Management Advisory Service Research Committee Research Report No. 27

Feasibility of Disclosure of Environmental Information as Investor Information

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Objective and Structure of This Research Report

How a company acts upon environmental issues on a global or regional scale can now determine the sustainability of society, and can also affect the sustainability of the company itself. For this reason, accurately comprehending and evaluating the actual status of actions that companies are taking on environmental issues is quite significant to society, investors and the very companies themselves. Addressing environmental issues is one of the important pillars of corporate social responsibility (CSR) and is an area in which Japanese companies are particularly capable of excelling.

Appropriate information disclosure is vital for any accurate evaluation. Indeed, the need for information disclosure by companies in relation to environmental issues is rising among investors, most prominently in the West; there are also companies in the West that are working towards broader disclosure of information regarding environmental issues and social issues within their structure for investor disclosure, including disclosure in annual reports. Here in Japan, in contrast, disclosure of environment-related information has for the most part developed as voluntary undertakings, such as environmental reports or social and environmental reports. A debate from a viewpoint of information disclosure to investors remains far from exhaustive, however. It will hence be necessary to examine environmental information disclosure as part of "disclosure of non-financial information" to investors, by taking into consideration disclosure records that have been accumulated up until now in the form of environmental reports etc.

This research report carries an objective of sorting out the current state of affairs in and outside of Japan as mentioned above and examining the future feasibility of disclosure of environmental information to investors in Japan. The structure of the Report is as explained below.

In Chapter I, specific examples are presented to describe the current state of affairs, where investors increasingly demand information regarding environmental issues etc. Chapter II then provides an organized account of international developments in the area of disclosure of environmental and social information in annual reports etc. In Chapter III, the background of the developments on environmental information disclosure to investors is sorted out; it is followed by an observation in Chapter IV of the current situation in Japan. In conclusion, Chapter V presents a discussion of the future feasibility of disclosure of environmental information to investors by using, as a theme subject, the issue of global warming, a topic believed to be of particular importance.

I. An Increasing Need Among Investors for Environmental and Social Information

There is a widespread awareness today that how a company addresses environmental issues and pays attention to social aspects of its operation can influence our quality of life and can also affect its corporate value. Accordingly, many institutional and individual investors, particularly those in the West, are beginning to show an interest, one from their viewpoint as investors, in the involvement that companies have in environmental issues and social aspects. Such a growing interest among investors has already materialized as specific actions. To start with, an overview of some leading examples of those actions will be given below.

1. Development of Socially Responsible Investment

"Socially responsible investment" (SRI) is a general term that refers to any investment behavior where an investor evaluates, in addition to evaluating financial aspects including profitability and financial soundness, how an investment target company is addressing environmental issues and social aspects of its operation and then reflects the findings in making an investment decision. It has developed against various backdrops; in the 1920's, for example, there was a drastic movement led mainly by Christian churches, which excluded from a potential list of investments any company that went against their sense of ethical values. As well, the 1970's saw SRI-type activities form a stronger tie with social movements, including human rights movements, anti-war and peace movements and environmental protection movements. Recently, however, it is not only a fraction of investors who play a part, as was the case in the past, but organizations operating as central figures in the financial sector, including institutional investors (*e.g.*, pension funds) and major investment management companies, are also embarking on socially responsible investment. The current size of funds in socially responsible investment is estimated at over 2 trillion dollars in the United States, taking up 10-odd percent of the nation's total funds invested[1], and 336 billion Euros in Europe[2] as well.

This development of socially responsible investment is accelerated by the following factors. First, there is now a widespread awareness that a company's efforts in the area of environmental protection and CSR are not simply a cost factor but rather contribute to a higher evaluation score given to the company. Some true-life examples have been observed in Japan as well, where a company with a good environmental conservation record enjoyed a higher corporate value while those slow to act were treated negatively. Second, some people are beginning to develop a sense of values as a lifestyle choice that does not just focus on financial and social success but gives a higher priority to the environment and health. This idea, so-called LOHAS (Lifestyle of Health and Sustainability), has come under the spotlight particularly in the West, and it is said that people who share it are shifting to socially responsible investment in their investment management. Third, the EU has been working at the government level to promote CSR since 2000. While the EU movement has had a direct impact on the promotion of environmental and social information disclosure as will be explained in Chapter II, it is also helping socially responsible investment practices expand in Europe as a result of the EU's encouragement, as part of the CSR promotion, to incorporate in the management of pension funds attention to environmental and social issues.

It is due to those factors that socially responsible investment, which used to be limited to only a part of the investor base, is spreading to and among common institutional investors and

[1] Social Investment Forum, *2005 Report on Socially Responsible Investing Trends in the United States*, 2006, p.1.
[2] Eurosif, *Socially Responsible Investment among European Institutional Investors 2003 Report*, 2003, p.10.

financial institutions. What this implies is: the need for environmental and social information as information for investment decision-making is now more common than ever.

2. Effort Examples: UN Principles for Responsible Investment and UNEP Finance Initiative

On April 27, 2006, the UN Secretary General Kofi Annan announced the "Principles for Responsible Investment" at the New York Stock Exchange. These Principles, which require institutional investors to incorporate in their investment management attention to environmental, social and corporate governance (ESG) issues, were, upon announcement, signed by 33 institutional investors that manage a total of 2 trillion dollars, with pension funds from various countries among them. With the number of signatory institutions growing rapidly later on, the aggregate amount of invested assets of the institutions that had signed the Principles as of May 1 reached 4 trillion dollars[3]. Since the Principles include a requirement of incorporating in the investment analysis and investment decision-making process attention to environmental and social issues, the need for information on environmental and social aspects of investment target companies will presumably become greater than ever before.

It was the United Nations Environment Programme (UNEP) and the United Nations Global Compact that actually engaged in the development of these Principles. The Global Compact consists of ten principles for businesses on issues of human rights, labor, the environment and anti-corruption that Secretary General Annan proposed in 1999, which the UN Headquarters in New York, serving as an administrative office, calls for signatures from businesses in various countries. In the meantime, the UNEP announced the "Statement by Banks on the Environment and Sustainable Development" in 1992 and the "Statement of Environmental Commitment by the Insurance Industry" in 1995, and revised the Statement by Banks to the "Statement by Financial Institutions on the Environment and Sustainable Development" in 1997 so as to cover a wider range of financial institutions, all in an attempt to call for signatures from financial institutions in various countries. The UNEP Finance Initiative was formed as a network of financial institutions that signed those statements and has carried out a variety of projects. More than 160 financial institutions from all over the world currently participate in the Finance Initiative, 16 of which are major banks, securities companies and insurance companies etc. from Japan[4].

Those efforts represent an intention to incorporate into investment management activities of common institutional investors attention to environmental issues and to society, as opposed to leaving such practice only to institutions that expressly advocate socially responsible investment. In this case, any attention that would restrict the pursuit of investment returns might pose an issue in terms of fiduciary responsibilities. On this subject, the UNEP Finance Initiative released a report in 2005 that studied the relevance to fiduciary responsibilities[5]. The report maintains that the traditional view that investment fund management taking

[3] At the time this Research Report was being written, the Japanese institutions that had signed the Principles for Responsible Investment were: Kikkoman Pension Fund, Daiwa Asset Management, Mitsubishi UFJ Trust and Banking, Sompo Japan Insurance, and Sumitomo Trust & Banking (in no particular order).

[4] The participating companies from Japan are (in no particular order): Tokio Marine & Nichido Fire Insurance, Sumitomo Mitsui Financial Group, Sumitomo Trust & Banking, Bank of Tokyo-Mitsubishi UFJ, Sompo Japan Insurance, Shiga Bank, NIPPONKOA Insurance, Nikko Cordial Securities, Nikko Asset Management, Mitsui Sumitomo Insurance, Mitsubishi UFJ Trust and Banking, Japan Bank for International Cooperation, Good Bankers, Development Bank of Japan, Daiwa Securities Group, and Aioi Insurance.

[5] UNEP Finance Initiative, *A Legal Framework for the Integration of Environmental, Social and Governance Issues into Institutional Investment*, 2005.

environmental and social issues into consideration is controversial in the light of fiduciary responsibilities is a misconception, and concludes that such investment therefore does not run counter to fiduciary responsibilities.

As a typical issue that is closely related to interests of financial institutions as well as institutional investors themselves, the UNEP Finance Initiative also sheds light on the risk involved in global warming and climate change and has conducted studies and given recommendations on this matter through a working group that it established. The issues associated with climate change risk draw particularly high attention of investors abroad compared with other environmental concerns, and investors therefore are taking an active part in actions other than the UNEP Finance Initiative. For this reason, the topic will be discussed separately in the following section.

Figure 1. Principles for Responsible Investment (Summary)

Principles for Responsible Investment (Summary)

As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and corporate governance (ESG) issues can affect the performance of investment portfolios. We also recognise that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

1. We will incorporate ESG issues into investment analysis and decision-making processes.
2. We will be active owners and incorporate ESG issues into our ownership policies and practices.
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.
4. We will promote acceptance and implementation of the Principles within the investment industry.
5. We will work together to enhance our effectiveness in implementing the Principles.
6. We will each report on our activities and progress towards implementing the Principles.

(Source) United Nations, *The Principles for Responsible Investment*, 2006, http://www.unpri.org/

3. Actions of Investors on the Global Warming Issue

As will be discussed in Chapter V, the development of global warming and the possibility of climate change bring about a broad range of risk to companies[6]. In connection with a rapidly growing risk of climate change, there is an increasing recognition that obtaining relevant corporate information, as well as assessing the risk and making an investment decision on the basis of such information, is precisely a fiduciary responsibility of institutional investors whose basic goal is to deliver long-term investment. Correspondingly, there is also a view that is now widely shared: in order for institutional investors to make an appropriate decision regarding climate change risk, a company needs to conduct a sufficient risk assessment and disclose sufficient information on the state of the risk and on its actions to address them.

[6] It is generally believed that an increased greenhouse gas concentration is resulting in global warming, which in turn becomes a major cause of climate change. In addition to mid- to long-term climate change, global warming presumably generates various other impacts, such as the rise in sea level and ecosystem transformation, changes in agricultural production, and shifts in areas of epidemics etc., all of which may be called climate change risk. Another point is that any debate on climate change risk may also include risk of damage from extreme climate etc. in recent years that has not been explicitly proven to be related to global warming; strictly speaking, the relationship between those two terms is thus a complicated one. In general, "climate change risk" is used more often in the West, while the "global warming issue" is more familiar to the Japanese people. As, however, a strict distinction between the two terms does not much affect the purpose of this Research Report, they are both used to imply basically a similar meaning in this Report.

Given those circumstances, actions are increasingly being taken internationally to request companies to disclose information on their efforts towards greenhouse gas emission reduction and climate change risk.

(1) Carbon Disclosure Project

One such global-scale effort to request companies to disclose information on climate change risk is the Carbon Disclosure Project (CDP). Launched with financial assistance from the British government, it is an ongoing project supported by institutional investors from the UK as well as various other countries. More specifically, the CDP is designed to inform investors of risks and business opportunities associated with climate change and inform the corporate management that shareholders have a high degree of concern about how climate change issues might affect the corporate value; with this intention, questionnaires are sent to leading companies in the world to ask about their management policies regarding greenhouse gases and about their emissionss etc., and the response and analysis results are later publicly released. As a practice prior to sending questionnaires to companies, signatures are obtained from institutional investors in the respective countries as an expression of support; during the Third Survey that was conducted in FY 2005 (called "CDP3" for short), the number of signatory institutional investors reached 155, with their aggregate invested assets amounting to 21 trillion dollars. As the Project has grown year after year, the number of signatory institutional investors has also increased from 35 companies with 4.5 trillion dollars in assets in 2003, to 95 companies with 10 trillion dollars in 2004 and 155 companies with 21 trillion dollars in 2005, in conjunction with a rapid rise in the rate of response from companies as well, from 47% in 2003, to 59% in 2004 and 71% in 2005.

