



WWF

REPORT

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

- Vol. 1 Electrical Equipment Industry -



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Introduction

We can obtain information on corporate efforts to address climate & energy issues in their environmental reports, CSR reports or equivalent ones. However, considerable variations were found in terms of how emission reduction targets are set, which GHGs are covered by them, etc. Hence, it is difficult for not only general customers but also interested stakeholders to correctly understand and compare each company's efforts. As a result, even a company with advanced efforts can not necessarily enjoy a high reputation, while a laggard company can not easily be identified. Therefore, these reports are seldom used as a tool to evaluate climate actions across the companies and release its findings.

Given that these reports are published at great effort and cost, there is concern that these circumstances could decrease companies' motivation, lowering the level of their efforts and information disclosure. In fact, there are companies who halt the publication of their environmental reports. These reports are supposed to be a tool to communicate entire activities carried out by a company and receive feedbacks from the readers, thereby raising the level of corporate efforts eventually. This sort of virtuous cycle can not be expected under the above-mentioned circumstances.

Of course, what types of climate actions are considered as "excellent" could differ from evaluator to evaluator based on their ground or purposes. For example, launched

in 2002, CDP (former Carbon Disclosure Project) requires companies to disclose a range of information such as their environmental footprint and strategy for the purpose of investment decision. They score each company's level of efforts based on the disclosed information.

As an NGO engaging in global environmental conservation, WWF places, among other things, great importance on the effectiveness of corporate climate & energy actions. For example, do they truly contribute to the global emission reduction? Do they consider the environmental capacity of the earth, i.e. the absorption capacity of carbon dioxide? Making much account of these aspects, WWF Japan has conducted a thorough evaluation on corporate efforts based solely on information available from environmental reports, CSR reports, etc. by using the common indicators for all companies. One remarkable feature of this project is that in addition to the 'disclosure' aspect of a company's environmental footprint and strategy, the 'implementation' aspect of their targets and measures are also evaluated.

As the first study under this project, we investigated 50 companies which belong to "Electrical Equipment" industry. Our evaluation was implemented only for areas such as the climate change and global warming and did not include the other areas. By using the common indicators, we will also make investigation and publication for other industries one by one.

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 2013. For the industrial segmentation, we used that of ‘Shikiho,’ a well-established corporate data book for investors, issued by Toyo Keizai Inc. instead of using that of Japan 500 itself.

Among 32 industries, this report shows the results of 50 companies which belong to ‘Electrical Equipment’ industry². Evaluation was carried out only for those who issue environmental reports or equivalent ones (including integrated reporting).

Scope of investigation

Information about climate actions described in the environmental reports issued in 2013 was evaluated. Note that a company who did issue these reports in the past but did not issue one in 2013 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 & performance and 2) information disclosure - 21 indicators in total (11 and 10 respectively). Each indicator has different number of achievement levels³ and so we first converted each score into 12-point scale in order to give equal weight to all indicators.

In addition, among 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 & energy actions. If a company gets a perfect score (12 points) for any of these key indicators, they can obtain additional 12 points for that indicator (24


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

points in total).

Tallying all the scores based on the above method adds up to 336 points, which was eventually converted into 100 point and thus every company was graded on a 100-point scale⁴.

Perform the evaluation of each company based on 21 indicators in total consisting of two broad categories of 1) Targets & Performance (11 indicators in total), 2) Information disclosure (10 indicators in total)



Each indicator has different number of achievement levels and so we first converted each score into 12-point scale in order to give equal weight to all indicators.

for instance...

4 pts ⇒ 12 pts	2 pts ⇒ 12 pts
3 pts ⇒ 9 pts	1 pt ⇒ 6 pts
2 pts ⇒ 6 pts	0 pt ⇒ 0 pt

Among 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 & energy actions. A company with a perfect score (12 points) for any of these key indicators can obtain additional 12 points (24 points in total).

★ 7 Key Indicators ★

12 pts ⇒ 24 pts

Subtotal scores are 192 and 144 points for 1) Targets & Performance and 2) Information disclosure, respectively. After converting both of these subtotal scores into 50 points each, they eventually adds up to overall scores of 100 points.

