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REPORT

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Ranking of Japanese Corporations for Effective Efforts to Address Climate and Energy Issues

- Vol. 3 Food and Beverage Industry -

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Introduction

With the adoption of the Paris Agreement at COP21 in December 2015, the world has made a transition toward a zero-carbon society with a clear goal of keeping rise in global temperature well below 2°C compared with the level in pre-industrial era. To achieve this goal, the world aims to balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases, which substantively means net zero emissions, in the second half of this century. This is a powerful signal for departure from fossil fuels, indicating that all economic activities will build upon the concept that “carbon emission is no good”. A five-year-cycle mechanism is also included to improve each country’s emission reduction target by referring to the latest climate science.

Thus, under the Paris Agreement, which well reflects the scientific basis, embracing a long-term goal of “well below 2°C (or 1.5°C),” the global climate efforts will continue to reduce emissions to zero in the latter half of this century. Corporations are also required to tackle climate change with a long-term vision in line with climate science.

WWF Japan launched its "corporate climate action ranking" project, which aims to boost corporate efforts to address climate and energy issues in Japan. Under this project, two reports have been issued so far, evaluating efforts by companies in the “Electrical Equipment” and “Transportation Equipment” industry, respectively. The report used information contained in corporate environmental reports and corporate social responsibility (CSR) reports (collectively referred to here as environmental reports) and common indicators to provide a comparative assessment. In formulating the indicators, an emphasis was placed on the effectiveness of the efforts that are taken by companies. For example, do they have a long-term vision in line with the 2°C pathway? Do they manage the life-cycle carbon footprint? A distinctive feature of this project is that it not only evaluates the ‘disclosure’ of a company’s environmental footprint and strategy, but that it also focuses on the ’implementation’ status of their efforts (to the extent that these can be determined based on publicly available environmental reports).

Based on this report, WWF Japan has engaged in dialogue with a wide range of companies, both inside and outside of the industry. Fortunately, various companies, including in the environmental consulting field, have expressed a great deal of interest in this project. What

is more, many people working within companies to address issues of the environment and corporate social responsibility have noted that this type of external evaluation can also provide a useful boost to their ongoing internal efforts.

This report, the third under this project, provides the results of our evaluation of 25 companies belonging to the "Food and Beverage" industry. The evaluation was carried out only concerning activities relevant to climate change and energy in the context of assessing climate action, and did not consider other environmental issues. We plan to publish evaluations of companies that belong to other industries in the future.

Main results

■ The three highest-ranked companies:

1st: Kirin Holdings
2nd: Japan Tobacco
3rd: Ajinomoto

(The three companies listed above achieved deviation scores above 60 in the industry)

■ The highest ranked company was Kirin Holdings with an overall score of 80.0 points (where 100 points is the highest score possible). Kirin received a full score for four of the '7 Key Indicators' considered particularly important by WWF from the standpoint of the effectiveness of corporate climate actions. These include having a long-term vision and disclosure of life-cycle emissions.

■ Because Ezaki Glico did not issue an environmental report in 2015, the company was excluded from the study and was not included in the rankings.

■ In order to solve the climate crises by keeping global warming below 2°C, companies will be called upon to set emissions reduction targets based on a long-term vision consistent with the "2°C pathway." In this study, only Kirin Holdings was found to be undertaking activities based on such a long-term corporate vision and targets.

■ With respect to the use of renewable energy, only Ajinomoto has set quantitative goals:

On the other hand, the following four companies disclosed all quantitative data relating to their introduction of renewable energy:

- **Ajinomoto**
- **Calbee**
- **Kirin Holdings**
- **Nichirei**

■ The following two companies had set both absolute and intensity targets for reductions in emissions:

- **Japan Tobacco**
- **Kikkoman**

■ In addition to Scope 1 and 2, the following three companies monitor and disclose their emissions with respect to the 15 categories of Scope 3:

- **Japan Tobacco**
- **NH Foods**
- **Kirin Holdings**

■ Through obtaining third-party verifications, the following two companies had increased the reliability of their GHG emissions data:

- **Japan Tobacco**
- **Kirin Holdings**

■ A few companies, which emit non-CO_2 GHGs such as methane, were found to exclude these emissions from their emission reduction targets.

■ There were a few companies whose boundary of emission reduction targets includes only domestic business facilities despite larger emissions at their overseas facilities.

■ There was a case in which, although a summary table in the company's report indicates a target in some area was "achieved," the actual performance data corresponding to the target was missing.

Investigated companies

The target companies under this project are those that belong to the 'Japan 500,'[1] which the CDP also sent its annual information request in 2015. For the industry segmentation, we used that of Securities Identification Code Committee instead of using that of Japan 500 itself. Among 32 industries, this report shows the results of 25 companies which belong to the "Food and Beverage" industry. Evaluation was carried out only for those who issue environmental reports or equivalent ones (including integrated reporting).

In the case of Suntory Beverage & Food, evaluation was carried out for Suntory Holdings rather than for Suntory Beverage & Food only as its environmental vision is shared by the whole Suntory group and its CSR report is issued by the group as a whole.

Scope of investigation

Information about climate actions described in the environmental reports issued in 2015 was evaluated. Note that a company that did issue these reports in the past but did not issue one in 2015 was excluded from the evaluation. In addition to the reports, information posted on a company's websites was also referred to for evaluation.

Scoring method

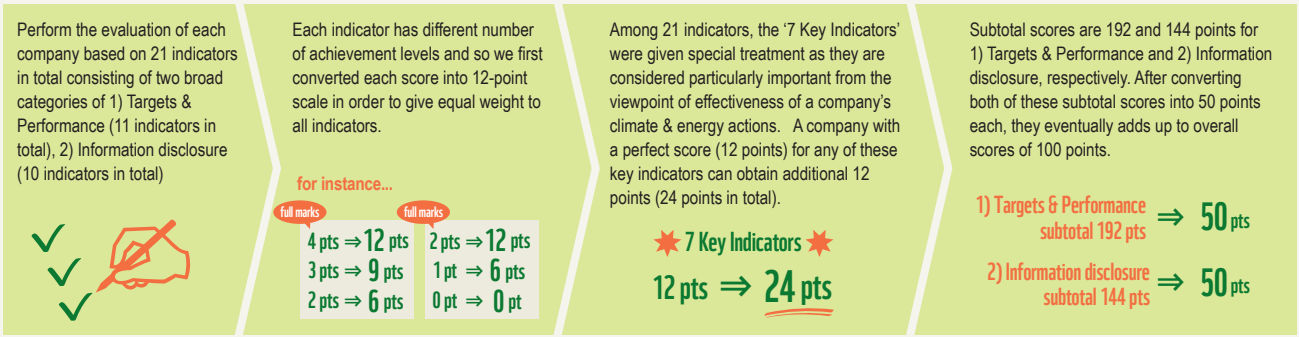
Evaluation indicators used in this project are divided into two broad categories, 1: Targets and Performance and 2: Information Disclosure, for 21 indicators in total (11 and 10 respectively). Each indicator has a different number of achievement levels[2] and so we first converted each score into a 12-point scale in order to give equal weight to all indicators.

