

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Founded in 1983, Advantech is a leader in providing trusted innovative embedded and automation products and solutions. Advantech offers comprehensive system integration, hardware, software, customer-centric design services, and global logistics support; all backed by industry-leading front and back office e-business solutions. Advantech has always been an innovator in the development and manufacture of high-quality, high-performance computing platforms. We cooperate closely with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries. To realize our corporate vision of Enabling an Intelligent Planet, Advantech will continue collaborating and Partnering for Smart city & IoT Solutions. At the core of Advantech's implementation of corporate citizenship is its commitment to Corporate Social Responsibility (CSR). In accord with that commitment, Advantech has established its Board, Audit Committee, Compensation Committee, Risk Management Committee and other mechanisms to oversee and help organize the corporate operation, audit institutions, improve corporate governance and make it fully responsible to its valued stakeholders. Moreover, through its quality management commitment which has been an essential part of its corporate culture, Advantech is devoted to consistent innovation in design, product quality and reliability, and in being responsible toward both its customers and the environment. Due to our on-going efforts, Advantech has not only grown steadily in size and profit, but also repeatedly won the endorsements of many well-known brands and product awards at home and abroad.

1. Building a Successful Sustainable LITA (altruistic) Enterprise:

Advantech believes, a corporation is just like an LITA (altruistic) tree rooted in the earth. To make the tree grow strongly, sunshine, air, water, and nutrients are needed, none is dispensable.

We think that perfect company governance and stakeholder balance will root the corporation deeply and establish a solid foundation. Sound organization development will grow into a strong trunk to support the corporation's operations; active talent cultivation will make the corporation flourish and expand with green shoots for market growth, and finally bear rich profitable fruit that the whole corporation can share together; and finally at last the fruit will drop to the ground to nourish the earth, so a corporation will also undertake full responsibility as a social citizen.

Advantech believes in altruism, and considers the "altruist LITA tree" spirit is the core value of the corporation. We believe, as a social organism, a corporation must sow good deeds with an altruistic spirit, and naturally gain unlimited blessings through a continuous virtuous cycle.

Advantech is proud and conscientious about its social citizenship responsibilities, and is expected to lead the whole industry to a place where everyone can live and work in peace and contentment.

2. Consider Stakeholder Balance as the Base of Operation:

Advantech thinks the base of sustainable operation is, seeking the perfect balance of stockholders. Only if the foundation is solid, can the enterprise last and the LITA tree spirit be implemented. We abandon the traditional narrow value that aims to maximize stockholder benefit as the only goal. We believe, that in addition to the support of stockholders, the growth of a corporation also needs active employee involvement, customer satisfaction and trust, along with all their share of virtuous social engagement. For stockholders with long support, we promise we will always operate in an open and honest spirit and reward them with a stable dividend as we progress toward a sustainable operation.

For employees, we promise Advantech will provide an honest and open development environment where employees can enjoy a beautiful life and entrust themselves for a lifetime.

For customers that trust us, we promise we will always focus on being a global leader in the system integration service field, and take "Enabling an intelligent planet" as our long-term vision for future development.

For society that coexists and thrives together with us, we promise we will dedicate ourselves to becoming a model corporate citizen, actively promote an altruistic spirit, and benefit the public with our industrial results, and return the corporation's growth back to society.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2017	December 31 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

China
Taiwan (Province of China)

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

TWD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board/Executive board	1) At the core of Advantech's implementation of corporate citizenship is its commitment to Corporate Social Responsibility (CSR). In accord with that commitment, Advantech has established its Board, Audit Committee, Compensation Committee, Risk Management Committee and other mechanisms to oversee and help organize the corporate operation, audit institutions, improve corporate governance and make it fully responsible to its valued stakeholders. 2) The organization of risk management steering committee: Board Chairman : CEO; Director on Board: COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. Everyone in Advantech has responsibility for enterprise risk management. The Chief Executive Officer is ultimately responsible and assumes ownership. Management team supports the risk management policy & process, promote compliance with its risk appetite, and manage risks within their spheres of responsibility.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives	The organization of risk and climate change management steering committee: Board Chairman : CEO; Director on Board: COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. Everyone in Advantech has responsibility for enterprise risk management. The Chief Executive Officer is ultimately responsible and assumes ownership. Management team supports the risk management policy & process, promote compliance with its risk appetite, and manage risks within their spheres of responsibility. All employees are expected to be familiar with this policy, take a risk management approach to their work and escalate issues to the management team. The region, group and function heads are responsible for implementing the policy, monitoring its implementation in the everyday activities of their division. The risk management steering committee consists of the key executives is required to review and monitoring of the risk management process semi-annually to ensure that risks are effectively identified and assessed and that appropriate controls and responses are in place. An irregular meeting is hold by CEO when significant risk is triggered.

