Kick Off Meeting of Scheme 5 ASEAN-JAPAN Energy Efficiency Partnership (AJEEP) SOME-METI Work Program 2022-2023



Carbon Neutrality Management and SBT

5th October 2022, Online

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Energy Efficiency Facilitating Hub THE ENERGY CONSERVATION CENTER, JAPAN SE4ALL EEF HUB



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A third of Pakistan under Water in Summer 2022





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Drought by Heat Wave in China in Summer 2022



5

Heatwave gripping Europe in Summer 2022





So, what will happen next decades ?























Risks for human health, infrastructure and ecosystem



source : IPCC Fifth Assessment Report

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UNFCCC (United Nations Framework Convention on Climate Change)



UNFCCC(the United Nations Framework Convention on Climate Change)

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source : UNFCCC and office of Prime Minister 9



More countries tackling Climate Change

- <u>121</u> countries had announced Carbon Neutrality at COP25 (Dec. 2019).
- Accounts for <u>17.9%</u> of the global CO2 emissions.



- 154 countries had announced Carbon Neutrality at COP26 (Nov. 2021).
- Accounts for <u>88.2%</u> of the global CO2 emissions.



Countries expressing Carbon Neutrality by 2050 : 144 countries (42.2%)
Countries expressing Carbon Neutrality by 2060 : 152 countries (80.6%)
Countries expressing Carbon Neutrality by 2070 : 154 countries (88.2%)



Source: Agency for Natural Resources and Energy, METI



Global CO2 emissions by sector

WW Direct emissions by sector in 2019 (59 GtCO2eq)







Emissions and target of ECAP

WW Direct + Indirect emissions by sector in 2019 (59 GtCO2eq)





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source : IPCC Sixth Assessment Report



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Why is Carbon Neutrality Management Necessary?

Carbon neutrality management is:

The implementation of activities to achieve carbon neutrality as a company Corporate management that incorporates this way of thinking

Three purposes for companies to implement activities to achieve carbon neutrality

1. Responding to the requirements for decarbonization: Appropriately respond to laws and social rules

2. Building up superiority: Review existing business with regard to decarbonization, and enhance your company's competitiveness

3. Capturing new opportunities: Get new chances created from the shift to a decarbonized society to expand your company's business

It affects:

- Sales, costs, markets, funding
- Corporate evaluation, reputation, recognition
- Corporate philosophy, vision

Position carbon neutrality at the core of management and business

In order for companies to contribute to carbon neutrality (substantially zero emissions), they need a "guide".



This is provided by the **SBT**, international standards





What are Science Based Targets (SBTs)?

Science Based Targets mean targets that are set based on climate science.

"Science Based" means conforming with the latest <u>climate science</u> that is believed to be necessary for realizing the objective of seeking efforts to limit warming to 1.5°C so that the global rise in temperature is restricted to a goal well below an increase of 2°C from pre-industrial levels.

"Targets" mean the greenhouse gas emission reduction targets that are set by companies taking the next 5 to 10 years as the target years, conforming with the goals sought by the Paris Agreement. These aim to prevent the adverse impacts of climate change and assure business growth into the future.



Science-based targets provide a clearly-defined pathway for companies to reduce greenhouse gas (GHG) emissions, helping prevent the worst impacts of climate change and future-proof business growth.

Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.



Source: Science Based Targets



Targets of SBTs (Goals)

Image of SBTs



Targets are set for the next 5-10 years as a guide for achieving a reduction of 4.2% or more each year.



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Changes in Global GHG Emissions: Current Pace of Change and SBT Targets

Changes in global GHG emissions



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Changes in Global GHG Emissions: Current Pace of Change and SBT Targets





SBT Certification Criteria and Target Setting Methods

For SBTs, global common criteria and methods are defined.

♦ SBT certification criteria

ltem	Details						
Boundary	 All related GHG emissions covering Scope 1 and 2 of an entire organization including subsidiaries 						
Base year and target years	Base year : Latest year for which data exists (Recommended) Farget years : Within a minimum of 5 years and a maximum of 10 years from the date when the targets are Submitted for official validation						
	• At the minimum, target goals aiming for 1.5°C are essential. (Linear reduction rate of 4.2% or more/year)						
	 Set goals based on the SBT methods approved by the SBT Secretariat. 						
Target goals	 Target settings in which several Scopes are totaled is possible. (e.g. Scope 1+2 or 1+2+3) However, Scope 1+2 and 3 individually must satisfy the SBT goals. 						
	 Reductions achieved by acquiring credits from other organizations or reduction contribution amounts cannot be included in the calculations in the reductions for realizing SBTs. 						