Results of responses to the questionnaires are analyzed by region and by industrial sector and the findings are written into a CDP Report together with other matters, which is released to the general public. In addition to presenting the risk management and information disclosure trend analysis results, a CDP Report also makes public sector-by-sector Climate Leadership Index(comprising companies deemed to be taking advanced actions on climate change) and the names of companies that refused to respond to the questionnaire. For readers' information, the Fourth Survey (CDP4), which is given a substantially larger scale than CDP3, was in progress in June 2006 when this Research Report was being written, with questionnaires having already been sent out to companies. While the trend of signatory institutional investor growth is still present (with a total of 31 trillion dollars in assets), what is particularly characteristic of CDP4 is a significant increase in the number of companies covered (500 in CD3; 1,800 in CD4), as well as a new inclusion of companies in Oceania, Brazil and China etc. that were not covered in the previous surveys, by establishing local administrative offices in the respective regions in cooperation with NGOs and independent research institutes in relevant countries. The number of Japanese companies covered by CDP4 is 150, which is a significant increase from 52 in CDP3. Many major Japanese financial institutions[7] have responded with a signature of support for CDP4.

[7] The Japanese financial institutions that gave a signature of support for CDP4 are (in no particular order): Daiwa Securities Group, Development Bank of Japan, Fukoku Capita Management, Meiji Yasuda Life Insurance, Mitsubishi UFJ Financial Group, Mitsui Sumitomo Insurance, Mizuho Financial Group, Nikko Asset Management, Sompo Japan Insurance, Sumitomo Mitsui Financial Group, and Tokio Marine & Nichido Fire Insurance.

(2) Investor Network Activities Addressing Climate Change Risk

Apart from the CDP, a network of institutional investors was established in the United States with the intention of promoting better understanding of the financial risks and investment opportunities posed by climate change. The activities of the network, named the "Investor Network on Climate Risk" ("INCR"), were initiated in November 2003 by ten major institutional investors with the aim of deepening the understanding of investors themselves about risks and opportunities that companies will take on as a result of climate change and telling companies about their existence. The activities of the INCR are coordinated by a non-profit organization called Ceres[8], which forms a network with investors and non-profit organizations, and also has company members. Ceres also forms stakeholder groups including international NGOs to discuss climate change issues as well as other environmental, social and governance issues with companies. The aggregate amount of invested assets of the INCR-participating institutional investors is rapidly increasing, marking 3 trillion dollars as of 2005.

Since its founding in 2003, INCR has promoted not only information disclosure but also various efforts concerning climate change issues. In their leading activities, the INCR is engaged comprehensively in a range of actions intended to mitigate investment risk associated with climate change, including: raising awareness of companies which the participating institutional investor members invest in, about the risks and opportunities associated with global warming; educating companies about policies and measures as well as target-setting; promoting actions of investors themselves in making climate change-related investments; encouraging companies to disclose information on material risks associated with climate change, and encourage governments to enact or enforce policies which support this disclosure[9]. The policies for these activities were developed as 10-point action plans at the Institutional Investor Summit meetings held in 2003 and 2005[10].

On the subject of disclosure by companies of climate change information, the Network also calls for all-around enhancement of information disclosure from multiple information media, as opposed to just calling for simple information disclosure. In other words, in addition to promoting disclosure by companies regarding climate change in their voluntary reports on sustainability, which are commonly called sustainability reports, the INCR is working to: prompt companies to report on climate change risk, focusing on the state of climate change risk and their policies and efforts, as well as performance information, and, further; promote disclosure of climate change risk information and emission information in their annual reports.

As one of the efforts to promote information disclosure by individual companies, shareholders resolutions have been filed with more than 20 companies operating in industries with high emissions (automobile, electricity, oil and gas) with respect to their information disclosure and efforts regarding climate change. The number of filings of shareholders resolutions of this sort has been rising rapidly since 2002, reaching 25 in 2004 and 33 in 2005 in the case of US companies. Those shareholders resolutions have

[8] Ceres stands for "Coalition for Environmentally Responsible Economies"; it is a coalition of organizations associated with socially responsible investment and NPOs that mainly focus on environmental issues.
[9] Ceres, *Investor Progress On Climate Risk: Results Achieved Since the 2003 Institutional Investor Summit on Climate Risk*, 2005.
[10] Institutional Investor Summit on Climate Risk, Final Report, 2005.

attracted a certain vote of approval, with a particularly high percentage vote gained in the oil and gas industries[11]. Even more notable is the fact that not only a fraction of investment funds that focus on socially responsible investment, but also some so-called mainstream institutional investors managing a large amount of trust assets have filed shareholders resolutions of this sort. Companies are reacting to this development by taking steps in the area of information disclosure (several companies have proceeded to disclose new information) and reflecting climate change risk in their management system (such as publicly releasing their policies on climate change risk and setting specific targets)[12].

In the meantime, the INCR is asking the Securities and Exchange Commission (SEC) to issue guidance for the disclosure of information on climate change in annual reports[13]. More specifically, the INCR submitted a written request to SEC Chairman William Donaldson, which points out the existence of climate change issues and the significance of their impacts on a company's liquidity, capital-raising and business performance and requests that companies should be required under Section 303 of the SEC Regulation SK to disclose, as material information, information regarding risks that they face. This also contains a request that the clause on voting right exercise under Section 14(1)-8 should be amended to specify that shareholders have the right to vote on a shareholders resolution requesting the company to report financial risks caused by climate change.

(3) Activities of Financial Institutions

The concern about the relation between business risks and climate change seems not to be limited only to institutional investors but also growing among major financial groups around the world[14]. For example, Allianz, the largest non-life insurance group in Germany, issued "Climate Change & the Financial Sector: An Agenda for Action" as a joint effort with the World Wildlife Fund for Nature (WWF), an international environmental NGO, in which the connection between a financial institution's services and climate change is suggested. Likewise, Merrill Lynch Group, a major global financial group, issued a report entitled "Energy Security & Climate Change: Investing in the Clean Car Revolution" as a joint effort with the World Resource Institute (WRI), a think tank specializing in issues of resources and the environment, in which actions of leading car companies on climate change risks and opportunities are assessed. Citigroup also released a report entitled "Investing in Solutions to Climate Change", which it developed in conjunction with WRI, which presents analysis work focused mainly on competitive opportunities generated as a result of active steps taken against climate change risk[15].

Thus, the widely growing concern among institutional investors as well as other financial institutions about the impacts of climate change that companies are exposed to has driven activities, under partnerships between NGOs and institutional investors or other financial

[11] For example, 37% at Apache and 31% at Anadarko.
[12] For example, Ford Motor Company, a major car maker in the United States, issued a climate change report in 2005 in response to a shareholders resolution concerning climate change filed with the company. The report discusses the influence and risk that the business is exposed to as a result of regulations, competition, legislation and physical impacts associated with climate change, as well as costs that would be incurred due to the failure to appropriately address those issues.
[13] Ceres, The Wirth Chair, *Climate Change Risk and the SEC Summary Report, 2004 Leadership Forum*, 2004.
[14] IFC (International Finance Corporation) and Global Compact, *Who Cares Wins*, 2005.
[15] The examples cited in this Section are cases described in the IFC report cited above (those of Allianz and Merrill Lynch Group) and a case that is considered to merit mentioning as a similar action of a major global financial group.

institutions, of requesting companies to disclose information regarding climate change. Adapting to such growing needs for information disclosure on the part of investors, companies are becoming increasingly aware of climate change risks and opportunities, markedly among those operating in industries which climate change has close relevance to, including oil and gas, electricity and automobile. This appears to be reflected in the rising number of CDP questionnaire respondent companies and in a much greater degree of information disclosure about climate change risk in the "Management's Discussion and Analysis of Financial Position and Results of Operations" ("MD&A") section of annual reports issued by US companies[16].

[16] Friends of the Earth, *Fourth Survey of Climate Change Disclosure in SEC Filings of Automobile, Insurance, Oil & Gas, Petrochemical, and Utilities Companies*, 2005.

II. International Developments in Disclosure of Environmental and Social Information in Annual Reports etc.

With the need among investors for environmental and social information becoming greater, companies are also accelerating their actions on information disclosure. As is the case in Japan, a practice of preparing independent reports, such as environmental reports and sustainability reports, is making progress in the West as a development in the area of environmental and social information disclosure, in which international guidelines released by the Global Reporting Initiative (GRI) and award systems of institutions in various countries, including the Association of Chartered Certified Accountants (ACCA), have played a significant role. Aside from this development, some have also begun to incorporate environmental and social information into institutionalized disclosure to investors, such as disclosure in annual reports. The EU has recently issued proactive recommendations and directives in this regard, in accordance with which institutionalization is now underway in the respective EU countries. In the United States, there have traditionally been more specific provisions associated with environmental issues. The discussion paper on the "Management Commentary (review of operations by the management)," which the International Accounting Standards Board (IASB) released in 2005, also contains a reference to environmental and social information. In this Chapter, a series of these key international developments are examined.

1. Developments in the EU[17]

The EU agreed on the EU strategy for 2010 (Lisbon Strategy) during the European Council Summit held in Lisbon in 2000. It aims to turn Europe into the most dynamic and competitive economy in the world in the ten forthcoming years, while maintaining social cohesion and sense of unity and protecting the environment. CSR was given a role of contributing to the achievement of these objectives, and a decision was made to promote CSR under policy initiatives. Given this background, the EU has, since 2000, released the following proposal, recommendation and directive in relation to the statement of environmental and social information in annual reports:

(1) Proposal for an EU Strategy for Sustainable Development

In 2001, the Commission of the European Communities released a proposal entitled "A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development[18]." As part of actions by the EU leading up to the Johannesburg Summit in 2002, this proposal was designed to integrate three commitments, *i.e.*, economic growth, social cohesion and environmental protection, by incorporating an environmental aspect into the EU strategy agreed to in Lisbon the year before. Although the proposal is not itself enforceable, a wide range of actions are suggested there, for example: "All publicly-quoted companies with at least 500 staff are invited to publish a “triple bottom line” in their annual reports to shareholders that measures their performance against economic, environmental and social criteria.[19]"

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[17] Yoshinao Kozuma, *Development of Environmental Accounting for External Reporting in the EU* [title translated from the Japanese original] (Masao Kawano (editor and author), *Creation and International Development of Environmental Accounting* [title translated from the Japanese original]) (Moriyama Shoten, 2006) was used as a reference in writing this Section.

[18] Commission of the European Communities, *A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development,* COM (2001) 264 final, 2001.

[19] *Ibid.* p.8.

(2) Recommendation on the Recognition, Measurement and Disclosure of Environmental Issues in Annual Reports

In the same year (2001), the Commission of the European Communities released a recommendation entitled "Recognition, Measurement and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies[20]." The recommendation was founded on a belief that drawing the attention of companies to environmental costs and risks will raise their awareness of environmental issues, which was expressed in the "Towards Sustainability: 5th Environmental Action programme," which had been released in 1992. Starting from there, it was considered that the lack of any explicit rules and guidelines was making any environmental information disclosed by companies devoid of comparability and credibility, despite the fact that various stakeholders, including investors and analysts, wish to know what actions companies are taking to address environmental issues; it was for this reason that the recommendation was issued with appended specific guidelines for the recognition, measurement and disclosure of environmental liabilities and expenses, recommending that companies of member countries be required to apply them.

