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Introduction

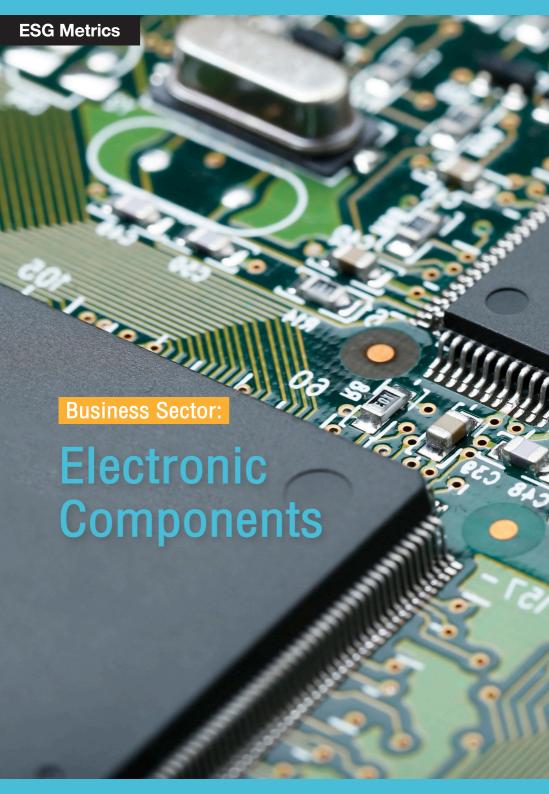
The reporting of information is an important process that enhances an organization's transparency and credibility with investors. Information regarding Environmental, Social, and Governance (ESG) performance has garnered significant interest, in addition to purely financial information. ESG-related information is considered vital as it has an increasing effect on investors' decisions. This is due to the growing intensity and complexity of environmental and social issues, which lead to risks in current business operations. Various industries face unique challenges due to the differing nature of their business operations. Therefore, the disclosure of business information needs to encompass details concerning risks and operational efficiencies that address the ESG issues specific to each industry group.

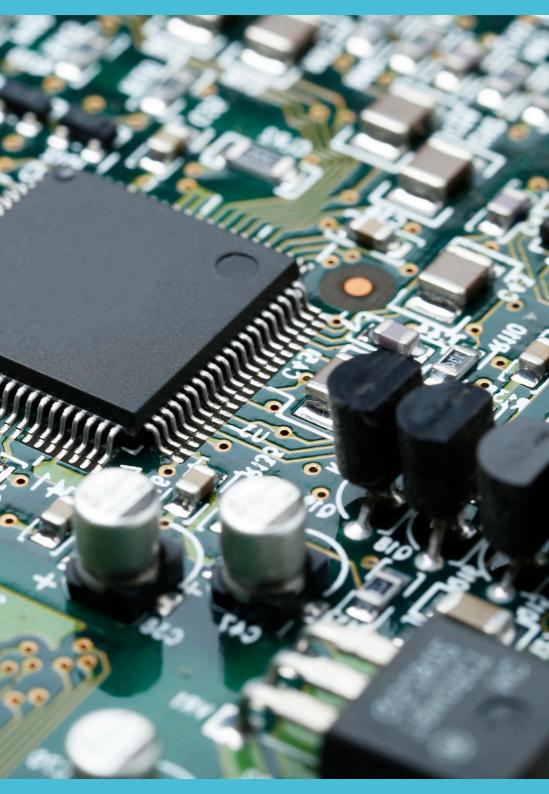
The Stock Exchange of Thailand (SET) prepared this Guidance on ESG Metrics for the Technology group to be used in conjunction with the Sustainability Reporting Guide for Listed Companies. This guidance describes the sustainability indicators of the Technology group, consisting of 2 parts as follows:

Part 1 describes the details of the indicators for the Technology group. This includes explaining the significance of the indicators, providing guidelines for reporting based on these indicators, and illustrating their connection with an international sustainability reporting framework—the GRI Standards and the Sustainable Development Goals (SDGs).

Part 2 presents summary tables that illustrate examples of performance based on annual indicators. These tables provide information that can be compared on a yearly basis and demonstrate the continuity of operations over time.

Listed companies should use this guidance in conjunction with the Sustainability Reporting Guide for Listed Companies to prepare sustainability reports categorized by industry group and business sector. This guidance can serve as both a tool and a checklist for monitoring performance within an organization and facilitating its continuous improvement. This approach will enrich the quality of sustainability information disclosure and reporting, aligning them with the current interests and needs of stakeholders.





Environmental Dimension Code **ESG Indicators GRI Standards SDGs** Electronic Waste (E-Waste) and ECO-E1 **Expired Product Management ECO-E1.1** Policy and guidelines regarding Disclosure Goal 12: electronic waste (e-waste) and 306-2 Responsible expired product management Consumption and Production Disclosure Goal 12: Weight of all electronic waste **ECO-E1.2** (e-waste) classified by e-waste and 306 - 3Responsible expired product management, such as: Consumption and - Weight of e-waste processed into Disclosure Production new products (recycle) 306-4 - Weight of e-waste being reused (reuse) Disclosure - Weight of e-waste that is separated 306-5 and collected through processing, and/or has components extracted from such waste for recycling (recovery), e.g., minerals, energy, or - Weight of e-waste disposed by landfill (landfill) - Weight of e-waste that is disposed of by other means Percentage of the products that are Disclosure Goal 12: ECO-E1.3 labeled with recommendation of 417-1 Responsible disposal method of expired products Consumption and Production

Rationale

• Information on electronic waste (e-waste) and expired product management reflects environmental responsibility, which arises from the business process and represents e-waste management efficiency to reduce disposal costs and create added value for the business.

Reporting Approach

A company should report the following information:

· Key summary of electronic waste (e-waste) and expired product management policy and guidelines.