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What are SBTs in Corporate Management?





SBT-certified Companies (Worldwide)

ECC.I



Source: Science Based Targets





Support for Companies by MOE & METI (1/2)

Emission calculation and target setting support project 1.

(1) Support for calculating GHG emissions throughout the supply chain

- Emissions intensity database
- · Guidelines for calculating emissions
- SBT goal setting support seminar (2)

2. **Decarbonization support project**

(1) Support Project for promoting decarbonization of the entire supply chain of large companies

- what : Support for studying emission reduction measures and formulating action plans to achieve GHG emission reduction targets for the entire supply chain
- who : SBT certified companies (including those currently applying for certification), etc.

(2) Support project for SMEs for promoting decarbonized management to reduce GHG emissions

- what : Support for SMEs to clarify the significance of working on decarbonized management, formulate reduction measures, and compile a reduction plan
- who : SMEs that have set or are considering setting medium- to long-term targets for GHG reduction



Support for Companies by MOE & METI (2/2)

https://www.env.go.jp/e	arth/ondanka/supply_chain/gvc/in	tr_trends.html#no07		
Green Value	Chain Platfor	'n	Site map	English English
"Supply-chain emissio	ons" Information Platform	· · · · · · · · · · · · · · · · · · ·	環境省	経済産業省
For those who start calculation	Reference materials for calculation	Examples of corporate initiatives	Domestic efforts	International efforts
SBT (Science	Based Targets)			
temperature rise to well belo target set by a company wit table of contents	ow 2°C above pre-industrial leve h a target year of 5 to 15 years	els and to 1.5°C). It is a green ahead.	nhouse gas emis	ssion reduction
 (1) <u>SBI overview materia</u> (2) <u>SBT bis it bis statistical statis statistical statistical statistical statistical statistica</u>	<u>l</u>		(As of	October 3, 2022)
 (2) <u>SBI detailed materials</u> 	2	SBTi Part	ticipating	338
\checkmark (3) <u>Guidance for dealing</u>	with SBT, etc.	Japanese	e 00	companies
✓ (4) <u>SB11-related materials</u>	2	Company	65	
Click here for SBT referen	ces	Acquisitio	on of	277 companies
Click here for examples of the second sec	<u>of SBT initiatives</u>	certificati	on	(including 151
Click here for examples of the second sec	of SBT/RE100 initiatives for SMEs			SMIES)
► <u>SBT (Science Based Targe</u>	<u>ets, external link)</u>	Commitm	nent	
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Fee for SBT Certification

Organization type	Target Validation Service	Cost
	Near-term science-based target validation including a second submission for validations that are not accepted and are re-submitted within six months	\$9,500
General (Not for SMEs or FIs)	Target updates service for companies wishing to align their targets with new minimum ambition level of 1.5°C or to update or edit previously approved targets	\$4,750
SMEs(small-and medium-sized enterprises)	Near-term science-based target submission for SMEs No standard target validation process and automatically approved and posted to the SBTi website	\$1,000
FIs (Financial Institutions)	Financial institution target submission	\$14,500

https://sciencebasedtargets.org/step-by-step-process#submit

Companies headquartered in developing countries may be **exempt** from validation service fees. Learn more about our pricing structure.





