

Environmental Reporting Guidelines

(Fiscal Year 2003 Version)

Tentative Translation

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(In this tentative translation, all annexes written under are cut.)

Reference Data for the Publishing and Better Understanding of Environmental Reporting

1. Summaries of Measures for Promoting the Voluntary Environmental Conservation Activities
2. Environmental Performance Indicators
3. Information in Regard to the Environmental Accounting
4. Eco-Action 21
5. Diffusion of Making and Publishing of Environmental Reporting
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For the Revision of the Guidelines

1. Purpose of the Revision of the Guidelines

As environmental consciousness in entities activities has risen in recent years, the importance of environmental communication and social accountability, which promote active and voluntary disclosure of environmental information about their environmental activities and considerations for environment matters in their activities and improve their reputation for their environmental efforts and performances, has been widely recognized. The number of organizations that publish environmental reporting for this purpose is steadily increasing; however, the number is not yet a significant portion in the entire business and non-business community.

In addition, when citizens make a decision to act on their environmental consciousness, it is necessary to know organizations' significant information about their environmental efforts. Citizens are seeking environmental information. The importance is widely recognized to fulfill the needs of citizens by providing and reporting environmental information.

The "Master Plan for Facilitating Formation of Sustainable Society" ("Recycling-Based-Society", Cabinet decision in March 2003) states, as one of its objectives, that about 50% of corporations that are listed on the stock market and about 30% of corporations that are not listed but employ more than 500 employees would publish their environmental reporting .

Since 2001, the Ministry of the Environment has promoted environmental reporting with various methods including the publications of the "Environmental Reporting Guidelines: Fiscal Year 2000 Version" (February, 2001), "Environmental Accounting Guidelines: Fiscal Year 2002 Version" (March 2002), and "Environmental Performance Indicators for Businesses: Fiscal Year 2002 Version" (March 2003). In abroad, many organizations have done similar efforts including the "Sustainability Reporting Guidelines 2002" published by the Global Reporting Initiative (GRI).

Under these circumstances, the Ministry of the Environment has installed the "Committee of Revision of Environmental Reporting Guidelines," which consists of writers, users and scholars of environmental reporting. This committee has met four times, listened public opinion through the public comments process, and published the "Environmental Reporting Guidelines: Fiscal Year 2003 Version."

This revision is based on "Environmental Performance Indicators for Organizations: Fiscal Year 2002 Version" and GRI's "Sustainability Reporting Guidelines 2002" is used as reference. Necessary revision has been performed, because of the domestic and international progress since the

publication of the Environmental Reporting Guidelines :Fiscal Year 2000 Version. The revision includes clarification of the definition, the revision of the contents of environmental reporting, and the addition of social aspects.

2. Objectives and Contents of the Environmental Reporting Guidelines

These guidelines summarize the directions and contents that are considered to be preferable, based on domestic and international trends on environmental reporting. The purpose of the guidelines is to give practical guidance for those who are planning the publication of environmental reporting and also who have already published environmental reporting(s).

Those which are planning the first publication might refer to Part 1 at the beginning, which shows the definition of environmental reporting and fundamental functions and principles of environmental reporting, and then Part 2, which shows components that are necessary for environmental reporting.

Those which have already published could use these guidelines to assess their own environmental reporting and make improvements by comparing their own environmental reporting with the components that are recommended by these guidelines.

In “Elements of Environmental Reporting” in Part 2, components that are considered to be important for environmental reporting are divided into 5 categories which includes 25 elements. For each 25 elements, information that should be included in environmental reporting is described. This information is:

- a) environmental information that is commonly discussed in various environmental reporting guidelines that are already published domestically or globally, and that is important for Environmental reporting of all organizations,
- b) environmental information that would be considered to be necessary from the view-points of organizations’ social accountability, providing useful information to interested parties for decision making and providing information which could help readers’ understanding and increase the objectivity of the contents as an environmental communication tool
- c) environmental information that will be important in future to build the sustainable society.

Since these guidelines show important or desirable information or components in environmental

reporting and explain the significance of including them and how to include them, therefore, it is anticipated that interested parties (readers of environmental reporting) also use these guidelines as guidance when reading or evaluate environmental reporting.

The components and information that are included in these guidelines are not restrictively enumerated, or in the other words, it is merely outcome of our studies. Therefore, if there is an issue which the scientific community does not have a consensus whether it has a significant impact on the environment, the issue may be included in the guidelines if it is highly concerned by the public, leaving the decision of the inclusion of the issue to the writers of environmental reporting. The writers of environmental reporting are expected to gather information and consider these issues by themselves. Thus, if a organization considers an issue that is not included in these guidelines is important, then the issue should be included in its environmental reporting.

In addition, these guidelines describe what environmental reporting should include, but they do not prescribe the order of components or how information in these components should be spelled out. Organizations are expected to show their originality that comes from their organizational characteristics in designing and writing environmental reporting.

3. Intended Readers of the Guidelines

In Japan, there are about 6,000 organizations which are either listed on the stock market or employ relatively many employees (more than 500 employees). Among them, it is estimated that about 700 companies publish environmental reporting. In the future, although ideally all organizations would publish environmental reporting, initially it is expected that the major organizations which have relatively plentiful human and monetary resources will positively face the challenge to publish environmental reporting.

Although these guidelines are written for all organizations which may write environmental reporting, major organizations mentioned above are particularly expected to publish environmental reporting which include components and information described in these guidelines. Organizations that have recently initiated the publication of environmental reporting or smaller businesses (including site units) could phase in the publication of environmental reporting by gradually adopting contents, where possible. The Ministry of the Environment has separately issued “Eco-Action 21 (Environmental Activity Evaluation Program)”, which aims to enable smaller businesses to design and operate environmental management program, to carry out conservation activities, and to publish environmental reporting with relatively ease. The Eco-Action 21 certification and registration program is scheduled to be in operation in 2004 and it requires writing

and publishing environmental reporting.

4. Exertion of Originality and Ingenuity - Environmental Reporting with Organizational Characteristics

The purpose of environmental reporting is to provide a significant tool for environmental communication and to fulfill organizations' accountability in regards to the environmental burden. Therefore, there are certain common items or contents that should be included in environmental reporting.

On the other hand, management policies, company ethos, corporate culture, and/or characteristics should also be reflected within the environmental reporting. From this perspective, each organization should exert its "originality and ingenuity" into writing the headings or contents of environmental reporting and the disclosing media, (including the decision over using printed paper or the internet).

It is hoped that environmental reporting which reflects each organization's characteristics are published and disclosed, based on the purport of these guidelines.

Commentary

To collect information on the distribution and uptake of these guidelines and to make continuous improvements, the Ministry of the Environment would appreciate if the facts would be written in those environmental reportings when reference is made to these guidelines. When referring, it should be requested to attach a contrastive table that contrasts the 25 elements in 5 categories which are suggested by these guidelines and the elements that are actually included in the environmental reporting (including page numbers of each aspect) and to state the reason of exclusion of the elements.

If inclusion of all elements is difficult because of the recent initiation of publishing, the size of the organizations and/or type of activities, and/or internal reasons of the organization, it is desired to state its intention to gradually improve the contents of environmental reporting.

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Part 1. What Is Environmental Reporting?

1. Definition of Environmental Reporting

Environmental reporting is, regardless of its name or disclosure media, to promote communication of organizations, to fulfill its accountability regarding environmental efforts in their activities, and to provide useful information to decision making of interested parties.

Environmental reporting refers to systematic and holistic statements of environmental burden and environmental efforts in organizations' activities, such as environmental policies, objectives, programs and their outcomes, organizational structures and systems for the environmental activities, in accordance with general reporting principles of environmental reporting, and that is published and reported periodically to the general public.

Commentary: Name

“Environmental reporting” can be called in different names depending on its purpose and contents, such as a “sustainability reporting,” which include social and economic aspects or a “social and environmental (CSR) reporting,” which describes activities based on corporate social responsibility (CSR). Environmental reporting defined in these guidelines refers reports and publications which are periodically disclosed and which holistically and systematically stating the state of environmental burden caused by organizations' activities and environmental efforts that mitigate them, and which are in accordance with general reporting principles of environmental reporting. Therefore, environmental reporting defined by these guidelines includes those statements that contains information about corporate social responsibility or sustainability

Commentary: Disclosure Media

The media of current “environmental reporting” varies from brochure/printed material, web (URL) to CDs. Regardless of its media, environmental reporting defined by these guidelines includes all those statements which are in accordance with general reporting principles of environmental reporting and which holistically contain information about the state of environmental burden caused by organizations' activities, and environmental efforts.

Commentary: In Accordance with General Reporting Principles

“General Reporting Principles of Environmental Reporting” means relevance, reliability, clarity, comparability, and verifiability, each of which will be discussed later.

Environmental reporting should be consistent with these general principles, and should be holistically and systematically stated containing the 25 important elements.

Environmental reporting should include the environmental policies, objectives and

environmental programs, environmental burden, based on the characteristics and size of organizations' activities, products and services, the organizational structure to carry out the environmental efforts and their achievements. Also environmental reporting should contain a pledge which states the determination to endeavor to achieve the environmental policies and objectives.

In case of small-or-medium-sized enterprises (SMEs), however, environmental activity report written and published satisfying the requirements of "the Environmental Action Evaluation Program (Eco-Action 21)" of the Ministry of the Environment is also environmental reporting defined in this report.

Commentary: Publish and Report Periodically

Generally, environmental reporting should be published once every fiscal year of the organization.

2. Principle Functions of Environmental Reporting

Environmental reporting has two fundamental functions, external (or social) function and internal function, which promotes environmental efforts in organizations' activities. It plays very important role in strengthening voluntary environmental efforts in organizations activities.

The following three are external functions, when environmental reporting is used as a tool for environmental communication between the organization and the public.

- (1) Function to disclose information based on the social accountability of organizations
- (2) Function to provide information that is useful for decision making of interested parties.
- (3) Function to promote environmental activities by "a pledge and review" between organizations and the public.

The following two are internal functions.

- (4) Function to establish or revise environmental policies, objectives and programs of organizations.
- (5) Function to motivate the management and employees and to encourage environmental activities of them.