In addition, among the 21 indicators, the '7 Key Indicators' were given special treatment as they are considered particularly important from the viewpoint of effectiveness of a company's climate and energy actions. Specifically, if a company received a perfect score (12 points) for all of the seven indicators, they could obtain an additional 12 points for that indicator (24 points in total).

7 Key Indicators

- 1-1-1. Long-term vision
- 1-3-2. Unit of emissions reduction target (Scope 1,2)
- 1-3-3. Energy efficiency target (Scope 1,2)
- 1-3-4. Renewable energy target
- 1-4. Annual GHG reduction rate of Scope 1&2 absolute target
- 2-1-5. Measurement & disclosure of life-cycle emissions
- 2-1-6. Third-party evaluation

Tallying all the scores based on the above method adds up to 336 points, which was eventually converted into 100 points, and thus every company was graded on a 100-point scale[3].



1 The Japan 500 companies are selected by United Nations-backed Principles for Responsible Investment (PRI) Japan Network, including those in the FTSE Japan Index.

2 Five-level indicator: scores from zero to four; four-level indicator: scores from zero to three; three-level indicator: scores from zero to two; two-level indicator: scores from zero to one, respectively.

3 On a 50-point scale for each of 1) Targets and Performance and 2) Information Disclosure, respectively.

Table 1 Evaluation indicators

Evaluation indicators				Achievement levels	Levels (points)
1. Targets & Performance	1-1. Time spans of targets	1-1-1. Long-term vision		Have a long-term vision with consideration of the earth's capacity. Also set consistent targets based on some quantitative logic	2
				Have a long-term vision with consideration of the earth's capacity but no consistent targets	1
				No long-term visions with consideration of the earth's capacity / Have only qualitative environmental policies	0
		1-1-2. Target years		Have both long-term and short/mid-term targets	2
				Have only short/mid-term (or long-term) targets	1
				No targets	0
	1-2. Range of targets	1-2-1. Geographical boundary (Scope 1,2)		Boundary includes all major business sites including overseas ones	3
				Boundary includes only subset of business sites including overseas ones	2
				Boundary includes only subset of domestic business sites	1
				Bounday not clear or no targets	0
		1-2-2. Perspective of life-cycle management		Have targets for all of Scope 1, 2 and 3 as well as for "avoided emissions"	4
				Have targets for both Scope 1 and 2. Also, make efforts in Scope 3 and/or "avoided emissions"	3
				Have targets for Scope 1 and/or 2	2
				Have only a single target throughout life-cycle stages (No individual targets for Scope 1,2)	1
				No targets	0
	1-3. Climate targets	1-3-1. Target GHGs (Scope 1,2)		Target covers all GHGs	2
				Target covers only CO2 in spite of other GHGs emitted	1
				No emission reduction targets	0
		1-3-2. Unit of emissions reduction target (Scope 1,2)		Targets for both absolute and intensity * Both must be for the same boundary	4
				Only absolute targets	3
				Only intensity targets	2
				Only peculiar indices other than absolute / intensity targets, despite climate-related description	1
				No climate-related description or no targets	0
		1-3-3. Energy efficiency target (Scope 1,2)		Targets for both absolute and intensity	3
				Only absolute targets	2
				Only intensity targets	1
				No targets	0
		1-3-4. Renewable energy target		Numerical targets (kW etc.) for Scope 1,2 renewable use including green power certificates, etc.	2
				Peculiar indices such as contribution to Scope 3 emission reduction via renewable deployment	1
				No targets	0
	1-4. Annual GHG reduction rate of Scope 1&2 absolute target			Annual reduction rate ≧ 1.5%	2
				1.5% ＞ Annual reduction rate ≧ 0.75%	1
				0.75% ＞ Annual reduction rate	0
	1-5. Status of achievement			All targets achieved	2
				Not all targets achieved	1
				No targets achieved / impossible to judge / No targets set	0
	1-6. Comparison between performance and actions taken			Review and explain the impacts of implemented climate actions for each of the company's targets	2
				Only refer to implemented actions without their linkage with targets / Only a part of actions reviewed	1
				Explain no concrete actions / No targets	0
2. Information disclosure	2-1. Credibility of disclosed formation and data	2-1-1. Scope 1&2 GHG (CO2) emission data	2-1-1-1. Absolute and intensity	Both absolute and intensity data disclosed	3
				Only absolute data disclosed	2
				Only intensity data disclosed	1
				Neither absolute nor intensity data disclosed	0
			2-1-1-2. Time-series data	Data disclosed for the past five years or more in the form of a chart, a table, etc.	3
				Data disclosed for the past years (more than two and less than five) in the form of a chart, a table, etc.	2
				Data disclosed for the past two years, enabling comparison only with last year	1
				Only a single year data disclosed, enabling no comparison with past data	0
		2-1-2. Scope 1&2 energy consumption data	2-1-2-1. Absolute and intensity	Both absolute and intensity data disclosed	3
				Only absolute data disclosed	2
				Only intensity data disclosed	1
				Neither absolute nor intensity data disclosed	0
			2-1-2-2. Time-series data	Data disclosed for the past five years or more in the form of a chart, a table, etc.	3
				Data disclosed for the past years (more than two and less than five) in the form of a chart, a table, etc.	2
				Data disclosed for the past two years, enabling comparison only with last year	1
				Only a single year data disclosed, enabling no comparison with past data	0
		2-1-3. Amount of renewable energy use		All the quantitative data (kW, kWh, etc.) for renewable use disclosed	3
				Some of the quantitative data (kW, kWh, etc.) for renewable use disclosed	2
				Data for peculiar indices disclosed. ex) such as contribution to Scope 3 emission reduction via renewable deployment	1
				No quantitative data disclosed	0
		2-1-4. Data boundary (Scope 1,2)		Data boundary clearly described	1
				No clear description of data boundary	0
		2-1-5. Measurement & disclosure of life-cycle emissions		Disclose emissions data for all of Scope 1, 2 and 3 with each 15 category in mind for Scope 3	4
				Disclose emissions data for Scope 1, 2 and a part of Scope 3 as well as for "avoided emissions"	3
				Disclose emissions data for Scope 1, 2 and a part of Scope 3	2
				Disclose emissions data for Scope 1 and 2 only	1
				Disclose no emissions data at all	0
		2-1-6. Third-party evaluation		Verified by reliable third party	2
				Place comments from experts instead of third-party verification	1
				No third-party evaluation	0
	2-2. Credibility of target setting	2-2-1. Comparison of targets and results		Results for each fiscal year reported in comparison with targets in the form of a chart, etc.	1
				Only results reported, enabling no comparison with targets	0
		2-2-2. Gounds of target setting (Scope 1,2)		Grounds clearly shown / short-term targets linked to mid- or long-term targets	1
				Targets arbitrarily set with no clear grounds	0