The guidelines thus presented as an appendix recommend that companies disclose in annual reports their environmental policies and programs, progress in major environmental issues, and environmental performance, to the extent that environmental issues are critical to their business performance and financial position. Among these items, particularly thorough disclosure is recommended for environmental performance by citing as examples energy use, material use, water use, and waste disposals and referring to the usefulness of disclosing quantitative environmental efficiency indicators and segment-by-segment specifics.

(3) Directive Amending Directives on Annual and Consolidated Accounting

With the intention of improving the comparability of financial statements, the EU decided to apply international accounting standards as of January 2005. In order to develop EU accounting rules in this connection, a directive amending the directives on annual and consolidated accounting (Modernisation and updating of accounting rules) was subsequently adopted[21]. This directive requires both the annual report and the consolidated annual report to "include at least a fair review of the development and performance of the company's business and of its position, together with a description of the principal risks and uncertainties that it faces" and also requires "the review shall be a balanced and comprehensive analysis . . . . consistent with the size and complexity of the business." It goes on to prescribe: "To the extent necessary for an understanding of the company's development, performance or position, the analysis shall include both financial and, where appropriate, non-financial key performance indicators relevant to the particular business, including information relating to environmental and employee matters[22]."

These provisions are simpler than the recommendation in 2001 but, being a directive,

[20] Commission of the European Communities, *Commission Recommendation of 30 May 2001 on the Recognition, Measurement and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies,* 2001/453/EC, 2001.
[21] The European Parliament and of the Council, *Directive 2003/51/EC of The European Parliament and of the Council of 18 June 2003 amending Directives 78/660/EEC, 83/349/EEC and 91/674/EEC on the annual and consolidated accounts of certain types of companies, banks and other financial institutions and insurance undertakings*, 2003.
[22] *Ibid*., Article 1 14 (a), Article 2 10 (a).

which is enforceable against member countries, they have a huge impact nonetheless. This is because member countries are under an obligation to establish domestic legislation in accordance with a directive. The respective countries have indeed created provisions for the disclosure of environmental and social information in annual reports. Major developments in European countries are discussed separately in the next Section.

2. Developments in European Countries[23]

Reacting to the recommendation and directive of the EU described above, European countries have each been working on establishing domestic legislation for the disclosure of environmental and social information. The developments in principal countries are as described below.

(1) Development in the UK

The UK implemented an amendment to its Company Law in March 2005, whereby creating a requirement for listed companies to disclose "Operating and Financial Review (OFR)" in their annual reports. The stated purpose of OFR disclosure was to provide shareholders with information useful for them to base their decision on, by presenting matters such as a balanced and comprehensive analysis of the condition of the company, key factors that contributed to its business performance and yearend results for a given business year, as well as key factors deemed to impact its future operation and business performance; accordingly, the Law required, among other things, a statement of major risks and uncertainties that the company faces. It went on to require, to the extent necessary to meet the requirements mentioned above, disclosure of information relating to the company's employees, environmental issues, society and community as well as relevant key performance indicators (KPI).

After later reportedly repealing the OFR-based obligation in November 2005 and alternatively deciding to require the inclusion of "Business Review," the UK government proceeded to propose a new statutory amendment in 2006. It is stated in the proposal that narrative reporting covering social, community, employee and environmental matters will be required so that the information required through the OFR, a disclosure item newly added in the 2005 Company Law amendment, and under the EU directive on "Modernisation and updating of accounting rules" will be reflected there. While how the future will unfold is still unclear, its broad direction towards disclosure will probably remain unchanged.

In the meantime, an action was taken to develop OFR reporting standards; the Accounting Standards Board (ASB) established the "Reporting Standard on the OFR" in 2005 to present principles for OFR preparation and its disclosure framework. Further still, the "implementation guidance" that accompanies the Reporting Standard on the OFR contains KPI disclosure case examples, among which carbon dioxide emissions and waste disposals etc. are mentioned in relation to environmental issues. In January 2006, the UK Department for Environment, Food and Rural Affairs (DEFRA) also released the "Environmental Key Performance Indicators," in which 22 KPI's relating to emissions to

[23] Yoshinao Kozuma, *Development of Environmental Accounting for External Reporting in the EU* [title translated from the Japanese original] (Masao Kawano (editor and author), *Creation and International Development of Environmental Accounting* [title translated from the Japanese original]) (Moriyama Shoten, 2006) was used as a reference in writing this Section.

air, water and land and to resource use are presented.

(2) Development in France

In France, the Commercial Code was partially amended by the 2001 Law on New Economic Regulations, as a result of which listed companies are now required to disclose in annual reports information on effects of their business activities on society and the environment. This amendment can be viewed as rather a reflection of the 2001 recommendation because it was implemented prior to the EU directive on "Modernisation and updating of accounting rules." The disclosure requirement is therefore provided for in a relatively detailed fashion.

Specific items of disclosure are listed in a government decree, among which, in the area of environmental issues, are: (1) use of water, resources and energy, approach to achieving higher energy efficiency, status of renewable energy use, status of land use, emissions to the atmosphere, water and soil, noise, odor and wastes that have serious effects on the environment; (2) measures to mitigate effects on the ecological balance, natural environment and protected flora and fauna; (3) environmental assessment procedures; (4) steps for compliance with environmental laws and regulations; (5) expenses for environmental burden reduction; (6) environmental management structure; (7) provisions and compensations relating to environmental issues; (8) damages associated with the environment; and (9) information on items (1) to (6) above that concerns foreign subsidiaries.

(3) Development in Germany

In Germany, the Commercial Code was amended in 2004 to create a requirement of including non-financial performance indicators, such as information on clientele growth and on the environment and employees, in consolidated annual reports, as well as non-consolidated annual reports of companies with a large capital, to the extent necessary for an understanding of the company's business undertakings and position. This was done to follow the EU directive on "Modernisation and updating of accounting rules." These provisions are, however, simpler compared to the equivalents in the UK and France, with no specific items of required environmental information disclosure listed.

(4) Development in the Netherlands

In the Netherlands, prior to an amendment to Part II, Chapter IX of the Civil Code that governs annual report requirements, the Financial Reporting Guidelines of the Financial Reporting Council was revised, in which the contents of disclosure under the Code are effectively prescribed, and the guidelines on CSR information to be disclosed in annual business reports was introduced as of 2003. The guidelines are divided into four parts, *i.e.*, general, environmental, social and economic; items shown in the part of environmental issues contain environmental measures, consumption of resources including energy, water and materials, and impacts of business activities on the supply chain.

3. Development in the United States

In the United States, it was during the 1970's when SEC regulations requiring the statement of environmental information, particularly information on environmental liabilities such as the pollution cleanup obligation, were introduced together with related guidance, after which information disclosure continued to be improved and enhanced from the 1980's throughout to the 1990's. This took place under the influence of large-scale soil contamination cases and strengthened environmental regulations, including the Super Fund Act. In other words: a situation already existed back then, where how an environmental issue is dealt with serves as an important piece of information in the investment decision-making process.

As a recent development, the 2002 Sarbanes-Oxley Act had an effect of prompting thorough information disclosure by, for instance, requiring the SEC to check the contents of reports from companies on a more frequent basis, while it did not impose a disclosure requirement for any new environmental information. With the release of Interpretation 47, *Accounting for Conditional Asset Retirement Obligations* (FIN 47) by the Financial Accounting Standards Board (FASB) in March 2005, there is now a requirement that any asset for which a pollution cleanup or treatment obligation might arise in the future, such as due to soil contamination or asbestos, should be recognized as a conditional liability even if such an event is not probable.

Thus, a whole system of requiring disclosure of environmental information to investors is in the process of being instituted and expanded in the United States, mainly in the form of SEC regulations; accordingly, efforts are made to enhance and improve disclosure practices through issuance of guidances by the AICPA, examination of and recommendations for the disclosure status by the Environmental Protection Agency (EPA), and reports to Congress by the Government Accountability Office (GAO)[24].

4. Recommendation of the IASB for "Management Commentary"

The International Accounting Standards Board (IASB) released a discussion paper in October 2005 on "Management Commentary (review of operations by the management)" in financial reporting[25]. "Management Commentary" is defined as information that accompanies financial statements as part of an entity’s financial reporting, which explains the main trends and factors underlying the development, performance and position of the entity’s business during the period covered by the financial statements, and also explains the main trends and factors that are likely to affect the entity’s future development, performance and position[26]. It is described in the discussion paper that "MD&A (Management's Discussion and Analysis)," an expression used in the United States and Canada, was initially contemplated as its title, but, considering that the term "OFR" is used in the UK and "Management Reporting" is used in Germany, "Management Commentary" was chosen to serve as a general term.

What is suggested as matters to be stated in a Management Commentary covers a broad range of topics, including business details, objectives and strategies, main resources and risks, results and their reviews, and benchmarks for and indicators of performance measurements. In presenting the list of topics, the paper states that such information is useful for investors in that it affects the evaluation of a company because "how an entity interacts with its customers, employees, the community in which it operates and the environment, can have a significant impact on its short- and long-term financial well-being[27]."

[24] United States Government Accountability Office, *Environmental Disclosure; SEC Should Explore Ways to Improve Tracking and Transparency of Information*, 2004.
[25] International Accounting Standards Board, *Discussion Paper: Management Commentary - A paper prepared for the IASB by staff of its partner standard-setters and others*, 2005.
[26] *Ibid*., paragraph 19.
[27] *Ibid*., paragraph 131.

Whether or not to proceed to deliberate over the adoption as a standard of the disclosure proposed in this discussion paper will be decided in consideration of, among other matters, the results of public comment collected up to April 2006. Such development is very likely not imminent at this point in time, but will probably be put on the discussion agenda in the future, given the fact that the realm of examination of the IASB is generally believed to cover not only financial statements but also financial reporting.

III. Background of Developments on Environmental Information Disclosure to Investors

As has been observed, the need for environmental information associated with corporate activities is growing among investors on an international scale, and there have also been efforts made to promote disclosure of environmental and social information within the whole system of investor disclosure. The reasons for and factors underlying these trends can be sorted out as follows:

1. Increased Seriousness of Environmental Issues

As a fundamental background of the need for environmental information associated with corporate activities, one can cite the increasing seriousness and urgency of environmental issues in general, as well as an ensuing, increasingly shared recognition that various environmental issues need to be improved on.

Recently, global environmental issues have been discussed as the most critical issue that mankind must promptly act on and solve. Especially since *Limits to Growth*, a pioneering report published by the Club of Rome, a wide spectrum of global environmental issues, such as ozone depletion, diminishing tropical forests and global warming, have been put on the discussion table, as guided by scientific knowledge. Added to them is the existence of a myriad of issues that are intricately intertwined, including biodiversity, resource and water depletion and food problems. Also influenced by the tremendous human damage and economic losses all around the world that were caused by the frequent occurrence of extreme weather patterns in the last several years, people now have an increasingly heightened sense of crisis over global environmental issues.

The international community has been reacting to this by various efforts under a common principle aimed at "sustainable development" or "sustainable society," for example: UN agreements such as the "Rio Declaration on Environment and Development" and "Agenda 21"; international treaties such as the Convention for the Protection of the Ozone Layer and the Framework Convention on Climate Change; international accords for the actual implementation of the above-cited agreements, such as the Montreal Protocol and the Kyoto Protocol; and institutionalization and international cooperation for environmental regulations in the respective countries. Unfortunately, though, global environmental issues are not exactly arriving at a solution, given the pressure from economic and population growth in developing countries, as well as the complicated nature of those issues and challenges of the conflict of interest between countries or regions and of balancing economies and the environment. In fact, the environmental burden on a global scale may actually be becoming even heavier, reflecting a presumably increasingly grim situation.