When writing and publishing environmental reporting, it is important to design the environmental reporting achieve properly these functions.

Commentary: Function as a tool for environmental communication between the organization and the public.

Environmental reporting can be considered as "an open-window of organizations and a significant tool for environmental communication." Interested parties outside of the organizations 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 interested parties through this “window”. In addition, environmental reporting is a tool as environmental communication because organizations can understand through the window what interested parties feel and what they want organizations to do.

Commentary: Function to disclose information to fulfill the social accountability of organizations

Organizations, occupying the main part of socio-economic activities, generate considerable environmental burdens through their operations. The environment is the common heritage of mankind, and it could therefore be considered that organizations should fulfill their accountability to report their environmental burdens, mitigation methods, and environmental conservation efforts. Environmental reporting is one of the most important methods to fulfill the responsibility.

Commentary: Function to provide information that are useful for decision making of interested parties.

When interested parties make choices among products and services or where they invest, they need variety of product information and/or 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 many interested parties use environmental information in environmental reporting for their choices of products and services, then organizations with commitment to environmental protection will be given higher evaluation they deserve, and the promotion of the voluntary environmental efforts by organizations would be expected in the market mechanism. Particularly, it is expected that environmental reporting will play a significant role as information media for labor market and capital market such as stock market, while eco-labeling plays an important role in the market of goods and services. This is gradually becoming the reality as SRI, such as the eco-fund in Japan, is rapidly becoming popular.

In recent years, socially responsible investment (SRI) is becoming popular in European and North American countries. An increasing number of public pension funds as well as individual investors are willing to invest into “business organizations which actively commit environmental efforts”. Under these circumstances, Japan’s business organizations which disclose environmental efforts by writing and publishing environmental reporting will receive an increase amount of green investments or green money from foreign countries, therefore, it will contribute to the integration of the economy and the environment that will lead to a

environmentally sustainable society.

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

Commentary: Function to promote environmental activities by “a pledge and review” between the organization and the public

By disclosing targets and the state of organizations' environmental 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 policies and targets on environmental conservation activities and society, in turn, evaluates them.

When an organization publishes environmental reporting, if it makes positive efforts, consideration of external interests' eyes or comparison among organizations within the same sector, it may lead to the progress in environmental conservation by the whole society.

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

Commentary: Function to establish or revise environmental policies, objectives and programs of business organizations.

By disclosing environmental reporting, it is expected that organizations will voluntarily improve the contents and quality of environmental conservation in order to enrich the contents of the environmental reporting. In addition, an internal collecting system of environmental information should be improved to provide an opportunity to revise or establish policies, objectives, targets, and action plans concerning the environment.

Commentary: Function to motivate the management and employees and encourage environmental activities of them.

Employees may not know the details of organization's environmental conservation efforts, and environmental reporting can be used for training employees in order to increase their awareness of its environmental conservation efforts, and to motivate their environmental consciousness. Furthermore, the pride which employees have in the organization would be

increased through environmental conservation. By including top management commitment, it could potentially motivate CEO's environmental consciousness, as well.

3. General Reporting Principles of Environmental Reporting

Environmental reporting is published as a tool for environmental communication from the perspective of social accountability. The following five principles are essential in order to make environmental reporting an effective tool for environmental communication and fulfilling social accountability. Environmental reporting which does not meet with these principles is more as an environmental pamphlet.

1) Relevance

Environmental reporting needs to provide information which is useful for interested parties' decision making by reporting the state of environmental burden caused by business activities and environmental programs that mitigate the burden and it needs to be issued in proper timing.

Commentary: Usefulness and timing in relevance

The contents of environmental reporting vary depending on principal readers intended. It is crucial to sufficiently consider the expectation and needs of each reader toward the organization and environmental reporting. Environmental reporting should suit the expectations and needs of its readers, and should include proper information for all the 25 elements, which are important for environmental reporting.

In order to be useful environmental reporting, it needs to be issued to interested parties in proper timing. Environmental reporting needs to be published in a fixed interval; and it should report environmental efforts in the operation, accidents concerning the environment and the establishment or revision of environmental policies and objectives in proper timing.

Whether a piece of information is relevant or not should be determined by the organization itself in consideration of the magnitude of influence which the information would have on decision making of interested parties.

2) Reliability

Environmental reporting needs to state reliable information.

In order to ensure reliability of environmental reporting, it must be free from errors and omissions. Organizations must provide environmental reporting that is accurate, includes substantial contents that reflect environmental burden the organization produce, covers all the

25 elements described in these guidelines and avoid statements that carry an impression that the reporting organizations trying to mislead the readers of the environmental reporting.

Whether various interested parties accept and trust the contents of a published environmental reporting depends on the organization's stance on the publication of environmental reporting.

In order to promote the reliability of environmental reporting, it is necessary to take the following points into consideration.

- To include contents based accurately on facts
- To comprehend information that is necessary and substantive in regards to environmental conservation activities and mitigation of environmental burdens to be carried out by the organization
- To be written in accordance with these guidelines and include all necessary information.
- To describe neutrally, and without bias, information which could have an impact upon the decisions and opinions of readers with regard to socially contentious issues. To carefully express the contents in a way that will not lead to misunderstandings when mentioning to uncertain facts or data and predictions of the future.
- To include no exaggerated statements or advertisement-like statements.

3) Clarity

Environmental reporting needs to provide necessary information with clear and easy-to-understand expressions to avoid misunderstandings among interested parties.

Commentary: easy-to-understand expressions

The potential readers (interested parties) of environmental reporting are various and it is important to take the need for clarity and the need to avoid misinterpretation into account when organizations publish environmental reporting. Although simple expressions are important to be clear, it is often necessary to provide substantial information even if the length of the statement becomes long. For example, if providing information that contains uncertainty, then the nature of uncertainty, the scope which the statement applies, and facts that lead to the decision should be clearly stated.

It is important to show annual changes for past several years in order to be persuasive report. When providing sectional information, it is also important to state in a way which readers understand the ratio of the section in the whole organization. Listing environmental efforts is not sufficient. It is important to state what portion each of the environmental efforts represents the whole organization.

Some environmental reporting only mentions organizations' environmental activities qualitatively. They almost fail to mention quantitative data (results and targets) and the state of environmental burdens caused by their activities. To inform readers of facts accurately, it is essential to indicate such quantitative data and it should provide actual numeric data as much as possible. If the absolute values are excluded or only an index such as percentages of previous year is applied, it could damage the reputation of the organization or raise needless doubts. This could lead to misconception such as, "Actually, they are not taking any action at all" or "They actually produce larger environmental burdens".

After that, environmental reporting, as a communication tool, should be easy to see, read, and understand. It is also necessary to devise particular expressions that attract the readers' interest to read.

In order to promote the clarity of environmental reporting, it is desirable to do the following.

- To enhance the use of straightforward sentences and styles
- To use graphs or pictures in addition to text
- To appropriately explain the meaning of efforts reported or quantities mentioned

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

It is especially expected that site environmental reporting should be summarized in easy manner, with emphasis on information of interest to the local public.

4) Comparability

Information included in 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 would enable certain comparison

First of all, information included should not be only for a single year, but it should enable to compare historical trends of the organization.

Secondly, although environmental burdens 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. Providing figures that could be compared to the figures

of the relevant industry, such as averages of the industry, would be effective.

It is difficult to standardize generally environmental information included in environmental reporting if the nature of operations or sectors is different. However information that is measured or estimated according to widely accepted guidelines, including these guidelines, is based on its own standardized conditions, reasoning and methods; therefore it would not be misunderstood and can be used as a basis for comparison.

If environmental reporting is not comparable, a organization cannot refer to other organizations' activities. Therefore, interested parties will face difficulty in selecting organizations that have positive motivation in environmental conservation.

Measures, such as clear descriptions of data and methods of data measurement, the publishing of environmental reporting which conforms to the guidelines, and the measurement of environmental performance using commonly agreed standards within the sector, will result in the enhancement of the reliability of environmental reporting and comparability among organizations will result from.

4) Verifiability

Information in environmental reporting needs to be accompanied by the basis and foundation of the statement and it should be verifiable with objective standpoint.
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Commentary: Verifiability

In the process of promoting reliability in environmental reporting, it is necessary to be verifiable with an objective standpoint for the information mentioned in environmental reporting . To be verifiable means that; Firstly, estimation methods and boundaries of each piece of information within environmental reporting are clearly mentioned. Secondly, verifiability also requires certain sources for each information in environmental reporting, and calculation systems should be described in order to allow confirmation of the reliability of data by a third party. In this case, the third party does not necessarily mean external person(s), and could refer to internal auditor(s).

4. Fundamental Requirements of Reporting

1) Clarification of Reporting Organization

It is essential that the boundary of the reporting organization is clearly defined in environmental reporting.

Commentary

The state of environmental burden and environmental activities of the organization should be a part of consideration when defining the boundary.

A major consideration should be whether the boundary of the reporting includes: an independent company only, a consolidation or group companies, sites in Japan, or sites all over the world.

Many organizations do their activities not within one unit of organization, for example, using domestic or international subsidiaries or contracting out transportation sections. Therefore, activities in all related units have to be covered for proper, fair and accurate evaluation of environmental performance of such operations. Thus, it is desirable to include the entire group using the method of consolidated financial statement. However, the cost of data gathering and comparability should be considered when determining the boundary, and consideration should also be given to how far the control of the management can reach. It is necessary to state in environmental reporting the area of boundary used in environmental reporting and the reason why the boundary has been defined.

Some existing environmental reportings inconsistently applies different boundaries within one environmental reporting (e.g. the corporate profile applies independent settlement data, environmental performance refers to data corrected at principal sites but not all sites, statements on environmental conservation activities include overseas sites or subsidiaries).

Although this may be unavoidable due to the accuracy of collected data or an amount of labor, it is necessary to specify the boundaries applied to each component, should they be different to the boundaries applied to the whole environmental reporting.

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

In this case, the use of a chart which gives an outline of the whole organization, statements about the strategy of the whole organization, and explanations of the position of each organization will help readers' understanding on the reporting organization.

2) Clarification of Reporting Period

It is essential that organizations clearly define the period of the reporting in environmental reporting.