Scoring results

Of the 25 companies investigated in the "Transportation Equipment" industry, Ezaki Glico did not issue environmental reports in 2015, and was thus excluded from the study and was not evaluated here. As a result of the evaluation for the remaining 24 companies, the maximum score was 80.0 and the minimum was 16.0 out of 100 points—varying widely. The average score was 44.8 and the standard deviation was 14.8. The top three companies are Kirin Holdings, Japan Tobacco and Ajinomoto. In the Table 2, companies from the top three to Meiji Holdings got above-average (44.8) scores within this industry.

Although direct comparisons with the companies in the "Electrical Equipment" and "Transportation Equipment" industries are difficult to make, given that the environmental reports used for the evaluations were issued in different years, we can note that the average score for the "Food and Beverage" industry is lower than the companies in the "Electrical Equipment" (48.7 points) and "Transportation Equipment" industries (46.7 points).

When viewed by category (with 50 points being the highest possible score for each), the average scores were 16.1 (the maximum being 32.8 and the minimum 0) and 28.7 (the maximum being 47.2 and the minimum 16.0) for Category 1: Targets and Performance and Category 2: Information Disclosure, respectively. The level of corporate efforts for information disclosure turned out slightly higher. The same trend was seen in the earlier reports on the "Electrical Equipment" and "Transportation Equipment" industries. A contributing factor may be that the CDP started sending its annual information requests (climate change questionnaire) to Japanese companies in 2006, thereby promoting the practice among companies of compiling and disclosing necessary information.

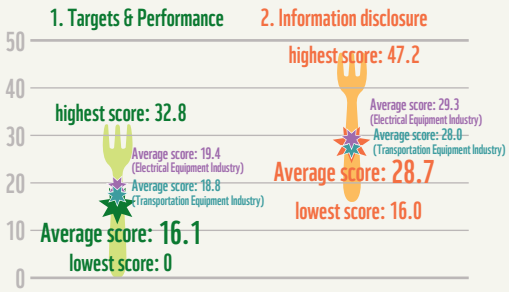


Table 2 Ranking of investigated companies

Evaluated companies: 24 in total
●Average score: 44.8 ●highest score: 80.0 ●lowest score: 16.0

* Top 3 companies obtained T-score above 60.

high

Ranking	Overall scores (out of 100 points)	Companies	Targets & Performance (out of 50 points)	Information disclosure (out of 50 points)
1	80.0	Kirin Holdings	32.8	47.2
2	70.4	Japan Tobacco	27.3	43.1
3	63.0	Ajinomoto	26.6	36.5

More than 50 points and less than 60 points (Second grouping)	Suntory Beverage & Food Kikkoman NH Foods
More than 40 points and less than 50 points (Third grouping)	Asahi Group Holdings Coca-Cola West Kagome Yamazaki Baking Nichirei Sapporo Holdings House Foods Group Meiji Holdings Kewpie Ito En Yakult Honsha Coca-Cola East Japan
Less than 40 (Fourth grouping)	Morinaga Milk Industry Calbee Nissin Foods Holdings Takara Holdings Nisshin Seifun Group Toyo Suisan Kaisha
Out of ranking (no environmental reports issued in 2015)	Ezaki Glico

Above average within this industry

Below average within this industry

Low

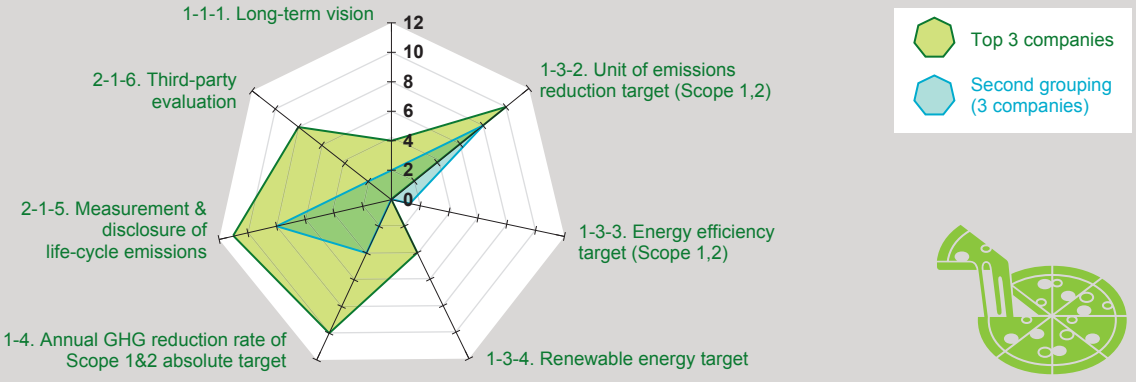
* Companies are listed in order of overall scores.

General overview of scoring results

Many companies which received high rankings among the 24 companies tended to have achieved favorable scores for those indicators that WWF considers important—including unit of emissions reduction target (i.e., having both absolute and intensity targets), annual GHG reduction rate of Scope 1&2 absolute target and measurement of life-cycle emissions. As shown in Figure 1, the top three companies received good scores for indicators such as annual GHG reduction rate of Scope 1&2 absolute target, setting renewable energy targets and improving their reliability through third-party evaluation. This set them apart from the second grouping (three companies). The highest ranking company, Kirin Holdings, achieved perfect scores for four of the seven key indicators, including a long-term vision and measurement of life-cycle emissions, as well as receiving a high score (47.2 points) for Category 2: Information Disclosure. It should be noted that, similar to the results of this report, those companies in the "Electrical Equipment" and “Transportation Equipment” industries which ranked high had also acquired high scores on these seven indicators.