- Management plans, monitoring method, and evaluation of the implementation of e-waste and expired product management.
- Total weight of all e-waste.
- Weight of e-waste categorized by management approaches, such as:

Waste Management	Weight of Electronic Waste (Kilograms)
Recycle	
Reuse	
Separation and collection through processing, and/or having components extracted from such waste for recycling (recovery), e.g., minerals, energy, or water	
Landfill	
Others	

 Percentage of products that are labeled with recommendation of disposal method of expired products is calculated as follows:

Percentage of products that are labeled with recommendation of disposal method of expired products =

Total number of products that are labeled with recommendation of disposal method of expired products

x 100

Total products

Code	ESG Indicators	GRI Standards	SDGs	
ECO-E2	Preventing the Contamination in Products	of Toxic Sub	ostances	
ECO-E2.1	Policy and guidelines regarding the prevention of contamination of toxic substances in products or raw materials	Disclosure 416-1	Goal 12: Responsible Consumption and Production	
ECO-E2.2	Process of quality inspection and control for raw materials to prevent contamination of toxic substances in products or raw materials	Disclosure 416-1	Goal 12: Responsible Consumption and Production	
ECO-E2.3	Number of cases where contamination of toxic substances is detected in products or raw materials, along with explanation of mitigation measures	Disclosure 416-1	Goal 12: Responsible Consumption and Production	

 Information about preventing toxic contamination resulting from operations in the electronics industry reflects efforts to mitigate social and environmental impacts. This can influence consumer confidence and decisions regarding the consumption of the company's products and/ or services.

Reporting Approach

A company should report the following information:

· Key summary of policy and guidelines regarding the prevention of contamination of toxic substances that violate laws, regulations, or international standards, such as RoHS (Restriction of Hazardous Substances), etc.

Remark: Examples of toxic substances in the electronics industry are as follows:

- Cadmium, Cd
- Lead. Pb
- Mercury, Hg
- Hexavalent chromium, Cr6+
- Polybrominated biphenyls, PBB
- Polybrominated diphenyl ethers, PBDE
- Bis (2-ethylhexyl) phthalate, DEHP
- Butyl benzyl phthalate, BBP
- Dibutyl phthalate, DBP
- Di-isobutyl phthalate, DIBP
- Process of inspecting raw materials and implementation plan to prevent contamination of toxic substances in products, with the aim of preventing the presence of residual substances in the raw materials through to final products.
- · Number of cases where contamination of toxic substances is detected in raw materials and products, along with explanations of mitigation measures.
- Additional reference:
 - RoHS (Restriction of Hazardous Substances) is an international regulation of the European Union regarding the use of hazardous substances in electrical and electronic equipment.

Code	ESG Indicators	GRI Standards	SDGs
ECO-E3	Climate Change Risks		
ECO-E3.1	Climate change risk assessment with explanation of potential impacts on business operations	Disclosure 201-2	Goal13: Climate Action
ECO-E3.2	Goals, plans, and measures to mitigate climate change risks	Disclosure 201-2	Goal13: Climate Action



Information on risks and adaptation measures in response to climate change reflects the
company's efforts to mitigate impacts of these risks and enhance business opportunities arising
from such risks. Furthermore, it showcases the management's preparedness and adaptability of
the business during emergency situations caused by natural disasters, which can significantly
affect business operations. Examples are droughts, floods, sea level changes, and extreme
weather conditions. These events impact production factors, land allocation, transportation, etc.

Reporting Approach

A company should report the following information:

- Risk factors arising from climate change and significantly impacting business operations, such as:
 - Examples of physical risks, such as impacts on businesses from changes in sea levels, atmospheric temperatures, natural freshwater sources, storm occurrences, forest fires, and impact on employee health due to increased exposure to high temperatures and heat radiation, etc.
 - Examples of regulatory risks include international laws and agreements that require businesses to be accountable for greenhouse gas emissions through taxation mechanisms, which consequently lead to significantly higher production costs, etc.
 - Other examples of risks, such as changes in the energy industry, the increasing demand for environmentally friendly technologies, products, and services, which leads to continuous environmental trends, etc.
- Quantitative and qualitative targets to prepare the business for climate change.
- Plans and measures to mitigate risks from climate change. Examples are as follows:
 - Utilizing clean energy or renewable energy sources that do not emit greenhouse gases.
 - Increasing energy efficiency by using less resources.
 - Carbon offsetting.

Social Dimension

Code **ESG Indicators GRI Standards** SDGs ECO-S1 Access to Digital Technology Policy and guidelines aimed at Disclosure Goal 9: ECO-S1.1 413-1 promoting access to digital technology Industry, Innovation and Infrastructure Projects to promote access to digital Disclosure Goal 9: ECO-S1.2 technology 413-1 Industry, Innovation and Infrastructure

 Information regarding access to digital technology reflects intention towards conducting business while simultaneously elevating the quality of life through digital technology products and services provided by companies. These must be capable of addressing the current societal demands.

Reporting Approach

Code

A company should report the following information:

- Summary of policy and guidelines related, reflecting the company's efforts to promote opportunities for accessing digital technology, which serve as a business potential towards society.
- Summary about the project aimed at promoting access to digital technology, encompassing tracking plans and measuring outcomes from the promotion that encourages creative and socially responsible use of digital technology by everyone. This aims to highlight the company's role in elevating the quality of life and society through processes, products, or services that are easily accessible, equitable, and safe for users.

GRI Standards

SDGs

ESG Indicators

ECO-S2	Promotion of Female Workford	e	
ECO-S2.1	Policy and guidelines related to promoting gender equality in the workplace	Disclosure 405-1	Goal 5: Gender Equality Goal 8: Decent Work and Economic Growth
ECO-S2.2	Number of female employees categorized by employment level: - Senior management level - Management level - Staff level	Disclosure 405-1	Goal 5: Gender Equality Goal 8: Decent Work and Economic Growth

Rationale

· Information on promoting the female workforce within the workplace reflects the creation of equal opportunities for professional growth among personnel in the company, without genderbased discrimination

Reporting Approach

- Summary of policy and guidelines related to promoting the female workforce within the workplace.
- Female-to-male employee ratio.



• Number of female employees categorized by employment level.

