated, total material input will increasingly become an important indicator in the future. It may be extremely difficult for some organizations to collect data on total material input, but they are expected to take a step-by-step approach by starting to understand the input amount of resources that are suitable for calculation. It is also expected for industries and companies to be engaged in the development of their own appropriate methods of calculating numerical values for the total material input.

[Points to Note for Calculating Indicators]

- (i) Total material input is calculated by using the following factors: total amount of resources (materials) excluding energy and water input in activities; types of main resources; and individual state of resources when they were input; amount of input natural resources; and each amount of purchased and stocked main raw materials; products, and commodities.
- (ii) Concerning measurement units, tons are the preferred unit, but any unit commonly used in an industry can be used.
- (iii) For the main breakdown, or categorized resources, of total material input, each amount and percentage of the resources, such as metal, plastic, and rubber, should as far as possible be reported. When reporting only main raw materials and commodities, it is necessary to give a brief specification of raw materials, products, or commodities (including containers and packages) that were not covered and the purchase cost of the

reported main raw materials, etc. or products and commodities, as a percentage of the total cost of all materials. Shown below is an example of how to categorize resources, but organizations should reasonably categorize and report resources as appropriate to their actual circumstances.

Input resources categorized by type

- Types of resources (ton or other units)
 - Metal (iron, aluminum, copper, lead, etc.)
 - Plastic
 - Rubber
 - Glass
 - Lumber
 - Paper
 - Agricultural produce, etc.
- State when materials are input (ton or other units)
 - Parts, semi manufactured products, completed products, and commodities
 - Raw material
 - Ancillary materials
 - Containers and packaging materials
- Other indicators (ton or other units)
 - Exhaustible natural resources (fossil resources, rare minerals, etc.)
 - Recyclable resources
 - Renewable natural resources (appropriately controlled agricultural and marine products)
 - Chemical substances (substances, etc. subject to PRTR)
- (iv) Resource productivity is calculated by dividing gross sales by total material input.
- (v) Total material input does not include the amount of resources consumed as consumables (excluding materials for containers and packages) other than resources that were purchased and stocked, the amount of resources put in capital investment, etc. as capital goods, or materials recycled inside the facilities of an organization. However, those resources and materials excluded above can be reported separately from the total material input.
- (vi) Concerning parts, semi-manufactured products, and completed products, it is best to give

a breakdown of their component resources. If this is too difficult the total weight can be given.

- (vii) When it is difficult to calculate the total material input, the total amount of manufactured products or that of sold commodities, adding the amount of generated wastes can be used for calculations.
- (viii) Concerning green procurement, the input amount of goods assessed by an organization to be environment-friendly needs to be presented, from among the materials bought for providing products and services, but, it is necessary to clarify the assessment criteria. An organization's consumption should be presented separately as green purchasing (purchased amount, etc. of environment-friendly products, services, etc.). (refer to MP-6.)
- (ix) The rate of recycled and reused resources is calculated by dividing the recycled and reused amount by the total material input.
- (x) In principle, the amount of collected materials including the products, commodities, and containers or packages of other companies needs to be reported in ton units. However, the amount mentioned above can be reported in other units that are used in actual business practice.
- (xi) Returned products needs to be classified as per the OP-5 procedure and then presented.

OP-3: Amount of water input and reduction measures

Water resources are indispensable for all life forms, including humans and they are also the basis for any socio-economic system to operate.

Therefore, the amount of input water resources, its breakdown, and reduction measures need to be reported.

(1) Information and indicators to include

- a. Policy, targets, plans, initiatives, results, etc. related to measures to reduce the amount of input water resources
- b. Amount of input water resources (cubic meters, m³)
- c. Breakdown of input water resources (m³)
 - Clean water
 - Industrial water
 - Groundwater
 - Seawater
 - River water
 - Rainwater, etc.

(2) Commentary

Fresh water accounts for about 2.5% of all the water resources on the earth, and only about 0.8% of the fresh water in rivers, lakes and marshes, underground reservoirs, etc. can be used for drinking or domestic purposes, and production activities. Used water recycling and effective use of scarce water resources are yet to be widely promoted.

Therefore, the amount of input water resources needs to be reported and controlled.

[Points to Note for Calculating Indicators]

- (i) The amount of input water resources does not include the amount of water that is already recycled in the facilities of an organization. The amount of water recycled shall be reported separately under the OP-4. However, because of scarcity of water resources, it is extremely important to calculate the amount of water recycled in the facilities of an organization.
- (ii) It is desirable to calculate the amount of water input from each water source in addition to the amount of input water resources.
- (iii) Refer to Reference Material 5 [Common Estimation Examples of Indicators].(Omitted in the English version)

OP-4: Amount of materials recycled within an organization's operational area

The amount of materials that an organization uses in a recycling-based way in its operational areas needs to be reported separately from the total amount of materials input from outside the facilities. In Japan, the perception that water resources are drying up is weak, but, in other parts of the world, particularly in some developing countries and desert regions, it is feared that water resources are drying up. Therefore, efforts to reuse and recycle clean water on-site, and to use recycled wastewater and rainwater should be promoted and need to be reported.

(1) Information and indicators to include

- a. Policy, targets, plans, initiatives, results, etc. related to the recycling-based use of materials (including water resources) in the facilities of an organization
- b. Amount of materials recycled in the facilities of an organization (unit: ton)
- c. Type and amount of each material recycled in the facilities of an organization (unit: ton)
- d. Amount of water recycled in the facilities of an organization (unit: cubic meters) and measures to increase it
- e. Breakdown of the amount of water recycled (unit: cubic meters)
 - Amount of recycled water (in principle, cooling water is not included)
 - Use of recycled wastewater

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Amount of resources reused in the facilities of an organization
- Amount of resources recycled in the facilities of an organization
- Amount of resources recycled as heat in the facilities of an organization

(3) Commentary

As is emphasized in the Fundamental Plan for Establishing a Sound Material-Cycle Society, increasing the input amount of recyclable resources and raising the recycling-based resource use rate is extremely important in reducing the consumption of natural resources and creating a sustainable and sound material-cycle society.

In regards to natural resources, reducing the consumption of exhaustible natural resources and simultaneously cyclical use of used resources (reusing, recycling, and thermal recycling) are all necessary from the viewpoint of constructing a sustainable society.

In addition, scarce water resources have yet to be used more efficiently. Using water resources more efficiently means not only reducing the amount of water resources input from outside the facilities of an organization, but also increasing the recycling and reuse rate inside the facilities- all extremely important measures for the establishment of a sustainable sound material-cycle society. Recently, recycled wastewater in particular, which is generated by

processing used clean water in the facilities of an organization, has been increasingly subject to recycling.

[Points to Note for Calculating Indicators]

- (i) For information about the breakdown by type of materials recycled, refer to “OP-2: Total material input” and [Points to Note for Calculating Indicators] of OP-9 (Total amount of waste generation and final disposal and reduction measures).
- (ii) The amount of “black liquor” recycled in the paper manufacturing industry, etc. is included.
- (iii) Refer to Reference Material 5 [Common Estimation Examples of Indicators].(Omitted in the English version)

OP-5: Total amount of manufactured products or sales

From the standpoint of material balance, the total amount of manufactured products or sold commodities is important as an indicator for output materials. This indicator is also needed in evaluating the environmental impacts caused by the total amount of input energy and water resources, the amount of greenhouse gas emissions and released chemical substances, and the amount of water discharge and generated wastes, etc.,.

