



# Considerations for XBRL based on Environmental Reporting Guidelines

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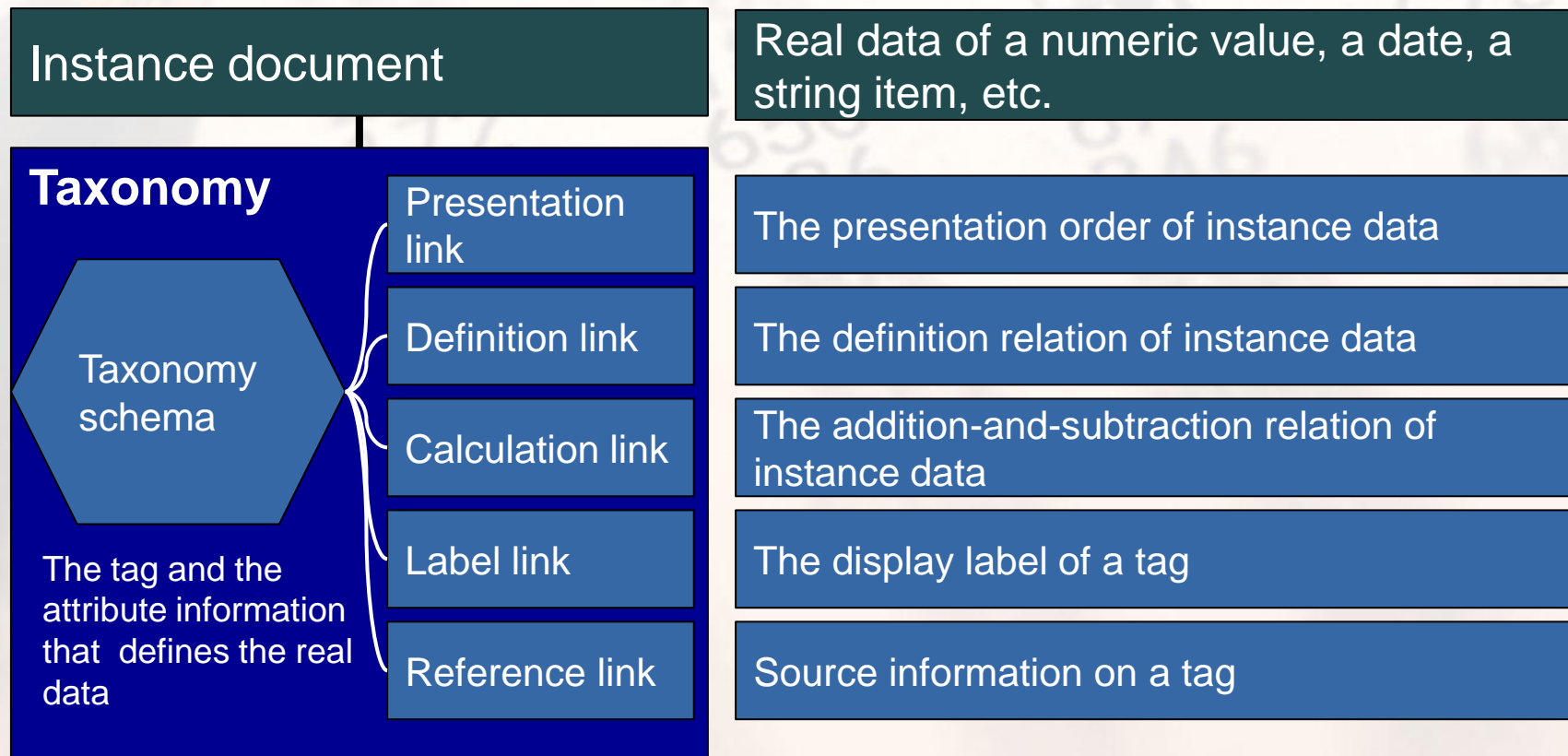
# What is XBRL?