256 SBT-certified Companies In Japan

No. of companies in each industry sector out of the 256 companies which have acquired SBT certification (as of September 19, 2022)

Sector	#	Sector	#	Sector	#
Electrical Equipment and Machinery	25	Pharmaceuticals, Biotechnology and Life	10	Food and Staples Retailing	3
Construction and Engineering	20	Solid Waste Management Utilities	7	Forest and Paper Products - Forestry, Timber, Pulp and Paper, Rubber	3
Professional Services	20	Homebuilding	6	Media	3
Trading Companies and Distributors, and Commercial Services and Supplies	19	Retailing	5	Containers and Packaging	2
Technology Hardware and Equipment	17	Chemicals	4	Electric Utilities and Independent Power Producers and Energy Traders (including fossil, alternative and nuclear energy)	2
Building Products	16	Construction Materials	4	Healthcare Equipment and Supplies	2
Consumer Durables, Household and Personal Products	15	Ground Transportation - Trucking Transportation	4	Water Transportation - Water Transportation	2
Software and Services	13	Mining - Iron, Aluminum, Other Metals	4	Education Services	1
Automobiles and Components	12	Semiconductors and Semiconductors Equipment	4	Specialized Consumer Services	1
Food and Beverage Processing	12	Telecommunication Services	4	Tobacco	1
Real Estate	11	Textiles, Apparel, Footwear and Luxury Goods	4		
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21 SBT-certified Companies in ASEAN

companies in ASEAN which have acquired SBT certification (as of September 19, 2022)

#	country	company	#	country	company
1	Singapore	Keppel Land	1	Malaysia	Tai Wah Garment Industry Sdn. Bhd.
2	Singapore	M1 Limited	2	Malaysia	TERENGGANU SILICA CONSORTIUM SDN BHD
3	Singapore	Olam	3	Malaysia	Pantas Software Sdn. Bhd.
4	Singapore	Singapore Exchange Limited	4	Malaysia	Ramatex
5	Singapore	Singapore Telecommunications Limited (Singtel)	5	Malaysia	Ditrolic Energy Holdings Sdn. Bhd
6	Singapore	Flex Ltd.	1	Cambodia	Olive Apparel (Cambodia) Co., Ltd.
7	Singapore	GreenA Consultants Pte Ltd	2	Cambodia	Shoe Premier II (Cambodia) CO. Limited
8	Singapore	CapitaLand	1	Thailand	Starboard, Airush & SOMWR
9	Singapore	City Developments Limited	2	Thailand	Fortune Parts Industry Public Company Limited
10	Singapore	ComfortDelGro Corporation Limited	1	Philippines	GenerationHope, Inc.
			1	Vietnam	Julie Sandlau Vietnam. Itd



Source: Science Based Targets 26



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Sustainable Society, Sustainable Economies and Companies

Sustainable Society
Society where people can live safe, securely and equally into the future



Sustainable Economies and Companies Economies and companies that can grow into the future

Three purposes for companies to implement carbon neutrality management

Responding to the requirements for decarbonization: Appropriately respond to laws and social rules
 Building up superiority: Review existing businesses with regard to decarbonization, and enhance your company's competitiveness

3. Capturing new opportunities: Get new chances created from the shift to a decarbonized society to expand your company's business

$\overline{\ }$		Purposes for emissions reduction management strategies							
		Responding to the requirements for decarbonization	Building up superiority	Capturing new opportunities					
		Appropriately respond to laws and social rules	Review existing businesses with regard to decarbonization, and enhance your company's competitiveness	Get new chances created from the shift to a decarbonized society to expand your company's business					
	Sales	 Avoid the disaffection of customers seeking decarbonized products and services Respond to strengthened emissions regulations 	 Capture customers seeking decarbonized products and services, and acquire market Set premium pricing due to low carbon value Realize high added value through business model innovation (DX, etc.) 	• Advance into markets for new products and services that contribute to the decarbonization of other companies					
3enefit:	Profits	 Respond to increased burdens due to carbon pricing 	 Cost reductions due to increased efficiency in manufacturing and operations Reductions in employee recruiting costs 	 Shift to a high value-added "portfolio of products contributing to decarbonization" 					
	Corpora te value	 Avoid social criticism caused by making insufficient responses Avoid investor risks (divestment, activism, etc.) 	 Enhancement of company and product brands Acquisition of outstanding employees Enhancement of low carbon-related technologies 	• By effectively applying the change to decarbonization of other companies, enhance the value of your company's assets					
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1. Responding to Requirements for Decarbonization (1/2): Various Stakeholders

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Various requirements from stakeholders relating to decarbonization (Examples)

- 1) Industry groups: Industry standards and criteria
- Customers: Information provision, target setting, reduction activities
- Investors, banks: Engagement
- 4) Society: Criticism from SNS and local communities
- 5) Suppliers: Price negotiations
- 6) National and local government: Legal, carbon taxation, (Each country) emissions regulations