Therefore, information about the total amount of manufactured products or that of sold commodities and the amount of materials used for containers and packages need to be given.

(1) Information and indicators to include,

- a. Total amount of manufactured products or that of sold commodities

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Amount of materials used for containers and packages

(3) Commentary

From the viewpoints of the need for society-wide reduction of negative environmental impacts and the formation of a sound material-cycle society, it is anticipated that there will be an increase in the amount of production and sales of products that help reduce energy consumption and waste during use and that can be recycled and reused at the end of their own lifecycle.

[Points to Note for Calculating Indicators]

- (i) Either the total amount of manufactured products, or sold commodities can be reported. The total amount of sold commodities needs to be reported as the sum total of the sales of main products, and commodities should be reported in ton units.
- (ii) When reporting only the amount of main products and commodities sold, it is necessary to give brief specifications of the products and commodities that were not covered for the indicator. Provide the sales of the main products and commodities as a percentage of the total sales.
- (iii) When there is a big difference in the weight of raw materials, semi-manufactured products, and completed products between the beginning and the end of the year, such a difference should be reported.

OP-6: Amount of greenhouse gas emissions and reduction measures

If global warming continues, it is feared that it will have serious consequences such as a rise in sea level and consequent water damage, a decrease in the agricultural production, expansion of areas exposed to infectious diseases, and the extinction of some species caused by changes to their natural habitats, etc. Therefore, in order to achieve the ultimate goal of the United Nations Framework Convention on Climate Change, the stabilization of greenhouse gases in the atmosphere so as to prevent global warming, the Kyoto Protocol (which took effect on February 16, 2005) was adopted at the third conference of the parties of the convention (CoP3). In order to achieve the numerical targets of the Kyoto Protocol, organizations need to carry out voluntary activities to reduce greenhouse gas emissions into the atmosphere.

Therefore, reporting needs to include the amount of greenhouse gas emissions (converted to tons of CO₂), or each amount of the six substances subject to the Kyoto Protocol, and types of substance classified by emission source, a basic policy on the reduction of the substances, and the reduction measures.

(1) Information and indicators to include

- a. Policy, targets, plans, initiatives, results, etc. related to measures to reduce greenhouse gas emissions, etc.
- b. Total amount (converted to tons of CO₂) of greenhouse gas emissions (six substances subject to the Kyoto Protocol) (The breakdown of the amount both in Japan and overseas is needed.)
- c. Breakdown by type of the amount (converted to tons of CO₂) of greenhouse gas emissions (six substances subject to the Kyoto Protocol)

(2) Information and indicators to included as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Breakdown by emission source of the amount (converted to tons of CO₂) of greenhouse gas emissions (six substances subject to the Kyoto Protocol) (amount by facility and by organization)
- When an organization has been using the Kyoto Mechanisms, include the details on how it was used and the amount of reduced gases (acquired credit)
- When an organization is participating in a voluntary domestic emission trading system, the status of participation and the amount of reduced gases
- When an organization has used a system for guaranteeing the calculation of the amount of greenhouse gas emissions (verification by a third party, ISO14064 (specifications for calculating, reporting, and verifying the amount of emitted and reduced greenhouse gases), etc.), the details on how the system has been used and the amount of reduced gases
- Prospective change of the CO₂ emission coefficient of purchased electricity

(3) Commentary

Global warming is a phenomenon whereby certain gases create a greenhouse effect. With the development and expansion of human activities, greenhouse gases such as carbon dioxide (CO₂) and methane are emitted into the atmosphere in large quantities, thus adding to the concentration of previously emitted gases and raising the average temperature of the entire planet.

In order to stabilize the atmospheric concentration of greenhouse gases, countries (including Japan) began signing the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and it took effect in 1994. In order to achieve the targets of the UNFCCC, CoP3 (the Third Conference of the Parties of the Convention) was held in Kyoto in 1997, and the Kyoto Protocol was adopted. (Japan ratified the protocol on June 4, 2002.) This protocol requires industrialized countries, to reduce greenhouse gases by a specified percentage (6% for Japan) of the amount of those emitted in the base year (1990) during the first commitment period (2008-2012). The requirement for the Kyoto Protocol to take effect was met by Russia's ratification, and it took effect on February 16, 2005, thereby obliging Japan to meet the target of the protocol. In order to achieve this reduction target, the Kyoto Mechanisms, etc. were introduced.

CO₂ in particular, which accounts for about as much as 90% of the total amount of greenhouse gases emitted in Japan, contributes to global warming, by being emitted in large quantities through the combustion of fossil fuels, such as coal and petroleum.

The amount of greenhouse gas emissions needs to be reported as the sum total of each greenhouse gas emitted through organizational activities and the main breakdown of the gases. The sum total and each amount of greenhouse gases are converted to the amount of carbon dioxide (hereafter referred to as "ton-CO₂ conversion") and reported in ton units. When the amount of greenhouse gas emissions other than CO₂ is extremely small, however, only the amount of emitted CO₂ needs to be reported.

For the main breakdown of the amount of greenhouse gas emissions, the breakdown by type of greenhouse gases and the breakdown of emission activities that were subject to calculation need to be reported as far as possible.

[Points to Note for Calculating Indicators]

- (i) In conformity with the amended Law Concerning the Promotion of the Measures to Cope with Global Warming (Global Warming Prevention Promotion Law), each organization that emits a large quantity of greenhouse gases (specific emitters) became obliged on April 1, 2006 to calculate the amount of greenhouse gases it emitted and report it to the government. Greenhouse gases to be reported are energy-derived and non-energy-derived CO₂, methane, nitrous oxide, and three CFC alternatives (hydro-fluorocarbon[HFC], per-fluorocarbon[PFC], and sulfur hexafluoride[SF₆]).
- (ii) For details on how to calculate the amount of greenhouse gas emissions, refer to *Manual for Calculating and Reporting the Amount of Greenhouse Gas Emissions* (released in November 2006).

Reference Ministry of the Environment: “Manual for Calculating and Reporting the Amount of Greenhouse Gas Emissions”

<http://www.env.go.jp/earth/ghg-santeikohyo/manual/index.html>

- (iii) When measures have been introduced to reduce greenhouse gas emissions, there would be many different methods and opinions as to the best way to evaluate their efficiency, but, it is important to choose a method that is appropriate to the individual circumstances. For example, in addition to a method of calculating the difference in the amount of greenhouse gas emissions before and after measures were implemented, when it is assumed that the implementation of any measures to a power supply will show a reduction in the time period, there is a method for calculating any reductions by multiplying the reduction in electricity by the CO₂ emission coefficient of the power supply.
- (iv) When reporting the amount of reduction in greenhouse gases in environmental reporting, it is necessary to give both the calculation formula and the emission coefficient used for calculation, as well as the calculation base.
- (v) When a specific emitter is obliged to report the amount of greenhouse gas emissions under the Law concerning the Rational Use of Energy (Energy Saving Law) and has reported the amount of emitted energetic origin CO₂, the report is regarded as being based on the Global Warming Prevention Promotion Law. Even in this case, however, when the specific emitter is obliged to report gases other than energetic origin CO₂, it is necessary for them to report and disclose the amount as prescribed in the Global Warming Prevention Promotion Law.
- (vi) When an organization emits greenhouse gases in a facility in a foreign county, the amount of emissions needs to be calculated according to the emission coefficients of that country, if such coefficients have been determined.
- (vii) HFCs should also be reported as a chemical substance described in OP-8 that handles the released amount of chemical substances (fluorocarbons).
- (viii) Concerning the amount of CO₂ emissions reduced when the Kyoto Mechanisms are used, the reduction is not subject to the direct emission control of an organization and therefore, it needs to be calculated separately.
- (ix) Concerning the breakdown by emission source of the amount of greenhouse gas emissions, the following items should be reported.
 - Energy consumption in the facilities of an organization
 - Fuels used for transportation
 - Waste treatment
 - Industrial process
 - Others
- (x) When the total amount of input energy is only purchased electricity, it can be reported along with the amount of emitted energetic origin CO₂.
- (xi) In calculating the amount of greenhouse gas emissions derived from the use of electricity, when no CO₂ emission coefficient of electricity in the target year has been announced, the most recently announced emission coefficient can be used. In this case, in reporting the

amount of emitted CO₂ in the multiple periods of the succeeding year and later, the amount of emitted CO₂ of the target year can be calculated again with any newly announced CO₂ emission coefficient being used.