## About XBRL (eXtensible Business Reporting Language),

- Data description language
- Tagging data
- Taxonomy and instance (separation of a definition and data)
- Open standard, free of license fees

# XBRL structure

- XBRL consists of a taxonomy and an instance document. An instance document is a set of real data, and a taxonomy is a definition object which specifies the "behavior" of an instance.



# Advantages of XBRL

## Feature

The ambiguity of a data interpretation is reduced.

A phenomenon specific to a filer is expressed by an extended taxonomy.

## Realization

Interoperability between an authority, a filer and a user

Clarification of the common rule using taxonomy

Clarification of filer-specific events by adding extension tag

Improvement in reliability by the validation check (validation link: transfer of the validation link is also possible)

## Expectation

Improvement in comparability

Increase in efficiency by automatic processing

# What are Environmental Reporting guidelines?

## Outline

- Published by Ministry of the Environment (Japan)
- Latest Japanese version is “Fiscal Year 2012 Version”
- Download site:  
<http://www.env.go.jp/en/policy/economy/erg2007.pdf>  
(Last English version is 2007)

# What are Environmental Reporting guidelines?

## Objectives of the Guidelines

- The periodic publication of environmental reporting.
- To offer improved and practical guidance for carrying out *environmental management*.

## Contents of the Guidelines

- Information and indicators to include  
Environmental information and indicators that shall be included by all organizations
- Information and indicators to include as appropriate



# What are Environmental Reporting guidelines?

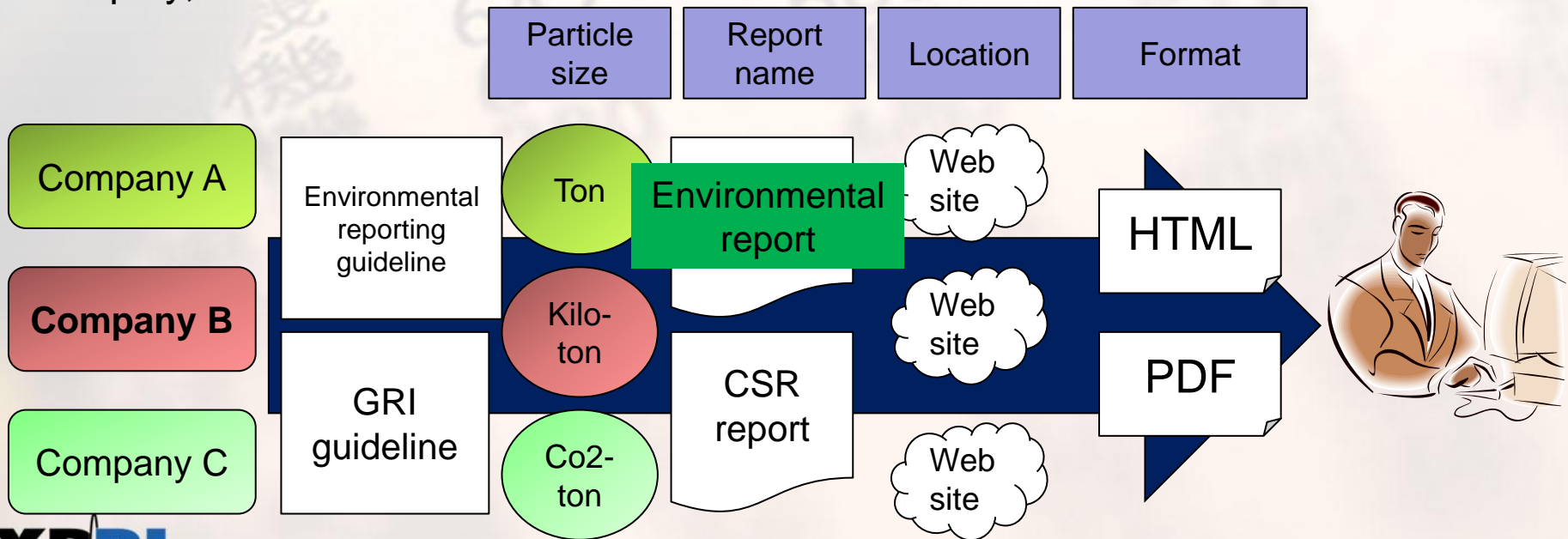
## Fundamental functions of Environmental Reporting