Employment Level	Total Number of Employees (People)		
Litipioyment Level	Female Male		
Senior management level			
Management level			
Staff level			

Code	ESG Indicators	GRI Standards	SDGs
ECO-S3	Combating Child Labor		
ECO-S3.1	Policy and guidelines regarding combating child labor within the organization	Disclosure 408-1	Goal 8: Decent Work and Economic Growth
ECO-S3.2	Policy and guidelines regarding combating child labor within the supply chain	Disclosure 408-1	Goal 8: Decent Work and Economic Growth
ECO-S3.3	Number of incidents or complaints or cases of child labor detected within the organization and the supply chain, along with remediation and mitigation measures	Disclosure 408-1	Goal 8: Decent Work and Economic Growth

Rationale

Information on combating child labor demonstrates the intention and efforts to prevent and
safeguard against violations of human rights related to child labor, both within the organization
and the supply chain. In the event of incidents or complaints related to the aforementioned
issues, it may impact the organization's reputation and trade.

Reporting Approach

- Summary of policy and guidelines that demonstrate the company's commitment to combat child labor or employ child workers, defined as individuals below the age of fifteen according to the definition by the International Labor Organization (ILO).
- Scope of policy or guidelines to combat child labor or employ child workers, covering business operations both within the organization and across the supply chain.
- Number of incidents or complaints or cases of child labor detected within the organization and the supply chain, along with remediation and mitigation measures.

Governance and Economic Dimension



Code	ESG Indicators	GRI Standards	SDGs
ECO-G1	Cybersecurity and Personal Da	ata Protectio	on
ECO-G1.1	Policy and guidelines on cybersecurity and personal data protection	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ECO-G1.2	Percentage of technology infrastructures that have been certified with cybersecurity standards, such as ISO 27001 or other relevant standards	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ECO-G1.3	Measures and guidelines related to personal data usage	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ECO-G1.4	Percentage of employees who have been trained in cybersecurity and personal data usage	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ECO-G1.5	Number of incidents or cases of cyberattacks against the company, along with mitigation measures	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ECO-G1.6	Number of incidents or cases of personal data breaches, along with mitigation measures	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure

Rationale

• Information related to cybersecurity management and personal data protection reflects the organization's capabilities and effectiveness in managing information technology and security systems. It encompasses the organization's data storage capabilities, leading to confidence in conducting business.

Reporting Approach

A company should report the following information:

- · Summary of policy and guidelines that demonstrate the company's management of technology security, information technology, and personal data in accordance with legal regulations and international standards.
- Percentage of technology infrastructures that have been certified with cybersecurity standards, such as ISO 27001 or other standards, calculated as follows:

Percentage of technology
infrastructures certified with
cybersecurity standards

Total number of technology infrastructures
certified with cybersecurity standards

- x 100

Total number of technology infrastructures



• Percentage of employees who have been trained in cybersecurity and personal data usage.

Percentage of employees trained in cybersecurity and	Total employees trained in cybersecurity and personal data usage		100		
personal data usage		Total number of employees	^	100	

- Number of incidents or cases of cyberattacks against the company, along with mitigation measures.
- Number of incidents or cases of personal data breaches, along with mitigation measures.
- Additional reference:
 - ISO 27001 is an internationally recognized standard for information security management systems.

Code	ESG Indicators	GRI Standards	SDGs
ECO-G2	Computer Systems and Inform	ation Techn	ology Security
ECO-G2.1	Policy and guidelines on computer systems and information technology security	G3-PA6*	Goal 9: Industry, Innovation and Infrastructure
ECO-G2.2	Number of testing instances to support emergency situations in computer systems and information technology	G3-PA6*	Goal 9: Industry, Innovation and Infrastructure
ECO-G2.3	Number of incidents or cases of failures in computer systems and information technology and their impacts on the business, along with mitigation measures	G3-PA6*	Goal 9: Industry, Innovation and Infrastructure

Rationale

Information on security management of computer systems and information technology reflects
the readiness to handle events that impact the stability of computer systems and information
technology. This is a crucial component in the production and services. Additionally, this instills
confidence in stakeholders that in case of emergency situations, the company has preventive
and recovery measures in place for computer systems and information technology promptly.

Reporting Approach

- Summary of policy and guidelines related to the security of computer systems and information technology, while demonstrating the emergency management plan to mitigate and prevent potential business damages.
- Number of instances of computer systems and information technology testing conducted to support emergency situations in the past year.
- Number of incidents or cases of computer systems and information technology failures and their impacts on the business, along with showcasing overall progress in management and mitigation measures.

^{*} Indicators according to GRI G3 Disclosures

Code	ESG Indicators	GRI Standards	SDGs
ECO-G3	Conflict-free Minerals Sourcing	g	
ECO-G3.1	Principles for suppliers regarding conflict-free mineral sourcing	Disclosure 414-1	Goal 12: Responsible Consumption and Production
ECO-G3.2	Percentage of suppliers acknowledging the conflict-free mineral sourcing principles	Disclosure 414-1	Goal 12: Responsible Consumption and Production
ECO-G3.3	Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles	Disclosure 414-1	Goal 12: Responsible Consumption and Production

• Trading minerals, which are associated with countries experiencing conflict, characterized by violence, and lacking political stability, or so-called conflict minerals, is considered to be indirectly supporting human rights violations and money laundering. Therefore, responsible and ethical mineral sourcing information will instill confidence that the company tracks its suppliers' mineral sourcing, which is pivotal in production, considering its societal and environmental impacts. If the company's suppliers are linked to conflict minerals, it could negatively affect the business reputation or escalate to a level of risk that hinders trade or leads to disputes with stakeholders.

Reporting Approach

A company should report the following information:

- Key summary of principles of conflict-free mineral sourcing in the procurement process, along with measures and communication strategies with suppliers, to track compliance with these principles and prevent the sourcing of conflict minerals in high-risk countries.
- Percentage of suppliers acknowledging the conflict-free mineral sourcing principles, using the following method:

Percentage of suppliers acknowledging the conflict-free		Total number of suppliers acknowledging the conflict-free mineral sourcing principles	v	100
mineral sourcing principles		Total number of suppliers	^	100

 Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles, using the following method:

Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles	 Total number of suppliers who have undergone training on the conflict-free mineral sourcing principles	x	100
mineral sourcing principles	 Total number of suppliers		

- Additional reference:
 - The European Commission has issued regulations to prevent the trade of conflict minerals.