(xii) Refer to Reference Material 5 [Common Estimation Examples of Indicators]. (omitted in the English version.)

OP-7: Air pollution, its environmental impacts on the living environment, and reduction measures

The status of the achievement of emission control targets, how air pollutants were emitted, and measures to prevent the emission of pollutants need to be reported, along with the status of noise, vibrations, and offensive odors, and reduction measures. Furthermore, initiatives to improve the thermal environment of urban areas by alleviating the heat island phenomenon need to be reported.

(1) Information and indicators to include

- a. Policy, targets, plans, initiatives, results, etc. related to measures to reduce the amount of released sulfur oxides (SO_x), nitrogen oxides (NO_x), and volatile organic compounds (VOC)
- b. Each released amount (in tons) of sulfur oxides (SO_x), nitrogen oxides (NO_x), and volatile organic compounds (VOCs) according to the Air Pollution Control Law
- c. Status of noise, etc. generated (in decibels) according to the Noise Regulation Law and reduction measures
- d. Status of vibrations, etc. generated (in decibels) according to the Vibration Regulation Law and reduction measures
- e. Status of offensive odors, etc. generated (specified offensive odor substance concentration or odor index) according to the Offensive Odor Control Law and reduction measures

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of environmental measures being taken for buildings and structures, which lead to the improvement of the surface covering of urban areas, such as greening of rooftops, walls, and grounds, highly reflective coating, water-retentive paving and so on.
- Status of environmental measures being taken for buildings, etc. with geothermal heat, river water, etc. used to reduce atmospheric anthropogenic exhaust heat, such as air conditioner exhaust heat

(3) Commentary

Nitrogen oxides, such as nitrogen monoxide and nitrogen dioxide, are generated mainly by the combustion of materials, and the main sources of NO_x generation are stationary sources, such as factories, and mobile sources, such as vehicles (For information about mobile sources, refer to MP-8.). NO_x and VOCs are precursors to photochemical oxidants, suspended particulate matter (SPM), and acid deposition.

While the generation of noise and vibration is limited to the surrounding area in proximity to their source, they often exist widely where people carry out activities. Therefore, protecting the living environment from the negative impacts of noise and vibration from factories/facilities, construction work, vehicles, airplanes, trains and so on is a big issue to solve.

For several years, the number of complaints about noise has been increasing. Complaints against factories/facilities now account for more than 30% of all complaints, and complaints against construction work account for a little less than 30% of the total. In recent years, low frequency noise has also become a big issue. In addition, concerning the number of complaints against each vibration-generating source, construction work receives the most complaints and factories/facilities come next. These sources are still the major cause of all complaints.

The number of complaints about offensive odors started to decrease from 1972, but recent years have seen an increase. Concerning the source of offensive odors, the number of complaints against once problematic industries, such as livestock agriculture and manufacturing industries has remained unchanged. On the other hand, in recent years complaints against service industries have been increasing.

[Points to Note for Calculating Indicators]

- (i) The status of noise, vibration, and offensive odors being generated and reduction measures needs to be reported when an organization is located in a region specified by the governor of each prefecture.
- (ii) For information about SO_x, NO_x, and VOC, refer to Reference Material 5 [Common Estimation Examples of Indicators].(omitted in the English version)

OP-8: Amount of release and transfer of chemical substances and reduction measures

Currently in Japan the Law Concerning the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substance Evaluation Regulation Law), Air Pollution Control Law, Water Pollution Control Law, PCB Waste Proper Treatment Special Law, and Law concerning Special Measures against Dioxins (Dioxins Law), etc. control the manufacture, import, use, treatment method, released amount, etc. of any chemical substances specified under such laws. In addition, organizations are obliged by the Law concerning Reporting, etc. of Release to the Environment of Specific Chemical Substances and the Promoting Improvements in Their Management (Chemical Substance Release Reporting and Management Promotion Law) to calculate and report the amount released into the environment and the amount transferred as wastes, etc. of a wide range of chemical substances including the controlled substances mentioned above (under the Pollutant Release and Transfer Register [PRTR system]); and provide a Material Safety Data Sheet (MSDS) in order to improve the management of chemical substances and promote risk communication.

Needless to say the chemical substances controlled by these laws, the released amount, transported amount, and the status of each chemical substance being managed by an organization need to be reported.

(1) Information and indicators to include,

- a. Chemical substance management policy and status of chemical substances being managed
- b. Policy, targets, plans, initiatives, results, etc. related to the released and transferred amount of chemical substances and reduction measures
- c. Initiatives, results, etc. concerning replacement of current chemical substances with safer ones
- d. Released and transferred amount of chemical substances subject to the PRTR system based on the Law Concerning Reporting etc., of Release of Specific Chemical Substances to the Environment and Promotion of the Improvement of Their Management (unit: ton)
- e. Concentration of specified substances when released into the atmosphere (benzene, trichloroethylene, and tetrachloroethylene) among hazardous air pollutants controlled by the Air Pollution Control Law
- f. Status of soil and groundwater pollution
- g. Status of pollution by dioxins controlled by the Law concerning Special Measures against Dioxins
- h. Concentration of hazardous substances, controlled by the Water Pollution Control Law, contained in wastewater and specified underground infiltrated water

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Production volume, import volume, transaction volume, average storage volume, maximum storage volume (unit: ton), applications, etc. of chemical substances
- Status of risk communication concerning chemical substances (number of briefings held, etc.)
- Status of how substances subject to the Japan Challenge Program have been handled and the status of how the safety information on the substances has been collected (sponsor registration and the number of substances for which a safety information collection program and a report have been submitted)
- Collecting safety information about handled substances and carrying out risk assessment (substance name, number of handled substances, etc.)
- Policies and initiatives concerning the transmission of information on chemical substance hazardousness from the upstream (chemical substance manufacturer, etc.) to the downstream (molded article manufacturer, etc.) in product lifecycle.
- Policies and initiatives concerning the transmission of information on applications of chemical substances from downstream to upstream

(3) Commentary

In modern society, a wide variety of chemical substances are manufactured in large quantities and widely used in a variety of situations. In addition, some unintended chemical substances, such as dioxins, are generated. Some chemical substances, when they are not appropriately managed in the process of manufacture, distribution, use, or disposal, may cause environmental pollution and have a hazardous impact on human health and the ecosystem.

It is important for organizations to conduct risk communication by holding briefings so that confidence in their activities can be increased and their attitudes and initiatives towards the management of chemical substances can be socially evaluated. Therefore, it is good practice to disclose the released and transferred amount of substances subject to PRTR and to explain any measures they are focusing on.