1) Targets & Performance subtotal 192 pts ⇒ 50 pts

2) Information disclosure subtotal 144 pts ⇒ 50 pts

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 WWF Japan will make investigation for other industries as well and publish the results one by one.
 3 Five-level indicator: score zero to four, four-level indicator: score zero to three, three-level indicator: score zero to two, two-level indicator: score zero to one, respectively.
 4 On a 50-point scale for each of 1) targets & performance and 2) information disclosure, respectively.

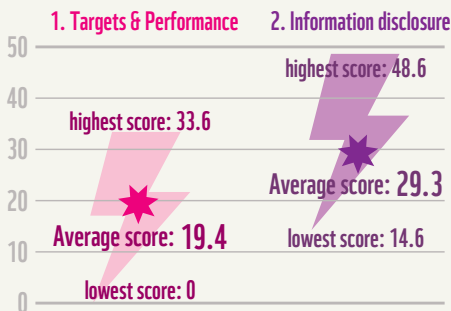
Table 1 Evaluation indicators

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	
			Boundary 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	
	1-3. Climate targets	1-3-1. Target GHGs (Scope 1,2)	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	
			Target covers all GHGs	2	
		1-3-2. Unit of emissions reduction target (Scope 1,2)	Target covers only CO2 in spite of other GHGs emitted	1	
			No emission reduction targets	0	
			Targets for both absolute and intensity * Both must be for the same boundary	4	
			Only absolute targets	3	
1-3-3. Energy efficiency target (Scope 1,2)		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		
		Targets for both absolute and intensity	3		
1-3-4. Renewable energy target	Only absolute targets	2			
	Only intensity targets	1			
	No targets	0			
	Numerical targets (kW etc.) for Scope 1,2 renewable use including green power certificates, etc.	2			
1-4. Annual GHG reduction rate of Scope 1&2 absolute target		Annual reduction rate $\geq 1.5\%$	2		
		$1.5\% > \text{Annual reduction rate} \geq 0.75\%$	1		
		$0.75\% > \text{Annual reduction rate}$	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
		2-1-2. Scope 1&2 energy consumption data	2-1-2-1. Absolute and intensity	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
				Both absolute and intensity data disclosed	3
				Only absolute data disclosed	2
			2-1-2-2. Time-series data	Only intensity data disclosed	1
				Neither absolute nor intensity data disclosed	0
	2-1-3. Amount of renewable energy use		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	
			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	
	2-1-4. Data boundary (Scope 1,2)		Data for peculiar indices disclosed. ex) such as contribution to Scope 3 emission reduction via renewable deployment	1	
			No quantitative data disclosed	0	
Data boundary clearly described			1		
No clear description of data boundary			0		
Disclose emissions data for all of Scope 1, 2 and 3 with each 15 category in mind for Scope 3			4		
2-1-5. Measurement & disclosure of life-cycle emissions		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		
2-2. Credibility of target setting	2-2-1. Comparison of targets and results	No third-party evaluation	0		
		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		
		Grounds clearly shown / short-term targets linked to mid- or long-term targets	1		
2-2-2. Grounds of target setting (Scope 1,2)		Targets arbitrarily set with no clear grounds	0		

Scoring results

As a result of evaluation for 47 companies⁵ which belong to “Electrical Equipment” industry, the maximum score was 82.2 and the minimum was 15.4 out of 100 points - varying widely. The average score was 48.7 and the standard deviation was 13.9. The top 7 companies are Sony, Toshiba, Ricoh, Konica Minolta, Fujitsu, Casio Computer and Seiko Epson. In the Table 2, companies from the top 7 to Anritsu got above-average (48.7) scores within this industry.

The average scores were 19.4 (the max 33.6 and the min 0) and 29.3 (the max 48.6 and the min 14.6) for the category 1) targets & performance and 2) information disclosure, respectively. The level of corporate efforts for the information disclosure turned out higher. In fact, many companies show a comparison table between the contents of their report and the GRI Sustainability Reporting Guidelines, indicating their serious efforts toward information disclosure by following standards or guidelines. The CDP started sending its annual information request to Japanese companies in 2006, promoting the practice of grasping and disclosing necessary information among them. This could be a contributing factor.



⁵ Among 50 companies who belong to “Electrical Equipment” industry, three companies did not issue environmental reports or equivalent. These companies, Keyence, Fanuc and Mitsumi Electric were excluded from evaluation.