Performance Summary:

ESG Metrics - Electronic Components Sector

Environmental Dimension						B	
Code	GRI Standards	ESG Indicators	Unit	3 years	Previous 2 years (e.g., 2019)	years	year
ECO-	E1 Elec	ctronic Waste (E-Waste) ar	nd Expire	ed Proc	luct Ma	nagem	ent
ECO-E1.1	Disclosure 306-2	Policy and guidelines regarding electronic waste (e-waste) and expired product management	Yes/No				
ECO-E1.2	Disclosure 306-3 Disclosure	Total weight of electronic waste (e-waste)	Kilograms				
	306-4 Disclosure 306-5	- Weight of e-waste processed into new products (recycle)	Kilograms				
		- Weight of e-waste being reused (reuse)	Kilograms				
		- Weight of e-waste that is separated, and collected through processing, and/or has components extracted from such waste for recycling (recovery)	Kilograms				
		– Weight of e-waste disposed by landfill (landfill)	Kilograms				
		- Others	Kilograms				
ECO-E1.3	Disclosure 417-1	Percentage of the products that are labeled with recommendation of disposal method of expired products	%				
ECO-	E2 Prev	venting the Contamination	of Toxic	c Subst	ances i	n Produ	ıcts
ECO-E2.1	Disclosure 416-1	Policy and guidelines regarding the prevention of contamination of toxic substances in products or raw materials	Yes/No				
ECO-E2.2	Disclosure 416-1	Processes of quality inspection and control of raw materials to prevent contamination of toxic substances in products or raw materials	Yes/No				

Code	GRI Standards	ESG Indicators	Unit	3 years	2 years	Previous years (e.g., 2020)	year	
ECO-E2.3	Disclosure 416-1	Number of cases where contamination of toxic substances is detected in products or raw materials, along with explanation of mitigation measures	No. of cases					
ECO-	E3 Clin	nate Change Risks						
ECO-E3.1	Disclosure 201-2	Climate change risk assessment with explanation of potential impacts on business operations	Yes/No					
ECO-E3.2	Disclosure 201-2	Goals, plans, and measures to mitigate climate change risks	Yes/No					
Soci	Social Dimension							
Code	GRI Standards	ESG Indicators	Unit	3 years	2 years	Previous years (e.g., 2020)	year	
ECO-	S1 Acc	ess to Digital Technology						
ECO-S1.1	Disclosure 413-1	Policy and guidelines aimed at promoting access to digital technology	Yes/No					
ECO-S1.2	Disclosure 413-1	Projects to promote access to digital technology	No. of projects					
ECO-	S2 Pro	motion of Female Workford	ce					
ECO-S2.1	Disclosure 405-1	Policy and guidelines related to promoting gender equality in the workplace	Yes/No					
ECO-S2.2	Disclosure 405-1	Number of female employees catego employment level	rized by	Female Male	Female Male	Female Male	Female Male	
		Total employees in the company	People					
		- Senior management level	People					
		- Management level	People					
		- Staff level	People					



Code	GRI Standards	ESG Indicators	Unit	3 years	2 years	Previous years (e.g., 2020)	year
ECO-	S3 Con	nbating Child Labor					
ECO-S3.1	Disclosure 408-1	Policy and guidelines regarding combating child labor within the organization	Yes/No				
ECO-S3.2	Disclosure 408-1	Policy and guidelines regarding combating child labor within the supply chain	Yes/No				
ECO-S3.3	Disclosure 408-1	Number of incidents or complaints or cases of child labor detected within the organization and the supply chain, along with remediation and mitigation measures	No. of cases				
Gove	ernan	ce and Econom	nic Di	imer	sior	1	G
Gove	Ernan GRI Standards	ce and Econom	nic Di	Previous 3 years	Previous 2 years	Previous years	year
Code	GRI Standards	ESG Indicators	Unit	Previous 3 years (e.g., 2018)	Previous 2 years	Previous	year
Code	GRI Standards		Unit	Previous 3 years (e.g., 2018)	Previous 2 years	Previous years	year
	GRI Standards G1 Cyb	ESG Indicators Dersecurity and Personal Dersecurity and guidelines on cybersecurity and personal data	Unit ata Prot	Previous 3 years (e.g., 2018)	Previous 2 years	Previous years	year
Code ECO-G1.1	GRI Standards G1 Cyb Disclosure 418-1 Disclosure	ersecurity and Personal D Policy and guidelines on cybersecurity and personal data protection Percentage of technology infrastructures that have been certified with cybersecurity standards, such as ISO 27001 or	Unit ata Prot Yes/No	Previous 3 years (e.g., 2018)	Previous 2 years	Previous years	year