In Europe, specified hazardous substances contained in household electrical and electronic appliances were prohibited from being used (by RoHS directives), and a comprehensive system for the Registration, Evaluation, Authorization, and Restriction of chemical substances (called REACH) was started. As is clear from these facts, restrictions on hazardous substances have become stricter in Japan and Europe.

[Points to Note for Calculating Indicators]

- (i) When reporting information on chemical substances, the released and transferred amount of only those chemical substances whose transaction volume and purchased

volume are large, or ones that are highly dangerous and may have a significant influence on stakeholders, needs to be reported with the released and transferred amount of a substance separated from the data of other substances. In addition, the average and maximum storage volumes should also be reported.

- (ii) There are five ways of calculating the released and transferred amount of substances subject to the PRTP.
 - Using the material balance
 - Using an emission factor
 - Using an actual measurement value
 - Using a physical property value
 - Others
- (iii) For details on methods of calculating the amount of substances subject to PRTR, refer to the *Manual for Calculating Released Amount, etc. of Substances Subject to PRTR* (finally revised in January 2004) by the Ministry of Economy, Trade and Industry and the Ministry of the Environment.
- (iv) The released amount (including any leaked amounts), collected amount (amount given to a collection trader according to the Fluorocarbons Recovery and Destruction Law), and any destroyed amount (amount given to a destruction trader according to the same Law, which is included in the collected amount) of fluorocarbons subject to the Law for Ensuring the Implementation of Recovery and Destruction of Fluorocarbons concerning Specified Products (Fluorocarbons Recovery and Destruction Law) should be reported as much as possible. In addition, concerning the released amount, CFC and HCFC needs to be described as substances subject to the PRTR, and HFC should be described as a greenhouse gases.
- (v) The released amount of any other chemical substances and the released amount of any substances specified by relevant laws are required to be calculated.
- (vi) Concerning the status of soil and groundwater contamination, organizations should describe the results of any research in accordance with the Soil Contamination Countermeasures Law or any tests they have conducted on their own initiative.
- (vii) Refer to Reference Material 5 [Common Estimation Examples of Indicators]. (omitted in the English version.)

OP-9: Total amount of waste generation and final disposal and reduction measures

Overall waste generated in Japan increased from the 1960s, and levels have remained constantly high since the 1990s. While the remaining capacity of final landfill sites has diminished in recent years, there are other problems, such as the increased cost of treating waste and illegal dumping. Therefore, it is a top priority to prevent unnecessary wastes, etc. from being generated and to appropriately recycle or treat waste.

In order to achieve these goals, reporting needs to include a breakdown of the amount of discharged wastes, etc., the breakdown of different treatments, the waste amount to landfills, to help assess the problems of a shortage of final landfill sites and illegal dumping, and measures to reduce wastes need to be reported.

(1) Information and indicators to include,

- a. Policy, targets, plans, initiatives, results, etc. related to measures to prevent further wastes from being generated and to reduce, and recycle them
- b. Total amount of discharged wastes (unit: ton)
- c. Amount of final disposal wastes (unit: ton)

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Dealing with extended producer responsibility
- Breakdown of the methods of treating wastes, etc.
- Main breakdown of the total amount of discharged wastes, etc. (including valuable resources)
- Breakdown of the amount of final disposal wastes
 - Amount of industrial waste directly landfilled (amount of final disposal wastes calculated by the manifest system)
 - Residual amount of industrial wastes left after intermediate treatment and that of the same wastes left after recycling, both of which are expected to be land filled
 - Amount of municipal solid wastes to be land filled and that of the same wastes expected to be land filled after intermediate treatment and recycling
 - Amount of waste disposed in landfill sites
- How an organization has been involved in the reduction, recycling, etc. of construction wastes as a purchasing party.
- Number of issued manifests and the status of how the electronic manifest system has been used

(3) Commentary

As shown in the Basic Environment Plan and the Fundamental Law for Establishing a

Sound Material-Cycle Society, measures to treat and recycle waste should be taken in consideration using the following order of priority: (1) preventing waste etc., from being further generated, (2) reusing used products and parts, (3) recycling collected waste as raw materials (material recycling), and (4) recovering heat from waste (thermal recycling). Materials regarded as waste even after these processes have been applied need to be appropriately treated (Note that following the priority order above may be traded off against environmental impacts other than waste, however, the priority order will not necessarily be followed in some cases).

[Points to Note for Calculating Indicators]

- (i) The total amount of discharged waste etc., needs to be reported as the sum total of type of waste etc., generated by organizational activities and the main breakdown of the type of waste should be reported in tons. The total amount of discharged waste, etc. needs to be calculated by adding up the weights of the type of waste that an organization has discharged and carried out from its facilities (out of its control), excluding those shipped for the provision of products and services, and the weight of the waste that the organization landfilled in its own sites.
- (ii) For the main breakdown of the total amount of discharged waste etc., it needs to be reported whether the waste is municipal solid waste (specially controlled municipal solid waste among them) or industrial waste (specially controlled industrial waste among them). In addition, when the specially controlled municipal solid and industrial waste may affect the judgment of stakeholders, the contents of the types of waste, main causes of their generation related to organizational activities, and the status of how they have been treated needs to be reported.
- (iii) The amount of final disposal waste to be reported (in tons) includes the amount of landfilled waste etc., and the residue expected to be landfilled after intermediate treatment and recycling, and as far as possible, the breakdown of the amount. However, when the amount of discharged municipal solid waste is extremely small, only the amount of landfilled industrial waste calculated using the industrial waste manifest system and the residue left after intermediate treatment and recycling can be reported.
- (iv) For the breakdown of the amount of final disposal waste, the weight of the waste needs to be calculated by adding up the weight of each waste to which an organization gave final treatment (landfilling, etc.) in its own landfill site.
- (v) The amount of waste that went to a landfill includes any residue expected to be landfilled after the reuse, recycling, thermal recycling, and simple incineration of most of the waste, but it should be calculated and disclosed separately from the amount of waste that was landfilled to which the final disposal operation is performed directly. If any residue cannot be calculated, the reason needs to be made clear.
- (vi) For the breakdown of the method of treating waste etc., the status of initiatives to reduce the amount of final landfill waste and that of waste to be incinerated, for

example, by transporting the waste to a biomass power generation facility also needs to be reported.

- (vii) The breakdown of the method of treating waste etc., consists of the amount of recyclable resources to be reused, recyclable resources to be recycled, recyclable resources from which heat is recovered, and waste that is simply incinerated with no thermal recycling carried out.
- (viii) The amount of waste recycled does not include materials that are recycled in the facilities of an organization. Information about recyclable resources to be reused or recycled in the facilities of an organization needs to be reported under OP-4 (amount of materials recycled within an organization's operational area).
- (ix) The amount of recyclable resources to be reused or recycled is calculated by adding up the weight of each resource that was reused or recycled among recyclable resources that discharged and removed from its facilities (out of its control).
- (x) The amount of construction waste materials considerably increases in the fiscal year when the facilities or equipment are rebuilt or demolished, because they are generated after the rebuilding or demolition of facilities/equipments and factories/business establishments. As construction waste includes the characteristics of production goods and capital goods, this amount needs to be excluded from the total amount of discharged waste and be calculated separately. Also, it is good practice to provide a note about the total amount of construction waste materials.
- (xi) Refer to Reference Material 5 [Common Estimation Examples of Indicators]. (omitted in the English version.)