Commentary

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

The period of environmental conservation activities mentioned in environmental reporting should be consistent with the applied period of the environmental reporting. However, not all activities may have finished within a fixed period, past environmental activities may have a continuous effect over a period of time, and reported environmental activities 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.

3) Clarification of Reporting Areas

It is essential that organizations clearly define the areas of reporting in the environmental reporting.

Commentary

Recently, in Europe and the United States, the notion that the areas of reporting are not just limited to "the environment" and can be expanded to social and economic fields, is becoming popular and organizations are publishing this as "Sustainability Reporting or CSR Reporting". Social area refers to, for example, occupational safety & health, employee benefit policies, equal opportunities, efforts for the disadvantaged, minimum wages, freedom of union, philanthropy, business ethics, protection of whistle-blowers, recalling of products and so on. Economic area refers to, for example, net sales and profits, assets, amount of investment, wage, labor productivity, employment creation, and so on.

However, in contrast to the environmental area, the reporting of social and economic areas is still under development. It is crucial to accumulate various relevant researches and examinations in future in order to determine what and how each element in those areas should be treated in reporting.

However, many organizations deal with environmental measures and occupational safety &

health at once within the same section in it. Therefore, in many cases, these issues are very closely related to each other.

These guidelines have added a new section of the “State of Performance of Organizations in Social Area” and show examples of social information that should be included in environmental reporting as well as some examples of the entries of operation and management-related indices. It is desirable that each organization extends the fields of reporting to social and economic areas at their discretion.

Part 2. Elements of Environmental Reporting

1. Structure of Environmental Reporting

There are “Necessary Components of Environmental Reporting”. These are components, essential for making environmental reporting work as a tool for environmental communication that provide useful information to interest parties’ decision making, and for fulfilling social accountability. All these components are included in the most current environmental reporting.

The necessary components and information for environmental reporting are:

- 1) Basic Headings,
- 2) Summary of Policy, Targets, and Achievements of Environmental Efforts,
- 3) State of Environmental Management,
- 4) State of Activities for Reduction of Environmental Burden, and
- 5) State of Performance of Organizations in Social Area.

The following twenty five elements are necessary headings in an environmental reporting.

1) Basic Headings

This includes CEO’s statement (including summary of efforts and pledge), the foundation of reporting, and a summary of the nature of the organization, this contains fundamental components to ensure the reporting functions as a communication tool between the organizations and the society, and provides useful information to interest parties’ decision making. It is also necessary that CEO’s statement includes not only a greeting, but also a summary of environmental activities of the organization and commitments to society.

The necessary components are the following three headings.

- (1) CEO’s statement (including summary of efforts and pledge)
- (2) Foundation of reporting (Reporting organization, time period, areas,)
- (3) Summary of the organization

2) Summary of Policies, Targets, and Achievements in Environmental Efforts

This component is concerning with policies, targets, plans, achievements and material balance of its activities with regard to organization’s environmental activities, and this part describes the state of environmental burden and the outlines of environmental activities of the organization. It is appropriate for targets, plans, and achievements, including state of environmental burden, to be summarized in a table.

The necessary components are the following four headings.

- (4) Environmental policies regarding environmental activities
- (5) Summary of objectives, plans of environmental activities and achievements in environmental efforts
- (6) Material balance of its activity

(7) Summary of environmental accounting information

3) State of Environmental Management

This is a section in which the state of the entire environmental management is described. Each of the state of the environmental management system, the state of supply chain management for environmental conservation, the state of research and development of environmentally conscious technologies, the state of the disclosure of environmental information and environmental communication, the state of compliance with environmental regulations, and the state of social contribution should be described independently. The necessary components are the following six headings.

- (8) State of environmental management system
- (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
- (11) State of the disclosure of environmental information and environmental communication
- (12) State of compliance with environmental regulations
- (13) State of social contribution related to environment

4) State of Activities for Reduction of Environmental Burden

The current state of environmental performance and its achievements of the organization to reduce environmental burden with yearly changes should be stated in accordance with the nine core indicators described in the “Environmental Performance Indicators for Organizations” .

Measures which reduces environmental burden in the upstream and the downstream of the business, such as green procurements and the reduction of environmental burden by producing or selling products that cause less environmental burden throughout their life-cycle should be mentioned in this section.

This section would be the biggest in the volume of information in environmental report.

The necessary components are the following eleven headings.

- (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 gasses 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
- (24) State of products and services that contribute to reduction of environmental burden.

5). State of Performance in Social Area

In recent years, the scope of environmental reporting has been widened, and information on

social area in activities of organizations have become to be a part of sustainability reporting or social and environmental (CSR) reporting, as it is already mentioned. Reporting of social area is, however, still in a stage of development. These guidelines, therefore, describe representative information discussed in sustainability reporting guidelines published in Japan, show information that is required to disclose by laws and regulations, and summarize information that will be important in future.

(25) State of Performance in Social Areas

Commentary: About these Twenty-five elements that should be included in environmental reporting.

These guidelines show examples of “recommended information to be included in environmental reporting” for each of “25 significant elements that need to be included in environmental reporting.” They are information that is:

- a) commonly discussed in domestic and international environmental reporting guidelines and it is environmental information which is important for all organizations,
- b) important because it provides useful information to interested parties, helps fulfilling the accountability, and, as a tool for environmental communication, increases understanding of readers and objectivity of the contents, and
- c) considering the basic function of environmental reporting, important toward the realization of sustainable society.

As for “25 significant elements that need to be included in environmental reporting,” it is necessary to include in environmental reporting in any way. However, some elements may not fit into certain specific organization, therefore, based on the nature of the operation, organization may flexibly select the “recommended information to be included in environmental reporting” discussed in these guidelines. Information that is considered as trade secret should be written as much as it is possible.

These guidelines do not intend to prescribe and enumerate the headings and contents, but it summarizes the results of current studies. Therefore, the inclusion of environmental topics of public concern should be judged at the management level based on market significance of the topics, even if their environmental impacts are scientifically uncertain. For such topics, it is also expected that organizations will voluntarily examine and develop the headings and contents of environmental reporting accordingly. Further, it is expected that a business should mention aspects, which are judged as significant environmental information, even if they are not mentioned within these guidelines.

With regard to said headings, “3. State of Environmental Management” and “4. State of Activities for Reduction of Environmental Burden”, their contents are based on “Environmental Performance Indicators for Organizations (Fiscal Year 2002 Version)” established by the Ministry of the Environment.

As above, these guidelines mention the components of environmental reporting and do not prescribe any order of headings and the contents to be added under each heading. It is expected that organizations will devise the structure of the environmental reporting according to the nature of the organization.

2. Components of Environmental Reporting and Information that Should Be Included

1) Basic Headings

(1) CEO’s Statement (Including Summary and Pledge)

The CEO’s statement (summary and pledge) to be added at the beginning of environmental reporting. It is extremely significant and it should include the organization’s own ideas, current status, and future targets on environmental conservation.

Further, the contents of the statement are necessary to be appropriate to the industry, operational scales, and individuality. General statements alone will be incomplete.

Recommended information to be included in environmental reporting

- a. The recognition of the necessity of environmental activities within the organization and of the prospect of sustainable society which is orientated environmental conservation in future.
- b. Environmental policies and strategies of organizations corresponding to industry, operational scales and individuality.
- c. Summary of environmental burden (significant environmental aspects) according to the industry, operational scales and individuality.
- d. Summary of environmental activities which reduce environmental burden according to the industry, operational scales and individuality.
- e. Pledge (commitment) to the society concerning said environmental activities will be carried out and targets will be met by promised time limit. (This is an official promise to the public of the management of the organization, and this is serious as to the management would be held responsible if the promise is broken.)
- f. Statement that all significant environmental burden and environmental policies, objectives

and reduction programs of the burden are accurately included in environmental reporting.

- g. The signature of the CEO
- h. If environmental reporting is certified, statement that it is certified. If it is registered, statement that it is registered.
- i. Comparisons between the environmental conservation of the organization and that of industry standards or society in general

Commentary

The CEO's statement should be printed on the first page of environmental reporting and is a summarizing statement by the CEO or the executive officer for the environment reporting. Therefore, it should be brief rather than detailed, the management's philosophy should be frankly stated in their own words, and the management should express their determination to carry out their environmental programs.

The CEO's statement should be:

- based on the nature, size and characteristics of the organization,
- clearly and concisely summarizing environmental burden caused by its activities, environmental policies, environmental activities that would reduce the burden, targets and achievements, and
- stating the organization's commitment that these environmental activities will be carried out and targets will be met by promised date.

Additionally, CEO's statement could include, if possible, statements that environmental reporting accurately includes all aspects of environmental burden and environmental activities without omission and that the organization will actively disclose environmental information and encourage environmental communications with interested parties.

The reason of this is that fulfilling the accountability by writing and publishing adequate and accurate environmental reporting and providing necessary information are an important part of top managements' duties, and the top managements themselves need to be responsible for the contents of environmental reporting.

(2) Foundations of Reporting (Reporting organization, time periods, and Areas)

This specifically mentions the details of reporting foundations that is the reporting organization, reporting period, reporting areas and reference / in accordance of the reporting standards / guidelines when organizations publish environmental reporting. In addition to this, clarification should be made of the division in charge of publication of the reporting and contacts. Furthermore, methods of receiving feedback and/or enquiries should also be devised.

These are necessary in order to make environmental reporting an effective tool for environmental communication.

Recommended information to be included in environmental reporting

- a. Reporting organization (The boundary of reporting may contain specific sites, plants or subsidiary companies, and the differences with consolidated companies should be explained. If boundaries do not yet include the whole organization, a projected time-scale for complete coverage should be provided. If some portions of environmental reporting have different boundaries, each portion should mention the boundary of reporting.)
- b. Reporting time period, the date issued, and schedule for the next issue (and date of the most recent previous environmental reporting, if any)
- c. The reporting areas (Environmental, social and economic fields)
- d. Guidelines and standards that are used as in-accordance-with or reference (including industry specific ones).
- e. The division in charge of the publication and means of contact (including telephone number, fax number, e-mail address)
- f. Any feedback methods, such as attaching a questionnaire sheet or postcard which states that the organization will provide a reply to correspondences
- g. The organization's URL
- h. Lists and outlines of major related materials which are also disclosed (such as, a corporate pamphlet, securities reports, environmental policies and communication materials concerning significant environmental aspects if ISO14001 certification is obtained, environmental brochures, or technical brochures and details of how these can be obtained)

Commentary

Basic information such as reporting organization, reporting period and reporting areas needs to be located at a place which specifically easy to be spotted, such as the back page of the front page or the last page of the environmental reporting.