No. of

cases

No. of

cases

personal data usage

mitigation measures

Number of incidents or cases of

along with mitigation measures

Number of incidents or cases of

personal data breaches, along with

cyberattacks against the company,

ECO-G1.5

ECO-G1.6

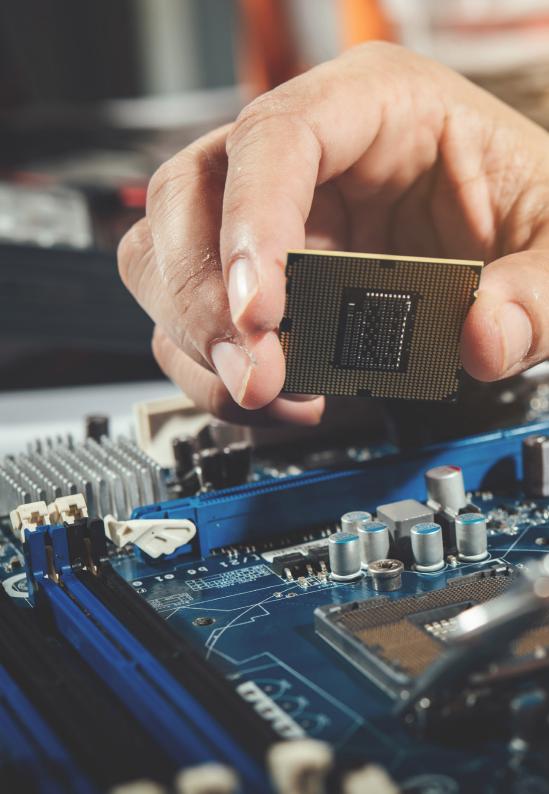
Disclosure

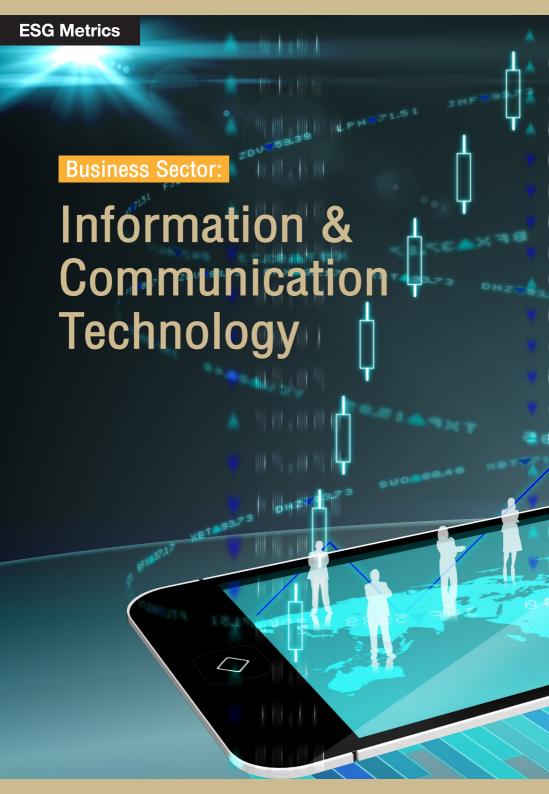
418-1

Disclosure

418-1

Code	GRI Standards	ESG Indicators	Unit	3 years	Previous 2 years (e.g., 2019)	years	Reporting year (e.g., 2021)
ECO-	G2 Con	nputer Systems and Inforn	nation T	echnolo	ogy Sec	urity	
ECO-G2.1	G3-PA6	Policy and guidelines on computer systems and information technology security	Yes/No				
ECO-G2.2	G3-PA6	Number of testing instances to support emergency situations in computer systems and information technology	No. of tests				
ECO-G2.3	G3-PA6	Number of incidents or cases of failure in computer systems and information technology and their impacts on the business, along with mitigation measures	No. of cases				
ECO-	G3 Con	flict-free Minerals Sourcin	ıg				
ECO-G3.1	Disclosure 414-1	Principles for suppliers regarding conflict-free mineral sourcing	Yes/No				
ECO-G3.2	Disclosure 414-1	Percentage of suppliers acknowledging the conflict-free mineral sourcing principles	%				
ECO-G3.3	Disclosure 414-1	Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles	%				







Environmental Dimension



Code	ESG Indicators	GRI Standards	SDGs
ICT-E1	Data Center Energy Manageme	ent	
ICT-E1.1	Data center energy management plan	Disclosure 302-1	Goal 7: Affordable and Clean Energy
ICT-E1.2	Power Usage Effectiveness (PUE) in data centers	-	Goal 7: Affordable and Clean Energy

Rationale

· Information about data center energy management reflects continuous efforts to conserve electricity in data centers, which contributes to more efficient cost and energy management for the company. Moreover, the Power Usage Effectiveness (PUE) metric demonstrates the energy usage measurement in data centers, aiming to enhance and optimize energy consumption effectively.

Reporting Approach

A company should report the following information:

- Summary of data center energy management plan demonstrating effective and highly efficient methods of managing and controlling energy usage.
- Power Usage Effectiveness (PUE) in data centers is calculated below:

Total facility power usage in data centers PUE Total IT equipment power usage in data centers

Remark: A PUE value that is close to or equal to 1 indicates an efficient management of electricity in the data center.

Code	ESG Indicators	GRI Standards	SDGs
ICT-E2	Electronic Waste (E-Waste) an Management	d Expired P	roduct
ICT-E2.1	Policy and guidelines regarding electronic waste (e-waste) and expired product management	Disclosure 306-2	Goal 12: Responsible Consumption and Production



Code	ESG Indicators	GRI Standards	SDGs
ICT-E2.2	Weight of all electronic waste (e-waste) classified by e-waste and expired product management, such as: Weight of e-waste processed into new products (recycle) Weight of e-waste being reused (reuse) Weight of e-waste that is separated and collected through processing, and/or has components extracted from such waste for recycling (recovery), e.g., minerals, energy, or water Weight of e-waste disposed by landfill (landfill) Weight of e-waste that is disposed of by other means	Disclosure 306-3 Disclosure 306-4 Disclosure 306-5	Goal 12: Responsible Consumption and Production
ICT-E2.3	Percentage of the products that are labeled with recommendation of disposal method of expired products	Disclosure 417-1	Goal 12: Responsible Consumption and Production

• Information on electronic waste (e-waste) and expired product management reflects environmental responsibility, which arises from the business process and represents e-waste management efficiency to reduce disposal costs and create added value for the business.

Reporting Approach

- Key summary of electronic waste (e-waste) and expired product management policy and guidelines.
- Management plans, monitoring method, and evaluation of the implementation of e-waste and expired product management.
- Total weight of all e-waste.

• Weight of e-waste categorized by management approaches, such as:

Waste Management	Weight of Electronic Waste (Kilograms)
Recycle	
Reuse	
Separation and collection through processing, and/or having components extracted from such waste for recycling (recovery), e.g., minerals, energy, or water	
Landfill	
Others	

· Percentage of products that are labeled with recommendation of disposal method of expired products is calculated as follows:

Percentage of products that are labeled with recommendation of disposal method of expired products =

Total number of products that are labeled with recommendation of disposal method of expired products

Total products

x 100

Code	ESG Indicators	GRI Standards	SDGS
ICT-E3	Climate Change Risks		
ICT-E3.1	Climate change risk assessment with explanation of potential impacts on business operations	Disclosure 201-2	Goal13: Climate Action
ICT-E3.2	Goals, plans, and measures to mitigate climate change risks	Disclosure 201-2	Goal13: Climate Action

ECC Indicators

Rationale

• Information on risks and adaptation measures in response to climate change reflects the company's efforts to mitigate impacts of these risks and enhance business opportunities arising from such risks. Furthermore, it showcases the management's preparedness and adaptability of the business during emergency situations caused by natural disasters, which can significantly affect business operations. Examples are droughts, floods, sea level changes, and extreme weather conditions. These events impact production factors, land allocation, transportation, etc.