OP-10: Total amount of water discharge and reduction measures

Water pollution caused by wastewater discharged from business establishments and domestic wastewater from general households has damaged human health and negatively affected the ecosystem for fish, shellfish, etc. and degraded the quality of clean water and the human living environment. In some public waters polluted with organic pollutants, environmental quality standards are not being met.

Therefore, the total amount of discharged wastewater, the amount of wastewater by discharge destination and its water quality, and reduction measures need to be reported.

(1) Information and indicators to include

- a. Policy, targets, plans, initiatives, results, etc. related to measures to reduce the total amount of discharged wastewater
- b. Total amount of discharged wastewater (unit: cubic meters)
- c. Concentration (average and maximum values) of hazardous substances in wastewater (which are classified into health items, living environment items, and dioxins), the release of which is controlled by the Water Pollution Control Law and the Law Concerning Special Measures Against Dioxins; and the pollutant discharge load of the substances subject to the total volume control of the Water Pollution Control Law, etc., and reduction measures
- d. Breakdown of the amount of wastewater by discharge destination (unit: cubic meters)
 - Rivers
 - Lakes and marshes
 - Sea areas
 - Sewage, etc.

(2) Information and indicators to include as appropriate

- Amount of thermal effluent and that of cool effluent used in the process of using water in the sea, rivers, lakes and marshes, etc. (mainly for thermal exchange) and the average temperature difference between the two effluents.

(3) Commentary

In a cyclic process, water falls to Earth as rain and is absorbed and stored as groundwater by forests and in the soil or enters the sea through rivers before evaporating and falling as rain again. In order to secure a healthy water cycle and maintain good water quality, it is necessary to control the impacts on the environment caused by the use of water. Criteria for protecting human health and to conserve the living environment from water pollution have been set as environmental quality standards. In order to meet these standards and prevent water pollution, according to the Water Pollution Control Law, 27 health items and 15 living environmental criteria have been set for controlling wastewater

discharged from factories and business establishments.

[Points to Note for Calculating Indicators]

- (i) The total amount of discharged wastewater needs to be reported as the sum total of wastewater discharged as the result of organizational activities and the main breakdown of the wastewater should be reported in units of cubic meters. For the main breakdown of the total amount of discharged wastewater, discharge destinations, such as rivers, lakes and marshes, sea areas, sewage, etc., need to be reported.
- (ii) The amount of input water resources is expected to include the total amount of water provided from outside, including water that was not used in the manufacturing process. For example, the amount of water discharged, without being used in the manufacturing process as purified water after it overflowed from the reverse osmosis membrane (R/O), is also included in the amount of input water resources.
- (iii) Among the items (hazardous substances) in wastewater the release of which is controlled by law, the concentration of each health item and living environment item (other than pH and total coli form) needs to be reported as units of milligrams per liter (mg/l), and the concentration of dioxins needs to be reported as units of picograms per liter (pg-TEQ/l).
- (iv) When the amount of discharged wastewater has not been physically measured using as a flow meter, for example, the amount needs to be calculated using a rational method. In this case, a note needs to be added that the disclosed amount of wastewater is not based on an actual measurement, along with the method used to calculate the amount.
- (v) The pollutant discharge load caused by wastewater discharged from the total pollutant load control area needs to be reported in tons.
- (vi) Refer to Reference Material 5 [Common Estimation Examples of Indicators]. (omitted in the English version.)

4. Information and Indicators that Describe the Status of the Relationship between Environmental Considerations and Management (EEI)

(Eco-efficiency indicator = EEI)

(1) Information and indicators to include

- a. The relationship of economic value created by economic activities, such as value added, with environmental impacts caused by the same activities

(2) Information and indicators to include as appropriate

In addition to (1), the following information and indicators should be included as appropriate;

- Status of the extent that eco-efficiency has been improved

(3) Commentary

It is desirable that as organizations carry out their organizational activities, they cause as little environmental impact as possible. An eco-efficiency indicator shows the eco-efficiency of an organization's entire activities. What is actually expected from the eco-efficiency indicator is an indication of the relationship between all environmental impacts caused by an organization's activities and the management indices (value added, net sales, etc.) that indicate the results of the activities. There are now several methods or theories for integrating multiple environmental impacts into one indicator. It is therefore still premature to recommend any one method or theory as a guideline. On the other hand, there is a method in which the eco-efficiency of a specific environmental impact is calculated in comparison with value, value added, etc., per unit of environmental conservation cost without integrating multiple impacts.

Organizations should nonetheless aim to increase the eco-efficiency of all their activities- such as supply chain management, including purchasing, procurement, and the use and disposal of materials-and when it is possible to calculate the environmental impacts of each activity, it is desirable to show the status of the eco-efficiency of activities in as many areas as possible.

In addition, it is also good practice to show the contents of environmental impacts in a more detailed way. There are various factors and combinations of factors to be placed in the numerator and denominator of an indicator that indicates eco-efficiency and it is necessary to select appropriate factors based on the characteristics of the type of industry or business. In addition, by combining several indicators, a broader range of information can be provided. The definition of eco-efficiency and the method of measuring differ depending on the type of business, so great care needs to be taken when comparing organizations and different organizational activities.

In addition, it is desirable to report on how an organization has improved its eco-efficiency and the total volume of various environmental impacts (which is a single indicator that integrates different environmental impacts with specific coefficients used) and include medium and long-term targets.

(4) Examples of Representative Eco-efficiency Indicators

There are two types of representative eco-efficiency indicators. One is aimed at individual environmental impact; the other is aimed at a value calculated with multiple environmental impacts integrated. Examples for the former include a basic unit of CO₂ generated by sales, a basic unit of waste generated by production output, etc. Examples of the latter include not only methods devised uniquely by each organization but also methods developed by private research organizations, such as the Lifecycle Impact Assessment Method based on Endpoint modeling (LIME) and Environmental Policy Priorities Index for Japan (JEPIX). Especially when using an eco-efficiency indicator included in the latter, it is necessary to fully understand that coefficients used for the integration of environmental impacts are calculated based on various assumed conditions or preconditions. Therefore, what needs to be clearly reported in environmental reporting is not just the idea of an eco-efficiency indicator but also a formula for calculating eco-efficiency. And it is also required to devise ways to accurately convey to stakeholders the meaning that an eco-efficiency indicator encompasses. In addition, when comparing different organizations, it is necessary to give full consideration to the properties, limits, etc., of any eco-efficiency indicator.

Various indicators can be used for the numerator and denominator adopted for eco-efficiency. Representative eco-efficiency indicators are shown below. Other than the ones shown here, eco-efficiency indicators developed by various organizations are shown in the Reference Material. (Refer to Reference Material 4 [Examples of Eco-efficiency Indicators].) (available in Japanese only.)

| |
|--|
| Value added |
| Amount of emitted CO ₂ (tons) |

(Inverse may also be used.)

Note: Value added can be calculated as, “Sales - costs for materials, etc. (costs for purchase from outside)” or “operating profit + labor costs + depreciation expense.”

Alternatively, the following indicators may be used.

| |
|--|
| Production output or net sales value |
| Amount of emitted CO ₂ (tons) |

(Inverse may also be used.)

| |
|---|
| Production output or net sales value |
| Total material input or amount of final disposal waste (tons) |

(Inverse also may be used.)