Table 2 Ranking of investigated companies

Evaluated companies: 47 in total
 ●Average score: 48.7 ●highest score: 82.2 ●lowest score: 15.4

Ranking	Overall scores (out of 100 points)	Companies	Targets & Performance (out of 50 points)	Information disclosure (out of 50 points)
1	82.2	Sony	33.6	48.6
2	81.4	Toshiba	32.8	48.6
3	80.6	Ricoh	32.0	48.6
4	75.7	Konica Minolta	31.3	44.4
5	74.4	Fujitsu	29.9	44.4
6	67.1	Casio Computer	33.1	34.0
7	65.1	Seiko Epson	32.8	32.3

* Top 7 companies obtained T-score above 60.

More than 50 points and less than 62 points (Second grouping)	Hitachi Sharp Mitsubishi Electric TDK Yaskawa Electric NEC Fuji Electric Panasonic Kyocera	↑ Above average within this industry ↓ Below average within this industry
More than 40 points and less than 50 points (Third grouping)	Yokogawa Electric Anritsu Azbil Tokyo Electron Toshiba TEC Brother Industries Horiba Rohm Koito Manufacturing Canon NIDEC Alps Electric GS Yuasa Hirose Electric Murata Manufacturing Ibiden Minebea Hamamatsu Photonics Stanley Electric Screen Holdings Ushio Taiyo Yuden Omron	
Less than 40 (Fourth grouping)	Nihon Kohden Advantest Shinko Electric Industries Sysmex Renesas Electronics Funai Electric Mabuchi Motor Ulvac	

* Companies are listed in order of overall scores.

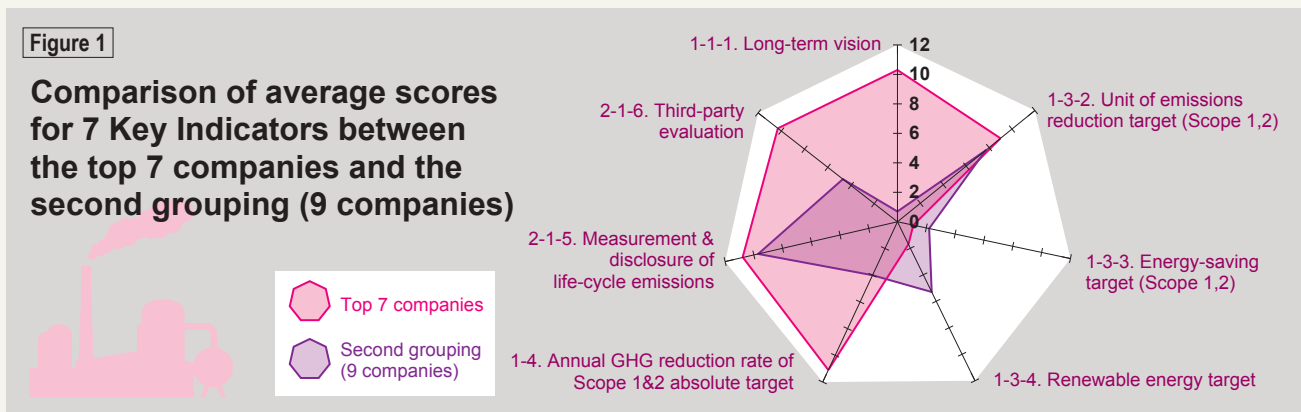
Out of ranking (no environmental reports issued in 2013)	Keyence Fanuc Mitsumi Electric
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General overview of scoring results

Many companies which ranked high obtained good scores for indicators which WWF thinks important such as a long-term vision, level of difficulty for Scope 1&2 targets, improvement of reliability through the third-party verification and measurement of life-cycle emission. The top 7 companies make ambitious efforts in these factors, which results in effective climate actions. Figure 1 shows obvious difference for these factors between the top 7 companies and the second grouping (9 companies). However, no companies scored high throughout every indicator. Even those who are included in the top 7 companies could further raise their level of efforts by enhancing their efforts in energy savings or renewable energy field, etc.