- Function as a tool for environmental communication between an organization and society
- Disclose information to fulfill the obligation of organizations to be accountable to society.
- Provide useful information for stakeholders making decision
- Promote environmental activities by a “pledge and review” between the organization and society
- Establish or revise the environmental policy, objectives and action plans of an organization
- Motivate and encourage the environmental activities of managements and employees



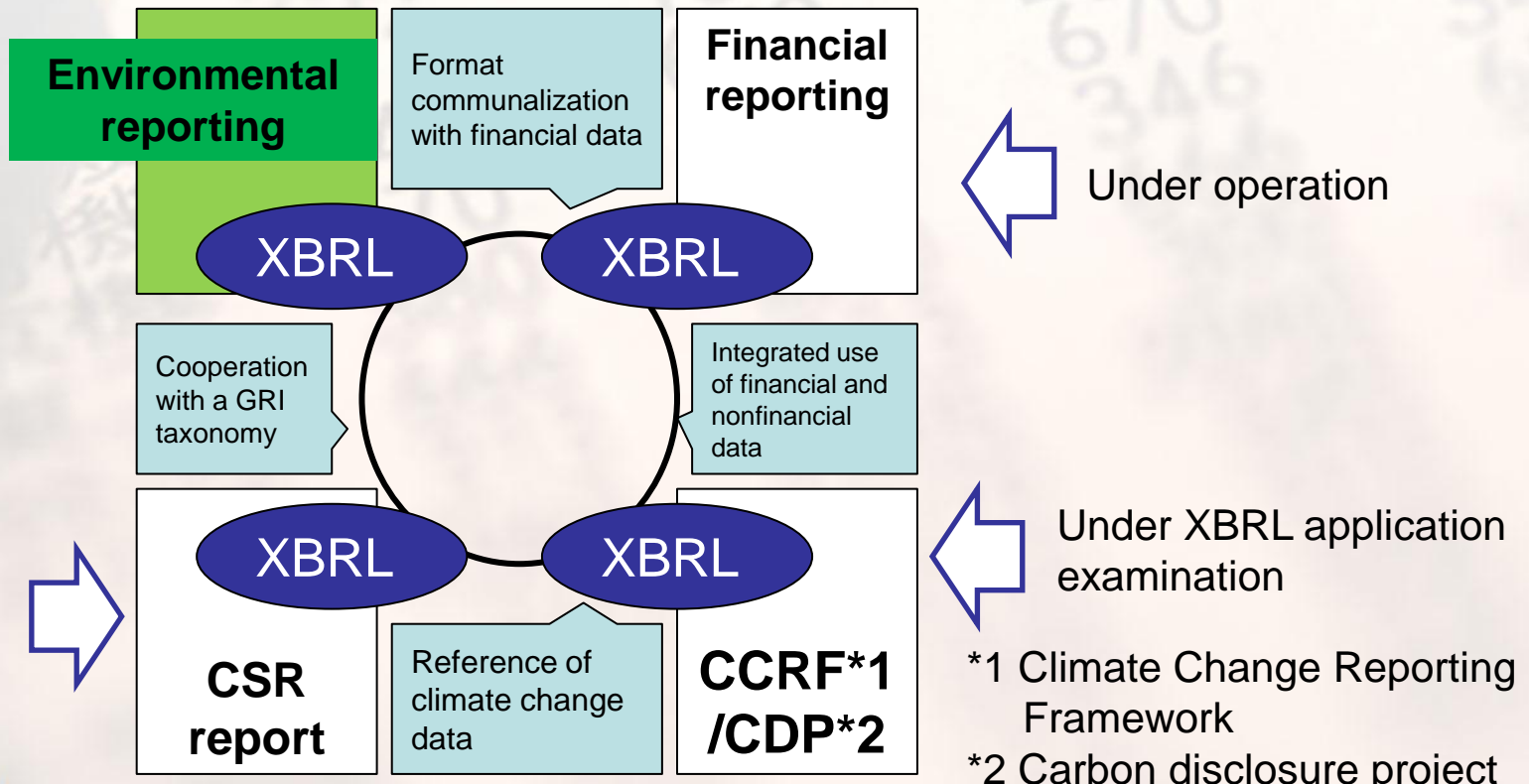
# Issues of Environmental Reporting as data