[Points to Note When Calculating an Indicator]

- (i) When calculating an eco-efficiency indicator, it is necessary for the value boundary (range of calculation) of the numerator (economic value) to correspond with that of the denominator (environmental impact).
- (ii) The value (amount of emitted CO₂, amount of final waste disposed etc.) adopted in the denominator (environmental impact) needs to be shown not as a relative value but as total volume.
- (iii) An eco-efficiency indicator directly reflects the environmental initiatives and efforts of an organization, but it is only a relative value. Therefore, the total volume also needs to be reported in order to avoid causing any misunderstanding for audiences.
- (iv) Eco-efficiency indicators need to be reported so that yearly changes can be clearly understood. Doing so helps in analyzing the results of an organization's initiatives and noting problem-solving progress.

Information and Indicators that Describe the Status of Social Initiatives

1. Concepts of Information and Indicators in Environmental Reporting

The results of a 2005 survey⁵ published in Japan revealed that in recent years 62.7% of environmental reporting and similar disclosures reported not only the status of environmental conservation activities but also a commitment to social issues. As shown in the categories given to some of the reporting, such as CSR reporting, Environmental and Social reporting and Sustainability reporting, most of them now include social aspects. This is because in the course of fulfilling their social responsibilities, it is important for organizations to commit themselves to both environmental and social issues, which in turn leads to the inclusion of social aspects in addition to environmental issues in reporting.

In the third Basic Environment Plan decided by Japan's Cabinet in April 2006, "integrative enhancement of environmental, economical, and social aspects" was highlighted as the first item of its basic direction concerning environmental policies. For the construction of a sustainable society, it is desirable that organizations, as the core economic drivers, incorporate the environmental and social aspects of their activities into their management policies, and disclose the status of their initiatives regarding environmental and social issues.

From these points of view and based on the items reported in many of the existing environmental reporting and guidelines, this chapter presents information and indicators that indicate the status of social initiatives.

Vital local communities are an important component in terms of both environmental and social aspects. When organizations think of what kind of relationship they should build with local communities, it is beneficial to keep both aspects in mind. In the United States, it is regarded as important for organizations to build a good relationship with local communities in the course of fulfilling their social responsibilities. On the other hand, in Europe, when the social responsibilities of organizations are discussed, a lot of attention is paid to securing employment and developing human resources, etc., in the region.

Anyway, matters that should be regarded as important in initiatives to social issues differ, depending on the degree of social importance and the situations in which an individual organization finds itself. Therefore, the items to be reported below are only examples, and organizations are required to report their initiatives to solve the social problems that they regard as important, in addition to the items below.

When organizations assess the items to include in environmental reporting on their initiatives related to social issues, in addition to items related to environmental conservation, initiatives focused on their relationship with stakeholders in local communities are also considered. Therefore, organizations are expected to describe those items they consider to be especially important after they have exchanged opinions with various stakeholders about the cultural and historical background of any local communities.

⁵The percentage of companies that replied "We describe not only the environmental aspects but also the social and economic ones." for "FY 2005 Survey of Environmental Friendly Corporate Activities"

Many research papers have been published recently concerning corporate social responsibilities from a variety of different viewpoints including those of governments and private institutions. When organizations report their initiatives regarding social issues, they are expected to provide appropriate information using such research results for reference. (Refer to Reference Material 6 [Research Results of Domestic and International Research Organizations].) (omitted in the English Version)

2. Information and Indicators that describe the Status of Social Initiatives (SPI)

(1) Information and indicators to include as appropriate

When describing initiatives to Social Issues, an organization's policy, targets, plans, etc. need to be reported. In addition, in terms of the information and indicators shown below, it is desirable to set priorities by, for example, consulting with stakeholders and then selecting and reporting on the most appropriate ones. As an option, a summary of the extent that the activities of an organization have contributed to the creation of social value can be reported.

1) Information and indicators concerning industrial safety and hygiene

- Policies, plans, and initiatives concerning industrial safety and hygiene
- Frequency and number of industrial accidents (number of accidents, details on serious accidents such as deaths, serious injuries, deaths from overwork, etc., and reporting required by the Law on Industrial Safety and Hygiene)
- Policy and initiatives concerning the health care of employees (initiatives based on guidelines for research on danger and hazardousness, etc.,^{*1} initiatives based on guidelines on measures for business organizations to implement based on health examination results^{*2}, the status of safety and health education being given, and initiatives based on guidelines on measures for business organizations to create a comfortable working environment^{*3})
- Frequency rate, severity rate, and number of non-attendance days
- Expenditure on health and safety and expenditure per employee
- Initiatives based on guidelines for industrial safety and hygiene management systems^{*4}
- The minutes of the Industrial Health and Hygiene Commission and notification to all employees

^{*1}Guideline on research, etc. on danger and hazards (in Japanese)

<http://www.jaish.gr.jp/anzen/hor/hombun/hor1-47/hor1-47-5-1-0.htm>

^{*2}Guidelines on measures for organizations to implement based on health examination results (in Japanese)

<http://www.jaish.gr.jp/anzen/hor/hombun/hor1-19/hor1-19-1-1-0.htm>

^{*3}Guidelines on measures for organizations to create a comfortable working environment (in Japanese)

<http://www.jaish.gr.jp/anzen/hor/hombun/hor1-21/hor1-21-1-1-0.htm>

^{*4}Guidelines on industrial safety and hygiene management systems (in Japanese)

<http://www.jaish.gr.jp/anzen/hor/hombun/hor1-2/hor1-2-58-1-0.htm>

2) Information and indicators concerning employment

- Policies, plans, and initiatives related to employment
- Breakdown of labor force (percentages of permanent employees, temporary employees, short-term contract employees, part-time employees, etc., status of elderly people)

employed, number of persons leaving organization in the previous year (by age, sex, and region), turnover rate (by age, sex, and region), and comparison of regular employment rate and regular employees as a percentage of all employees in the region)

- Wage conditions (ratio of the average wages of regular employees against those of non-regular employees; comparison of health insurance, maternity leave before and after childbirth, childcare leave, and retirement pensions between regular employees and non-regular ones)
- Status of how fairly job applicants are selected and employed
- Status of how personnel evaluations are conducted
- Status of how education and training are carried out
- Information according to the Equal Employment Opportunity Law for Men and Women (ratio of male to female directors and managers, ratio of male to female regular employees, and how the guideline on corporate voluntary activities for helping female employees fulfill their potential^{*5} has been followed)
- Policies and initiatives related to the employment of the disabled, and the status of the disabled being employed according to the Disabled Employment Promotion Law (number of disabled employed and their employment rate)
- Policy on the employment of alien workers and the status of alien workers being employed
- Status of public welfare (status of the extent that maternity leaves before and after childbirth and childcare have been taken, initiatives to support families raising children, off-duty education of employees and assistance for employees to participate in NPO activities, the status of the extent that paid holidays and ones not stipulated by law have been taken, and initiatives based on the Next-Generation Fostering Assistance Promotion Law)
- Labor-management relations (ratio of organized labor, status of collective bargaining, basic policies on dismissal and employment adjustment and the status of how the policies have been adhered to, status of labor-management disputes and lawsuits, and the status of directions, recommendations, etc. conducted by the Labor Standards Inspection Bureau)
- Initiatives to improve the workplace environment (status of how policies on prevention of sexual harassment have been clarified and made known to employees, status of whether a complaints procedure is in place and known to employees, initiatives to prevent bullying other than sexual harassment, and how complaints about bullying have been handled, to what extent the guidelines on AIDS problems in the workplace^{*6} have been adhered to, and to what extent the guidelines on items that a business proprietor should take into consideration in employment management when dealing with problems caused by sexual speech and behavior in the workplace^{*7} have been adhered to).