Reporting Approach

A company should report the following information:

- Risk factors arising from climate change and significantly impacting business operations, such as:
 - Examples of physical risks, such as impacts on businesses from changes in sea levels, atmospheric temperatures, natural freshwater sources, storm occurrences, forest fires, and impact on employee health due to increased exposure to high temperatures and heat radiation, etc.
 - Examples of regulatory risks include international laws and agreements that require businesses to be accountable for greenhouse gas emissions through taxation mechanisms, which consequently lead to significantly higher production costs, etc.
 - Other examples of risks, such as changes in the energy industry, the increasing demand for environmentally friendly technologies, products, and services, which leads to continuous environmental trends, etc.
- Quantitative and qualitative targets to prepare the business for climate change.
- Plans and measures to mitigate risks from climate change. Examples are as follows:
 - Utilizing clean energy or renewable energy sources that do not emit greenhouse gases.
 - Increasing energy efficiency by using less resources.
 - Carbon offsetting.

Social Dimension



Code	ESG Indicators	GRI Standards	SDGs
ICT-S1	Access to Digital Technology		
ICT-S1.1	Policy and guidelines aimed at promoting access to digital technology	Disclosure 413-1	Goal 9: Industry, Innovation and Infrastructure
ICT-S1.2	Projects to promote access to digital technology	Disclosure 413-1	Goal 9: Industry, Innovation and Infrastructure

Rationale

Information regarding access to digital technology reflects intention towards conducting business
while simultaneously elevating the quality of life through digital technology products and services
provided by companies. These must be capable of addressing the current societal demands.

Reporting Approach

A company should report the following information:

- Summary of policy and guidelines related, reflecting the company's efforts to promote opportunities for accessing digital technology, which serve as a business potential towards
- Summary about the project aimed at promoting access to digital technology, encompassing tracking plans and measuring outcomes from the promotion that encourages creative and socially responsible use of digital technology by everyone. This aims to highlight the company's role in elevating the quality of life and society through processes, products, or services that are easily accessible, equitable, and safe for users.

Code	ESG Indicators	GRI Standards	SDGs
ICT-S2	Safety from Electromagnetic V	Vaves of Sig	nal Towers
ICT-S2.1	Evaluation of health risks and safety from electromagnetic waves of signal towers	Disclosure 413-2	Goal 9: Industry, Innovation and Infrastructure
ICT-S2.2	Number of incidents or customer complaints affected by electromagnetic waves of signal towers, along with remediation and mitigation measures	Disclosure 413-2	Goal 9: Industry, Innovation and Infrastructure

Rationale

 Information about safety from electromagnetic waves of signal towers demonstrates risk issues, and responsible management approach of the business in preventing health impacts on customers and communities surrounding the signal towers. This is aimed at ensuring stakeholders' confidence that the company's services will not result in such impacts and enhancing the company's overall credibility within the surrounding community.

Reporting Approach

- Summary of the approach in assessing health and safety risks from electromagnetic waves of signal towers, including outlining preventive measures briefly.
- Number of incidents or customer complaints affected by electromagnetic waves of signal towers, along with appropriate remediation and mitigation measures for those impacted.



Code	ESG Indicators	GRI Standards	SDGs
ICT-S3	Promotion of Female Workford		
ICT-S3.1	Policy and guidelines related to promoting gender equality in the workplace	Disclosure 405-1	Goal 5: Gender Equality Goal 8: Decent Work and Economic Growth
ICT-S3.2	Number of female employees categorized by employment level: - Senior management level - Management level - Staff level	Disclosure 405-1	Goal 5: Gender Equality Goal 8: Decent Work and Economic Growth

Information on promoting the female workforce within the workplace reflects the creation of
equal opportunities for professional growth among personnel in the company, without genderbased discrimination.

Reporting Approach

- Summary of policy and guidelines related to promoting the female workforce within the workplace.
- Female-to-male employee ratio.
- Number of female employees categorized by employment level.

Employment Level	Total Number of Employees (People)			
Employment Level	Female	Male		
Senior management level				
Management level				
Staff level				

Code	ESG Indicators	GRI Standards	SDGs
ICT-S4	Combating Child Labor		
ICT-S4.1	Policy and guidelines regarding combating child labor within the organization	Disclosure 408-1	Goal 8: Decent Work and Economic Growth

Code	ESG Indicators	GRI Standards	SDGs
ICT-S4.2	Policy and guidelines regarding combating child labor within the supply chain	Disclosure 408-1	Goal 8: Decent Work and Economic Growth
ICT-S4.3	Number of incidents or complaints or cases of child labor detected within the organization and the supply chain, along with remediation and mitigation measures	Disclosure 408-1	Goal 8: Decent Work and Economic Growth

 Information on combating child labor demonstrates the intention and efforts to prevent and safeguard against violations of human rights related to child labor, both within the organization and the supply chain. In the event of incidents or complaints related to the aforementioned issues, it may impact the organization's reputation and trade.

Reporting Approach

Code

A company should report the following information:

- · Summary of policy and guidelines that demonstrate the company's commitment to combat child labor or employ child workers, defined as individuals below the age of fifteen according to the definition by the International Labor Organization (ILO).
- Scope of policy or guidelines to combat child labor or employ child workers, covering business operations both within the organization and across the supply chain.
- Number of incidents or complaints or cases of child labor detected within the organization and the supply chain, along with remediation and mitigation measures.