If the reporting organization includes units that are subjects of consolidated accounting, the names of the units should be clearly shown to avoid any confusion. In such case, it should clearly state what kind of information is included: for example, some units are mentioned just for topics (boxed articles), or data of those units are included in performance data. If the latter case, it should be clearly stated which performance data includes data from such units.

If environmental reporting is published on the world wide web (URL or HP), the availability on the web is stated in the environmental reporting. If the web version contains more

information, the readers of environmental reporting should be advised with a statement on the printed version. If environmental reporting is available on any other media, such as CD-ROMs, the contents and method of acquisition should be stated.

(3) Summary of the Nature of the organizations

It is necessary to provide a simple outline of the nature of the organization, i.e. what does the organization undertake, and on what scale. If the outline of the organization is not provided, it is difficult to comprehend the likely environmental burden according to the nature of the organizations and which environmental conservation activities are likely to be significant. It is therefore necessary to include brief descriptions of the organization, the products or services involved and indices that illustrate the reporting organization.

Recommended information to be included in environmental reporting

- a. Management policy of the organization
- b. Nature of organization (kind of industry and type of operation) and its products and services (the field of the business)
- c. Amount of sales or production (including historical trends for at least the previous five years)
- d. Number of employees (including historical trends for at least the previous five years)
- e. Other information on the scale of activity of the reporting organization (e.g., total assets, profits, or total floor space)
- f. Regions in which the organization operates; the numbers and locations of factories, offices, the headquarters; and major products and locations of each facility (With regard to regions of mining, purchasing of principal raw materials, or selling products and services, it should mention whether operations are limited to Japan, specific regions, or overseas.)
- g. Details of significant changes in size, structure, ownership, or products/services that have occurred in the reporting period (if any changes such as, mergers, company split-up, advances into new business, or construction of new plants)
- h. An outline of the history of the organization and its environmental conservation activities
- i. The nature of markets or customers served (such as, retailers, wholesalers, or governments).

Commentary

Management related information, such as sales, output of products or services, and the number of employees, is essential for the estimation of environmental burden per unit of product or service output (the intensity of environmental burden) or value of products or services per unit of environmental burden (eco-efficiency). If there are indices that are commonly used in specific industry, these indices also should be reported.

In the description, the kind of business (kind of industry) and the principle area of operations (locations of major offices) need to be discussed in relation with their environmental burden and environmental activities that reduce the burden in a detailed and easily understood manner.

2) Summaries of Environmental Policies, Targets and Achievements in its Activities

(4) Environmental policies regarding environmental conservation

When organizations make efforts to address environmental issues, it is crucial to establish management policies (Fundamental principles or philosophy concerning environmental activities in the organization) for environmental conservation, and disclose this in their environmental reporting. The management policies or ideas should be appropriate to individual and also be consistent with the CEO's statement (summary and pledge).

Recommended information to be included in environmental reporting

- a. Management policies and posture on environmental conservation (these should be appropriate to the nature and scale of operations and products/services and also the environmental burden caused by the operations)
- b. Date of the establishment of the policy; measures taken to establish policy; consistency with other management policies; and relation to corporate governance.
- c. Easy explanation of what management policy intends concerning environmental conservation, vision for the future, and the background to the establishment of policy
- d. The identification of and contents of the environmental charters or agreements to which the business organization agrees with (conforms)

Commentary

As well as including management policy for environmental conservation, it is important to describe details of the background and justification for the establishment of the policy based on the organization's individual traits, (e.g., existing environmental burden, necessary environmental conservation efforts) in order to make the environmental reporting more understandable.

With respect to management policies on environmental conservation, it is necessary to include not only operational areas of the organizations, but also upstream and downstream (e.g., purchase of (raw) materials, transportation, use and disposal of products/services) in their targets, thereby taking the entire life cycle of the business into account.

Additionally, environmental policies for business activities should be written in accordance with the “Basic Environment Plan” and the “Basic Plan for Establishing Sustainable Society.”

Beside, ISO14001, an international standard of environmental management system, states environmental policies should be stated when establishing an environmental management system. If the reporting organization (generally the entire organization or a group of organizations) and certified organizations are the same organization, then environmental policies defined by ISO14001 and by these guidelines can be considered as same.

(5) Summary of objectives, plans of environmental activities and achievements in environmental conservation

It is desirable to draw up tabulated descriptions of the long-term objectives, the current and following terms’ objectives, the plans of environmental activities for each term, the environmental burden of activities for each term, the state of environmental activities, the analysis and evaluation of their outcomes. It is desirable to present them along with standardized data that enable comparing different terms. If the provision (a summary or resume) of the total environmental reporting is provided, it will make it more understandable.

Recommended information to be included in environmental reporting

- a. Actual environmental burden and its trends (previous five years)
- b. Analysis and evaluation of environmental burden
- c. Medium/long term and current/next term targets for environmental conservation and changes (which should be appropriate to the characteristics of the organization and its scale)
- d. Established time (date); “yardstick” period; and intended duration of medium/long term targets
- e. Achievements by the end of the term.
- f. Plans corresponding to said (medium/long term and current/next term) targets regarding environmental activities.
- g. Medium and long term plans for environmental activities and their targets, actual and estimated environmental burden during the reporting term and following term, and analysis and evaluation of the environmental efforts during the reporting and following periods, corresponding to the targets
- h.** Data collected within the “yardstick” period
- i. Summary of the total environmental reporting (Each content of the summary should be accompanied by a page number where the actual content in the environmental reporting can be found)
- j. Challenges for environmental efforts made by the organization corresponding to details of

- the operation and particular products/services.
- k. Characteristic efforts made during the reporting period
 - l. Additional or improved efforts since previous reporting
 - m. Index that illustrates environmental efficiency, presented
 - n. Managerial achievements expressed with an integrated index of several environmental burden indices, presented.

Commentary

Actual environmental burden means the performance data of major environmental performance indicators, such as the amount of total energy input, the amount of total material input, the amount of water input, the amount of greenhouse gases emissions, the amounts of chemical substances emissions and transfer, the total sales of products, the total amount of waste generation, the total amount of final disposal, and the total amount of water disposal. These indicators need to be accompanied by performance analysis and evaluations so that interested parties can make informed decisions. For example, information, such as the analysis on significant changes, drops or spikes, in an indicator and information on new technologies and new equipment that could have significant impacts on performance indicators need to be stated in environmental reporting. In addition, if environmental reporting mentions issues concerning future, it should be stated that the issue is based on a decision of the time of the publication of the environmental reporting.

Additionally, environmental reporting should describe medium- and long-term objectives (goals of environmental activities), present term objectives (reporting period) and the following term objectives and their attainments. These are not simply theoretical targets but ones that should be actually achieved. The targets should be as concrete and measurable as possible. They should be stated concretely and quantitatively, if it can be numerically measured, as much as possible. Analysis and evaluation of what extent objectives have been achieved; for example, analysis of the cause of a failure of achieving an objective, its chronological background, and information on next policies and new objectives should be stated in concrete and easily understood manner.

These objectives need to be established with consideration to the concept of life-cycle analysis. It is necessary to include not only operational areas within the organization, but also operations in upstream and downstream (e.g., purchase of (raw) materials, transportation, use and disposal of products/services), when setting targets, thereby taking the whole business life cycle into account.

Furthermore, summarized data, such as an outline of plans corresponding to targets, records of environmental burden during the reporting period, environmental accounting information (costs of environmental conservation, namely, “environmental cost” and economical effects) should also be mentioned. This could best be presented, through the use of tabulated descriptions, indicating corresponding page(s) in the environmental reporting which describe “the state of activities for the reduction of environmental burden” given in Section 4 of this Chapter, and where necessary, by summarizing the contents.

Beside, in order to clarify the progress of environmental efforts, it is necessary to include records of environmental burden during the set time period (e.g. a calendar or financial year which is used to measure the progress of the efforts).

Because the components of environmental reporting are various, potential readers (other than those with relevant experience) may find it difficult to assess the extent to which business operations are related to environmental issues and the efforts taken to mitigate environmental burden. It is also anticipated that writers will briefly mention the individual efforts and the fruits of these efforts, compared with the previous environmental reporting.

Therefore, a summary of the total environmental reporting in the form of a table or chart, over one or two pages, is desirable in order to facilitate the readers’ understanding of the relationship between an operation and the environment and future challenges.

(6) Material balance of business activity

In order to let out-side interested parties know an organization, the organization itself needs to know how much energy and materials are used (input to business activities) and how much environmental burden (including waste) is produced. The organization needs to summarize them and to publish its productions and sales from the view point of material balance.

Recommended information to be included in environmental reporting

- a. Complete picture of environmental burden related to the organization’s activities. (State of material input to business activities, the state of output such as the shipments of products and goods from the business and generation of waste (material balance of business activities) needs to be described in concisely and easily understood manner, if possible with figures and charts.
- b. If possible, including environmental burden measured with the viewpoints of environmental supply chain management and the life cycle of products into the charts and figures mentioned above.

Commentary

When summarizing the material balance, it is advised to use nine core indicators shown in “Environmental Performance Indicators Guidelines, Fiscal Year 2002 Version,” and show the material balance associated to the business activities with figures with actual measurements.

Additionally, it is important to take not only direct inputs and outputs to business activities into consideration, but also environmental burden at the extraction of raw materials, the production of supplied goods, such as the purchase of raw materials and parts from other businesses. It is important too to take environmental burden generated in the use, consumption and disposal of products into consideration, thereby taking the whole business life cycle into account.