^{*5}Guidelines on corporate voluntary activities for helping female employees fulfill their potential

(in Japanese)

<http://www2.mhlw.go.jp/topics/seido/josei/hourei/20000401-35.htm>

*6 Guidelines on AIDS problems in the workplace (in Japanese)

http://api-net.jfap.or.jp/mhw/document/doc_02_29.htm

*7 Guidelines on items that a business proprietor should take into consideration in employment management when dealing with problems caused by sexual speech and behavior in the workplace (in Japanese)

<http://www.mhlw.go.jp/general/seido/koyou/danjokintou/dl/20000401-30-2.pdf>

3) Information and indicators concerning human rights

- Policy, plans, and initiatives related to human rights
- Status of measures being taken against discrimination
- Status of measures taken to prevent child labor and forced or obligated labor (status of how programs for eliminating these kinds of labor, including supply chain management, have been carried out)
- Education and training for employees about human rights

4) Information and indicators concerning contributions to local communities

- Policies, plans, and initiatives for respect and protection of local culture and communities (in regions in Japan and abroad related to the activities of an organization)
- Initiatives to social issues in developing countries, etc.
- Status of fair trade and CSR procurement
- Status of cooperation and assistance for provision of education and training in local communities
- Policies, plans, and initiatives related to social contributions other than for the environment
- Status of assistance and provision to NPOs, industry groups, etc. amount of assistance, and goods supplied, etc.

5) Information and indicators concerning corporate governance, corporate ethics, compliance, and fair trade

- Policies, systems, plans, and initiatives related to corporate governance, ethics, compliance, and fair trade (also applies for overseas activities)
- Details of violations of laws other than environmental laws, details on the directions, recommendations, orders, punishments, etc. given by administrative agencies, and the number of them (laws mentioned above include the Anti-Monopoly Law, Law for the Prevention of Unreasonable Premiums and Misrepresentation Concerning Products and Services, Subcontract Law, Labor Standards Law, Worker Dispatch Law, Fair Competition Regulations, Consumer Products Safety Law, Specified Commercial Transactions Law, Product Liability Law, and Foreign Exchange and Foreign Trade Law)

- Details on all lawsuits other than environmental suits that have been filed or faced and their results
- Status of whether a code of conduct has been formulated
- Status of the initiatives on fair transaction, such as the compliance program of the Anti-Monopoly Law and the implementation of an Anti-Monopoly Law observance program; observation of the Law for the Prevention of Unreasonable Premiums and Misrepresentation Concerning Products and Services; measures to prevent delay in payment to subcontractors; and the implementation of a guidelines observance program for distribution trade practices.
- Policy, plans, and initiatives related to safeguards for those personnel who disclose information in the public interest (whistleblowers).

6) Information and indicators concerning personal information protection

- Policy, plans, and initiatives related to personal information protection

7) Information and indicators concerning a wide range of consumer protection and product safety

- Policies, plans, and initiatives related to consumer protection and product safety and quality
- Policies and initiatives to secure the safety and hygiene of customers through the process of designing, manufacturing, selling (providing), using, and disposing of products and services
- Names of organizations that confirm and certify that their main products and services meet safety standards and, as necessary, the procedures for confirmation and certification, numerical targets for the products and services to meet the standards, and to what extent the standards have been met
- In-house systems for complying with laws and self-imposed regulations on advertising and sales to customers
- Measures to comply with the Product Liability Law, especially ones to secure the safety of customers in designing, manufacturing, and displaying products
- After-sales service program including inspection and repair
- Status of whether a customer complaints system has been set up and the status of how complaints have been effectively dealt with (whether a system for dealing with customer complaints has been set up and how the complaints have been dealt with according to the Customer Basic Law and how many cases of damage caused by products have been reported according to the Consumer Products Safety Law)
- Status of the extent that data to justify the quality indication and explanation of products, etc., required by the Law for the Prevention of Unreasonable Premiums and Misrepresentation concerning Products and Services, have been disclosed
- Status of how many faulty products, etc., have been recalled and collected
- A program for improving the sales and consumer contract provisions in regards to compliance with the Consumer Contracts Law, Consumer Basic Law, Financial

Product Transactions Law, and the Specified Commercial Transactions Law, and the status of the extent that the program has been carried out

8) Economic information and indicators concerning organization's social aspects

- Allocation of corporate value (value added) to stakeholders by types
- Names of parties that funds were donated to in areas other than the environment and the amount of donations
- Status of whether tax liabilities have been met appropriately

9) Information and indicators concerning other social aspects

- Policy, plans, and initiatives related to conducting animal experiments
- Respect for and protection of intellectual property rights
- Policies, plans, and initiatives related to the handling, developing, manufacturing, and selling of weapons and products or goods that can be diverted to military use
- Record of winning awards

(2) Commentary

Concerning social aspects, there are a variety of opinions on the kind of information that needs to be reported.

For example, the *Guidelines for Multinational Enterprises* (updated in June 2000) set out by the Organization for Economic Cooperation and Development (OECD) was drawn up as standards of conduct to deal with concerns from society about the liberalization and facilitation of trade and investment, as well as the globalization of the economy by multinational enterprises. The guidelines consist of a foreword and following ten chapters; Concepts and Principles; General Policies; Disclosure; Employment and Industrial Relations; Environment; Combating Bribery; Consumer Interests; Science and Technology; Competition; and Taxation.

In addition, the GRI Guidelines (3rd version) describe four items for the social performance indicator: labor practices and decent work (fair labor conditions), human rights, society, and product responsibility.

Social aspects should be examined taking into account the sustainability of regions, countries, and the planet, the influence on stakeholders at various levels, and those social responsibilities required of organizations. The Guidelines classify the information and indicators to be reported into the following nine categories: (1) industrial safety and hygiene; (2) employment; (3) human rights; (4) contribution to the local community and society; (5) corporate governance, ethics, and compliance and fair trade; (6) protection of personal information; (7) broad protection of consumers and product safety; (8) economic information and indicators concerning corporate social aspects, and (9) others. These nine categories have been created because they seem to attract more social interest or are regulated by law.

Information and indicators concerning social aspects may differ, depending on the type or scale of an organization's activities, but each organization should report items based on its own situation and with reference to the Guidelines.

Tasks to Tackle: Improving the Quality of Environmental Reporting

1. Aiming at Higher-Quality Environmental Reporting in Cooperation with Stakeholders

Because environmental issues are highly diverse and as the scope of organizational activities becomes wider, organizations need to ensure that the content of their environmental reporting is appropriate and based on the realities of their activities. In many cases, however, it is still difficult for organizations to fully understand the tasks they should focus on, because they are not necessarily clearly delineated objectively in the business world. Based on this fact, it will be increasingly important for organizations to compile environmental reporting based on the input of their various stakeholders.

Therefore, it is necessarily important for all parties involved to launch initiatives to create systems in which opinions of stakeholders are effectively integrated into organizational planning, and that the results of these exchanges are reflected in the following year's activities, including the process of compiling information for environmental reporting.

In addition, stakeholders should expect to be more involved in the compilation of environmental reporting, and all parties will need to make greater efforts in improving the developing and dissemination of higher-quality ones.

2. How to Utilize Environmental Reporting

Organizations are required to actively present environmental reporting. On the other hand, environmental reporting is also expected to serve as a tool for engaging stakeholders in environmental issues and to be widely used by organizations to explain their environment-friendly activities.