On the contrary, low-ranked companies with less

than 40 points have a common tendency that they scored extremely low for indicators in the category 1) targets & performance. They usually have no emissions reduction targets, no energy-saving targets and no renewable 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 disclose basic information such as total amount of GHG emissions, it would never be impossible for them to set a reduction target. It is expected that they gradually improve the level of their efforts toward setting at least annual reduction targets as well as mid- and long-term target eventually.



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

Since the Industrial Revolution, the amount of anthropogenic GHG emissions, especially carbon dioxide (CO₂), has been increasing. The amount of CO₂ is far beyond that absorbed by the earth through forests and oceans. In order to solve the climate change issues, it is essential to have a long-term view that we need to reduce the emission amount to at least below the level of the

earth’s capacity for absorption. According to the Fifth Assessment Report issued by the Intergovernmental Panel on Climate Change, emission reduction by 40 to 70% is needed by 2050 compared with the 2010 level in order for rise in the average global temperature not to exceed by 2 degrees above the pre-industrial level. Besides, the emissions must approach zero thereafter toward 2100. When setting emissions reduction targets, it is also important for companies to have a top-down view based on such scientific findings and the environmental capacity of the earth in addition to a typical bottom-up view, thus



setting consistent targets based on a long-term vision toward 2050.

Of the 47 companies evaluated, the following 5 have long-term visions with consideration of the earth's capacity to absorb CO₂ and have set consistent targets based on some quantitative logic. All of these companies set short-term (toward 2020) and mid-term (2020 to 2030) reduction targets by backcasting their long-term vision & targets.

- ◆ Casio Computer
- ◆ Konica Minolta
- ◆ Ricoh
- ◆ Seiko Epson
- ◆ Sony

This sort of strategy/target setting is highly appreciated from the viewpoint of effective climate & energy actions with the notion to keep the global emission within the environmental capacity of the earth.

It was also found that several companies in this industry have mid- or long-term targets by using an original indicator called 'Factor'⁶ – Toshiba, Kyocera, etc. This way of target setting is similar to offsetting. In this concept, by increasing the Factor more than 1.0, a company regards itself as fulfilling its social responsibility as the environmental burdens (the denominator) from its own

business operation becomes smaller than environmental values (the numerator) created by the company through the deployment of its eco products into societies. In this way of target setting, we need to bear in mind that fulfilling only the Factor target is not necessarily consistent with the necessity that the emissions be within the limit of the earth's capacity for absorption. Even though the company increases its own emissions (the denominator), it is still possible to achieve its Factor target if the company makes a greater extent of contribution to its outside emission reduction (the numerator) via its eco products. In addition, we have to say that the numerator would inevitably entail uncertainty for its calculation as it is to be based on many assumptions, i.e. how consumers use that product?, they replaced it with an older product?, under what climate conditions the wind turbine is used?, etc. The baseline emissions could also be set in an arbitrary manner. Thus, it is difficult to verify that the earth definitely sees the amount of emission reduction which is claimed by the company.

Therefore, from the viewpoint of the environmental capacity, a company should set not only a Factor target or a 'contribution' target but also its Scope 1&2 targets in the same time span.

⁶ 'Factor' is expressed as a fraction with the following numerator/denominator in general.

Numerator: Amount of contribution to emission reduction in the society through the deployment of a company's energy efficient products, renewable-energy-related equipment such as solar panels, etc.

Denominator: Amount of Scope 1&2 emissions, etc.

Importance of life-cycle emissions management

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

Of the 47 companies evaluated, at least 45 turned out to have Scope 1&2 targets. This means that almost all of them manage their own GHG emissions or energy consumption and make efforts to reduce it with some targets.

It was also found that in addition to the Scope 1&2, quite a few companies grapple with emissions reduction from the Scope 3, the upstream and downstream of their own business operation. Reducing CO₂ emissions from transport is a typical example for it. Reflecting the industry's business-to-consumer (B2C) models, efforts in emissions reduction at the stage of product use is also advanced. This is what is called "avoided emission of goods and services." For example, a company can contribute to reducing emissions in societies by deploying its energy efficient products and/or renewable-energy-related equipment such as solar panels as well as providing a range of ICT services.