It is necessary to take environmental burden into account with the viewpoint of the material balance and the life cycle of products for efficiently and effectively improving environmental activities of the organization. And it contributes to preventing greenhouse effects, ensuring the circulation of materials and building a sustainable society

(7) Summary of Environmental Accounting Information

Referring to “Environmental Accounting Guidelines 2002” published by the Ministry of the Environment, an organization should assess (measure) and analyze, as quantitatively as possible, costs and effects of environmental conservation during operations, and should mention the current state of the implementation of environmental accounting, giving details in summary form.

Recommended information to be included in environmental reporting

- a. Costs expensed for environmental measures
- b. Environmental effects relating to environmental measures
- c. Economical effects associated with environmental measures

Commentary

It is important to promote efficient and effective environmental measures through appropriate management decisions, supported by managing environmental cost and analyzing costs and benefit of environmental measures. Further, the disclosure of environmental accounting information provides an effective means of enabling an impartial understanding and evaluation of the state of environmental conservation efforts.

In this context, it is desirable that many businesses implement an environmental accounting system, and simply mention and disclose the quantitative information estimated within environmental reporting in summary form.

An organization can disclose environmental accounting information in summary form by using the announcement formats shown in “Environmental Accounting Guidelines 2002”.

3) State of Environmental Management

(8) State of environmental management systemes

Environmental reporting should provide information on issues, including the structure of environmental management systemes (EMS), the method of environmental management systemes, the status of ISO 14001 certification, the status of Environmental Activity Evaluation Program (Eco-Action 21) certificate, which is scheduled to be launched in 2004, education provided for employees, and environmental auditing.

Recommended information to be included in environmental reporting

- a. The organizational structure of the EMS (including internal control system such as details of responsibility, authority, and organization) and a chart showing the organization
- b. State of environmental risk management.
- c. State of establishment and operation of the EMS (including an explanation of the systemes),
- d. The number and proportion of sites that are within the EMS.
- e. If the EMS has been acquired an ISO14001 certification, the number and proportion (e.g., number of employees working at the certified sites as a proportion of the total number of employees) of sites, and the period of the certification(s)
- f. The state of education program(s) for employees in environmental conservation
- g. Details of emergency plans and the state of emergency preparedness
- h. State of the implementation of monitoring and measurement of environmental impacts
- i. Standards for EMS audit, the state of implementation (number of audits), results of the audits and responses to the audits
- j. A flow-chart which gives an overall view of the EMS.
- k. Quantitative information on the state of implementation of environmental education for employees (e.g., number or proportion of employees who have received environmental education, average hours of education per employees over year).
- l. Use of the results of environmental conservation in personal achievement evaluation.
- m. In-house commending programs.

Commentary

In order for organizations to improve their environmental performance, they need to establish and implement a recognized environmental management systemes (EMS) which will be the

basis for all of their activities. Details of the make up and implementation of the environment management system is the significant information that should be mentioned in environmental reporting.

The way in which environmental management systems are established and implemented is likely to differ largely depending on the type and the size of an organization. It is necessary however to describe the current state of the systems which will depend upon the characteristics of the organization.

(9) State of supply chain management for environmental conservation.

Supply chain management for environmental conservation is what an organization is requesting or demanding business partners regarding their environmental activities, and how the organization manages them. It is important information to be included in environmental reporting.

This component should include the summary of the policies, standards, plans and achievements of supply chain management.

Recommended information to be included in environmental reporting

- a. Summary of the policies, standards, and plans of supply chain management.
- b. Summary of the achievements of supply chain management.

Commentary

When environmentally concerned organizations think about their activities, they should pay attention not only their own business activities but also pay attention to business partners, from which raw materials, parts are purchased, to which products are sold, which provide transportation and which dispose waste. Promoting greening of supply chains by talking with a wide variety of business partners is strongly encouraged.

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

Since desirable states of supply chain management may differ by the kind or size of business activities, each organization should build its own supply chain management that suits its characteristics.

(10) State of research and development of technologies for environmental conservation and environment-conscious products/services

This include details of the state of research and development of technologies for

Recommended information to be included in environmental reporting

- a. State of research and development of environmentally conscious methods of production or production technology.
- b. State of research and development of technologies for design for the environment: (DfE).
- c. State of research and development by using the life cycle assessment (LCA) method
- d. Ideas for environmentally sound operations and sales and business models that conserve the environment,
- e. Funding used for research and development such as design for the environment: (DfE).

Commentary

In order to make environmental efforts in organizational activities, it is desirable for organizations to promote environmentally sound research and development, to employ ideas for environmental operations and sales, and to develop business models that conserve the environment, such as environmentally conscious methods of production, research and development of technologies for environmental products and services (Design for the environment: DfE). These research and development activities will lead to eco-business of the organization as well as future improvements in environmental performance.

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

Although the state of research and development of technologies for environmental conservation, environment-friendly products/services etc. is likely to differ largely depending on the type and size of corporation, it is necessary to clearly mention the state of research and development according to the characteristics of the business.

(11) State of the disclosure of environmental information and 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 labels and the state of environmental communication with interested parties should be included.

Recommended information to be included in environmental reporting

- a. State of implementation of environmental information disclosure through environmental reporting and environmental labels
- b. State of environmental communication with interested parties (for example, surveys, meeting with local residents, periodical visiting and reporting, meeting with business partners, stakeholder dialogue, communication by the publication of newsletters, the state of communication with interested parties, and kinds and numbers of inquiries and responses)
- c. State of offices that publish environmental reporting or site specific environmental activity reports.
- d. State of participating exhibitions concerning environmental issues
- e. State of advertisement concerning environmental issues

Commentary

In order to make environmental efforts and to win the confidence of society, an organization needs to disclose its environmental information and try to develop improved environmental communication from its own initiative in the light of the principle of accountability and the necessity of providing useful information to interested parties. Efforts to transmit environmental information to interested parties through environmental reporting, environmental labeling, advertisements and other means have become one of responsibilities which organizations must perform. Inclusion of information on the contents of inquiry made by interested parties and responses by the organization to them would be helpful. It is desirable that not only what have been done for environmental communication but also the effects of environmental communication and how the organization used the effects.

Progress in the disclosure of environmental information through environmental reporting, environmental labels and other means as well as environmental communication with interested parties is likely to differ largely depending on the type and the size of organizations. It is however necessary to clearly mention the state of environmental communication and other related aspects according to the characteristics of the organization.

(12) State of compliance with environmental regulations

The state of compliance with environmental regulations and of any violations, fines, accidents, and complaints should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. The method to verify whether activities are conducted in accordance with major laws and regulations (description of periodical or non- periodical internal checking system).

- b. Violations of major laws and regulation at least within three years. (If the organization has received directions, recommendations, orders, or punishments from authorities for a major violation of a law or a regulation, the description of the violation, the response to the incident and the measure to prevent the violation should be stated in environmental reporting. If there is no violation, the fact of no violation should be stated.)
- c. If the business organization has standards that exceed environmental regulation, the description of the in-house regulation.
- d. Violations or untruthful statement in eco-labeling, environmental advertisement and environmental information of products.
- e. Number of fines or penalties paid for environmental violation and their amounts.
- f. If the business organization is a party of a lawsuit concerning environmental issues, the contents of and the response to the lawsuit
- g. Contents and frequency of complaints and demands received from interested parties relating to environmental issues (including complainants to noise, vibration, and odor).

Commentary

In order for organizations to make environmental efforts and to win the confidence of society, they need to promote environmental communication from their own initiative. At the same time, they also need to comply with laws and ordinances, and to disclose information on their adherence to such laws (as well as violations of such laws). In particular, status of compliance with laws and regulations, violations and accidents, state of complaints are important information that need to be included in environmental reporting and they increase the confidence of the public.

If there is significant information that would influence decisions of interested parties, such as occurrence or change of laws and regulations, customary recognized trading rules, management policies and litigation, they need to be described concretely and concisely. If there is no such issues, it should be stated so.

Although the content of environmental regulation is likely to differ largely depending on the type and the size of a corporation, it is necessary to clearly mention the state of the regulations and compliance according to the characteristics of each organization.

(13) State of social contribution related to environment

With regard to environmental conservation, activities of organization and voluntary social contributions of employees should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. Voluntary activities to the environment by employees who are compensated for the activities by the employer.
- b. Membership of or support for environmental organization(s) (ex. NPOs, trade associations)
- c. Contents, amounts and goods that are used for supporting NPOs or trade associations which promote environmental preservation,
- d. State of environmental education programs that are provided to local communities,
- e. State of environmental and social activities which the organization has done in cooperation with local communities,
- f. State of activities which the organization done in cooperation with other interested parties.
- g. State of commending programs to recognize environmental activities,
- h. State of greening, planting of trees, and restoration of the environment.
- i. State of efforts that aim to preservation of bio-diversity.

Commentary

It is desirable that organizations make environmental efforts, and at the same time, make efforts to build an sustainable society through co-operation with various other sectors. One of the specific methods of co-operation is by making a social contribution to the environment – which may include voluntary social contribution activities to the environment by employees and organizations, support for environmental non-profit organizations (NPOs), and efforts of industrial groups. It is necessary to promote these kinds of positive social activities voluntarily.

Activities for preserving bio-diversity or protecting the environment, particularly ownership of lands in natural environmental preservation areas and the management of such lands, as well as business activities on the areas and their major impacts on bio-diversity should be included in environmental reporting as much as possible.

How social contribution to the environment is taken place is important information that should be included in environmental reporting.

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

4) State of Activities for Reduction of Environmental Burden

(14) Total amount of energy input and measures to reduce it

Consumption of fossil fuel such as oil, natural gas and coal produce carbon dioxide, which
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causes global warming. Therefore, the total energy input and the breakdown of fossil fuel consumption, and measures to reduce the input, as well as energy efficiency need to be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. The total energy input and measures to reduce the inputs
- b. Breakdown of fossil fuels consumed (kinds of fossil fuel used; whether electricity is purchased from outside or in-house generation)
- c. Utilization of new energy
- d. Energy efficiency and measures to improve it.