In contrast, companies ranking lowest and receiving fewer than 40 points have a common tendency that they scored very low for indicators for Category 1: Targets and Performance. We observed that some of these low-ranked companies have no emissions reduction targets, no energy efficiency targets, and no renewable energy targets, which in turn brings no opportunity for comparison between the targets and the actual performance. Thus, the 'absence of targets' produced a multiple effect to lower the total scores. However, given that even these companies did disclose basic information, such as time-series emission data, it must be possible for them to set a reduction target. It is expected that they work to improve the level of their efforts in the future, through first setting annual targets, and eventually, setting medium- and long-term targets.

Figure 1 **Comparison of average scores for 7 Key Indicators between the top 3 companies and the second goruping (3 companies)**



Consideration of scoring results for each major scoring criterion

1. Targets & performance

Importance of long-term vision considering the environmental capacity of the Earth

⇒ Relevant indicators: 1-1. Time spans of targets

In order to solve climate change issue, it is essential to have a long-term view based on the need to reduce emissions amount to at least below the level of the Earth's capacity for absorption. According to the Fifth Assessment Report, the latest report issued by the United Nations Intergovernmental Panel on Climate Change (IPCC), emissions reductions of about 40% to 70% are needed by 2050 compared with the 2010 level in order to limit average global temperature rise to below 2°C above the pre-industrial level. Additionally, emissions must be reduced to close to zero approaching the year 2100.

As the Paris Agreement well reflects the scientific basis, toward its long-term goal of "well below 2°C (or 1.5°C)," the global climate efforts will continue through periodic target review and update every five years. The Agreement also requires climate targets of each party should represent a progression beyond previous ones. Therefore, corporate climate efforts are also required to not only take a typical incremental approach considering their capital investment plans and other operations, but also have a long-term vision based on scientific findings and enhance efforts to reduce emissions step by step. It is important to set a long-term target toward 2050 or so as well as a short-term reduction target (in absolute terms) in line with it and enhance the targets every three to five years.

Of the 24 companies evaluated for this report, only Kirin Holdings has set this kind of long-term vision and targets. Kirin's long-term target is to reduce CO_2 emissions generated from its global value chain by half by 2050 in order to balance the environmental load produced by the Kirin group's value chain with the Earth's capability to supply resources. The company also has a short-term target (Scope 1 and 2) consistent with the 2050 target.

◆ Kirin Holdings

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Clarification of the geographical boundary of emissions reduction targets

⇒ Relevant indicators: 1-2-1. Geographical boundary (Scope 1, 2)

Many companies have prepared a list and other visuals summarizing their goals to address climate change. Such approaches are to be welcomed in terms of helping to improve clarity as well as data comparability. However, such a list should explicitly define the relevant geographical scope of each target. Efforts are needed to ensure that summaries specify whether given targets encompass all operations or only certain sites such as factories; whether it applies only to domestic operations or to overseas operations as well; and it should also be explicit whether the target is relevant only for the company in question or also for other affiliated companies as well.

However, in practice, there are cases in which such details are not provided and the boundaries of the indicated targets remain ambiguous. Hence, readers of such environmental reports must on their own examine bar charts and other data sheets indicating emissions performance, and make comparisons with the figures provided to infer the scope of activities encompassed by the targets. The lack of clarity can make it increasingly difficult for readers to correctly understand corporate efforts, and thus further attention will be needed.

The organizational scope and time period covered by the reports are typically indicated in the editorial policy section found in the beginning of environmental reports.

However, the scope thus indicated tends to be essentially an overall, "one-size-fits-all" pledge by the company, while there are many cases in which the indicated scope does not actually match the scope for the individual climate change targets. In such instances, the scope of activities should also be clarified on the pages where activities in each of the various specific fields are explained.

In some cases, given targets encompass only domestic operations although more GHGs emissions arise from overseas operations (Kagome, Yamazaki Baking, etc.). On the contrary, in the case of Kirin Holdings, newly-added overseas operations through merger and acquisition are well included in the target management, making steady progress in emissions reduction throughout its global value chain. Thus, for overseas operations, it is important to make efforts step by step by first completing the measurement of emissions amount and then moving into actions with emission reduction targets. In particular, manufacturing sites are high priority due to their large emissions in general. It should be noted that a careful consideration is needed if a given target applies to only "major business facilities." In such a case, it is essential to describe which facilities and what percentages of total emissions are covered by the target. This is because a facility might not be "major" from the sales or marketing viewpoint, while it might be "major" from the perspective of emissions amount.

Importance of life-cycle emissions management

⇒ Relevant indicators: 1-2-2. Perspective of life-cycle management

Of the 24 companies evaluated, at least 20 turned out to have Scope 1 and 2 emissions reduction targets. This means that greater than 80% of the companies manage their own GHG emissions with some targets and make efforts to reduce them. On the other hand, while Nisshin Seifun Group had a numerical target for emissions reduction until FY2013, the company has been having no numerical targets since FY2014. During the first commitment period (from 2008 to 2012) under the Kyoto Protocol, Japan had an absolute emission reduction target of 6% (compared with the 1990 level). Then, as the period ends, the nation chose to have only a voluntary target since FY2013. In addition, the Japanese government significantly lowered its existing 2020 target (25% reduction from the 1990 level). As seen in the previous report on the "Electrical Equipment" industry, it is a shame to see while some companies steadily advance their climate actions under a long-term target irrespective of the nation's lack of ambition, other companies reduce the level of their targets or even stop having any targets.

Among 20 companies mentioned above, it was also found that in addition to the Scope 1 and 2, many companies were taking measures to reduce emissions from the Scope 3—that is, the upstream and downstream of their own business operations. Reducing CO2 emissions from transport is a typical example of such efforts such as via making an efficient logistics network, modal shift, introducing low-emission vehicles, etc. It was also found that some companies indirectly reduce logistics-related emissions by introducing lightweight containers and packaging (Kirin Holdings, Nissin Foods Holdings, Yakult Honsha, etc.). Reducing emissions from the cooking processes by customers was another unique measure seen in this "Food and Beverage" industry. For example, House Foods Group developed a new frozen-food product which can be defrosted without a microwave oven. Japan Tobacco developed a new noodle product which can be cooked without a cooking stove. These can be regarded as what is called "avoided emissions of goods and services."

Thus, from the viewpoint of effectiveness, it is highly important to comprehensively address climate and energy issues from the Scope 1 and 2, Scope 3 to "avoided emissions" throughout the product life cycle.

Types of GHGs included in emission reduction targets

⇒ Relevant indicators: 1-3-1. Target GHGs (Scope 1, 2)

If there are GHGs emissions other than CO2 (such as methane, HFCs, and SF6), it is desirable to set a reduction target for all GHGs. A few companies, although they emit non-CO2 GHGs, were found to exclude these emissions from their emission reduction targets (Morinaga Milk Industry, etc.).