- Although it is created based on various guidelines, the actual granularity and the scope of the disclosure items are not standardized.
- There are cases where the environment information itself is reported as an Environmental Report, and cases where it is one component of a sustainability report, such as a CSR report.
- It is disclosed on each company's website.
- Formats, such as PDF and HTML, are not unified, and also it is only the format for display, therefore reuse is inefficient.



# Application of XBRL to Environmental Reporting

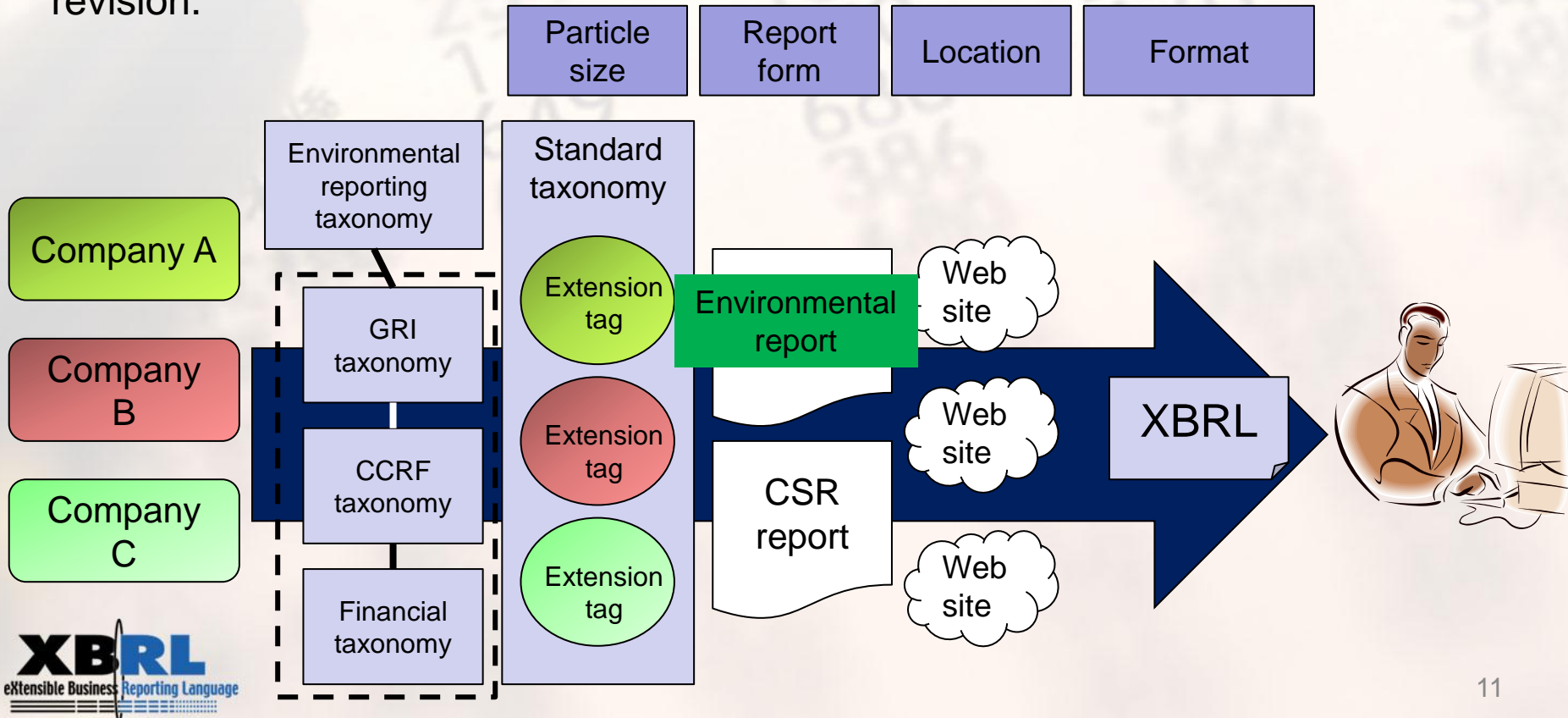
- By applying XBRL to Environmental Reporting,
  - Data circulation and reuse costs are reduced.
  - Data utilization is promoted by linkage with other non-financial and financial data.