First of all, it is expected to be fully used inside the organization that created it. In order to carry out environment-friendly activities, the management of an organization needs to act on its own initiative and describe its commitments to environmental issues, fully understand the contents of its reporting and familiarize its employees with the contents. The employees are also expected to embrace and participate in environmentally friendly activities.

In addition, it is expected that environmental reporting will be used by organizations to explain their environmentally friendly management policies and initiatives to external stakeholders, such as stockholders or investors, community residents, mass media, and relevant NPOs through briefings, press conferences, and meetings for the exchange of opinions. On such occasions, organizations are expected to fully communicate with stakeholders, so those stakeholders can get enough of the information they need. Also, organizations are expected to draw upon stakeholders' opinions, and reflect them in management.

Furthermore, environmental reporting needs to be considered more frequently in terms of investment, financing, or corporate valuation. Therefore, all parties involved, including financial evaluation organizations, need to develop methods of conveying the whole picture of

an organization's environment-friendly activities in as balanced and as understandable a way as possible.

In addition to the points mentioned above, parties involved in environmental reporting need to develop methods for environmental reporting to be fully used in a variety of situations.

3. Reporting on the Status of Initiatives to Social Issues

In recent years, more and more organizations have disclosed their initiatives involving social issues in their CSR reporting, social and environmental reporting, or environmental reporting. Therefore, guidelines for organizations to use for obtaining information and indicators concerning social initiatives are needed. Because environmental issues are closely related to social situations, it is highly recommended that organizations voluntarily report on their initiatives to social issues. The Guidelines provides examples of typical information and indicators to be reported.

Information and indicators concerning social aspects have been discussed by other ministries in Japan, international organizations, NPOs, etc., but they still deserve further research. In the future, based on the results of research, a broader discussion with all parties will be needed, regarding the way in which environmental reporting should be perceived in the whole context of reporting on corporate social responsibilities.

On the other hand, some organizations currently emphasize their social contribution activities in their environmental reporting, and tend to fail to provide adequate information on their environment-friendly management or environmental performance. As the deterioration of the global environment is becoming an increasingly urgent problem, it is more important than ever for organizations to actively and voluntarily disclose information on their environment-friendly activities or initiatives that can help construct a sustainable society. To this end, organizations are strongly encouraged to conduct adequate information disclosure on their environment-friendly activities in ways that conform to on the Guidelines.

Comparison of *Notification of Report Recording Guidelines*, the *Guidelines* and the *Environmental Reporting Guidelines 2003 Version*

| <i>Notification of Environmental Report Recording Guidelines</i> | <i>Environmental Reporting Guidelines (Fiscal Year 2007 Version)</i> | <i>Environmental Reporting Guidelines (Fiscal Year 2003 Version)</i> |
|---|--|--|
| [1] Policies, etc. on Environmental Considerations in Corporate Activities (Notification No. 2-1) | [1] Basic Information BI-1 CEO's statement [2] Status of Environmental Management MP-1 Status of environmental management (MP-1-1 Environmental policy in organizational activities) | [1] Basic Headings (1) CEO's statement [2] Summary of Policies, Targets, and Achievements in its Activities (4) Environmental policies regarding environmental conservation |
| [2] Main Corporate Activities, Target Fiscal Year for the Activities, etc. (Notification No. 2-2) | [1] Basic Information BI-2 Fundamental requirements of reporting BI-3 Summary of the organization's business (Including Management indices) | [1] Basic Headings (2) Foundation of reporting (3) Summary of the Nature of the organization |
| [3] Plans for Environmental Considerations in Corporate Activities (Notification No. 2-3) | [1] Basic Information BI-4 Outline of environmental reporting (BI-4-2 Summary of objectives, plans and results regarding environmental initiatives) | [2] Summary of Policies, Targets, and Achievements in its Activities (5) Summary of objectives, plans of environmental activities and achievements in environmental conservation |
| [4] System, etc. for Environment-friendly Efforts in Corporate Activities (Notification No. 2-4) | [2] Status of Environmental Management MP-1 Status of environmental management | [3] State of Environmental Management (8) State of environmental management systems |
| [5] State, etc. of Environment-friendly Efforts in Corporate Activities (Notification No. 2-5) | [3] Status of Activities for Environmental Impacts and Reduction Measures OP-1 Total amount of energy input and reduction measures OP-2 Total amount of material input and reduction measures OP-3 Amount of water input and reduction measures OP-4 Amount of materials recycled within an organization's operational area OP-5 Total amount of manufactured products or sales OP-6 Amount of greenhouse gas emissions and reduction measures OP-7 Air pollution, its environmental impacts on the living environment, and reduction measures OP-8 Amount of release and transfer of chemical substances and reduction measures OP-9 Total amount of waste generation and final disposal and reduction measures OP-10: Total Amount of water discharge and reduction measures [2] Status of Environmental Management MP-6 Status of green purchasing or procurement MP-8 Status of environmentally friendly transportation | [4] State of Activities for Reduction of Environmental Burden (14) Total amount of energy input and measures to reduce it (15) Total amount of material input and measures to reduce it (16) Amount of water input and measures to reduce it (17) Amount of greenhouse gases emission and measures to reduce it (18) Amount of chemical substances emission and transportation, and measures to reduce it (19) Total amount of products or sales (20) Total amount of waste generation and final disposal and measures to reduce it (21) Total amount of water disposal and measures to reduce it (22) State of environmental burden caused by transportation and measures to reduce it (23) State of green procurement and measures to promote it |

| | | |
|--|---|--|
| <p>[6] Information on Environmental Considerations for Products, Services, etc. (Notification No. 2-6)</p> | <p>[2] Status of Environmental Management MP-12 Status of products and services that contribute to the reduction of negative environmental impacts [3] Status of Activities for Environmental Impacts and Reduction Measures OP-5 Total amount of manufactured products or sales</p> | <p>[4] State of Activities for Reduction of Environmental Burden (24) State of products and services that contribute to reduction of environmental burden</p> |
| <p>[7] Others (Notification No. 2-7)</p> | <p>[2] Status of Environmental Management MP-2 Status of compliance with environmental regulations MP-10 Status of environmental communication</p> | <p>[3] State of Environmental Management (11) State of the disclosure of environmental information and environmental communication (12) State of compliance with environmental regulations</p> |
| <p>Items Desired to Be Achieved by a Corporation's Originality and Ingenuity</p> | <p>[1] Basic Information BI-4 Outline of environmental reporting BI-5 Material balance of organizational activities [2] Status of Environmental Management MP-3 Environmental accounting information MP-4 Status of environmentally conscious investment or financing (newly set) MP-5 Status of supply chain management for environmental conservation MP-7 Status of research and development of new environmental technologies and DfE MP-9 Status of biodiversity conservation and sustainable use of biological resources MP-11 Status of social contribution related to environment [3] Status of Activities for Environmental Impacts and Reduction Measures [4] Status of Relationship between Environmental Considerations and Management [5] Status of Social Initiatives</p> | <p>[2] Summary of Policies, Targets, and Achievements in Environmental Efforts (6) Material balance of its activities (7) Summary of environmental accounting information [3] State of Environmental Management (9) State of supply chain management for environmental conservation (10) State of research and development of technologies for environmental conservation and environment-conscious products/services (13) State of social contribution related to environment [5] State of Performance in Social Area State of performance in social area</p> |

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