There were also cases in which it was unclear from a company's environmental reports whether or not it has emissions of other GHGs. If a company emits non-CO2 GHGs, it should at least describe it in the material balance sheet. Necessary information should be disclosed well considering its clarity and comprehensiveness.

Unit of emission reduction targets—absolute / intensity

⇒ Relevant indicators: 1-3-2. Unit of emissions reduction target (Scope 1, 2)

From the viewpoint of effective climate actions, it is desirable for a company to manage their GHG emissions on the basis of both absolute amounts and emissions intensity. It should be noted that only managing the efficiency of business activities under intensity targets is not sufficient if "40 to 70% reduction by 2050" and net zero emissions in the second half of this century is to be realized. When considering the planet as a whole, ultimately speaking, climate change is a matter of reducing the total amount of GHG emissions. On the other hand, for organizations to understand factors for their emissions trends and to consider measures to take in the future, it is essential that they track emissions intensities.

Of course, for a company which is in a business expansion phase or some special circumstances, it might be difficult to set an absolute emissions reduction target since associated increases in the total emission amount is inevitable. Even in such a case, however, it is difficult to envision that emissions would continue to increase in perpetuity over a long period of time through 2050 or 2100. It should still be possible for a company to set a long-term absolute target based on the scientific basis. For short-term efforts, even if total emissions were to increase, it will also be effective to manage emissions from both the perspective of absolute amounts and intensity. It is important to improve targets every three to five years accordingly.

Some point out that it has become more difficult to set an absolute emission reduction target due to worsening emission factors for grid electricity since the Great East Japan Earthquake. However, it is still possible for a company to eliminate external factors and evaluate its own performance for emissions reduction by using an emission factor as of its basic year on the basis that the factor is stable throughout the period. In this study, Nichirei and other companies were found to take such an approach. For the information disclosure, it is just necessary to describe management conditions such as "calculated assuming a stable emission factor."

Another point is that it is important to set these absolute and intensity targets for the same geographic areas of the business operations simultaneously, and avoid cases in which there is an absolute target for domestic operations while pursuing an intensity target overseas. Of the 24 companies, the following two companies have set both absolute and intensity targets for Scope 1 and Scope 2 emissions.

◆ Japan Tobacco ◆ Kikkoman

Proactive adoption of renewable energy—a new pillar for corporate climate strategy

⇒ Relevant indicators: 1-3-4. Renewable energy target

In order to realize net zero emissions in the latter half of this century toward a long-term goal of "well below 2°C (or 1.5°C)," it is essential to make a transition to a society which is based on renewable energy as well as energy conservation, as early as possible. The use of renewable energy is becoming more and more important for businesses as a climate solution, as well. Conventionally, corporate climate actions tended to focus on improving energy efficiency rather than adopting renewable energy, due to associated cost savings. Companies eager to increase their use of renewable energy had found it relatively easy to increase their rate of renewable energy use in certain overseas regions where the cost for renewable energy is low, while it had been difficult for them to increase it above a certain level in Japan, where the deployment and associated cost reduction of renewable energy sources were not sufficient. However, since the launch of Japan's feed-in tariff (FIT) program in 2012, a supportive environment has been set for companies to make their capital investments in renewable energy more attractive. Reforms in Japan's electricity system would also make it easier for them to procure more energy from renewable sources as liberalization of retail electricity sales is expected to increase

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options for renewable electricity supply for them as well.

Corporations are extremely important stakeholders in terms of their potential to promote the deployment of renewable energy in Japan, and they are expected to play a leadership role in facilitating the transition to renewables. As a result of this study, only Ajinomoto turned out to have quantitative targets for the use of renewable energy in their Scope 1 and 2. The company aims to increase the ratio of renewable energy use to at least 15% for the Group as a whole. There are a variety of options for renewable use such as producing renewable energy on-site, investing in the external production of renewable energy, and purchasing a credible green power certificate. It is ideal for a company to set a renewable energy target by combining and making maximum use of these options. Through these corporate efforts, it is expected that the use of renewable energy will expand domestically in the future.

◆ Ajinomoto

Annual rate of emission reduction

⇒ Relevant indicators: 1-4. Annual GHG reduction rate of Scope 1 and 2 absolute target

WWF Japan has published “Energy Scenario Proposal for Decarbonizing Japan” (Vol.1-4), for which we called upon Dr. Haruki Tsuchiya of the Research Institute for Systems Technology to conduct sponsored research, to show how the future energy should be from the viewpoint of solving climate change issues. The scenarios have shown that it is technically and economically viable to meet all domestic energy demand by renewable energy sources by 2050. As a result of calculations for demand-side potential for energy saving, including industrial, residential, commercial and transport sectors, the final energy demand can be reduced by 50% by 2050 compared with the present level. They also showed that domestic GHG emissions can be cut by approximately 88% below 1990 levels by 2050 under a certain assumption for non-CO2 GHGs. This is equivalent to about 1.5% reduction per annum.

Japan has a long-term target of 80% emission reduction by 2050 toward a long-term goal of “below 2° C.” If this target is to be achieved, it is essential to make a transition to a low carbon society as mentioned above. Therefore, it is desirable that businesses also set emission reduction targets which are consistent with “1.5% reduction annually.” While, technically speaking, the required level for an annual emissions reduction rate should depend upon a company’s base year, evaluation procedures should not be overly complicated. This study eventually adopted “1.5% reduction annually” as a benchmark to make a unified evaluation. Six companies were found to have absolute reduction targets above “1.5%.” As in the previous reports, evaluations were limited to those companies that have absolute reduction targets.

◆ Asahi Group Holdings
◆ Coca-Cola West
◆ House Foods Group
◆ Japan Tobacco
◆ Kikkoman
◆ Kirin Holdings

2. Information disclosure

Required stance for the disclosure of information and data

⇒ Relevant indicators: 2-1. Credibility of disclosed information and data

In corporate climate efforts, information disclosure is as important an aspect as is the formulation of targets and strategy. When disclosing relevant information, consistency with target setting should be well taken into consideration. It is highly important to disclose necessary data in order for readers of reports to see if each target is achieved or not. Even if the target year is 2020, toward which no targets are set for each fiscal year, it is important to disclose data of ongoing levels of emissions, in order to allow readers to understand the progress that is being made. Additionally, although a summarized table listing the achievement for each target is appreciated, there was a case in which the data corresponding to a given "performance" item do not actually appear in the report (Suntory Beverage & Food, House Foods Group, etc.). While not intending to cast doubt on the outcomes, from the standpoint of "transparency," it is nevertheless essential that specific performance data are also listed, in order for readers to confirm the status themselves.