While these efforts are very important aspects of corporate climate actions, strenuous efforts in the Scope 1&2 should be the indispensable prerequisite when engaging in the Scope 3 and avoided emissions fields. In the case of the avoided emissions, the amount of 'contribution' to the society, in general, could be higher than the Scope 1&2 emissions but it tends to be a number of high uncertainties as mentioned before. Besides, the emission reduction via an energy-saving product in societies can also be regarded as a contribution on the side of a consumer who selected the product rather than a company who sold it. Thus, it is not certain where the contribution itself is attributable to.

On the contrary, the Scope 1&2 emissions can be considered to be numbers of greater accuracy. A company can calculate them precisely by making steady efforts to collect necessary data from each of its business facilities. Amounts of emission reduction from these scopes can also be regarded as numbers of high certainty from the viewpoint of global emission reduction. Concerning emissions from transport among the Scope 3, in particular, an environment for precise calculation has been created as a result of the revision of the Rationalization in Energy Use Law, which obliges Specified Corporations and Specified Shippers to develop their own energy conservation plans and report the amount of their energy use.

Thus, in this study, even though a company makes

efforts in the avoided emission field, it was not necessarily given high marks for it unless it has Scope 1&2 targets. A company was awarded high marks when it has set Scope 1&2 targets first and then expands its efforts into the Scope 3 and the "avoided emission" fields. Consequently, as many as 11 companies turned out to be making life-cycle efforts by setting targets for all of the four scopes, Scope 1, 2, 3 and the "avoided emission" as follows, indicating the high ambition levels of this industry.

- | | |
|------------------|-----------|
| ◆ Casio Computer | ◆ Ricoh |
| ◆ Fujitsu | ◆ Sharp |
| ◆ Hitachi | ◆ Sony |
| ◆ Konica Minolta | ◆ TDK |
| ◆ NEC | ◆ Toshiba |
| ◆ Panasonic | |

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 amount and intensity. While businesses tend to give priority to intensity improvement, it should be noted that only managing the efficiency of business activities under the intensity targets is not sufficient if "40 to 70% reduction by 2050" is to be realized. This is because the total emissions could still increase in spite of intensity improvement if the company's amounts of activities such as production and proceeds increase. Ultimately speaking, the climate change is a matter of reducing the total amount of GHG emissions. Due to factors other than a company's own efforts to reduce emissions such as economic downturn, it is also possible for its total emission amounts to decrease naturally despite the deterioration of its intensity.

Thus, it is desirable to set both absolute and intensity targets. These two targets need to be set for the same boundary of the businesses because it is meaningless to set an absolute target for the domestic operations and an intensity target for overseas operations. Among 47 companies, the following 7 companies was found to have both absolute and intensity targets for their Scope 1&2 emissions.

- | | |
|------------------------------|--------------------|
| ◆ Koito Manufacturing | ◆ Toshiba |
| ◆ Rohm | ◆ Toshiba TEC |
| ◆ Sharp | ◆ Yaskawa Electric |
| ◆ Shinko Electric Industries | |

Of course, for a company which is in the stage of business expansion, it might be difficult to set an absolute emission reduction target due to associated increase in the total emission amount. In such a case, however, it is still possible for the company to set a long-term absolute target in line with the environmental capacity of the earth. It is also important to manage its emissions on the basis of both absolute amount and intensity in the short-term efforts, too.

Emission reduction targets and energy-saving targets – either-or target setting is insufficient?

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

This study found that there are few companies which have both GHG emission reduction targets and energy-saving targets for their Scope 1&2. While emission reduction targets may imply energy-saving management, it is still essential to manage energy efficiency tightly. Caution should be exercised when a company has only energy-saving targets. Setting only energy-saving targets may lead to decisions in which important emission reduction measures are omitted or given a lower priority. Fuel shift from oil to natural gas, for example, steadily contributes to emission reduction of CO₂ but it does not necessarily cause reduction of energy consumption, resulting in the possibility of this important measure not to be implemented. It turned out that 4 companies such as NEC among 47 have only energy-saving targets and do not have CO₂ emission reduction targets. It should be recognized that energy-saving targets only can not cover every potential climate action.