Commentary

The amount of carbon dioxide emission caused by the use of fossil fuel accounts for 90 percent of the total carbon dioxide emission in Japan. In order to prevent global warming, it is critical to reduce the total energy input as well as converting fossil fuel to energy sources which emit less carbon dioxide, including the introduction of solar power generation, wind power generation, and biomass energy

The total energy input is the sum of electricity input used for the activities and the consumption of a various kinds of energy, and each source of energy is entered in the unit of mega joule (MJ). The total energy input should be divided into subcategories, such as purchased electricity, consumption of fossil fuel and new energy; and actual amount of energy consumption and percentage of each energy source should be provided.

The division of total energy consumption would be, for example, the amount of fossil fuel consumption would be divided into coal, kerosene, heavy oil, gasoline, city gas, etc. and new energy would be divided into photovoltaic, solar thermal energy, wind power, and biomass.

The total amount of energy input should be divided into the amount of electricity and the amounts of each categories of fossil fuel. The measurements should be based on the “Table of Heat Generation of Energy Sources” (revised on March 30, 2001) published by the Agency of Natural Resource and Energy. If the “Table of Heat Generation of Energy Sources” does not provide a conversion rate, the source of the conversion rate used in environmental reporting should be cited.

When converting purchased electricity expressed in kilo watt hour (kWh) into joule (J), the conversion rate should be 9,830 (kJ/kWh), which is estimated with energy efficiency of thermal generation plants based on the detailed enforcement regulations of the “Law on Temporary

Measures to Promote Business Activities for the Rational Use of Energy and the Utilization of Recycled Resources.”

The total energy input should include energy that the organization consumed for transportation, however fuel consumption for transportation provided by contractors is classified into another category.

The amount of oil and coal consumed as raw material in production process is considered as a part of the total material input.

The amount of each energy source may be expressed in proper unit that is used for the particular energy source.

Purchased new energy (for example, electricity from wind generation facility) should not be included in purchased electricity, but counted as new energy.

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 used to generate the electricity should be estimated and it can be deducted from 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 it is described in environmental reporting separately.

(15) Total amount of material input and measures to reduce it

Extraction of resources (natural resources) from the environment is increasing every year. From the stand point of sustainable society, it is necessary to reduce the consumption of non-renewable resources as well as reducing the input of total amount material by promoting repeated-use of post consumption materials (reuse, recycle and thermal recovery).

For this purpose, it is desirable to include the total amount of material input, a breakdown of the material, and the measures for reducing the consumption in environmental reporting as well as the resource productivity and the cyclical use rate of materials.

Recommended information to be included in environmental reporting

- a. Total amount of material input (or the amount of major raw material purchased, including containers and packaging) and measures to reduce the inputs.
- b. Amount of input of each kind of material.
- c. Resource productivity and measures to improve it
- d. The amount of the use of recycled materials and the cyclical use rate.
- e. Amount of resources consumed as expendable supplies rather than goods and products (excluding materials for container and packing).
- f. Materials that are circuitry used inside the business organization.

- g. Amount of resources that are used for equipment of capital assets of the business organization,
- h. Amount of resources that are used for construction of buildings or civil engineering projects that the organization is constructing by contracts.

Commentary

Extraction of resources (natural resources) from the environment has increasing every year. The total input of materials associated with social and economic activities in 2000 in Japan was 2.1 billion tons, of which 1.9 billion tons of materials were natural resources. Recycled materials consisted only 2200 millions tons, which is merely 10 percent of the total material consumed.

The “Basic Plan for Establishing Recycling Based Society” established a goal, that is reducing environmental burden and realizing sustainable production and consumption while keeping the quality of life. The Basic Plan proposed comprehensive and systematical implementation of policies concerning the formation of recycling based society and the changing the flow of material from massive consumption to more environmentally sound one. Three targets of material flows shown in the Basic Plan were resource productivity, the cyclical use rate of materials and final disposal, which should be respected by business organizations as much as possible.

When organizations establish environmental policies, the concept of LCA approach should be included, that is environmental consideration is required not only in the outputs but also in the input of energy and materials.

The total amount of materials means all materials that are directly inputted to activities except energy and water. Their breakdown, the state of materials at the time of consumed as raw materials, the amounts of natural resources and recycled resources, and the amounts of the purchase of major raw materials, products and goods should be reported in environmental reporting. These amounts should be expressed in tons but units that are used in practice can be used. In the calculation of the cyclical use rate, the amount of materials that are circuitry used (reuse and recycling) within the organization itself should not be included.

The breakdown of the total amount of materials means the amount and proportion of each kind of resource such as metal, plastic, and rubber, and they should be divided as detailed as possible.

If merely the amount of major raw materials or products are shown, information, such as the descriptions of the excluded materials or products (including containers and packing) and the proportion of the value of the major materials or products in the entire material or products should be reported.

The total amount of material input should not include the amount of resources consumed as expendable supplies rather than goods and products (excluding materials for container and packing). Similarly, the total amount of material input should not include the amount of resources that are used as equipment of real estate of the organization, and the amount of materials which are circuitry used inside the business organization. However, they can be stated separately from the total amount of materials.

Resource productivity should be calculated by dividing total amount of sales with the total amount of material input.

The cyclical use rate should be calculated by dividing the amount of circuitry used materials with the total amount of material input.

Increasing the use of recycled materials and thereby increasing the cyclical use rate reduces the consumption of natural resources. And in order to build a sustainable recycling based society, it is extremely important, as emphasized in the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities.

In case of business organizations which perform constructions of building and civil engineering projects or producing machinery for their customers, materials used for their own and materials used for projects for their customers should be separately entered as much as possible.

(16) Amount of water input and measures to reduce it

<p>Water resources are indispensable to survival of lives including human beings and it is the foundation of the social economic system. Therefore, the amount of water input, its breakdown and measures to reduce water usage should be included in environmental reporting.</p>
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Recommended information to be included in environmental reporting

- a. The amount of water input and measures to reduce water usage
- b. Breakdown of the water usage,
- c. The amount of water circuitry used within the business organization.

Commentary

Only 2.5 percent of water resources on the earth are fresh water. Furthermore, only 0.8 percent of water consist rivers, lakes and ground water that can be utilized by human beings as drinking water or supporting daily activities. It is urgently necessary to promote the circuitry use of water and to increase the efficiency of water utilization.

The total amount of water input is the total of usage associated with activities and it should be expressed in cubic meters (m³).

The breakdown of the total amount of water input should be the amounts and the proportion of each of water sources: city water, industrial water, ground water, sea water, river water and rain water, as much as possible. The amount of water resources that are circuitry used inside the business organization should not be included in the total amount of water, however, they should be included separately from the total amount of water.

Water resources that are used as raw material for products should be included in total amount of material input.

(17) Amount of greenhouse gasses emission and measures to reduce it

As global warming progresses, serious effects, such as flooding caused by the increase of the sea level, decreasing of harvesting of crops, severer transmissible diseases, extinction of wild species, would be expected.

Therefore, the amount of emissions of greenhouse gasses (converted into ton-CO₂), the amount of emission and the cause of it accompanied by measures to reduce the emission of the six substances under the Kyoto Protocol, should be included in environmental reporting.

Additionally, the emissions of air pollutants, the causing activities of them, and measures to reduce them should also be included.

Recommended information to be included in environmental reporting

- a. Amount of emissions of greenhouse gasses and measures to reduce them.
- b. Amount of carbon dioxide emissions
- c. Kinds of greenhouse gasses emitted.
- d. Causing activities of the emissions
- e. If employing the Kyoto mechanism, the information of the program and the amount of reduction..
- f. Amount of sulfur oxides (SO_x) emission (tons) and measures to reduce it.
- g. Amount of nitrogen oxides (NO_x) emission (tons) and measures to reduce it.
- h. Items that are regulated, their emission standards, and measures to reduce them

Commentary

Global warming is a phenomenon that temperature of the globe rises because of the increase of the level of greenhouse gasses, such as carbon dioxide and methane, released by human activities.

The substances regulated by the Kyoto protocol are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and three chlorofluorocarbon substitutes (hydro-fluorocarbon compounds: HFC, per-fluorinated compounds: PFC's, and sulfur hexafluoride: SF₆). Particularly, carbon dioxide is released by combustion of fossil fuels, such as coal and oil, and greenhouse effect caused by carbon dioxide accounts for 90 percent of the total greenhouse effect caused by emissions in Japan.

The amounts of greenhouse gas emissions is entered as the sum of greenhouse gasses emissions associated with activities, and each emission as well as the total emission should be expressed in tons “t-CO₂,” which is the converted value of greenhouse effect into the amount of carbon dioxide. If the emissions of greenhouse gasses other than carbon dioxide are negligible amounts, only carbon dioxide emission may be entered.

When the amount of total greenhouse gas is estimated, each greenhouse gas emission is converted into the amount of carbon dioxide by multiplying it with its greenhouse effect coefficient (stipulated in the Enforcement Order of the Law Concerning the Promotion of the Measures to Cope with Global Warming) and finally the estimated amounts of greenhouse gasses are summed up.

In order to calculate greenhouse gas emissions caused by business activities identified by the Enforcement Order, multiply business activities such as the consumption of fuels with relevant coefficients (Article 3, Section 1, a table of the Enforcement Order).

When estimating CO₂ emissions from generation of electricity supplied by electricity supply businesses, the emission coefficient provided by the electricity supplier (demand side, not the supply side) should be used. If emission coefficients are not be able to obtained, use the emission coefficient, “the Emission Coefficient for the Consumption of Electricity Supplied by Other Individuals [General Electricity Supplier]”, provided by the Enforcement Order.

There are a few methods to assess the effects of measures that are introduced to reduce the emission of greenhouse gasses. An organization should use the best method that is rational and fits the individual characteristics of the measures. “The Scenario for Achieving Objectives:

a Subcommittee Mid-term Report” (the National Environment Commission, Global Environment Committee, March 2001) describes two methods in parallel: multiplying the reduction of the use of electricity (kWh) with power generators’ national average emission coefficient (0.36kg-CO₂/kWh) and multiplying it with thermal power average emission coefficient (0.69kg-CO₂/kWh).

Environmental reporting should include greenhouse gas emissions from transportation services contracted out to external operators as well as in-house transportation, each of which should be mentioned separately. Emissions from different transportation modes should be separately mentioned.