In the case of a factor for which no targets have yet been set, it is still recommended to disclose relevant information and data. For example, if a company has only an intensity target and has not set an absolute reduction target, information disclosure should include total emission amounts as well as intensity amounts.

It is also important to clearly describe for which boundary the disclosed data are relevant. Most of the companies evaluated in this report made clear the boundaries of the emissions data, but there were also cases where notations were ambiguous or the disclosed data did not properly correspond to the boundaries of listed targets. The former needs to be improved in terms of clarity and comparability. Similarly, for the latter, even if there are challenges in data management and aggregation systems, such companies must make efforts to match the boundaries of their targets with the disclosed data.

Disclosure of GHG emission data

⇒ Relevant indicators: 2-1-1. Scope 1&2 GHG (CO2) emission data

All of the 25 companies evaluated were found to have disclosed total GHG or CO2 emission data for their Scope 1 and 2. Of these, 21 companies disclosed intensity data in addition to absolute amounts.

As mentioned before, it is important to manage both absolute and intensity amounts in order to improve the effectiveness of corporate climate efforts. Although most of these 21 companies have either absolute or intensity targets and only two (Japan Tobacco and Kikkoman) have both, all of them disclosed data for both amounts. Thus, it was found that at least more than 80% of all the evaluated companies manage both absolute and intensity aspects. This very same tendency was seen in the previous reports on the "Electrical Equipment" and “Transportation Equipment” industry. In the future, it is expected for companies to step up the setting of quantitative targets from the stage of reporting their data.

With respect to the remaining three companies which disclosed only absolute emissions data, all of them have only an absolute reduction target (Coca-Cola East Japan, Coca-Cola West and Nichirei). While it is assumed that the data reported by the companies reflect only absolute emissions simply according to the way of target setting, these companies should also reassess their approach, in keeping with the importance of managing both absolute and intensity amounts, and adopt intensity factors in target setting and information disclosure.

From the viewpoint of chronological data disclosure, all 24 companies showed time-series emission data but many of them showed either absolute or intensity amounts. Given the importance of consistency, comparability and completeness, there is still room for further improvement

Disclosure of performance in renewable energy use

⇒ Relevant indicators: 2-1-3. Amount of renewable energy use

14 companies out of the 24 evaluated have disclosed quantitative data for their renewable energy use including green power certificates in the form of kW, kWh, etc. As mentioned above, while only one company has set a target for the adoption of renewable energy, it turned out that such efforts have been expanding through the support provided by the FIT system. In the future, businesses are expected to set quantitative targets for renewable energy in addition to those for energy efficiency, thereby advancing comprehensive climate solutions like the two wheels on an axle.

Among the 14 companies, the following four companies disclosed all of the quantitative data related to their renewable energy use, while the remaining companies limited their reporting merely to partial information, such as introducing a few related case examples. In the case of efforts for energy efficiency, relevant information is usually disclosed from the viewpoint of how much energy or CO2 was saved as a result of each energy efficiency measure implemented by the company. Information disclosure

for renewable energy should be also disclosed in the same manner, bearing in mind that renewable energy is another essential pillar for addressing climate change. For example, if a company purchases certificates for Green Power or Heat, it would be an effective option to show their proportions to the total amount of electricity or heat and to aim at increasing their shares gradually.

- Ajinomoto
- Kirin Holdings
- Calbee
- Nichirei

In some cases, it was not clear whether a company used the FIT system or not for introducing its renewable energy facilities. This is also important information and needs to be mentioned.

Life-cycle emissions management—essential for effectiveness of climate actions

⇒ Relevant indicators: 2-1-5. Measurement & disclosure of life-cycle emissions

Once the level of a company's efforts to manage its Scope 1 and 2 emissions reaches a certain level, it is important to expand the scope of its efforts to life-cycle actions by measuring its upstream and downstream emissions based on the Scope 3 Standard developed by the GHG Protocol. By calculating emissions for each of the 15 categories in Scope 3 inventories such as purchased goods and services, transportation and distribution, use of sold products, etc., a company could identify where there is high potential for emissions reduction and start addressing these together with stakeholders.

In this evaluation, as in the previous reports, high scores were given to companies working not only to make their activities visible for Scope 1 and 2, but also for the 15 categories in Scope 3. Among the 24 companies, the following three (13% of the total companies) were providing such data. By comparing the percentage of such companies with that for the "Transportation Equipment" (28% of the total companies) and the "Electrical Equipment" (19% of the total companies) industries, it turned out that the Food and Beverage industry needs to step up its Scope 3 efforts further.

- Japan Tobacco
- NH Foods
- Kirin Holdings

Improvement of reporting reliability through third-party verification

⇒ Relevant indicators: 2-1-6. Third-party evaluation

Third-party verification is highly important to improve the reliability of GHG data which a company calculated by itself. It contributes to ensuring the transparency, accuracy, completeness and consistency of the emissions reporting. In addition, it is also expected to improve the level of climate actions within the company including collection and aggregation of the data.

The following two companies out of the 24 were certified for their GHG data by the third parties. Other nine companies posted comments by experts such as researchers but did not receive third-party verification. By recognizing the significance of third-party verification, more and more companies are expected to adopt it.

- Japan Tobacco
- Kirin Holdings

Importance of evidence-based emission reduction targets

⇒ Relevant indicators: 2-2-2. Gounds of target setting (Scope 1,2)

Among 24 companies evaluated, there were five companies which showed grounds of their target setting for emissions reduction. For example, Kirin Holdings' 2050 target of reducing CO2 emissions generated from its global value chain by half is based on its clear long-term vision to balance the environmental load produced by the group's value chain with the Earth's capability to supply resources. Suntory group also has its own Environmental Vision toward 2050 and has set 2020 targets in line with the long-term vision.

If a company sets an emission reduction target by using incremental approach based on its short-term plan for investment in facilities as conventionally, it would be difficult to provide reasonable explanation for the created target. However, now that long-term perspective based on the scientific basis is essential for corporate climate actions, it will be more and more important to set a climate target with clear grounds which can be easily understood by the third parties.

Discussion

Corporations that have not issued environmental reports

Of the 25 companies evaluated, Ezaki Glico had not issued environmental reports for 2015, and was thus excluded from the evaluation. On the other hand, the company can be considered to be making basic climate efforts since climate-relevant information such as emission reduction targets and emissions data was at least disclosed on their website. In the future, it is expected for Ezaki Glico not only to use environmental reports as a tool to communicate their efforts to those outside the company but also to help them raise the level of their climate efforts.