Previously, the electrical and electronics industry voluntarily pledged to improve CO₂ emission per real output of the industry by 35% compared with the 1990 level during the Kyoto Protocol's first commitment period (2008-2012). While some companies followed and adopted this industry's intensity target, quite a few companies ambitiously chose to set an absolute target toward FY2012

probably because the nation had an absolute reduction target of 6% (compared with 1990) under the Kyoto Protocol. However, among such ambitious companies, many have changed their absolute targets to intensity ones either for CO₂ emission or energy consumption after 2013 – Sharp, Hitachi, etc. Under KEIDANREN's Commitment to a Low Carbon Society declared by Japan Federation of Economic Organizations (Keidanren), the electrical and electronics industry has set a new voluntary target of improving its energy intensity by an average of 1% annually toward 2020. There is a growing trend among the member companies to set an intensity target (for CO₂ or energy consumption) in line with the industry's one after 2013.

Under the United Nations Framework Convention on Climate Change (UNFCCC), Japan refused to have a reduction target during the Kyoto Protocol's second commitment period and so have no legally binding absolute targets until 2020 in the international arena. Unfortunately, this national situation is likely to have a negative influence on the industrial efforts, lowering the target levels of corporate climate actions.

Use of renewable energy – a new pillar for corporate climate strategy

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

In order to prevent climate change by achieving “40 to 70% reduction by 2050,” 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, too. Conventionally, the national global warming policies are built upon nuclear power, thus blocking the deployment and associated cost reduction of renewable energy sources. Under this situation, corporate climate policies have given priority to energy-saving measures and so renewable energy use has been limited. Recently, however, corporate capital investment in renewable energy has been increasing since the launch of the nation's feed-in tariff (FIT) in July 2012 as the long-term investment in renewable energy makes good business sense now due to secured investment recovery.

Businesses are indispensable stakeholders from the viewpoint of large-scale deployment of renewable energy.

For companies, target setting for the use of renewable energy becomes increasingly important in addition to several climate targets such as for CO2 emission reduction and energy conservation. As a result of this study, 4 companies turned out to have quantitative targets for the use of renewable energy in their Scope 1&2 in the form of either cumulative installed capacity (MW), share of renewable electricity or equivalent amount to CO2 emission reduction.

- ◆ Fujitsu
- ◆ Mitsubishi Electric
- ◆ TDK
- ◆ Yaskawa Electric

In general, corporate efforts for renewable energy can be considered far from advanced if compared with energy-saving efforts. It might be true that investment in renewable energy facilities was a financially difficult option for a company before the launch of FIT. However, there are still other options such as purchasing Green Power certificates. This fact indicates that importance of renewable energy use has been underestimated despite its high potential for climate mitigation. There is definitely plenty of room for further growth within corporate climate policies.

Annual rate of emission reduction

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

WWF Japan has published “Energy Scenario Proposal for Decarbonizing Japan” (Vol.1-4), for which we called upon Dr. Haruki Tsuchiya from 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 the domestic energy demand by renewable energy sources by 2050. As a result of calculation 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 emission 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 with a view to keeping rise in global

average temperature below 2 degrees Celsius. 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, requirement level for annual reduction rate should depend upon a company’s base year, evaluation procedure should not be too much complicated. This study eventually adopted “1.5% reduction annually” as a benchmark to make a unified evaluation. 10 companies were found to have absolute reduction targets above “1.5%.”

- ◆ Alps Electric
- ◆ Casio Computer
- ◆ Fuji Electric
- ◆ Konica Minolta
- ◆ Ricoh
- ◆ Rohm
- ◆ Seiko Epson
- ◆ Sony
- ◆ Toshiba
- ◆ Yokogawa Electric

Importance of review for climate actions implemented

⇒ Relevant indicators: 1-6. Comparison between performance and actions taken

Almost all companies evaluated in this study show their performance of climate actions in a way that allows for clear judgment whether each target was achieved or not with explanation of actions which contributed to successful performance. However, they seldom show sufficient review or consideration of actions. In addition, there is no or little description of actions in some cases. For example, a company has set targets in the scope of its production, transport and product. The company’s CSR report refers to actions taken in the scope of production and products but does not describe those in the scope of transport at all. Another company in its report explains only its performance data but does not say anything for actions taken for it at all - Tokyo Electron, etc.

A company should refer to actions implemented toward its climate targets, review their degree of contribution to its performance, and clarify lessons to be learned and used in the next year. This is the ideal stance for reporting of high clarity. Reports should be created with completeness as well. A report should not fail to describe all the necessary information comprehensively.