2. Interrelation between Environmental Issues and Corporate Activities

In line with the increased seriousness of environmental issues and the raised awareness of that fact as discussed above, there is also a growing recognition that corporate activities have significant effects on the global as well as local environment. Looking back at Japan, many companies have been making earnest efforts since the revelation of a series of pollution cases and have also actively been dealing with global environmental issues since the 1990's; likewise, as exemplified by UN actions and EU trends, the international community has a further increasing awareness that companies should act even more responsibly to address their effects on the environment.

This, in turn, adds more weight to the effects that companies are subjected to from environmental issues. In other words, a company's past, present and future actions on environmental issues now have increasingly significant effects on its business performance. Companies may be required to additionally cover whole new costs that it has thus far not covered, such as costs from compliance with new regulations and new tax burdens, where a variety of environmental regulations (*e.g.*, against toxic substance use and contaminant emission) are set in place and a new environmental economic system (*e.g.*, environmental taxation and emissions trading) is introduced. Also considering the rising number of cases that entail an enormous burden on a company as a result of lawsuit, damages and contamination cleanup etc., such as the recent asbestos and soil contamination cases, this trend will likely continue for years to come. Moreover, a company's profits or losses are now influenced greatly by the level of its energy efficiency and resource efficiency record, given the growing scarcity of energy and other resources caused by rapid economic development in large emerging economies, most prominently, China and India.

Those companies which outpace others in actions on environmental issues can, by so doing, not only avoid or reduce such a burden, but can also gain profit-making opportunities through a new framework like emissions trading or turn it to their advantage in differentiating their products from others and creating a positive brand image. On the other hand, those with low environmental efficiency might be faced with increased costs and reduced profit-making opportunities and suffer from diminished competitiveness as a result. The impact that such difference in a company's position and capability in environmental actions has on its business performance is expected to loom even larger, supposing that a new system of economy, in which any environmental burden arising in connection with corporate activities is internalized as a cost burden on companies, continues being developed in the future.

3. Recognition of Need for Environmental Information Disclosure to Investors

Hence, how a company acts on environmental issues can have considerable effects on its competitiveness, future business performance and long-term future cash flows. Risks and uncertainties in its operation can be affected as well. This is why such information will come as important for investors. As, however, it is difficult to discern that aspect of the company's operation from traditional financial information alone, non-financial information like environmental information is needed for a correct evaluation of the company. A growing recognition of this sort, *i.e.*, that environmental information is one of the important pieces of information by which to evaluate a company in the investment decision-making process, is in all likelihood one reason why investors, particularly in the West, request disclosure of environmental information or efforts are made to have environmental and social information disclosed in annual reports.

In the case of the EU, indeed, disclosure of environmental and social information in annual reports has been institutionalized as part of its CSR promotion efforts since the Lisbon Strategy. This can obviously be taken as reflecting an expectation for raised awareness of investors about environmental issues and social issues, in order to prompt actions of companies by establishing such an information disclosure framework. The UN also developed the Principles for Responsible Investment, which are founded on activities of the Global Compact and UNEP originally designed to improve on environmental issues and social issues, and contained in there guidance for requesting companies to disclose environmental information. In sum, a common belief that supplying information that would enable investors to appropriately evaluate a company in relation to environmental issues leads to the betterment of environmental issues themselves is one of the driving forces behind those actions by the EU and the UN.

IV. Current Status of and Challenges for Environmental Information Disclosure in Japan

Having examined the international developments, as well as their background, regarding disclosure of environmental and social information to investors, we are left with a question of to what degree those developments are addressed by the system and practices of disclosure in Japan. As a next topic, the current status of disclosure in Japan will be discussed, together with challenges that it faces.

1. Progress in and Challenges for Voluntary Disclosure

(1) Status of Environmental Report and CSR Report Issuance

One possible way for a company to voluntarily disclose environmental or social information is to issue a report called an environmental report or CSR report. Although there is no legal obligation for the issuance of such reports in Japan, the number of companies that voluntarily issue and disclose them is more than 800 as of 2004[28], with more companies joining in year after year. Both quality and quantity of information disclosed are also improving, and many companies disclose additional information on their homepage as well. Judging from these trends, the volume of information that companies disclose voluntarily is probably on the increase. This suggests that an idea of tracking and disclosing environmental information or CSR information is in the process of spreading to and gaining ground among many companies.

(2) Advantages of Voluntary Disclosure

While environmental reports and CSR reports issued by companies vary in terms of the coverage and volume of information, they, being reports that are basically focused on environmental or social information, have an advantage to the issuing companies in that a systematic account can be given in such reports, with topics ranging from their philosophy and management policies regarding environmental issues and CSR, to the purposes, objectives, organizational structure, and specific details of their actions as well as their achievement status. Another point is that since each company operates a different business under a different organizational structure and gives a different level of weight to a given environmental issue, an ability to disclose information flexibly, according to the specific characteristics of the company, can result in appropriate disclosure. In this respect, it makes sense that environmental reports and CSR reports have developed as a voluntary action on the part of companies.

Viewed from a standpoint of those who are on the receiving end of information, such voluntary information disclosure has presumably had a great implication as well. Indeed, environmental information that companies disclose voluntarily is appreciated by research institutes that rate companies by studying and analyzing their environmental information and supply such information to institutional investors[29], which find a relatively high value in it among a limited range of information available to them, a value in terms of usefulness as a source of data to be used in their analysis work. In other words, information that companies disclose voluntarily probably has a certain impact on the investment

[28] According to the Ministry of the Environment, *FY 2004 Survey on Environment-Friendly Corporate Activities*, 2005.
[29] It is said that the number of research institutes of this type is rising, with the level of their expertise and workloads also growing. Mistra, Sustainability, *Value for Money: Reviewing the Quality of the SRI Research*, 2004.

decision-making of financial institutions and institutional investors, indirectly through studies done by such research institutes.

(3) Limits of Voluntary Disclosure

Such voluntary disclosure comes with limits as well, however. Indeed, the fact that a disclosure system for environmental and social information was established in European countries, or that support is growing for the Carbon Disclosure Project, where investors request major companies to disclose information regarding climate change under set standards, implies that governments and investors are aware of the existence of certain limits to the traditional practice of voluntary disclosure by companies[30]. From a perspective of supplying information that is useful for investment decision-making, the following points can be cited as limits to voluntary disclosure in comparison to institutionalized disclosure:

(i) Only a particular set of companies disclose information

The non-compulsory nature of voluntary information disclosure means that it is exercised by only a particular set of companies, not by every company. Under this circumstance, investors might not be able to obtain necessary information in relation to companies that do not voluntarily disclose it, even when their environmental performance and actions on environmental issues have a material effect on their business performance etc.

(ii) Difficulty of comparing different companies or different periods of the same company

As voluntary disclosure is not subject to any specific disclosure standards, each company applies different environmental performance measurement standards and boundaries for measurements, and sets a different scope of consolidation and disclosure form, making it difficult to compare information along the same lines. There are also cases where even simply making a comparison between different periods is difficult because it is often at a given company's discretion what disclosure standards to apply, which compromises consistency. It has been pointed out in an analysis report for the Carbon Disclosure Project that although it is necessary to have consistent and comparable data on emissions of companies in the course of financial analysis in order to supply to investors credible and accurate research results about effects of climate change risk on investments, their comparability remains questionable at this point in time.

(iii) Credibility of information

As disclosure is voluntary, there may not be any clear accounting standards in the calculation of emissions etc. and, even if there is, they are susceptible to obscure application.

[30] Other actions in the West include benchmark studies conducted by the UK Environmental Agency and Friends of the Earth, an international environmental NPO, on the status of disclosure of environmental information or information regarding climate change in annual reports; this provides yet another indication of the awareness of limits to voluntary disclosure, as well as of a high level of interest in disclosure of environmental information in financial reporting. Please refer to the following: UK Environmental Agency, *Environmental Disclosures*, 2004, Friends of the Earth, *Fourth Survey of Climate Change Disclosure in SEC Filings of Automobile, Insurance, Oil & Gas, Petrochemical, and Utilities Companies*, 2005.

2. Initiative to Make Environmental Information Disclosure Mandatory

(1) Enactment of the Environmentally-Conscious Activity Promotion Law

One possible plan of action to address such limits to voluntary disclosure would be to make mandatory the current practice of issuing environmental reports etc. In this regard, the Law Concerning the Promotion of Business Activities with Environmental Consideration by Specified Corporations, etc., by Facilitating Access to Environmental Information, and Other Measures (Environmentally-Conscious Activity Promotion Law)" was enacted in 2004 and came into force in April 2005. This law is intended to create conditions towards the promotion of active environmentally-conscious efforts of those corporations by actively utilizing environmental reports on a society-wide scale through promoting the prevalence of environmental reports, an important tool of communication between specified corporations and their various stakeholders, and developing an institutional framework for higher credibility.

(2) Meaningfulness and Limits of the Environmentally-Conscious Activity Promotion Law

Through the Environmentally-Conscious Activity Promotion Law, an institutional framework for the promotion of the prevalence of environmental reports and for their higher credibility has been developed and certain public corporations (specified corporations) are now required to issue and publicly release environmental reports. These steps are designed to promote voluntary environmentally-conscious efforts of those corporations by prompting citizens and businesses, when making an investment or purchasing a product, to consider the status of environmental consciousness of any prospective supplying corporations.

However, specified corporations that are required to issue and publicly release environmental reports are independent administrative institutions and national university corporations etc., while private businesses are grandfathered from this requirement. Provisions created for private businesses are only of a non-binding nature, whereby major companies are encouraged to make efforts to issue and publicly release environmental reports.

Therefore, existing laws alone have yet to solve the limits to voluntary disclosure previously described.

3. System of Disclosure to Shareholders and Investors

(1) Treatment of Environmental Information in the System of Disclosure to Shareholders and Investors

Under current legislative arrangements, environmental information may still be disclosed within the system of disclosure to shareholders and investors. More specifically, possible means of disclosure might include provision and impairment accounting in financial statements, notes to financial statements on contingent liability, and descriptions in registration statements and securities reports under, for instance, "Issues to be Addressed," "Risk to Business etc.," "Financial Position and Operating Result Analysis" and

"Corporate Governance."[31] A concise description will be given below.

(i) Treatment in Financial Statements

a. Accounting for Provisions or Disclosing Contingent Liabilities

If a company contaminates the adjacent environment in the course of its activity, it may, as a contaminator, have to assume environmental liabilities including damages and a cleanup obligation. Where such an environmental liability is yet to be recognized as a direct liability and also meets the conditions set in Note 18 of the " Supplements to Financial Accounting Standards for Business Enterprises," the company would have to account for a provision. When it is necessary to disclose the liability as a contingent liability, the company would have to footnote its details and amount.

b. Accounting for an Impairment Loss

With the application of impairment accounting to any business years that begin on or after April 1, 2005, any effects from soil contamination etc. may have to be considered in applying the "Accounting Standards for Fixed Asset Impairment" etc.

c. Accounting Procedures for Emissions Trading

In November 2004, the Accounting Standards Board of Japan released Practical Issue No. 15 *Tentative Treatment of Accounting for Emission Trades*, in which accounting procedures for emission credits under the Kyoto mechanisms set in the Kyoto Protocol are discussed. This document contains a clear description of the treatment of accounting (*e.g.*, asset accounting for emission credits) for transactions made with the intention of acquisition of an emission credit for use in emission reduction, or of obtaining an emission credit for sale to a third party. For readers' information, the treatment details were revised on July 14, 2006.