1. Responding to Requirements for Decarbonization (2/2): Customers



Table: Approaches made to suppliers by SBT-certified companies (Examples)

Sector	Company name	Target year	Targets
Retail	Aeon	2021	Set SBT targets for the suppliers corresponding to 80% of the emissions from their purchased products and services.
Medical & Pharmaceuticals	Daiichi Sankyo	2020	Set reduction targets for 90% of their main suppliers.
Chemicals	Sumitomo Chemical	2024	Formulated science-based GHG reduction targets for suppliers corresponding to 90% of the production weight.
Construction industry	Jenex	2024	Formulated science-based GHG reduction targets for suppliers corresponding to 90% of the emissions from their purchased products and services.
Machinery	Nabtesco	2030	Set reduction targets aiming for SBTs for 70% of their main suppliers.
Printing	Dai Nippon Printing	2025	Set SBT targets for their main suppliers corresponding to 90% of their purchased amounts.
Other products	Comany	2024	Set SBT targets for suppliers corresponding to 80% of emissions from their purchased products and services.
\m			



Decarbonization of Supply Chains

Risk type	Examples
Physical risks	 Increase in seriousness and frequency of abnormal weather including typhoons and flooding Changes in precipitation patterns and extreme variations in weather patterns Rises in average temperatures
Regulatory risks	 Carbon pricing mechanisms Introduction and strengthening of emissions reporting obligations Orders and regulations relating to existing products and services
Reputation risk	 Increase in negative feedback from stakeholders
Table: Approache	s made to suppliers by SBT-certified companies (Examples)

1. Responding to Requirements for Decarbonization: Received From Customers



Table: Approaches made to suppliers by SBT-certified companies (Examples)

Sector	Company name	Target year	Targets
Retail	Aeon	2021	Set SBT targets for the suppliers corresponding to 80% of the emissions from their purchased products and services
Medical & Pharmaceuticals	Daiichi Sankyo	2020	Set reduction targets for 90% of their main suppliers
Chemicals	Sumitomo Chemical	2024	Formulated science-based GHG reduction targets for suppliers corresponding to 90% of the production weight
Construction industry	Jenex	2024	Formulated science-based GHG reduction targets for suppliers corresponding to 90% of the emissions from their purchased products and services
Machines	Nabtesco	2030	Set reduction targets aiming for SBTs for 70% of their main suppliers
Printing	Dai Nippon Printing	2025	Set SBT targets for their main suppliers corresponding to 90% of their purchased amounts
Other products	Comany	2024	Set SBT targets for suppliers corresponding to 80% of emissions from their purchased products and services

Source: MOE 32

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2. Building Up Superiority: Products and Services, etc.

Review existing products and management to enhance competitiveness and build up superiority. Grouping Effects **Case examples** Provision of decarbonized products and services High strength steel Electric forklift Multifunction printer Products and plate trucks (Standby power-saving) Increase in sales services Energy-saving Expansion of sales routes IT devices household · Acquisition of premium pricing G appliances Parts for EVs Exhaust heat recovery Reduction of losses and improvement of operations in development, production Development, Solar power generation Joint transportation production and and logistics logistics 9 å Å Discharge Cost reductions SMART METER pressure control Energy management Online meetings using IoT and smart meter 5 Introduction and renewal of equipment by Shiga Bank, Kyoto Bank, Hokuto Bank, Yonago Shinkin Bank, Fundraising utilizing low-interest environmental Mizuho Financial Group, MUFJ Bank, etc. financing and ESG investment



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3. Capturing New Opportunities: tackling carbon reduction





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Steps for Realizing CN Management

Methods for achieving the two targets for environment and management







3 Stages & 7 Steps for Realizing CN Management

Carbon neutrality management is achieved by implementing seven steps and one option.