Life cycle climate efforts based on a long-term perspective required for a company

As seen in the previous report on the "Electrical Equipment" industry, this study for the “Food and Beverage” industry has found that stalemate in climate policy and efforts at a national level has been having negative influence on corporate climate actions since the first commitment period under the Kyoto Protocol. While some companies steadily advance their climate actions under a long-term target irrespective of the nation’s lack of ambitious climate policy and targets, other companies reduce the level of their targets or even stop having any targets. However, when a company runs its business globally, this sort of passive stance against environment could pose a great risk as well as lead to opportunity loss.

With the adoption of the Paris Agreement, the world has made a transition toward a zero-carbon society with a clear goal of “well below 2°C (or 1.5°C).” In order to realize net zero emissions in the second half of this century, parties will make efforts to reduce the shortage of emissions reduction amount through a five-year-cycle mechanism to improve each country’s target. Based on the concept that “carbon emission is no good,” spread of technology and projects for energy saving and renewable energy are expected to be accelerated more and more. A company will be chosen if it provides low-carbon products or services as well as address climate issues throughout the product life cycle based on a long-term perspective.

• Science based target setting

Through the study for the “Food and Beverage,” the "Electrical Equipment" and the “Transportation Equipment” industries, it turned out that there are companies taking comprehensive and strategic climate actions based on a long-term perspective, although the number of such companies is still small. "Science Based Targets," a collaborative initiative by WWF, CDP, WRI, and the UN Global Compact, has been developing guidelines and tools for companies to set their own reduction targets that is in line with the scientific

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basis toward the goal of “well below 2°C (or 1.5°C)” (http://sciencebasedtargets.org/). As of March 2016, more than 120 companies globally have committed to such climate-target setting under the SBT initiative, including nine Japanese companies such as Sony, Toyota, Nissan, Honda and Ricoh. Actually, five companies out of this nine received high evaluation marks in this ranking project throughout all three industries for having set a “long-term vision.” Unfortunately, no companies have committed to the SBT from Japanese food and beverage industry yet.

CDP has announced to include a new question in its questionnaire about whether a company has a target in line with the SBT or not from 2016 onward, thus having influence on the overall results for the company. The “2°C” goal was sometimes recognized when discussing target setting by a country, it was seldom recognized or reflected quantitatively in corporate target setting. However, as the GHG Protocol has become a de facto standard for measuring and report GHGs emissions by companies, the SBT could also become a de facto standard for corporate target setting in the foreseeable future. As the world aims at the “2°C” goal, adopting the SBT earlier would provide a variety of opportunities.

・Comprehensive climate efforts throughout the product life cycle

Unlike the "Electrical Equipment" and the “Transportation Equipment” industries, the “Food and Beverage” industry does not entail large energy consumption during the product use phase. However, this study has revealed that the Food and Beverage industry still makes ambitious life-cycle efforts including the upstream and downstream emissions.

In order to reduce CO2 emissions from transport, for example, various efforts were undertaken such as via making an efficient logistics network, modal shift, introducing low-emission vehicles, etc. The Kirin group was successfully reducing transport-related emissions by adopting cooperative distribution system together with Asahi Breweries, Sapporo Breweries and the Suntory group. Kagome is making a similar effort with the Mizkan group and the Nisshin OilliO Group, too. While competing with each other in the core business field, companies work together in other fields to reduce environmental footprint. This stance can be highly evaluated. By introducing lightweight containers and packaging, some companies were indirectly reducing emissions from logistics or from vessel fabrication processes by suppliers. Reducing emissions from the cooking processes by customers was another unique measure by selling accordingly devised food products. Beverage manufacturers like Coca Cola, Kirin and Suntory were making efforts for thorough energy savings and emissions reduction for their vending machines by introducing heat pump technology, peak-shift function and natural refrigerant. In the aspect of information disclosure, several companies measured and disclosed 15 categories of Scope 3 emissions in addition to Scope 1 and 2 emissions (Japan Tobacco, Kirin Holdings and NH Foods).

Under a clear long-term vision, a company puts in practice life-cycle climate and energy efforts by reducing emissions from its own businesses (Scope 1 and 2) and from Scope 3 as well as contributing to “avoided emissions.” With the advent of the Paris Agreement, it is this sort of strategic efforts that is required for a company from now onward. Sufficient dialogue with upstream and downstream stakeholders including suppliers, utilities and customers would enable a deeper mutual understanding, a better solution and a virtuous cycle for your business.

Trends in corporate use of renewable energy

Conventionally, Japan's climate and energy policies are built upon nuclear power, thus blocking the deployment and associated cost reduction of renewable energy sources. Because of this, energy efficiency measures, with their high cost-benefit impacts, have been given priority in corporate climate actions, and the use of renewable energy has been limited. Against this backdrop, companies moving to renewable energy have been increasing thanks to the launch of the nation’s FIT program,

While only one company (Ajinomoto) has set a quantitative target for the adoption of renewable energy, as many as 14 companies out of 24 have disclosed quantitative data for their renewable energy use. Incorporating all three industries evaluated in this project so far, while only seven companies had renewable energy targets, 50 have disclosed quantitative data, indicating that the importance of renewable energy use as a climate solution has been becoming higher.

Under the "RE100" (http://there100.org/), a joint initiative by CDP, the Climate Group, etc., various corporations pursuing 100% renewable electricity have pledged their commitment. Microsoft, for example, has

been using 100% renewable energy for its US operation since 2014. 60 companies globally including Nike, Unilever, BMW, IKEA and Coca Cola Enterprises have committed to 100% renewable power.

In the Japanese context, when corporations invest in renewable energy to sell generated electricity under the FIT, it is ultimately the consumers who bear the costs supporting the program, and thus they cannot claim that the energy they consume is from renewables. This can cause difficulties in external communications. Therefore, corporations will need to have some strategic plans in the future for the use of renewable energy sources.

For example, Sweden's IKEA has announced a goal for 100% renewable electricity by 2020. More precisely, however, the company aims to "produce as much renewable energy as it consumes by 2020," leaving open the ways they may use for procuring renewable power. In addition to increasing the direct use of renewable energy, possible approaches are believed to include investing in external renewable energy projects or purchasing electricity generated from other sources. What should be noted here is a clear policy to the effect that, in order to reduce to zero its own impact on the global environment from its energy consumption, an equal amount of renewable energy must be generated somewhere in the world.