(ii) Descriptions in Documents Other Than Financial Statements

There were cases in the past where a reference was made under "Issues to be Addressed" to the necessity to take steps to comply with environment-related regulations or make environmentally-conscious efforts. With the enforcement of the "Government Ordinance to Amend Part of the Enforcement Ordinance of the Securities and Exchange Law" and the "Cabinet Office Ordinance to Amend Part of the Cabinet Office Ordinance Concerning Disclosure of Corporate Information etc." in March 2003, any registration statements submitted in or after July 2004 and securities reports for the year ended March 2004 or later years are required to contain three additional items as non-financial information (qualitative information): "Risk to Business etc.," "Financial Position and Operating Result Analysis" and "Corporate Governance." For Form 5 submissions for semi-annual securities reports, however, the amendment regarding descriptions of "Risk to Business etc.," "Financial Position and Operating Result Analysis" and "Corporate

[31] In addition to the system of disclosure to shareholders and investor disclosure mentioned above, there is also a disclosure system under the Corporate Law, as well as regulations of securities exchanges imposed on listed companies etc. For example, the Tokyo Stock Exchange requires that the status of an internal system for timely disclosure of corporate information be submitted as an appendix. Likewise, the Ministry of Economy, Trade and Industry established the "Study Group on Disclosure and Evaluation of Corporate Activities" in February 2005 with the aim of examining a plan to develop standards for integrated risk management by companies, and released its interim report in June 2005.

Governance" does not apply and it is therefore not necessary to include them.

a. Issues to be Addressed

It is prescribed: "A specific description shall be given as to the details of and action policies etc. for issues in the area of business and financial management that exist as of the most recent possible date, which the consolidated companies (or the filing company if no consolidated financial statements are created) should address[32]."

b. Risk to Business etc.

It is prescribed: "A specific, easy-to-understand and concise description shall be given collectively as to those matters, of all matters concerning the business status and accounting status etc., which might have a significant impact on an investor's decision, including: any irregular change in the financial position, operating results and cash flow; dependence on any particular customer, product or technology etc.; any unique legal restriction, business practice or management policy; the occurrence of any significant lawsuit etc.; and any material information regarding directors, major shareholders or related companies etc." Although no direct reference to environmental issues is made here, a description would have to be given if there is any matter connected to an environmental issue that is a "matter that might have a significant impact on an investor's decision."

c. Financial Position and Operating Result Analysis

It is prescribed: "A specific and easy-to-understand description shall be given as to the details of analysis and review by representatives of the filing company regarding its financial position and operating results (for example: analysis of factors that have a material effect on its operating results, and information on the sources of its capital and its liquidity), so that an investor will be able to make a proper decision on its outline of business and financial condition etc." By the same token, any matter connected to an environmental issue might have to be analyzed if that matter is a "factor that has a significant effect on its operating results."

d. Corporate Governance

In one of the notes in filling out a Form, it is prescribed: "A specific and easy-to-understand description shall be given as to matters concerning corporate governance of the filing company (for example: details of the company's organization, the status of its internal control system development, the status of its risk management structure development, specifics of director remunerations, and specifics of audit fees)." As a company's environmental management is greatly affected by its corporate governance, the description given here may serve as important information to comprehend the structure of its corporate governance towards environmental risk etc.

(2) Status of Disclosure under the Current System

[32] Cited from "Notes in filling out a Form" for Form 2 under the Cabinet Office Ordinance Concerning Disclosure of Corporate Information etc.: the same for the subsequent citations.

Thus, there exists a framework under the current system of disclosure in which disclosure is required as to a matter connected to an environmental issue that is a "matter that might have a significant impact on an investor's decision" or a "factor that has a significant effect on its operating results." How, then, are actual disclosure practices conducted? On this subject, there is an empirical study done in 2006, which focused on descriptions in securities reports that had actually been given[33].

This study covers 339 companies that prepare environmental reports (including CSR reports etc.) and also issue securities reports, as subjects of an exhaustive study on the number and the contents of descriptions of environmental information and social information (CSR information) given under the sections of "Risk to Business etc." "Corporate Governance," "Issues to be Addressed" and "Research and Development Activities." Its findings show that the average number of per-company CSR information disclosure (the number of descriptions per company) is 15.58; although this is an indication that "a wide array of CSR information disclosure is already making progress as a business practice," the author points out that there are a number of issues that remain.

According to the study, all 339 companies that it covered were found to have disclosed some social information while 81 of them did not disclose any environmental information. Considering that the study subjects were companies that have already disclosed environmental information voluntarily by issuing environmental reports, the small number of companies that has disclosed environmental information is raised in the study as an issue. Nevertheless, the fact that the remaining 258 companies have disclosed some environmental information can also be taken as evidence that more than 70% of the companies recognize an environmental issue to be a matter that might have a significant impact on an investor's decision.

As to what was disclosed, many companies were found to have given nothing more than a general description or an expression of their environmentally-conscious attitude under "Issues to be Addressed" and "Corporate Governance," and most descriptions given under "Risk to Business etc." were also found to be a broad comment that "a strengthened regulation would become a risk factor to business performance etc." Granted that it is a natural consequence from how the institutionalized disclosure is currently prescribed, there was also virtually no case of quantitative information disclosure, except for only one company that stated "numerical data on its actual and target carbon dioxide emission reductions as well as on its recycled wastes."

Despite the fact that many companies thus do give descriptions on environmental issues under the sections for "Risk to Business etc." and "Corporate Governance" etc. under the current system, there is no uniform disclosure practice across companies at this point in time as to any particular topics, such as risk associated with climate change, a topic that increasingly draws attention of investors in the West, because the current system of institutionalized disclosure is not detailed enough to prescribe any particular topics. This provides an implication for a possible future approach: creating more specific disclosure rules for topics that are deemed to have an important effect commonly on many companies might lead to the supply of information that investors find more useful.

[33] Yoshinao Kozuma, *A Pilot Research on CSR Information in Annual Security Reports* [title translated from the Japanese original], JICPA Journal, July 2006 Issue (No. 612). The subsequent citations in this Section are all sourced from this reference.

(3) Feasibility of Enhanced Environmental Information Disclosure to Shareholders and Investors

As has already been discussed, how a company addresses environmental issues might bring about serious effects on the company, a situation that generally holds true to many companies; those effects may come in many different forms, such as risk of regulatory changes (*e.g.*, future regulations), profit opportunities (*e.g.*, emissions trading) and impacts on its corporate image and brand value. Therefore, it is presumably necessary to disclose environmental information in a more uniform fashion than now so that investors will be able to evaluate a company correctly and make an appropriate decision. In the case of certain types of environmental issues, such as the global warming issue, as will be discussed later, quantitative information may sometimes also be useful in an investor's decision-making process, including the evaluation of a risk that a company faces.

Voluntary disclosure, however, comes with certain limits from a perspective of information disclosure to investors as was explained, though it is making progress in Japan. Although the current system of information disclosure to investors does have certain sections in which to give a description, they do not go as far as specifying any particular disclosure topics and, therefore, are limited as environmental information disclosure that is effectively useful in the evaluation of a company. For this reason, it is presumably quite meaningful to enhance the current system of investor disclosure and establish an institutional framework so that every company should, when disclosing environmental information, disclose reliable information in a unified form.

Such an initiative might also be meaningful in that society as a whole could benefit from the improvement on environmental issues because, as can be seen in the actions taken by the European Commission and the UN, an added ability of investors to appropriately evaluate risks and opportunities associated with environmental issues that companies face would consequently prompt the development of environmental technology and further efforts of companies to address environmental issues.

As, on top of that, environmental performance and technology of Japanese companies, such as in the area of energy efficiency, are reputed to be progressed in many cases compared with those of overseas companies, promoting information disclosure of their environmental performance etc. might lead to an opportunity of internationally demonstrating the relative advantage of Japanese companies in what is concerned with the environment. As was already discussed, an improved environmental performance of companies is a must when one considers the current state of the global environment and the developments towards the creation of a sustainable social system; hence, strengthening international competitiveness of companies through the development of a relevant information disclosure system, while at the same time prompting investors to give an appropriate evaluation to a highly competitive company by supplying information that they find important, should in all likelihood contribute to the creation of a sustainable society and a robust capital market.

V. Direction of Environmental Information Disclosure to Shareholders and Investors: An Observation Focused on the Global Warming Issue

Specifically what direction can be taken in an attempt to incorporate environmental information into the system of disclosure to shareholders and investors? In this last Chapter, this question will be looked into by focusing on the global warming issue, a topic considered to be drawing the greatest attention of investors.

1. Risks and Opportunities Associated with the Global Warming Issue

As was already discussed, information on global warming and climate change, which are subjects of a variety of information disclosure requests that were made mainly by investors and are topics on which many financial institutions conduct studies and analysis, is presumably something that investors are highly interested in relative to other environmental information. This suggests that there is a recognition that a difference in the degree of impact on a company from the global warming issue, or its capability in taking environmental actions, has emerged as real risks or opportunities. Seeing that any information that investors require to evaluate companies is information concerning their risks and opportunities, the first target of our observation will be placed on an attempt to identify those risks and opportunities.

(1) Entry into Force of the Kyoto Protocol and Its Impact on Corporate Results

A major reason, among several that exist, for the increasing interest of investors in the global warming issue is the fact that international efforts towards greenhouse gas[34] reduction are beginning to take off, including the entry into force of the Kyoto Protocol in February 2005. With the Protocol coming into effect, its ratifying countries, with Japan and the EU among them, are now obliged to reduce greenhouse gases at a country level. For instance, Japan has an obligation to reduce greenhouse gas emissions by 6% of the 1990 level (for some greenhouse gases, the 1995 level) during the five years between 2008 and 2012. It is not individual companies but the country that is under the Kyoto Protocol obligation, which will likely trigger a range of domestic policies in the respective countries that are intended to fulfill their own reduction obligation. If, for example, a greenhouse gas reduction obligation is imposed on companies or an environmental taxation is introduced, companies in any industry with particularly high emissions will probably be affected to a considerable degree.

On the other hand, the entry into force of the Kyoto Protocol also has the potential to generate new profit opportunities for companies. This is because a myriad of economic approaches, the so-called Kyoto mechanisms, are prescribed there. The purpose of the Kyoto mechanisms is to bring success in emission reduction efforts in an effective and efficient fashion while saving costs through specific approaches that include emissions trading, clean development mechanism (CDM) and joint implementation (JI). In the case of Japan, amendments were made to the NEDO Law, the Special Oil Account Law and the Anti-Global Warming Measure Promotion Law in April 2006 as a legislative attempt to utilize the Kyoto mechanisms.

Originally accepted as a framework for countries to achieve their respective reduction

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[34] Greenhouse gas is a general term used to refer to any gas that is considered to have an effect on global warming. In the Kyoto Protocol, six gases are defined as greenhouse gases: carbon dioxide (CO_2), methane (CH_4), dinitrogen monoxide (N_2O) and chlorofluorocarbon alternatives (HFC, PFC, SF_6).

targets, the Kyoto mechanisms prompted emissions trading to begin in the EU in January 2005 for business-to-business trading in particular business categories. In this trading, a certain level of allowable greenhouse gas emissions is allocated to a company in advance with the possibility of penalties in the case of emissions in excess of that level; those companies which successfully cut back on their emissions to a level below what was assigned to them can sell the remaining volume in the market, while those which exceeded it can purchase the volume of the excess. It is believed that using such a market mechanism can lead to an efficient reduction of greenhouse gases. An emissions trading system taking the form of voluntary participation was also started in Japan in FY 2005 as a pilot project led by the Ministry of the Environment.

More and more companies are adopting a CDM approach as well. CDM means activities of investing in a greenhouse gas reduction project in a country that is not under a reduction obligation under the Kyoto Protocol, such as a developing country, and obtaining as a certified emission reduction (CER) the volume reduced through the project. While there are still a number of uncertain elements (*e.g.*, whether emissions trading will be fully introduced in Japan or how the relationship between a CER obtained in the capacity of a company and a CER obtained in the capacity of a country will be treated), it is highly probable that emissions trading will evolve into a source of profits for companies that excel in anti-global warming technologies.