Disclosed a GRI taxonomy

# Improvement in convenience by XBRL

- The granularity and the scope of an disclosure item becomes clear by a taxonomy, and this is useful for the filer's understanding of a guideline. Moreover, originality is respected by extension tag.
- Users can directly use the data for inter-firm comparison and secular analysis.
- The regulator can reflect the analysis result of a filer's extended tags at the time of revision.



# Environmental Reporting taxonomy

Environmental Reporting taxonomy is based on “Environmental Reporting Guidelines 2007” by Ministry of the Environment (JAPAN) .

## Environmental Reporting Guidelines 2007

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

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

Therefore, reporting needs to include the amount of greenhouse gas emissions (converted to tons of CO<sub>2</sub>), or each amount of the six substances subject to the Kyoto Protocol, and types of substance classified by emission source, a basic policy on the reduction of the substances, and the reduction measures.

#### (1) Information and indicators to include

- Policy, targets, plans, initiatives, results, etc. related to measures to reduce greenhouse gas emissions, etc.
- Total amount (converted to tons of CO<sub>2</sub>) of greenhouse gas emissions (six substance subject to the Kyoto Protocol) (The breakdown of the amount both in Japan and overseas is needed.)
- Breakdown by type of the amount (converted to tons of CO<sub>2</sub>) of greenhouse gas emission (six substances subject to the Kyoto Protocol)

#### (2) Information and indicators to included as appropriate

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

- Breakdown by emission source of the amount (converted to tons of CO<sub>2</sub>) of

## Environmental Reporting taxonomy

<http://www.env.go.jp/role/jpevr/2007-02-01/03/OPI>

### Operational Performance Indicators

- Total amount of energy input and reduction measures
- Total amount of material input and reduction measures
- Amount of water input and reduction measures
- Amount of materials recycled within an organization's operational area
- Total amount of manufactured products or sales
- Amount of greenhouse gas emissions and reduction measures
  - Policy, targets, plans, initiatives, results, etc. related to measures to reduce greenhouse gas emissions, etc.
  - The plan about the measure against reduction of the amounts of greenhouse gas emissions
  - The plan about the measure against reduction of the amounts of greenhouse gas emissions
  - The plan about the measure against reduction of the amounts of greenhouse gas emissions
  - The plan about the measure against reduction of the amounts of greenhouse gas emissions
  - Total amount (converted to tons of CO<sub>2</sub>) of greenhouse gas emissions
  - Breakdown by type of the amount (converted to tons of CO<sub>2</sub>) of greenhouse gas emissions
    - Released amount of carbon dioxide
    - Released amount of methane
    - Released amount of nitrous oxide
    - Concentration of benzene when released into the atmosphere and reduction measures
    - Concentration of trichloroethylene when released into the atmosphere and reduction measures
    - Concentration of tetrachloroethylene when released into the atmosphere and reduction measures
- Air pollution, its environmental impacts on the living environment, and reduction measures
- Amount of release and transfer of chemical substances and reduction measures
- Total amount of waste generation and final disposal and reduction measures
- Total amount of water discharge and reduction measures