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 formulation of targets and strategy. When disclosing relevant information, consistency with target setting should be well taken into consideration. It is essential to disclose necessary data in order for readers of the report to see if each target is achieved or not. For example, this study found that one company with a CO₂ intensity target does not show any intensity data. In our evaluation, such a company incurs point deduction.

In the case of a factor for which any targets have yet been created, 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 amount as well as intensity amount.

It is also important to clearly describe for which boundary the disclosed data are. This study faced several cases where boundary for the CSR report is different from that for disclosed emission data. In these cases, necessary description such as reasons or justification should be clearly shown. Data disclosure lacking such basic information can be regarded as problematic from the viewpoint of transparency and clarity.

Disclosure of GHG emission data

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

All 47 companies evaluated turned out to disclose total GHG / CO₂ emission data for their Scope 1&2. Among them, 38 disclosed intensity data, too. 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 38 companies have either absolute or intensity target and only a few have both, all of them disclosed data for both amounts. Thus, it was found that more than 80% of all the evaluated companies at least manage both absolute and intensity aspects. It is expected that they raise their ambition and set numerical targets in addition to data

disclosure.

With respect to the remaining 9 companies which disclose only absolute emission data, 6 do not have any emission reduction targets. These companies need to improve their efforts themselves – Taiyo Yuden, Funai Electric, etc. The other 3 have their targets on the absolute amount basis. It is assumed that they show only absolute amount data simply according to their way of target setting. These companies should also be aware of the importance of managing both absolute and intensity amounts. They should adopt intensity factors both in target setting and information disclosure.

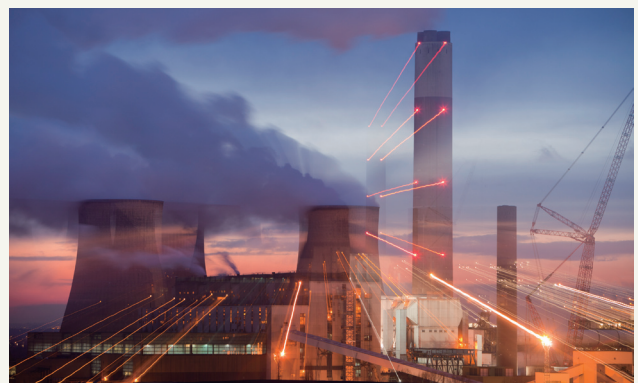
From the viewpoint of chronological data disclosure, all 47 companies show time-series emission data but many of them show either absolute or intensity amount. Given the importance of consistency, comparability and completeness, there is still room for further improvement.

Disclosure of performance in renewable energy use

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

21 companies out of evaluated 47 have disclosed quantitative data for their renewable energy use including green power certificates in the form of kW, kWh, etc. While it was only 6 companies that showed renewable energy targets, it turned out that corporate efforts in this field have been expanding since the launch of FIT. Businesses are expected to set quantitative targets for renewable energy in addition to those for energy saving, thereby advancing comprehensive climate solutions.

Among the 21 companies, 11 disclose all the quantitative data for their renewable energy use, while the



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others just show a few case examples of using renewable energy at some of their business locations. In the case of efforts for energy saving, relevant information is usually disclosed from the viewpoint of how much energy or CO2 was saved as a result of each energy saving 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 the 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.

- ◆ Fujitsu
- ◆ Ibiden
- ◆ Kyocera
- ◆ Mitsubishi Electric
- ◆ Panasonic
- ◆ Ricoh
- ◆ Sharp
- ◆ Shinko Electric Industries
- ◆ Sony
- ◆ Toshiba
- ◆ Yokogawa Electric

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&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 GHG Protocol. By calculating emissions for each of 15 categories of your Scope 3 inventories such as purchased goods and services, transportation and distribution, use of sold products, etc., you could identify where there is high potential for emission reduction and start addressing it together with your stakeholders. If there is high potential at the stage of product use, for example, making efforts in “avoided emission of goods and services” would be important.