(2) Risks to and Opportunities for Companies

Thus, one factor that can be cited as a reason for the growing interest of investors on the subject of global warming is the fact that a new economic system is in the process of being developed in connection with greenhouse gas emissions. Risks and opportunities associated with the global warming issue do not stop there, however. For instance, CERES, which was referred to in the discussion in Chapter I, presents risks and opportunities that companies face in connection with climate change by classifying them into the following categories[35]:

(i) Physical risks: risks of loss generation due to disasters or the rise in sea level or the other natural phenomena caused by global warming
(ii) Regulatory risks: risks of not being able to act on emission trading or emission restrictions
(iii) Competitive risk: risk of falling behind in the competition with other companies in product performance etc.
(iv) Technological and competitive opportunities: opportunities to have an upper hand over other companies

Category (i) or physical risks are risks that companies are exposed to due to the occurrence of climate change, which may bring about a significant impact on insurance companies and food-related industries etc. As exemplified by the case of Hurricane Katrina in 2005, there is an anxiety that the risk of losses to insurance companies is growing quite significant[36]. During "Globe 2006," an international conference held at the end of March 2006 in Vancouver, Canada, with the aim of probing into the latest developments in environmental actions and environmental technologies, a major reinsurance company

[35] Ceres, *Corporate Governance and Climate Change: Making the Connection*, 2006.
[36] Evan Mill, Richard J, Roth Jr., Eugene Lecomte, *Availability and Affordability of Insurance Under Climate Change: A Growing Challenge for the U.S.*, 2005.

representative commented that in the light of the risk of ballooning insurance benefit payments due to the frequent occurrence of natural disasters, it is strongly feared that global warming might eventually make it difficult for insurance companies to stay in business, some of which are beginning to strengthen actions against such a prospect.

Category (ii) or regulatory risks are risks suffered due to regulations against greenhouse gas emissions, which may bring about a significant impact on future cash flows for industries with large greenhouse gas emissions, including electric power companies and steel makers, as a result of the introduction of an emissions trading system or the fluctuation in trading prices. In the CDP analysis report mentioned previously[37], it is reported that the level of impact from costs that companies would pay under an emission allowance scheme on their final profits and losses varies considerably depending on the industry to which they belong and on the particulars of each company, but any companies failing to fully commit to emission reduction might see a much greater impact on final profits and losses, depending on how emission reduction allowances are assigned and how market prices move. Since different countries or regions apply different emission regulations etc., where the company has located its production sites etc. is also relevant to the magnitude of risk.

Category (iii) or competitive risk and category (iv) technological and competitive opportunities are two sides of the same coin: business risks or opportunities are determined by how the global warming issue is addressed in product and service development. Risks and opportunities of this type appear to be becoming already evident especially in the automobile industry where good sales records are seen in hybrid cars while sales are sluggish in the market for SUVs and pickup trucks, which are less energy-efficient. When it comes to competitive risks and opportunities, one must look at not simply the technological or product and service aspect, but also factors of corporate image and reputational risk (risk of damage to a company's stature or reputation). In other words, the degree of success of a company in the progress of its actions to address the global warming issue or in the achievement of eco-efficiency will, in the medium to long run, probably influence its reputation as well as business performance. In this sense, greenhouse gas emission information looms important not only from a viewpoint of regulatory risk but also from a viewpoint of reputational risk.

The magnitude of those risks or opportunities will vary greatly depending on factors such as the details of operation, location and business model of each company. The level of risk recognition is probably also quite different from company to company. It is true that global warming and climate change are ambivalent issues in and of themselves, leaving considerable room for scientific debates about their causes and the degree of their impacts; nonetheless, it is safe to say that information on whether the management of each company recognizes those risks or what actions they are taking is becoming crucial for investment decision-making by investors whose basic goal is to deliver long-term investment.

2. Information That Shareholders and Investors Require

Information that shareholders and investors require is the information through which the risks discussed above can be evaluated. For instance, what is important in the case of physical risks is to what degree risks are recognized and what actions are being taken to address them. As to

[37] Carbon Disclosure Project, Innovest, *Carbon Disclosure Project: On Behalf of 155 investors with assets of $21 trillion*, 2005.

regulatory risks, the most important piece of information is, ultimately, greenhouse gas emission information. In predicting future regulatory risks, also high on the list are action policies, management structure, measures and numerical targets etc. to combat global warming. These pieces of information are needed in the evaluation of reputational risk as well. For competitive risks and opportunities concerning products and services, action policies and the research and development status presumably stand out as important.

These pieces of information can be sorted out as follows:

(i) Action policies of a company on the global warming issue

Action policies of a company on the global warming issue serve as important information in that they make it clear what point of view the company entertains and what actions it is planning to take.

(ii) Management structure

Management structure information is important information for the understanding of under what structure the company is to effectively and efficiently address the global warming issue as the company recognizes it.

(iii) Risk information

This information is about how the company recognizes risks associated with the global warming issue and how it intends to address them. Information on the status of regulations applicable to its respective business locations and on its anti-global warming measures for regulatory compliance is of particular importance.

(iv) Greenhouse gas emission record

Greenhouse gas emissions can be divided into those concerning greenhouse gases generated from business activities and those concerning greenhouse gases at the stage of product and service use.

As greenhouse gas emissions generated from business activities are presumably connected to regulatory risks, what is desirable is information by region or by country. Segment information is also needed to comprehend risk by line of business.

Greenhouse gas emissions at the stage of product and service use serve as important information because they are presumably connected to competitive risk in product and service development in the future.

The emission accounting method and emission conversion factors underlying the information above are also information necessary in the understanding of emissions.

(v) Greenhouse gas emission targets, analysis and evaluation

This information is relevant to how shareholders and investors understand and evaluate greenhouse gas emission information. First of all, they might check what targets a company has set for the term under review so as to evaluate against them its performance during the term. What future targets have been set by the company is also important information. While a focus may be placed on the absolute volume of emissions from a regulatory risk viewpoint, what might be done from a reputational risk viewpoint includes calculating an eco-efficiency indicator by using added values etc. to adjust company size factors and conducting year-on-year comparisons.

(vi) Specific measures

This information is about specifically what measures the company is taking to reduce greenhouse gases. It serves as important information that concerns future regulatory and competitive risks.

(vii) Future plans

Future plans for greenhouse gas reduction are extremely important information in terms of addressing future regulatory and competitive risks.

These pieces of information contain information that should be described with a qualitative focus which merits being examined on an individual company basis and information that should be comprehended with a quantitative focus. While completeness and credibility of information are vital to either type of information, completeness, comparability and information credibility matter in particular in the case of quantitative information. In other words, what matters are: whether or not uniform recognition and measurement standards have been set; how the boundaries of disclosure information have been set; and to what degree of exactness measurements are conducted (information accuracy). In the next Section, these points will be discussed in the light of the current disclosure practices.

3. Current Status of Disclosure Regarding the Global Warming Issue

(1) Current Status of Disclosure in Environmental Reports etc.

In environmental reports and CSR reports, most companies mention the global warming issue. According to survey results of the Kansai Research Centre, Institute for Global Environmental Strategies[38], all 483 companies that were surveyed, among the TSE First Section companies that published environmental reports or CSR reports in FY 2005, had disclosed some form of information on carbon dioxide (CO_2) emissions. On a non-consolidated basis, every one of them disclosed CO_2 information. The disclosure rate on a group-wide, consolidated basis also reaches 62%. In disclosing CO_2 information in environmental reports, 70% of those companies (359 entities) only disclosed the CO_2 emission and 18% of them (86 entities) disclosed emissions of other greenhouse gases as well, while 5.8% (28 entities) were found to have provided no itemized data.

Reasons why most companies do state such information include: first, there is now an increasingly established awareness among companies that the global warming issue is extremely important among other environmental issues; and, second, it is now easier for them to give such information, thanks to an initiative by the Ministry of the Environment of describing points to note in the work of calculation, upon citing the following five

[38] *Analysis of the Current Status Regarding CO_2 Information Disclosure in Environmental Reports*, [title translated from the Japanese original], Eriko Nashioka, Kansai Research Centre, Institute for Global Environmental Strategies. This survey was part of the research conducted under the "Industry and the Environment Project" of the Kansai Research Centre, Institute for Global Environmental Strategies, a project supported by a promotion grant from the Ministry of the Environment.

matters as information that should desirably be stated, in the *Environmental Report Guidelines (Fiscal Year 2003 Version)*, which it released[39]:

(a) Greenhouse gas emissions and measures for their reduction
(b) Carbon dioxide emission
(c) Data itemized by type of greenhouse gas
(d) Data itemized by emission-causing activity
(e) If the Kyoto mechanisms are applied, the details and reduction volumes

What can be understood from this context is that disclosure of information regarding the global warming issue has become an established practice at least among companies that issue environmental reports and that it is therefore feasible as a business practice to track and disclose information on greenhouse gas emissions. As was discussed in Chapter IV, however, such practice is inevitably a limited one, given the voluntary nature of environmental reports and CSR reports as a disclosure instrument. In other words: even if an accounting method etc. is set out in the form of guidelines, it is unclear to what extent they, being guidelines, are adhered to in any actual work of calculation; the lack of any standardized boundaries or format of disclosure leaves a problem of comparability or credibility of information as well.

(2) Disclosure System under the "Law Concerning the Promotion of the Measures to Cope with Global Warming"

In the meantime, there is an obligatory reporting system for the measurement and disclosure of greenhouse gases under the "Law Concerning the Promotion of the Measures to Cope with Global Warming" (Law No. 117, October 9, 1998; hereinafter referred to as the "Anti-Global Warming Measures Law"). The Anti-Global Warming Measures Law was established with the aim of promoting measures to cope with global warming so as to contribute to the assurance of a healthy and cultural life of citizens in the future by, for instance, clarifying responsibilities of the national government, local public entities, businesses and citizens with respect to anti-global warming measures and setting out basic policies for anti-global warming measures. The Anti-Global Warming Measures Law was partially amended to ensure the correct and smooth implementation of the Kyoto Protocol, as a result of which certain companies are, since April 1, 2006, required to calculate and report to the national government their greenhouse gas emissions. The Law also requires that the national government sum up and publicly release the reported information. The greenhouse gases to be reported are the six types of gas addressed by the Kyoto Protocol, and entities subject to the reporting obligation are specified emitters set out by the Law[40]. Entities subject to the reporting obligation must submit a report in a prescribed form to their respective regulatory authorities by June 30 of each and every fiscal year, with all emissions of the respective greenhouse gases expressed in terms of CO_2 equivalents. In addition, the emission information thus collected is summed up by entity, by business

[39] *Environment Report Guidelines (Fiscal Year 2003 Version)*, March 2004, Ministry of the Environment, pp. 33-35.

[40] The provisions for specified emitters are roughly as follows. First of all, specified emitters can be divided into those who report their carbon dioxide emission from energy sources and those who report their greenhouse gas emissions from non-energy sources. The emissions from energy sources can be further divided into the industry and service sectors and the transportation sector. For the industry and service sectors, Type I or Type II designated energy management factories under the Energy Conservation Law are required to submit a separate report for each reporting corporation; for the transportation sector, designated freight transportation businesses, designated shippers, designated passenger transportation businesses and designated air transportation businesses under the Energy Conservation Law are required to submit a separate report for each of their sites. As to emissions from non-energy sources, the reporting obligation, which applies separately to each site, is imposed on any entity (i) on whose site a greenhouse gas-emitting activity is performed, as a result of which the total emission of each type of greenhouse gas reaches 3,000 tons in terms of carbon dioxide equivalent, and (ii) the number of whose employees, hired on a permanent basis by the entity as a whole, is 21 or more.

category and by prefecture and is then released to the public together with emission increase/decrease status information etc. Citizens can also, upon request, obtain information specific to a site, such as information on its emissions or on its emission increase/decrease status.