As WRI launched the "GHG Protocol Scope 2 Guidance" in 2015, corporations will be required to show consistency and transparency between its purchased electricity and emissions reporting. It is not just the matter of increasing the use of renewable electricity but the matter of on what policy a company procures it. What really counts is the quality of purchased renewables and contribution to its deployment. Therefore, a company will be required to announce its procurement policy for electricity. If seen in the positive way, a clear procurement policy would enable the effective use of renewable energy. For instance, if a company were to commit to a policy with the goal of contributing to the deployment of renewable energy in the regions where they operate, they could thereby create a wide variety of options, such as contracting to purchase renewable electricity from local suppliers or purchasing green power certificates, in addition to the direct use of renewable energy within the company. The adoption of such a policy would in turn provide a rationale for a number of activities, including capital investments that take advantage of the FIT system. The result would be an expansion of renewable use across the power distribution region, reducing the area's associated emissions factor. A company will be required not only to use renewable energy sources by itself but also to contribute to widespread deployment of renewables with high quality including its use and supply by other stakeholders.

Under this project, WWF Japan will continue its evaluation and publication of rankings for corporate climate actions by other industries, too. We expect that such external evaluations will contribute to boosting Japan's entire climate actions which are not active enough at present.

Table 3 Scoring results of all eveluated companies

Evaluation indicators			Ajinomoto	Asahi Group Holdings	Calbee	Coca-Cola East Japan	Coca-Cola West	Ezaki Glico	House Foods Group	Ito En	Japan Tobacco	Kagome	Kewpie	Kikkoman	Kirin Holdings	Meiji Holdings	Morinaga Milk Industry	NH Foods	Nichirei	Nisshin Seifun Group	Nissin Foods Holdings	Sapporo Holdings	Suntory Beverage & Food	Takara Holdings	Toyo Suisan Kaisha	Yakult Honsha	Yamazaki Baking
1. Targets & Performance (subtotal 192 points)	1-1. Time spans of targets	1-1-1. Long-term vision	0	0	0	0	0	Out of ranking (excluded from the evaluation due to no environmental reports issued in 2015.)	0	0	0	0	0	0	24	0	0	0	0	0	0	0	6	0	0	0	0
		1-1-2. Target years	6	6	6	6	6		6	6	6	6	6	6	12	6	6	6	6	0	0	6	12	0	0	6	6
	1-2. Range of targets	1-2-1. Geographical boundary (Scope 1,2)	12	4	0	12	12		8	4	12	4	12	12	12	12	0	4	4	0	0	4	12	0	0	4	4
		1-2-2. Perspective of life-cycle management	9	9	9	9	9		9	9	9	9	9	9	9	9	9	6	9	0	0	9	9	0	0	9	9
	1-3. Climate targets	1-3-1. Target GHGs (Scope 1,2)	12	12	12	12	12		12	12	12	12	12	12	12	12	6	6	12	0	0	12	12	0	0	12	12
		1-3-2. Unit of emissions reduction target (Scope 1,2)	9	9	6	9	9		9	6	24	6	6	24	9	9	6	6	9	0	0	6	6	0	0	9	9
		1-3-3. Energy efficiency target (Scope 1,2)	0	0	0	0	0		0	4	0	4	0	0	0	0	0	4	8	0	0	0	0	0	0	0	4
		1-3-4. Renewable energy target	24	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1-4. Annual GHG reduction rate of Scope 1&2 absolute target		6	24	0	6	24		24	0	24	0	0	24	24	6	0	0	6	0	0	0	0	0	0	0	0
	1-5. Status of achievement		12	0	0	0	12		6	6	6	6	0	12	12	0	0	12	12	0	0	12	12	0	0	0	6
	1-6. Comparison between performance and actions taken		12	12	12	12	12		12	12	12	12	12	12	12	12	12	12	12	0	0	12	12	0	0	12	12
2. Information disclosure (subtotal 144 points)	2-1. Credibility of disclosed information and data	2-1-1-1. GHG emissions (absolute / intensity)	12	12	12	8	8		12	12	12	12	12	12	12	12	12	12	8	12	12	12	12	12	12	12	12
		2-1-1-2. GHG emissions (time-series data)	12	12	8	8	8		8	12	12	12	12	12	12	12	12	12	8	8	12	12	12	12	8	12	12
		2-1-2-1. Energy consumption (absolute / intensity)	12	12	12	12	8		8	12	8	12	12	8	8	12	12	12	8	8	8	12	12	8	8	8	12
		2-1-2-1. Energy consumption (time-series data)	12	12	8	8	8		0	12	12	12	12	0	8	12	12	12	8	0	8	12	12	4	0	4	12
		2-1-3. Amount of renewable energy use	12	8	12	4	0		8	0	8	4	8	8	12	8	8	4	12	4	0	8	8	0	0	8	0
		2-1-4. Data boundary (Scope 1,2)	12	12	12	12	12		12	12	12	12	12	12	12	12	0	12	12	12	12	12	12	12	12	12	12
		2-1-5. Measurement & disclosure of life-cycle emissions	9	6	6	3	6		6	6	24	6	6	3	24	6	9	24	3	6	9	6	9	9	6	6	6
		2-1-6. Third-party evaluation	0	0	0	0	6		0	6	24	0	0	0	24	6	6	6	6	0	6	0	0	6	0	6	0
	2-2. Credibility of target setting	2-2-1. Comparison of targets and results	12	12	0	0	12		12	12	12	12	12	12	12	0	12	12	12	0	0	12	12	0	0	12	12
		2-2-2. Gounds of target setting (Scope 1,2)	12	0	0	12	0		0	0	0	12	0	0	12	0	0	0	0	0	0	0	12	0	0	0	12
Subtotal		1. Targets & Performance (converted into 50 points)	26.6	19.8	11.7	17.2	25.0		22.4	15.4	27.3	15.4	14.8	28.9	32.8	17.2	10.2	14.6	20.3	0.0	0.0	15.9	21.1	0.0	0.0	13.5	16.1
		2. Information disclosure (converted into 50 points)	36.5	29.9	24.3	23.3	23.6		22.9	29.2	43.1	32.6	29.9	23.3	47.2	27.8	28.8	36.8	26.7	17.4	23.3	29.9	35.1	21.9	16.0	27.8	31.3
Total		Overall scores (1+2 = 100 points)	63.0	49.7	36.0	40.5	48.6		45.3	44.5	70.4	48.0	44.7	52.2	80.0	45.0	39.0	51.4	47.0	17.4	23.3	45.7	56.2	21.9	16.0	41.3	47.4

Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

For more information

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