Extracted element item from narrative article

# Environmental Reporting taxonomy

## Definition link

<http://www.env.go.jp/role/jpevr/2007-02-01/01/BI>

- Basic Information
  - CEO's statement
  - Fundamental requirements of reporting
  - Boundary of the reporting organization and cover
  - Summary of the organization's business
  - Outline of environmental reporting
  - List of major indicators
  - Summary of objectives, plans and results regarding environmental conservation
  - Summary of targets, plans, results, and improvement measures regarding environmental conservation**
  - Material balance of organizational activities

XBRL taxonomy can express the Environmental Reporting Guidelines using taxonomy schema, label and documentation link, reference link, and relationship link.

## Taxonomy schema, Label link, Reference link

詳細情報	
Summary:	
Element Declaration:	
type	value
name	SummaryOfTargetsPlansResultsAndImprovementMeasuresRegardingInitiativesForEnvironmentalConservation
id	ipevr:SummaryOfTargetsPlansResultsAndImprovementMeasuresRegardingInitiativesForEnvironmentalConservation
type	nonnum:textBlockItemType
substitutionGroup	xbrli:item
periodType	duration
balance	
abstract	false
nullable	true
namespace	<a href="http://www.env.go.jp/policy/report/ipevr/2007-02-01">http://www.env.go.jp/policy/report/ipevr/2007-02-01</a>
prefix	ipevr
Label:	
type	value
label (ja)	ア事業活動における環境配慮の取組に関する目標、計画及び実績、改善
label (en)	Summary of targets, plans, results, and improvement measures regarding initiatives for environmental conservation
documentation (en)	For example, the following information and indicators can be used in a "summary." • Results and trends of the environmental impacts over the past five years or so (Note: The data can be described by combining with the data of BI-4-1) ...
Reference:	
type	value
reference	Ministry of the Environment 2007-02 Environmental Reporting Guidelines 3



Attribute information

Label link

Reference link

## Environmental Reporting Guidelines 2007

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

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

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

- (1) Information and indicators to include
- a. Summary of targets, plans, results, and improvement measures regarding initiatives for environmental conservation

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

- Results and trends of the environmental impacts over the past five years or so





# Sample instance

- The instance document is made by extensional taxonomy.
- The instance document has numeric, non-numeric and other information.
- Multiple languages using Label link.

OP-6: The amount of discharge and its measure against reduction against greenhouse gas	(抽象要素)
a. The plan about the measure against reduction of the amounts of discharge, such as green...	-
The plan about the measure against reduction of the amounts of discharge, such as greenh...	-
The plan about the measure against reduction of the amounts of discharge, such as greenh...	-
The plan about the measure against reduction of the amounts of discharge, such as greenh...	当社については、第6次環 境計画の最終年度となる20 11年度のCO2排出総量を5 .
a. The plan about the measure against reduction of the amounts of discharge, such as gree...	-
b. The total amount of discharge (items according to domestic and overseas) of greenhouse ...	1166300
Greenhouse gas - Domestic	899300
Greenhouse gas - Overseas	267000
c. The items of the amount classified by kind of greenhouse gas (Kyoto Protocol 6 substanc...	-
Carbon dioxide - CO2	966000
HFC	56300
PFC	79000
SF6	65000
Methane	-
Dinitrogen monoxide	-
OP-7: The loading dose concerning air pollution and a living environment, and its measure aga...	(抽象要素)
a. SOx (SOx), nitrogen oxide (NOx), the plan about the measure against reduction of the am...	-
b. The amount of SOx (SOx) discharge (ton), the amount of nitrogen oxide (NOx) discharge ...	-
Amount of emission - SOx	38
Amount of emission - NOx	10.0
Amount of emission - VOC	548.0
Pouring industrial dust into the air	0.9
c. A situation (decibel) and its measures against reduction, such as noise based on Noise R...	-
d. A situation (decibel) and its measures against reduction, such as vibration based on Vibra...	-
e. A situation (specific bad smell substance concentration or bad smell index) and its meas...	-