The form that an entity must use to report is the "Calculated Greenhouse Gas Emission Volume Report Form" shown in Figure 2. Thus, disclosing information to this extent is already a statutory obligation.

Under this reporting system, parties subject to the obligation to calculate and report emissions (specified emitters) are specified, who should, in calculating greenhouse gas emissions, add up volumes that are obtained by using the accounting methods and emission factors set out by government or ministerial ordinances. While it is also acceptable to use an accounting method or emission factor that is different from those set out by government or ministerial ordinances, an explanation needs to be given about the specifics of the accounting method or emission factor being used.

As greenhouse gas emission reported under the reporting system pursuant to the Anti-Global Warming Measures Law are calculated in accordance with law and ministerial ordinance provisions, they have a clear basis of calculation and can therefore be presumed to be highly comparable. The range of specified emitters subject to the reporting obligation is extensive enough to cover sites with high emissions that are significant in the light of the purpose of the Law. Accordingly, summing up, as aggregate greenhouse gas emissions of each company, the volumes reported under the Anti-Global Warming Measures Law would likely not cause any major problem in terms of the degree of materiality. In other words: emissions reported in accordance with the Anti-Global Warming Measures Law are probably fit to be used as fundamental data as information to be disclosed to shareholders and investors, as far as greenhouse gas emissions in Japan are concerned.

Importantly, using volumes reported under the Anti-Global Warming Measures Law for the purpose of disclosure to shareholders and investors would not entail any additional work or costs because they are collected in accordance with law. Moreover, considering that the system is designed so that such information will be released to the public anyway, it is unlikely that companies have any reason to avoid disclosing it. On the other hand, if investors were to individually make use of information under the Anti-Global Warming Measures Law, they would each have to make a request for disclosure and then need to add up the disclosed data of the respective sites to obtain company-by-company data. For this reason, investors could benefit from the incorporation of such information into the system of disclosure to investors.

Figure 2: Report Form under the Anti-Global Warming Measures Law (excerpts)

Form 1 (in relation to Article 4)

Report on Calculated Greenhouse Gas Emissions

(Month) (day), (year)

To: Minister responsible (Director of the local branch bureau)

Reported by: (Address)
(Name) seal
[in the case of a corporation, its name and the name of its representative]

Pursuant to the provisions of Article 21-2, paragraph 1 of the Law Concerning the Promotion of the Measures to Cope with Global Warming (hereinafter referred to as the "Law"), I hereby report on greenhouse gas emissions as follows:

Site	Name of the specified emitter (Name used in the previous report)		
	Name of the site (Name used in the previous report)		
	Location address	Prefecture City/ward/town/village	
Business conducted on the site			
Number of employees hired on a permanent basis by the specified emitter			
Calculated greenhouse gas emissions	As stated in Tables 1 and 2 in the Appendix		
Whether or not this report is concerned with a request under Article 21-3, paragraph 1 of the Law (Circle the applicable answer)	1. Yes 2. No	Whether or not information is submitted pursuant to the provisions of Article 21-8, paragraph 1 of the Law (Circle the applicable answer)	1. Yes 2. No
Staff in charge (contact information)	Department		
	Name		
	Telephone number		
* Date received	(Month) (day), (year)	* Date processed	(Month) (day), (year)

Notes:
1. Prepare a separate Report Form for each site.
2. Instead of writing the name (or, in the case of a corporation, the name of its representative) with a seal affixed, the reporter (or, in the case of a corporation, its representative) may give a signature.
3. Fill out the column for "Name used in the previous report" only if there has been any change.
4. In the column for "Business conducted on the site," enter the appellation of the business as defined by the four-digit categorization of the Japan Standard Industrial Classification; In the case of a site that conducts a business that belongs to two or more business categories, enter the main business among them.
5. In the column for "Number of employees hired on a permanent basis by the specified emitter," enter the number as it stood as of April 1 of the previous year (or, in the case of a specified emitter who began operating during the previous fiscal year, the date on which it began operating).
6. Do not fill out the columns marked with *.
7. The paper size of a Report Form as well as the Appendix must be A4 as defined in the Japanese Industrial Standards.

(Appendix)

Report year: FY (year)

Specified emitter code											*		
Prefecture code			Business code										
Whether or not the reporter is a Type I designated energy management factory etc. under the Law Concerning the Rationalization of Energy Use (if yes, enter the applicable number and the designation number under the said law)	1. Type I designated energy management factory 2. Type II designated energy management factory												
	Designated energy management factory designation number												

Notes:

1. In the columns for "Specified emitter code," "Prefecture code" and "Business code," enter the codes assigned, respectively, to the specified emitter, its prefecture and business as set out by the Minister of the Environment and the Minister of Economy, Trade and Industry.
2. Do not fill out the columns marked with *.

Table 1: Calculated greenhouse gas emissions (Part 1)

Classification of substance with a greenhouse effect	Calculated greenhouse gas emission
1. Carbon dioxide generated as a result of energy use	t-CO_2
2. Carbon dioxide other than carbon dioxide generated as a result of energy use	t-CO_2
3. Methane	t-CO_2
4. Dinitrogen monoxide	t-CO_2
5. Hydrofluorocarbons	t-CO_2
6. Perfluorocarbons	t-CO_2
7. Sulfur hexafluoride	t-CO_2

Notes:

1. In the column for "Calculated greenhouse gas emission" of "Carbon dioxide generated as a result of energy use," enter the total volume of the following (excluding those related to supply of electricity or heat to someone else):
   (1) Emission of carbon dioxide generated as a result of fuel use
   (2) Emission of carbon dioxide generated as a result of electricity use
   (3) Emission of carbon dioxide generated as a result of heat use
2. If the site for which this Report is submitted is a power station used for the purpose of electricity service business conducted as a main business or is a site on which a heat supply system used for the purpose of heat supply service business conducted as a main business is installed, enter necessary information in Table 2 as well, in addition to this Table.
3. If the site for which this Report is submitted is a Type I designated energy management factory or a Type II designated energy management factory under the Law Concerning the Rationalization of Energy Use, it is not necessary to fill out the column for "Calculated greenhouse gas emission" of "Carbon dioxide generated as a result of energy use."
4. If the calculated greenhouse gas emission of carbon dioxide other than carbon dioxide generated as a result of energy use includes the emission of carbon dioxide generated as a result of any of the following activities, enter in the column for "Calculated greenhouse gas emission" of "Carbon dioxide other than carbon dioxide generated as a result of energy use" the volume from which the total emission of carbon dioxide generated as a result of the said activity is deducted, and enter necessary information in Table 2 as well, in addition to this Table:
   (1) Use of wastes for the purpose of incineration (only where the said waste is used for the purpose of incineration in place of fuel (excluding fuels made from recycled wastes)), or for any of the following purposes:
      a. Using iron contained in waste rubber tires as a raw material for products
      b. Using waste plastic and equivalents to recover iron ore in a blast furnace
      c. Using waste plastic and equivalents to produce in a coke oven coke or hydrocarbon oil for its own use
   (2) Use of fuels made from recycled wastes

5. In the columns for "Calculated greenhouse gas emission" of "Hydrofluorocarbons" and "Perfluorocarbons," enter the total calculated greenhouse gas emissions from hydrofluorocarbon substances and the total calculated greenhouse gas emissions from perfluorocarbon substances, respectively, both of which are substances with a greenhouse effect set out in the Enforcement Ordinance of the Law Concerning the Promotion of the Measures to Cope with Global Warming.

Table 2: Calculated greenhouse gas emissions (Part 2)

1. Carbon dioxide generated as a result of energy use [to be filled out only by a power station or a site on which a heat supply system used for the purpose of heat supply service business is installed]

Calculated greenhouse gas emission	$t\text{-}CO_2$

2. Carbon dioxide generated as a result of use of wastes for the purpose of incineration or product manufacturing, or use of fuels made from recycled wastes

Calculated greenhouse gas emission	$t\text{-}CO_2$

Notes:
1. If the site for which this Report is submitted is a power station used for the purpose of electricity service business conducted as a main business or is a site on which a heat supply system used for the purpose of heat supply service business conducted as a main business is installed, enter in the column for "Calculated greenhouse gas emission" of "Carbon dioxide generated as a result of energy use" the volume specified in Note 1.(1) to Table 1.
2. If the site for which this Report is submitted is a Type I designated energy management factory or a Type II designated energy management factory under the Law Concerning the Rationalization of Energy Use, it is not necessary to fill out the column for "Calculated greenhouse gas emission" of "Carbon dioxide generated as a result of energy use."
3. If the calculated greenhouse gas emission of carbon dioxide other than carbon dioxide generated as a result of energy use includes the emission of carbon dioxide generated as a result of any of the following activities, enter in the column for "Calculated greenhouse gas emission" of "Carbon dioxide generated as a result of use of wastes for the purpose of incineration or product manufacturing, or use of fuels made from recycled wastes" the total emission of carbon dioxide generated as a result of the said activity:
   (1) Use of wastes for the purpose of incineration (only where the said waste is used for the purpose of incineration in place of fuel (excluding fuels made from recycled wastes)), or for any of the following purposes:
      a. Using iron contained in waste rubber tires as a raw material for products
      b. Using waste plastic and equivalents to recover iron ore in a blast furnace
      c. Using waste plastic and equivalents to produce in a coke oven coke or hydrocarbon oil for its own use
   (2) Use of fuels made from recycled wastes

Table 3: Accounting method or emission factor that is different from the accounting method or emission factor set out in an order in accordance with the Law

Classification of substance with a greenhouse effect	Specifics of the said accounting method or emission factor

Note:
In the respective columns of this Table, enter, if applicable, the classification(s) of substance(s) with a greenhouse effect for which am accounting method or emission factor different from the accounting method or emission factor set out in an order in accordance with the Law was used and give an explanation of the specifics of the said accounting method or emission factor.

Form 2 (in relation to Articles 11 and 19)

Calculated Greenhouse Gas Emission Increase/Decrease Status Information
and Other Information

Year submitted: FY (year)

Pursuant to the provisions of Article 21-8, paragraph 1 of the Law Concerning the Promotion of the Measures to Cope with Global Warming, I hereby report on calculated greenhouse gas emission increase/decrease status information and other information as follows:

1. The information contained herein is concerned with the specified emitter as a whole, and is submitted upon consent to the same being released to the public by the Minister of the Environment and the Minister of Economy, Trade and Industry. (Only one Form may be submitted by a single specified emitter)
2. The information contained herein is concerned only with the specific site, and is submitted upon consent to the same being disclosed only upon request. (Only one Form may be submitted by a single site)

(Enter the applicable number) → ☐

Specified emitter code											*		
Prefecture code			Business code										
Whether or not the reporter is a Type I designated energy management factory etc. under the Law Concerning the Rationalization of Energy Use (if yes, enter the classification shown on the right that applies to the reporter of the accompanying Report Form and the designation number under the said law)	1. Type I designated energy management factory 2. Type II designated energy management factory 3. Designated freight transportation business 4. Designated shipper 5. Designated passenger transportation business 6. Designated air transportation business												☐
	Designation number												

1. Information on the calculated greenhouse gas emission increase/decrease status
2. Information on the increase/decrease status of the greenhouse gas intensity factor
3. Information on the measures taken in relation to the reduction of greenhouse gas emission
4. Information on the accounting method of calculated greenhouse gas emissions etc. and on the method of managing data underlying the calculation
5. Other information

Staff in charge (contact information)	Department		
	Name		
	Telephone number		
* Date received	(Month) (day), (year)	* Date processed	(Month) (day), (year)

4. Direction of Desired Disclosure on the Global Warming Issue

As was previously discussed, information that shareholders and investors require can be sorted out into seven types. Among them, (i) "Action policies of a company on the global warming issue," (ii) "Management structure," (iii) "Risk information," (vi) "Specific measures" and (vii) "Future plans" would, being basically qualitative information even if partially containing numerical information, desirably be descriptions in which each company is allowed to describe its efforts and mindset etc. in a more or less unrestricted fashion. On the other hand, (iv) "Greenhouse gas emission record" and (v) "Greenhouse gas emission targets, analysis and evaluation" could, being quantitative information, probably provide comparable and useful information when formulated under uniform calculation standards, boundaries and disclosure form etc.