Governance and Economic Dimension

ESG Indicators



SDGs

GRI Standards

ICT-G1	Cybersecurity and Personal Da	ata Protectio	on
ICT-G1.1	Policy and guidelines on cybersecurity and personal data protection	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ICT-G1.2	Percentage of technology infrastructures that have been certified with cybersecurity standards, such as ISO 27001 or other relevant standards	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure



Code	ESG Indicators	GRI Standards	SDGs
ICT-G1.3	Measures and guidelines related to personal data usage	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ICT-G1.4	Percentage of employees who have been trained in cybersecurity and personal data usage	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ICT-G1.5	Number of incidents or cases of cyberattacks against the company, along with mitigation measures	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure
ICT-G1.6	Number of incidents or cases of personal data breaches, along with mitigation measures	Disclosure 418-1	Goal 9: Industry, Innovation and Infrastructure

Information related to cybersecurity management and personal data protection reflects the
organization's capabilities and effectiveness in managing information technology and security
systems. It encompasses the organization's data storage capabilities, leading to confidence in
conducting business.

Reporting Approach

A company should report the following information:

- Summary of policy and guidelines that demonstrate the company's management of technology security, information technology, and personal data in accordance with legal regulations and international standards.
- Percentage of technology infrastructures that have been certified with cybersecurity standards, such as ISO 27001 or other standards, calculated as follows:

Percentage of technology infrastructures certified with cybersecurity standards	_	Total number of technology infrastructures certified with cybersecurity standards	_ Y	100
		Total number of technology infrastructures	- ^	100

• Percentage of employees who have been trained in cybersecurity and personal data usage.

Percentage of employees trained in cybersecurity and	_	Total employees trained in cybersecurity and personal data usage		100
personal data usage	_	Total number of employees	_ ^	100

- Number of incidents or cases of cyberattacks against the company, along with mitigation measures.
- Number of incidents or cases of personal data breaches, along with mitigation measures.
- Additional reference:
 - ISO 27001 is an internationally recognized standard for information security management systems.

Code	ESG Indicators	GRI Standards	SDGs
ICT-G2	Computer Systems and Inform	ation Techn	ology Security
ICT-G2.1	Policy and guidelines on computer systems and information technology security	G3-PA6*	Goal 9: Industry, Innovation and Infrastructure
ICT-G2.2	Number of testing instances to support emergency situations in computer systems and information technology	G3-PA6*	Goal 9: Industry, Innovation and Infrastructure
ICT-G2.3	Number of incidents or cases of failures in computer systems and information technology and their impacts on the business, along with mitigation measures	G3-PA6*	Goal 9: Industry, Innovation and Infrastructure

 Information on security management of computer systems and information technology reflects the readiness to handle events that impact the stability of computer systems and information technology. This is a crucial component in the production and services. Additionally, this instills confidence in stakeholders that in case of emergency situations, the company has preventive and recovery measures in place for computer systems and information technology promptly.

Reporting Approach

- Summary of policy and guidelines related to the security of computer systems and information technology, while demonstrating the emergency management plan to mitigate and prevent potential business damages.
- Number of instances of computer systems and information technology testing conducted to support emergency situations in the past year.
- Number of incidents or cases of computer systems and information technology failures and their impacts on the business, along with showcasing overall progress in management and mitigation measures.

^{*} Indicators according to GRI G3 Disclosures



Code	ESG Indicators	GRI Standards	SDGs
ICT-G3	Conflict-free Minerals Sourcing	g	
ICT-G3.1	Principles for suppliers regarding conflict-free mineral sourcing	Disclosure 414-1	Goal 12: Responsible Consumption and Production
ICT-G3.2	Percentage of suppliers acknowledging the conflict-free mineral sourcing principles	Disclosure 414-1	Goal 12: Responsible Consumption and Production
ICT-G3.3	Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles	Disclosure 414-1	Goal 12: Responsible Consumption and Production

• Trading minerals, which are associated with countries experiencing conflict, characterized by violence, and lacking political stability, or so-called conflict minerals, is considered to be indirectly supporting human rights violations and money laundering. Therefore, responsible and ethical mineral sourcing information will instill confidence that the company tracks its suppliers' mineral sourcing, which is pivotal in production, considering its societal and environmental impacts. If the company's suppliers are linked to conflict minerals, it could negatively affect the business reputation or escalate to a level of risk that hinders trade or leads to disputes with stakeholders.

Reporting Approach

A company should report the following information:

- Key summary of principles of conflict-free mineral sourcing in the procurement process, along
 with measures and communication strategies with suppliers, to track compliance with these
 principles and prevent the sourcing of conflict minerals in high-risk countries.
- Percentage of suppliers acknowledging the conflict-free mineral sourcing principles, using the following method:

Percentage of suppliers acknowledging the conflict-free =	Total number of suppliers acknowledging the conflict-free mineral sourcing principles		100
mineral sourcing principles	Total number of suppliers	^	100

 Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles, using the following method:

Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles	= .	Total number of suppliers who have undergone training on the conflict-free mineral sourcing principles	v	100
		Total number of suppliers	^	100

- Additional reference:
 - The European Commission has issued regulations to prevent the trade of conflict minerals.

Performance Summary:

ESG Metrics - Information & Communication Technology Sector

Environmental Dimension									
Code	GRI Standards	ESG Indicators	Unit	3 years	Previous 2 years (e.g., 2019)	years	Reporting year (e.g., 2021)		
ICT-E	1 Data	a Center Energy Managem	ent						
ICT-E1.1	Disclosure 302-1	Data center energy management plan	Yes/No						
ICT-E1.2	-	Power Usage Effectiveness (PUE) in data center	-						
ICT-E	2 Elec	ctronic Waste (E-Waste) ar	nd Expir	ed Proc	luct Ma	nagem	ent		
ICT-E2.1	Disclosure 306-2	Policy and guidelines regarding electronic waste (e-waste) and expired product management	Yes/No						
ICT-E2.2	Disclosure 306-3 Disclosure	Total weight of electronic waste (e-waste)	Kilograms						
	306-4 Disclosure 306-5	- Weight of e-waste processed into new products (recycle)	Kilograms						
		- Weight of e-waste being reused (reuse)	Kilograms						
		 Weight of e-waste that is separated, and collected through processing, and/or has components extracted from such waste for recycling (recovery) 	Kilograms						
		– Weight of e-waste disposed by landfill (landfill)	Kilograms						
		- Others	Kilograms						
ICT-E2.3	Disclosure 417-1	Percentage of the products that are labeled with recommendation of disposal method of expired products	%						