Stage	Step	Activities implemented by the company
рс Л	1. Recognition of issues	Customer Request Cues.
licy ar trategy	2. Understanding of current situation	ges in GHG
P S S S	3. Design of future image	
r ion & ion	4. Understanding of potential	Plan 2021~2030
Plar nulati xecut	5. Formulation of plan	backcasting.
forr e>	6. Execution	
ing and ure, etc.	7. Reporting and disclosure	SBT g General mtg pure cf the soults and situation in g General mtg pure cf the soults and situation in social SBT n In In In In
Reporti disclosu	x. Contribution to reductions	Annual Report Ct into into Credits e them on the Shareholders
	EUCI	Source: MOE 37



CN Management and scheme 5

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Stage 2 Step 4 Understanding of potential

Formulate the plan based on the policy and strategy, and then execute it.

Step	Activities implemented by the company	Support for corporate activities (Examples)
4.Understanding of potential	 Investigate the reduction potential (= reduction measures) for achieving the targets. [procedure] Find the potential by energy saving. Find the potential by energy conversion Find the potential by switching current electricity to more decarbonized one. 	 Scope 1 and 2 reduction auditing Scope 3 reduction auditing

1. Energy Saving



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2. Energy Conversion



3. Decarbonized Electricity





Stage 2 Step 5 Formulation of plan

Formulate the plan based on the policy and strategy, and then execute it.

Step	Activities implemented by the company	Support for corporate activities (Examples)
5. Formulation of plan	 Build an execution plan with Step 4 reduction measures from target year to base year. [procedure] Judge the execution feasibility, priority and execution timing of each measure. If the feasibility is small because of technology level or price, set next review timing. Prepare and decide the medium to long-term plans. 	 Plan formulation support
GHG		- 50%
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Stage 3 Step 7 Reporting and Disclosure, etc.

Conduct reporting and disclosure of the results and situation. Contribute to the reductions.

Step	Activities implemented by the company	Support for corporate activities (Examples)
7. Reporting and disclosure	 Report the results of the GHG emission in the year to the government which is responsible for achieving NDC. Report the progress of the plan to various stakeholders who are interested in how company has been fullfing social responsibility. Disclose company's policy, strategy and risk and opportunity of climate-change-related business to investors for obtaining ESG investment. [procedure] Calculate the emissions for the fiscal year and report it to the SBT Secretariat. Disclose to stakeholders using environmental reports and integrated reports. As appropriate, receive verification by third parties. 	 Emissions calculation support Verification



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Stage 3 Step 7 Disclosure to Diverse Stakeholders

- Various requirements from stakeholders relating to decarbonization (Examples)
- 1) Industry groups: Industry standards and criteria
- 2) Customers: Information provision, target setting, reduction activities
- 3) Investors, banks: Engagement
- 4) Society: Criticism from SNS and local communities
- 5) Suppliers: Price negotiations
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Building Emission Factor Database





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SBT-certified Companies (In ASEAN)

companies in ASEAN which have acquired SBT certification (as of September 19, 2022)

#	country	company	#	country	company
1	Singapore	Keppel Land	1	Malaysia	Tai Wah Garment Industry Sdn. Bhd.
2	Singapore	M1 Limited	2	Malaysia	TERENGGANU SILICA CONSORTIUM SDN BHD
3	Singapore	Olam	3	Malaysia	Pantas Software Sdn. Bhd.
4	Singapore	Singapore Exchange Limited	4	Malaysia	Ramatex
5	Singapore	Singapore Telecommunications Limited (Singtel)	5	Malaysia	Ditrolic Energy Holdings Sdn. Bhd
6	Singapore	Flex Ltd.	1	Cambodia	Olive Apparel (Cambodia) Co., Ltd.
7	Singapore	GreenA Consultants Pte Ltd	2	Cambodia	Shoe Premier II (Cambodia) CO. Limited
8	Singapore	CapitaLand	1	Thailand	Starboard, Airush & SOMWR
9	Singapore	City Developments Limited	2	Thailand	Fortune Parts Industry Public Company Limited
10	Singapore	ComfortDelGro Corporation Limited	1	Philippines	GenerationHope, Inc.
			1	Vietnam	Julie Sandlau Vietnam. Itd



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Keppel Land's disclosure to stakeholders (1/4)



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Source: Keppel Land website



Keppel Land's disclosure to stakeholders (1/4)



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Source: Keppel Land website

Keppel Land's disclosure to stakeholders (2/4)





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Keppel Land's disclosure to stakeholders (4/4)



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Source: Keppel Land website

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