Extension label

	(抽象要素)
実績等	-
	-
	-
	当社については、第6次環 境計画の最終年度となる20 11年度のCO2排出総量を5 .
	-
CO2換算)	1166300
	899300
	267000
	-
	966000
	56300
	79000
	65000
	-
	-
量の低減対策に関す... Ox)排出量(トン)、...	(抽象要素)
	-
	38
	10.0
	548.0
	0.9
	-
	-
	-

リ騒音規制法に基づき騒音等の状況(デシベル)及びその低減対策  
 エ 振動規制法に基づく振動等の状況(デシベル)及びその低減対策  
 オ 臭気防止法に基づく臭気等の状況(特定臭気物質濃度または臭気指数)及びその低減対策

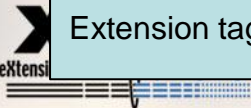
# Comparative analysis using XBRL data

Using XBRL tool, it is easy to compare multiple companies because Environmental Reporting taxonomy based.

	Company A	Company B	Company C	Company D
	2010-04-01 - 2011-03-31	2010-04-01 - 2011-03-31	2010-01-01 - 2010-12-31	2010-04-01 - 2011-03-31
[Operation performance index: OPI]				
OP-6: The amount of discharge and its measure				
a. The plan about the measure against reduction of the amounts of discharge, such as greenhouse gas, a target.		-	-	-
The plan about the measure against reduction of the amounts of discharge, such as greenhouse gas, a target.	当社は、創立100周年の年である2021年を目標年と	当社は、事業活動に伴う温室効果ガスの排出抑	-	-
The plan about the measure against reduction of the amounts of discharge, such as greenhouse gas, a plan.	低炭素社会を実現するために製	当社10工場の生産に伴うCO2排	-	-
The plan about the measure against reduction of the amounts of discharge, such as greenhouse gas, a measure	品使用時におけるCO2排出量の30	・2007年度の実績以下に	-	-
a. The plan about the measure against reduction of the amounts of discharge, such as greenhouse gas, a track record.	当社については、第6次環境計画の最終年度となる	三重工場(三重県多気郡)では生産部門、プロセ	-	-
b. The total amount of discharge (items according to the items of the amount classified by the items of greenhouse gas (Kyoto Protocol 6 substance) of discharge (Ton-CO2	2010年度の活動総括 第6次環境計画<2009~2011年度	・2007年度比31.3%削減	-	-
Greenhouse gas - Domestic	1166300	1634000	212000	575000
Greenhouse gas - Overseas	899300	1334000	-	-
Carbon dioxide - CO2	267000	300000	-	-
HFC	966000	1319000	-	-
PFC	56300	-	-	-
SF6	79000	315000	-	-
Amount of emission - SOx	65000	-	-	-
Amount of emission - NOx	-	-	-	-
Amount of emission - VOC	-	-	-	-
Amount of emission - SOx	3.8	3.0	3	236
Amount of emission - NOx	10.0	60.8	-	392
Amount of emission - VOC	548.0	-	-	-
Pouring industrial dust into the air	0.9	-	-	-

Possible to compare the tags if extension label existed

Extension tag is held





# Conclusion

- XBRL provides a common base for financial and nonfinancial reports.
- Overlapping tags between nonfinancial reports is resolved.
- Unification of entity data tag (such as company name) on taxonomy is necessary.
- More sample instances of nonfinancial report is necessary for widespread use.