It should be noted that, as mentioned before, efforts in the Scope 1&2 and Scope 3 (transportation and distribution above all) should be made in advance to engaging in “avoided emission of goods and services.” In this study, if a company does not disclose data for Scope 1&2 emissions and for transportation and distribution, it is not given high marks even though it discloses data for “avoided

emission of goods and services.” While visualization of Scope 3 emissions for each 15 category is highly effective to identify where to address for as efficient emission reduction as possible, it requires considerable efforts such as cooperation with suppliers. Therefore, companies with such ambitious actions were given the highest scores.

Among 47 companies, the following 9 companies turned out to disclose Scope 3 emissions data with each 15 category in mind. On top of that, all these companies engage in “avoided emission of goods and services,” culminating in reasonable and strategic efforts.

- ◆ Anritsu
- ◆ Fujitsu
- ◆ Hitachi
- ◆ Konica Minolta
- ◆ NEC
- ◆ Ricoh
- ◆ Sharp
- ◆ Sony
- ◆ Toshiba

On the other hand, there are 8 companies which disclose only Scope 1&2 emission data. One of these companies, for example, has an emission reduction target for logistics but it does not disclose data for it at all. A company should aim for transparent information disclosure when issuing an environmental report.

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 secure 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 8 companies out of the 47 were certified for their GHG data by the third parties. Other 16 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.

- ◆ Casio Computer
- ◆ Fujitsu
- ◆ Hitachi
- ◆ Konica Minolta
- ◆ Panasonic
- ◆ Ricoh
- ◆ Sony
- ◆ Toshiba

Key findings from this study

In addition to evaluations of individual factors mentioned so far, here we point out three key findings in terms of general tendency.

The first point is about how to deal with Scope 3 emissions and “avoided emission of goods and services.” It was found that a lot of companies tend to emphasize product-related emissions amongst Scope 3 or “avoided emission of goods and services” when setting reduction targets or measuring emissions. This is probably because many of the companies in this industry are what are called “B to C” companies. Of course, it is an ideal tendency for companies to expand the scope of their efforts from their own emissions to their indirect ones. However, as repeatedly mentioned before, these indirect emissions entail several issues such as numerical uncertainty and ambiguity of attribution. The question is the consumer renewed a personal TV or purchased additional one. Also, the emissions reduction is attributable to either consumers who bought the product OR the company which sold it. As increase in the sales of energy-saving products can be direct converted to the amount of emissions reduction, it would be comfortable for companies to set a target in this category. But we must say companies should manage these indirect emissions distinctively from Scope 1&2 emissions for the time being.

The second point is about possible influence of the national climate targets on corporate efforts. As mentioned at the previous section, “Emission reduction targets and energy-saving targets,” the period of corporate climate efforts until 2012 coincided with the nation’s transitional period from its first commitment period (CP1) under the Kyoto Protocol (KP) to the next phase where there is only voluntary national pledge. Under the former period, companies had set mid-term targets / plans toward 2012 in line with the nation’s CP1 commitment or with the industry’s Voluntary Action Plan on the Environment to achieve it. However, for the latter period (starting from 2013), a lot of companies backslided such as replacing a GHG emission reduction target toward 2012 by an energy-saving target although there were also companies with

high leadership which pursue their own measures under their long-term targets irrespective of the nation’s targets. Thus, this study revealed that absence of targets at the national level casted a shadow on corporate climate actions to a greater or lesser extent. Businesses should not use the absence of national targets as an excuse for a lack of their own actions. Rather, it is desired that an ambitious company plays a leading role by steadily advancing measures under its own long-term vision.

The third point is about issues related to comparability. One significant feature of this study was to evaluate environmental reports, which are issued in different ways from company to company, by using the common indicators for all companies. Otherwise, it is difficult for readers of the reports to understand difference in levels of climate efforts by each company. Insufficiency of comparability has been one of the biggest reasons for it. Each company sticks to its own convenient way in terms of target setting, scopes, disclosure of data, etc., making it extremely difficult to compare corporate efforts equally. Considering each company’s situation, characteristics, intentions, etc., one might think they may well do so. But have readers of environmental reports been truly satisfied with the conventional situation? It is natural for them to hope to encourage businesses to make more ambitious efforts by telling good and bad climate actions reported by the individual company. In this study, considerable variations were found in terms of description of targets & performance as well as disclosure of information & data. We must say that businesses should make efforts to standardize disclosure of climate-related information at least for basic information such as GHG emissions by setting a certain common criteria.

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.

**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.

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