The amount of emission caused by incineration of waste (waste oil and waste plastic) should include the amount of the waste incinerated by out-side contractors, and each of them should be mentioned separately.

Carbon dioxide emissions caused by incinerating goods made of wood and paper (other than oil) should not be included. Inventory used in Japan, which is in accordance with a guideline issued by the Intergovernmental Panel on Climate Change (IPCC), treats carbon dioxide emission from wooden products as if trees were incinerated at the time of logging. Therefore, carbon dioxide emissions caused by consumption as fuel (as waste wood and black liquor) and caused by land-filling and incineration should not be included (“The Guidelines for Estimating Greenhouse Gas Emissions from Businesses” issued by the Ministry of the Environment).

Regarding details of estimating emissions in Japan, please refer the most updated “Enforcement Order of the Law Concerning the Promotion of the Measures to Cope with Global Warming”, the “Guidelines for Estimating Greenhouse Gas Emissions from Businesses,” and the “Report of the Committee for Methods of Estimation Greenhouse Gas Emissions.”

Regarding emissions outside of Japan, if emission coefficients are provided in the relevant countries, estimation should be done in accordance with them.

Hydro-fluorocarbon compounds (HFC) should be reported as PRTR (discussed in the following section) in addition to reporting in this section.

Carbon dioxide emission reduction under the Kyoto Mechanism is not the emission reduction directly performed by organizations themselves, therefore they should not be entered in this section.

Hydro-fluorocarbon compounds (HFC) should be included in the amount greenhouse gas emissions, even if it is included in the section for amount of chemical substances emission and transportation.

Additionally, regarding pollution prevention measures in activities, the “Environmental Performance Indicators Guidelines for Businesses, Fiscal Year 2002 Version” describes core indicators, which consist of nine indicators, and their subindicators, which qualitatively supplement the core indicators, and other subindicators.

Other subindicators include ones that “are important for environmental protection although they are not applicable to all organizations” and ones “that would be important in future in order to build a sustainable society.” For example, these include information regarding the prevention of pollution that is emitted from organization’s activities, such as sulfur oxides (SOx) and nitrogen oxides (NOx). Items of these subindicators are important information that should be included in environmental reporting, depending on the nature and the size of the organization. In addition to major environmental performance indicators, environmental performance indicators that show the degree of qualitative environmental burden and indicators that are important for certain kind and size of organizations should be included in environmental reporting as much as possible. If other subindicators are included, the method of measurement or estimation and mathematical formula should be clearly stated.

(18) Amount of chemical substances emission and transportation, and measures to reduce it

In Japan, chemical substances are regulated by statutes including the Air Pollution Control Law, the Law Concerning Special Measure Against PCB Waste, and the Law Concerning Special Measures Against Dioxins (Dioxin Law). Each law regulates the use, methods of disposal and amount of emissions of particular substance. In addition, the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) obligates organizations to record and report the amount of emission to the environment and the amount of transportation as waste (PRTR program) , concerning a wide variety of chemical substances including substances covered by the laws mentioned above. The Law also obligates organizations to provide Material Safety Data Sheets (MSDS) and the management of chemical substances and risk communication.

Risk communication should be promoted and environmental reporting should include the amounts of emissions and transportation and the state of management of chemical substances not only that are regulated by these laws, but also that organizations voluntarily impose its own standards.

Recommended information to be included in environmental reporting

- a. Amounts of emissions and transportation and the state of management of chemical substances
- b. Concentration in the emissions regarding benzene, trichloroethylene, tetra-chloroethylene, among other hazardous air polluting substances
- c. States of pollution in soil, ground water and channel beds (stock pollutants)

Commentary

In modern society, a variety of chemical substances are produced in massive amount and used in a variety of places. Further, there are substances, such as dioxin, that are produced unintentionally. Some chemical substances pollute the environment and cause harmful effects on human health and the ecological system in the nature unless they are properly controlled at each stage of production, distribution, consumption and disposition.

The amount of emission and transportation of major chemical substances, including ones that are subject of PRTR reporting, should be measured in tons.

Although the degree of the hazard differ by substances, the amount of emissions and transportation of major chemical substances and the measures to reduce them should be reported in environmental reporting.

(19) Total amount of products or sales

The total amount of production or sales is important as an indicator of business output with the standpoint of material balance. This indicator is necessary to evaluate the total energy input, water resources inputs, amount of greenhouse gases emissions, chemical substance emissions, waste disposal, and the total water disposal. Therefore, the total amount of production and sales, the amount of environmentally concerned production and sales, such as products with the Eco-mark, and the amount of containers and packaging materials should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. Total amount of production and sales
- b. Amount of containers and packaging materials
- c. Amount of collection of major products, goods and containers and packaging
- d. Amount of production or sales of products with the Eco-mark etc.

Commentary

Amount of production and sales of products with the Eco-mark, etc. is an indicator that measures how much products that contribute to reducing environmental burden are included in the total amount of production or sales. From the standpoint of the reduction of environmental burden and the establishment of a sustainable society, it is desired to increase the production and

sales of products that consume less energy and produce less waste during the period of use and can be recycled after disposal.

Additionally, the amount of cans, bottles and plastic containers in municipal solid waste is significant, which account for 60 percent in it by volume and for 20 percent by weight. As remaining lives of landfill sites are urgently short, the establishment and effective operation of recycling system of containers and packaging waste is a serious challenge as a measure to reduce the amount of general waste.

The “Law for Promotion of Sorted Collection and Recycling of Containers and Packaging (Containers and Packaging Recycling Law)” requires, in order to reduce the amount of containers and packaging waste, organizations are requested to reduce the use of containers and packaging and to promote the use of recycled materials in new products.

The total amount of products and the total amount of sales should be reported as the total amount sales of the product in sales in tons(t). Only the amount of sales of major products or goods can be reported.

If only major products are reported, what excluded products and goods are and the percent of the sales of major products in the total amount of the entire sales should be reported.

Example of major products, in regards to which amounts of collection after consumption need to be reported in environmental reporting, are those products covered by the Law for Recycling of Specified Kinds of Home Appliances, automobiles covered by the Automobile Recycling Law, and containers and packaging covered by the Law for Promotion of Sorted Collection and Recycling of Containers and Packaging.

The amount of collection should be measured in tons (t) including products of other organizations. If there is another unit of measurement that is customary used in practice, the unit of measurement can be used.

(20) Total amount of waste generation and final disposal and measures to reduce it

The amount of waste in Japan has increased since the 1960s, and the level of waste generation has maintained at the elevated level since 1990. Remaining lives of landfill sites are urgently short, the cost of waste disposal has become very expensive, and the problem of illegal dumping has risen. It is urgently required to reduce the amount of waste generation, repeated use and proper disposal of materials.

Therefore, detailed components of the amount of waste generation and disposal should be entered in environmental reporting. Especially, the amount of waste finally disposed into landfill sites and measures to reduce it are important to include in environmental reporting

because of recent shortage of landfill sites and the increase of illegal dumping.

Recommended information to be included in environmental reporting

- a. Summary of objectives and plans concerning the reduction of waste generation, reduction of waste, and measures for promoting recycling.
- b. Response to producers' expanded responsibilities
- c. Total amount of waste generation and measures of its reduction
- d. Total amount of final disposal of waste and measures of its reduction
- e. Methods of waste management
- f. Breakdown of the total amount of waste generation
- g. Amount of materials that are reused by own
- h. Amount of materials that are recycled by own
- i. Amount of materials that are thermally recovered in the business organization

Commentary

As stated in the Basic Environment Plan and the Basic Law for Establishing a Recycling-Based Society, the order of priority should be in mind when pursuing proper measures for disposal of waste and recycling. This order of priority is, firstly, decreasing the generation of waste (reduce), secondly, reusing used products and parts (reuse), thirdly, recycling collected materials as raw materials (material recycle), and fourthly, thermal recovery (thermal recycle); and materials that becomes waste after these measures should be disposed properly. (The best order may be different in some cases because of possibilities that reduction of environmental burden from one of these measures can be tradeoff to other environmental burden).

Environmental reporting should include the total amount of waste generation from business activities and its breakdown, which should be recorded in tons (t).

Breakdown of the total amount of waste generation should include each information of general waste (also special control general waste) or industrial waste (also whether special control industrial waste or not).

Regarding special general and industrial wastes, if it may affect decisions of interested parties, the descriptions of the waste, causing business activities, and methods of disposal should be reported.

The amount of final disposal should include breakdown of the methods of final disposal or

other disposal methods, and it should be reported in tons (t). If the amount of general waste is negligibly small, the amount of final disposal calculated from industrial waste manifests alone may be reported.

If reporting figure based on industrial manifests, the facts they are based on industrial manifests and the recovery rate of waste tracking slips should be reported.

Breakdown of methods of waste management should include materials that are reused, materials that are recycled, materials that are thermally recycled and materials that are incinerated without thermal recovery.

The amount of circuitry reused material should not include materials that are reused within a site.

Construction waste associated with rebuilding, such as equipment, should not be included in the total waste generation. The total amount of it should be reported in a footnote of the environmental reporting.

(21) Total amount of water disposal and measures to reduce it

Water contaminants from organizations activities and households have impacts on the environment of our daily lives such as damages to human health and ecological systems in water and impacts on city water systems. National standards for water pollution in public waters caused by organic compounds such as chemical oxygen demand (COD) have not been met yet.

Therefore, environmental reporting should include the total amount of water discharge, the amount of discharge and the quality of water (chemical oxygen demand (COD) or biological oxygen demand (BOD) for each discharging location, and their reduction measures.

Recommended information to be included in environmental reporting

- a. Total amount of waste water and measures to reduce it
- b. Breakdown of waters of discharge (public waters, sewer, etc)
- c. Quality of discharged water (BOD and COD) and measure to reduce it.
- d. Amount of nitrogen and phosphorus emissions and measure to reduce them
- e. List of regulated discharges, their concentrations, and measures to reduce them

Commentary

Water is in a circle that rainwater falls onto the ground, it is absorbed in forests and soil and becomes ground water, runs through rivers and poured into sea, evaporated into the atmosphere, and falls as rainwater. Many pollutants are eliminated in this cycle. In order to maintain this

water cycle and the quality of water, it is necessary to manage this water cycle so environmental burden from the use of water does not exceed the capacity of natural water cycle.