While specific details of such calculation standards and disclosure form etc. might desirably be examined by and between relevant organizations in the future, a sample disclosure form, as thought suitable at this point in time, will be displayed in Figure 3 (hereinafter referred to as the "proposed disclosure form") so as to show in an easily understandable manner the direction envisioned by this Research Report, as well as to provide reference to be used in future discussion. However, an ideal direction of disclosure also relies much on factors such as the future institutional development, shifts in society's appreciation and sense of value etc., and the progress in the conduct of research. Those issues for future discussion will be summed up in Section 5 that follows.

The proposed disclosure form is designed to be incorporated into the system of disclosure to shareholders and investors, with the boundaries for organizations to be covered set as with the scope of consolidation in financial reporting. In reality, the lineup of consolidated companies may change every year, as a result of, for instance, buying another company as a subsidiary or selling a subsidiary to another company. Under the proposal, details of any such change that has a material impact on greenhouse gas emissions should be noted together with the emissions concerning that subsidiary.

Greenhouse gas emission record is an important piece of information for shareholders and investors to evaluate future regulatory and reputational risks. From this perspective, it is desirable, if possible, to comprehend to the broadest possible extent emissions connected with corporate activities. Given the current status, however, one cannot deny that there is a substantial gap in accuracy between information subject to the reporting requirement under the Anti-Global Warming Measures Law and grandfathered information. When it comes to domestic emissions, as was previously discussed, it can be deemed that sites with high emissions that are of significance are covered by the Anti-Global Warming Measures Law. With these points in mind, the proposed form is formulated for the time being in such a manner that disclosure of domestic emissions will be based on what is reported under the Anti-Global Warming Measures Law, with entries being classified, for convenience in analysis, into "production," "sales and management etc." and "distribution and transportation." The volume grandfathered by the Anti-Global Warming Measures Law is also added to the list for inclusion in the domestic subtotal calculation.

Considering future regulatory and reputational risks, not only domestic but overseas emissions should also be provided as important information for investors. As, moreover, regulatory risks greatly depend on the country or region of location, it is also crucial to comprehend them by country or by region. Information on emissions at overseas sites etc. by country or by region is accordingly included in the proposed disclosure form, granted that any entries there may currently not be satisfactory in terms of accuracy as they are grandfathered by the Anti-Global Warming Measures Law. Since segment-by-segment information is also necessary to comprehend risk for each line of business, the form is laid out so that emissions are shown by segment. The segmentation in this case is assumed to be the same as that used in financial reporting.

Another important piece of information is volumes of greenhouse gas reduction credits acquired from, as well as those sold to, external parties through emissions trading and CDM etc. Emissions trading may eventually start in Japan, as well as practices of CER acquisition for the acquirer's own emission reduction or for the purpose of selling to external parties. From a shareholder and investor standpoint, such details would serve as important information to know the greenhouse gas emission status and what steps are taken to make up for insufficient reduction. This, however, is an area to be examined in the future because an ideal disclosure form is likely to change due to circumstances including the future institutional development, as will be discussed later.

The proposed disclosure form is formulated to show the information described above for two business years, the current and the previous. This was done so that the status of the current year can be easily understood in comparison to the previous year. While it was decided, in order to avoid making the disclosure form too complicated, not to set up any columns for the calculation of year-on-year reduction volumes as comprehended by calculating the difference from the previous year, information users can, as needed, calculate the difference by referring to the information for the two years.

Depending on the business category, greenhouse gases generated at the stage of product or service use or disposal may occasionally be important, in addition to those generated at the stage of production, sales or distribution etc. Since there are no established calculation standards in this regard and companies inevitably have to conduct calculations under various assumptions as well, any figures reported would be highly uncertain. The disclosure form is therefore formulated to provide separate columns that are distinguished from other information, which are to be filled out as a company deems necessary. While a company is, when filling out the columns, instructed to note the basis of calculation of the figures, requirements for the information to be given here do not, at this point in time, go as far as to impose comparability with other companies, considering that it is only reference information.

5. Issues for Future Discussion

In this Research Report, a direction of environmental information disclosure to investors has been examined, taking into account the developments overseas and an observation of the disclosure need for the purpose of company evaluation. Obviously, what should be discussed in the future from this perspective is the actual implementation of such a direction. However, this issue is something that should be left to organizations concerned to discuss and goes beyond the scope of this Research Report. In the meantime, there are also issues remaining with the specific direction that has been examined here in Chapter V. Some of the major issues for future discussion in this respect are as follows:

(1) Review of a disclosure form adjusted to the future institutional developments etc.: This includes, for instance, discussion on the possible creation of columns to show the emission allowance assigned to the reporting company and, further, the excess emissions or excess allowances in the event that an emissions trading system is introduced in the future. In the process of discussion, the issue of how volumes of emission credits acquired from external

parties should be considered in the comparison with the emission allowance and target emissions etc., both in the domestic and overseas contexts. If emission credit carryover is permitted, a disclosure method in this connection also needs to be examined. For volumes of emission credits acquired from external parties, disclosure might include not only flow volumes but also stock volumes.

(2) Discussion of boundaries for organizations to be covered in reports: The proposed disclosure form was developed under an assumption that the scope of consolidation in financial reporting should, for the time being, serve as the boundaries. This means that if a company outsourced part of its business operation to a non-subsidiary company, its greenhouse gas emissions would drop accordingly; such a prospect was acquiesced as acceptable in the proposal under the current circumstances, in consideration of factors like information accuracy and effects on direct regulatory risks. If any change in the scope of consolidation has a material effect on emissions, the company is requested to note it, too. Nonetheless, further discussion is probably necessary to see if this setup is sufficient when effects on global warming and reputational risks are also put on the horizon.

(3) Approach in the treatment of greenhouse gas emissions of a non-100% subsidiary: There are two approaches that are applicable to a consolidated subsidiary that is not 100% owned: adding its entire emissions to those of the parent company; or adding a certain portion in view of the ownership interest. While it is requested under the proposed disclosure form that a company should note the approach that it chose, further discussion will be required in the future, during which the possibility of designating one of the two approaches as a uniform standard should also be looked into as an option, if comparability is weighed heavily. Treatment of associates accounted for using the equity method is another issue to be discussed.

(4) Guidance on entries of qualitative information such as management structure and risk information: Although qualitative information is probably best examined on an individual company basis with some degree of leeway allowed to the reporting company in making entries, certain guidance might be necessary. This subject should also be discussed in the future.

(5) Treatment of emissions at sites etc. grandfathered by the Anti-Global Warming Measures Law: It may become necessary to sum up emissions at overseas sites with a certain level of accuracy, especially when future reputational and regulatory risks are taken into account.

(6) Method of estimation and treatment of lifecycle emissions at the stage of product use etc.: Depending on the company or business category, more greenhouse gases may be emitted at the product use stage than at the production stage. Likewise, greenhouse gas emissions at the upstream stage of production including resource procurement, refining and purification etc. may also surface as an issue. If effects on global warming and reputational risks are to be considered in addition to regulatory risks, such information might become important as well; however, it comes with limited accuracy and comparability because it is currently based on calculations conducted under many assumptions. This is another issue to be discussed in the future, which should include the consideration of whether or not any form of guidance is necessary.

(7) Discussion about indicators for analysis and evaluation: While a focus may be placed on the absolute volume of emissions from a regulatory risk viewpoint, there can be various other types of indicators for analysis and evaluation. Possible examples may be volumes of

reduction from the previous year and from a particular base year. Showing eco-efficiency indicators based on sales and added values is another possibility in order that an evaluation will be conducted with a company size difference or any changes in output etc. adjusted. Determining what types of indicators and analysis methods are appropriate in this regard and to what extent calculation methods should be standardized is an important future discussion topic.

(8) Means to ensure credibility of information: Being information through which investors will evaluate a company, environmental information needs to be high in credibility. What is essential to that end is, among other points, clarity of standard and the appropriate development and administration of internal control on the part of the company, and the possibility of a third party assurance is also a prospective discussion topic. Considering the gap in accuracy between information on domestic and overseas operations, it is also necessary that relevant data, such as emission factors for carbon dioxide emissions as a result of electricity use, should also be developed.

Figure 3: Sample Disclosure Form

(1) Action policies of a company on the global warming issue	(5) Greenhouse gas emission targets, analysis and evaluation
(2) Management structure	(6) Specific measures
(3) Risk information	(7) Future plans

(4) Greenhouse gas emissions (actual record) (in tons of CO_2)

[Current Business Year]		Business A	Business B	Common	Total
Domestic	Carbon dioxide in production				
	Other greenhouse gases in production				
	Sales and management etc.				
	Transportation and distribution				
	Volume grandfathered by Anti-Global Warming Measures Law				
	Subtotal				
US					
EU					
China					
Total					
Volume of emission credits acquired from (sold to) external sources					

(in tons of CO_2)

[Previous Business Year]		Business A	Business B	Common	Total
Domestic	Carbon dioxide in production				
	Other greenhouse gases in production				
	Sales and management etc.				
	Transportation and distribution				
	Volume grandfathered by Anti-Global Warming Measures Law				
	Subtotal				
US					
EU					
China					
Total					
Volume of emission credits acquired from (sold to) external sources					

(Reference Information) Greenhouse gas emissions at the stage of product or service use

[Current Business Year]	Total
Business A	
Business B	

* For domestic emissions, enter the figures that have been reported under the Anti-Global Warming Measures Law in the respective classifications of "production," "sales and management etc." and "transportation and distribution."
* "Other greenhouse gases in production" indicates the volume of greenhouse gases excluding carbon dioxide that were generated other than as a result of fuel combustion and electricity use. If applicable, enter the breakdown volumes of the said greenhouse gases.
* Enter any domestic emissions that are exempted from the reporting requirement under the Anti-Global Warming Measures Law in the columns for "Volume grandfathered by Anti-Global Warming Measures Law." Note, however, that the grandfathered volumes may be entered in the respective classifications of "production," "sales and management etc." and "transportation and distribution."
* Emission conversion factors for use in domestic volumes should advisably be those in accordance with the Anti-Global Warming Measures Law. When different emission conversion factors are used, they must be noted.
* The segmentation in segment-by-segment information must be the same as the segmentation in other parts of financial reporting.
* If there is any company that has newly become a subsidiary or is no longer a subsidiary due to any change in consolidation and if that has a material effect on greenhouse gas emissions, such a fact must be noted together with the emissions concerning the said subsidiary.
* If any consolidated subsidiary is not 100% owned, note the approach chosen in the treatment of its greenhouse gas emissions, *i.e.*, whether the entire volumes were added or they were partially added in view of the ownership interest.
* State reference information when and as the reporting company deems necessary. In stating such information, the basis of calculation of the emissions being reported must be noted.