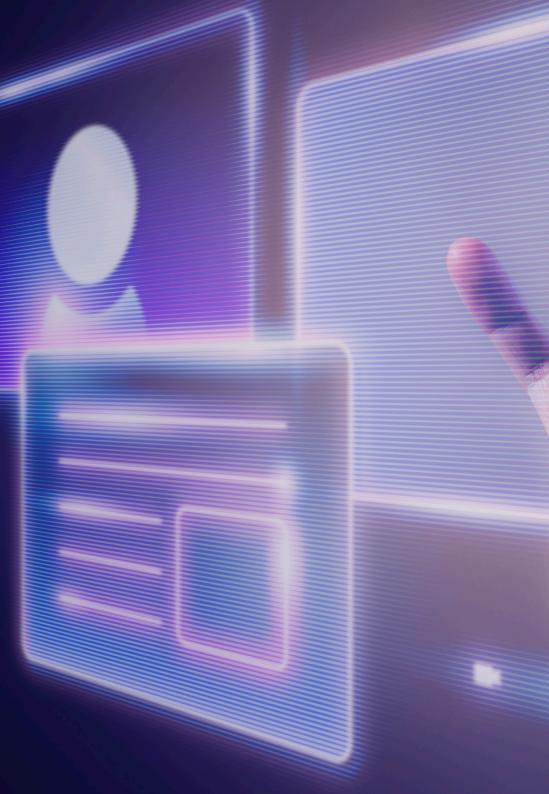
Code	GRI Standards	ESG Indicators	Unit	3 years	Previous 2 years (e.g., 2019)	years	Reporting year (e.g., 2021)
ICT-E	3 Clin	nate Change Risks					
ICT-E3.1	Disclosure 201-2	Climate change risk assessment with explanation of potential impacts on business operations	Yes/No				
ICT-E3.2	Disclosure 201-2	Goals, plans, and measures to mitigate climate change risks	Yes/No				
Soci	al Din	nension					S
Code	GRI Standards	ESG Indicators	Unit	3 years	Previous 2 years (e.g., 2019)	years	Reporting year (e.g., 2021)
ICT-S	1 Acc	ess to Digital Technology					
ICT-S1.1	Disclosure 413-1	Policy and guidelines aimed at promoting access to digital technology	Yes/No				
ICT-S1.2	Disclosure 413-1	Projects to promote access to digital technology	No. of projects				
ICT-S	2 Safe	ety from Electromagnetic V	Vaves o	f Signa	l Tower	s	
ICT-S2.1	Disclosure 413-2	Evaluation of health risks and safety from electromagnetic waves of signal towers	Yes/No				
ICT-S2.2	Disclosure 413-2	Number of incidents or customer complaints affected by electromagnetic waves of signal towers, along with remediation and mitigation measures	No. of cases				
ICT-S	3 Pro	motion of Female Workford	се				
ICT-S3.1	Disclosure 405-1	Policy and guidelines related to promoting gender equality in the workplace	Yes/No				

Code	GRI Standards	ESG Indicators	Unit	3 years		Previous 2 years (e.g., 2019)		Previous years (e.g., 2020)		year	
ICT-S3.2	Disclosure 405-1	Number of female employees categorized by employment level		Female	Male	Female	Male	Female	Male	Female	Male
		Total employees in the company	People								
		- Senior management level	People								
		- Management level	People								
		- Staff level	People								
ICT-S	4 Con	nbating Child Labor									
ICT-S4.1	Disclosure 408-1	Policy and guidelines regarding combating child labor within the organization	Yes/No								
ICT-S4.2	Disclosure 408-1	Policy and guidelines regarding combating child labor within the supply chain	Yes/No				•••••		•••••		•••••
ICT-S4.3	Disclosure 408-1	Number of incidents or complaints or cases of child labor detected within the organization and the supply chain, along with remediation and mitigation measures	No. of cases								
Gove	GRI Standards	ce and Econom	oic Di	Prev 3 ye	rious ears	Prev 2 ye	rious ears	Prev	ars	ує	ar
ICT-G	1 Cyb	ersecurity and Personal D	ata Prot	ecti	on						
ICT-G1.1	Disclosure 418-1	Policy and guidelines on cybersecurity and personal data protection	Yes/No								
ICT-G1.2	Disclosure 418-1	Percentage of technology infrastructures that have been certified with cybersecurity standards, such as ISO 27001 or other relevant standards	%		•••••		•••••		•••••		

other relevant standards



Code	GRI Standards	ESG Indicators	Unit	3 years	2 years	Previous years (e.g., 2020)	Reporting year (e.g., 2021)
ICT-G1.3	Disclosure 418-1	Measures and guidelines related to personal data usage	Yes/No				
ICT-G1.4	Disclosure 418-1	Percentage of employees who have been trained in cybersecurity and personal data usage	%				
ICT-G1.5	Disclosure 418-1	Number of incidents or cases of cyberattacks against the company, along with mitigation measures	No. of cases				
ICT-G1.6	Disclosure 418-1	Number of incidents or cases of personal data breaches, along with mitigation measures	No. of cases				
ICT-G	2 Con	nputer Systems and Inforn	nation T	echnolo	ogy Sec	urity	
ICT-G2.1	G3-PA6	Policy and guidelines on computer systems and information technology security	Yes/No				
ICT-G2.2	G3-PA6	Number of testing instances to support emergency situations in computer systems and information technology	No. of tests				
ICT-G2.3	G3-PA6	Number of incidents or cases of failure in computer systems and information technology and their impacts on the business, along with mitigation measures	No. of cases				
ICT-G	3 Con	flict-free Minerals Sourcin	ıg				
ICT-G3.1	Disclosure 414-1	Principles for suppliers regarding conflict-free mineral sourcing	Yes/No				
ICT-G3.2	Disclosure 414-1	Percentage of suppliers acknowledging the conflict-free mineral sourcing principles	%				
ICT-G3.3	Disclosure 414-1	Percentage of suppliers who have undergone training on the conflict-free mineral sourcing principles	%				







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