The total amount of water discharge is the sum of the amount of water discharge associated with the organizational activities. The total amount of water discharge and breakdown of it should be reported in cubic meters (m³).

The breakdown of the total water discharge should include where water is discharged, such as public water or sewer. Water discharges into water areas that are regulated by the Water Pollution Control Law need to be reported including average concentrations of biological oxygen demand (BOD) and chemical oxygen demand (COD) measured in milligram per liter (mg/l), if it may affect on decisions of interested parties.

(22) State of environmental burden caused by transportation and measures to reduce it

The amount of carbon dioxide emissions from transportation sector in Japan has increased every year, therefore, the state of environmental burden caused by transporting raw material to manufacturing sites, shipping products, services and waste to outside, and transporting passengers, and measures to reduce it should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. Summary of policies and plans to reduce environmental burden caused by transportation
- b. Total volume of transportation and measures to reduce it
- c. Amount of carbon dioxide emission associated with transportation and measure to reduce it.

Commentary

In the fiscal year of 2001, an increase of 22.8 percent was measured compared to the fiscal year of 1990, and accounted for 22.0 percent of the total amount of emissions. In addition, as automobile transportation increases and concentrates, air pollution in city areas is getting more and more serious. In order to reduce CO₂ emissions and air pollutants from 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 and to improve transportation efficiency through joint transportation/delivery and return cargo arrangements.

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, air etc.), and

then calculate the sum of them. The unit should be “ton-kilometer”(t x km) or “person-kilometer”(persons x km).

When the amount of CO₂ emissions is estimated, amounts of fuels used should be assessed and emissions should be estimated by using the emission coefficient range stipulated in “the Enforcement Order of the Law Concerning the Promotion of the Measures to Cope with Global Warming” and express in t-CO₂.

Although it is difficult to accurately monitor and estimate the transportation of products and services by external operators (consignment), it is desirable 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 to make estimations.

For the transportation of raw materials, fuels etc., it is desirable 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 desirable to separately disclose the proportion of transportation that is in house and that which is operated by external operators, and provide a breakdown of transportation means.

Improvement of transportation efficiency (unit: % {[transportation t x km] / [capacity t x km] or [transportation person x km] / [capacity person x km]}) through joint transportation/delivery and return cargo arrangements also contributes to reducing carbon dioxide emissions and air pollutants. It is therefore appropriate to estimate and disclose this information.

(23) State of green procurement and measures to promote it

In order to reduce environmental burden and promote circuitry use of resources and energy, organizations should work with business partners in the upstream, such as that supplies products and raw materials/parts and services (hereinafter, products and services), in addition to promoting environmental activities within the organization. This is, in other words, actively promoting environmental activities in the upstream of business, and one of important methods for this purpose is priority purchase of products and services that contribute the reduction of environmental burden (green purchase or procurement). How a business organization is doing green procurement and how much achievement it has made should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. State of green purchase or procurement
- b. Policies, targets and plans of green purchase or procurement

- c. Records of green purchase or procurement
- d. Number or money amount of purchase of environmentally designed goods and services
- e. Number of low emission vehicles or high fuel efficiency vehicles owned and introduced.

Commentary

As the purchasing of services/materials differs largely depending on the type and the size of a corporation, it is necessary to clearly mention the state of green purchasing according to the characteristics of the organization.

In case of business organizations that perform constructions of building and civil engineering projects or producing machinery for their customers, green purchasing of materials for their own business activities and green purchasing of materials used for projects for their customers should be separately entered as much as possible.

(24). State of products and services that contribute reduction of environmental burden

Reducing environmental burden caused by products and services that organizations produce or sell is one of important social responsibilities for organizations, and it is necessary to build a sustainable environmentally sound society or recycling-based society. Therefore, how an organization is actively engaging in production and sales that contribute to reduction of environmental burden should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. Amount of production or sales of goods and services that contribute to reducing environmental burden, the proportion of the products and services in the total products or sales, and the summary of the environmental effects.
- b. Number of products that meet energy saving standards.
- c. Number of products designed with consideration for dismantling, recycling, reusing or saving of energy.
- d. Evaluation of major products for their environmental burden from the viewpoint of life cycle assessment (LCA)
- e. Energy consumption efficiency of each product groups.
- f. Amount of CO₂ emission by using a product (estimates of CO₂ emission by the entire products shipped in the year; and CO₂ emission coefficients of major products)
- g. Proportion of reusable or recyclable parts of each product groups
- h. Amounts of collection of products, containers and packaging after consumption
- i. Amounts of reused, recycled or thermally recovered materials of collected products,

containers and packaging and their proportions.

Commentary

The Containers and Packaging Law, the Home Appliances Recycling Law, and the Automobile Recycling Law require business organizations to collect and recycle products that the organizations produced. Organizations need to respond to so-called expanded producers' responsibilities(EPR). The reduction of environmental burden of products and services is necessary from the viewpoint of environmental management and promotion of eco-business.

Although environmental products and services of organizations may differ significantly according to kinds and the size of organizations, each organization should describe its environmental activities that are based on its characteristics. Description should include the proportion of environmental products in the total products or sales discussed in (19) and summary of environmental effects (including estimates) of these activities, and should be described with factual information. Especially, financial organizations, such as banks, security brokers, insurance, wholesale and retail, transportation, and trading companies do not involve in their own production activities, therefore these organizations need to be creative in order to describe their environmental activities that are based on their own characteristics. For example, financial organizations should describe how they are concerned about environment protection in loans and investments.

5) State of Organizational Efforts in Social Aspects

(25). State of Performance in Social Aspects

Social aspects of sustainability include a variety of issues such as occupational safety and health, human rights, employment, regional culture, extensive consumer protection, product safety, politics, ethics, and protection of personal information. Trial efforts to promote disclosing and reporting of information concerning these social aspects are still in developing state.

These guidelines present important information from existing environmental reports, sustainability reports, and social and environmental reports (SCR). These guidelines also discuss information that is required to disclose by environmental statute, information that is required to disclose by laws and regulation which are not directly related to the environment and information that will be important in future. Information regarding these issues should be included in environmental reporting.

Recommended information to be included in environmental reporting

- a. Information concerning occupational safety and health
 - Summaries of policies, plans and activities concerning occupational safety and health
 - Frequencies and the number of industrial accidents or occupational diseases (number of

accidents)

- Accident frequency rate
- Number of working days lost
- Severity rate
- Expenses for safety and health, expenses per person

b. Information concerning human rights and employment,

- Summaries of policies, plans and activities concerning human rights and employment
- Breakdown of labor force (proportions of full-time employees, short-term contract workers, part time workers; the state of employment of senior workers)
- Information concerning The Equal Employment Opportunity Law (proportion of women in executives, managers, and the entire workforce)
- State of employing physically or mentally disabled persons under the Law for Employment Promotion, etc. of the Disabled
- State of welfare programs (maternity leave, child-care leave, measures to support child-care, programs to support education of employees outside the working hours or/and to support NPO activities, and statistics of the use of paid vacations and leaves of absence)
- Labor-management relations (Labor union density rate, state of collective bargaining, basic policies concerning layoff and job cut and records of layoff and job cut, labor disputes and litigation, instructions and recommendations from a Labor Standards Inspection Office)
- Efforts for improving work environment (measures for the prevention of sexual harassment and other kinds of bullying, state of complains regarding these matters)
- State of measures of ensuring the prevention of child labor, forced labor and mandatory labor (state of programs aiming abolishing these illegal labor practices in entire supply chain).

c. Information concerning respect and protection to regional culture,

- Policies, plans and activities regarding respecting and preserving local cultures,
- Activities in developing countries, etc.

d. Information concerning social communication and disclosure of information that is not related with the environment

e. Information concerning extensive consumer protection and products safety,

- Policies, plans and activities concerning protection of consumers and product safety
- Responses to the Product Liability Law, particularly safety measures in product design,

production and labeling.

- “After-service” programs such as checking and repairing of products after the sales
- State of appointing personnel which are in charge of accepting complains from consumers, and their statistics
- States of recalls of products and collection-and-repair programs
- State of programs that ensure obedience to the Specified Commercial Transactions Law regarding proper sales practices in mail-order and door-to-door sales and its compliance

f. Information concerning politics and ethics

- Summary of policies, plans and measures concerning corporate ethics
- Amounts of contributions and political contributions that are not related to the environment and to whom these contributions are made.
- Violations of laws and regulations which are not directly related to the environment, the contents and the numbers of instructions, recommendations, orders and administrative sanctions given by authorities (Including Anti Trust Law, Fair Competition Rules, Specified Commercial Transactions Law, PL Law)
- If involving litigation which is not directly related to the environment, the contents and responses to all litigation
- State of installing a code of conducts
- Measures to ensure fair trading such as obedience to the Fair Trading Law (Programs regarding the Fair Trading Law, Programs regarding the Law for Preventing Unjustifiable Lagniappes and Misleading Representation, state of programs that prevent delays of payments for contract works, state of programs of obedience to the Distribution-Trading Custom Guidelines)

g. Information concerning the protection of personal information

- Summary of policies, plans and measures for protection of personal information and protecting internal informants.

Commentary

There are debates on what information in social aspects should be included in environmental reporting.

For example, GRI’s Sustainability Reporting Guidelines 2002” names labor practices and decent work, human rights, society and product responsibility as four social performance indicators.

Social aspects should be considered based on sustainability of the region, country and the globe, impacts on interest parties at each level, and social responsibilities that organizations are expected to fulfill, and therefore they may differ by type, and size of organizations and their areas of activities. Organizations should decide what information is important to disclose and describe it. They should be described with explanation rather than merely a list of information.

In these guidelines, social aspects that are recommended to include are divided into seven categories: occupational safety and health, human rights and employment, respect and protection to regional culture, social communication and disclosure of information, extensive consumer protection and products safety, politics and ethics and the protection of personal information. These are areas which are highly concerned in the society or which are covered by laws and regulations.

Information in social aspects may differ by type, and size of organizations. These guidelines are used as reference, and it is expected each organization writes social aspects that are based on its own circumstances.