C1.2

(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Assessing climate-related risks and opportunities	Annually
Chief Financial Officer (CFO)	Both assessing and managing climate-related risks and opportunities	Annually
Chief Risks Officer (CRO)	Both assessing and managing climate-related risks and opportunities	Annually
Corporate responsibility committee	Both assessing and managing climate-related risks and opportunities	Annually
Safety, Health, Environment and Quality committee	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

The organization of risk/climate change management steering committee: Board Chairman : CEO; Director on Board: COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. Everyone in Advantech has responsibility for enterprise risk management. Advantech also invited cross-functional experts to join the CSR team and follow PDCA methodology to keep improvement. All the CSR(Including CDP) program status reports to CEO and board of directors

Specific description of responsibilities

1)The Chief Executive Officer is ultimately responsible and assumes ownership.

2)CFO (Chief Financial Officer) responsible for financial decisions related to climate change and Legal Manager e.g. exchange rate, interest rate, global regulation analysis

3) COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. :

1.Responsible for financial, operational, technical and quality risks arising from waiting for changes

2.Financial Risks

3.Operational Risks

4.Technology Risks

5.Quality Risks

6.Human Resource Risks

4) Overall environmental factors that cause potential threat to Advantech's operations and business ranging from climate change impact, exchange rate, interest rate, political situation, important social event, educational level of invested area, significant market booming or depression that causes demand fluctuation, commodity and material price changes posing a threat to Advantech's operation and business, etc.

5) The region, group and function heads are responsible for implementing the policy, monitoring its implementation in the everyday activities of their division. All employees are expected to be familiar with this policy, take a risk management approach to their work and escalate issues to the management team.

6) Climate-related issues Monitor and Follow-up

Advantech used the life cycle assessment (LCA) method to define the company's 10-year sustainable development goals. Advantech has successfully established identification procedures and declarations that conform to relevant laws and regulations, formulated green supply chain management standards, set design criteria for green products, achieved green product certifications, conducted GHG inventory, and published CSR reports. In the future, the scope of corporate disclosure will be expanded from organization-level inventory to include investigations related to product carbon/ water footprints. Advantech also aims to identify additional opportunities for managing GHG and water resources within supply chains, develop low-carbon, water-saving products, and thoroughly implement sustainable corporate development.

Advantech's short term sustainable development goal

- International environmental protection legislation - RoHs • JGPSSI • REACH
- Green supply chain management Supplier management • Green procurement specifications
- Energy saving projects

Advantech's Medium term sustainable development goal

- Ecological design Green product design
- Life cycle assessment
- Environmental information disclosure/ Green labels
- Greenhouse gasses inventory /Carbon footprint/carbon neutrality/water footprint

Advantech's long term sustainable development goal

- Sustainable corporate development Corporate social responsibility activities
- Sustainable corporate development strategies

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Board Chair

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

The Chief Executive Officer is ultimately responsible and assumes ownership.

Who is entitled to benefit from these incentives?

Board/Executive board

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

CFO (Chief Financial Officer) responsible for financial decisions related to climate change and Legal Manager e.g. exchange rate, interest rate, global regulation analysis

Who is entitled to benefit from these incentives?

Director on board

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. : 1.Financial Risks 2.Operational Risks 3.Technology Risks 4.Quality Risks 5.Human Resource Risks

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Overall environmental factors that cause potential threat to Advantech's operations and business ranging from exchange rate, interest rate, political situation, important social event, educational level of invested area, significant market booming or depression that causes demand fluctuation, commodity and material price changes posing a threat to Advantech's operation and business, etc.

Who is entitled to benefit from these incentives?

Business unit manager

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

The region, group and function heads are responsible for implementing the policy, monitoring its implementation in the everyday activities of their division.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

All employees are expected to be familiar with this policy, take a risk management approach to their work and escalate issues to the management team.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	1	3	Natural disasters that often occur today (such as flooding, water shortage, power outages, high temperatures, etc.) have high probability of occurrence and high risks. Therefore, Advantech has the best disaster response planning and training for such short-term risks (BCP program in place). Besides, Advantech used the life cycle assessment (LCA) method to define the company's 10-year sustainable development goals. Advantech has successfully established identification procedures and declarations that conform to relevant laws and regulations, formulated green supply chain management standards, set design criteria for green products, achieved green product certifications, conducted GHG inventory, and published CSR reports. In the future, the scope of corporate disclosure will be expanded from organization-level inventory to include investigations related to product carbon/ water footprints. Advantech also aims to identify additional opportunities for managing GHG and water resources within supply chains, develop low-carbon, water-saving products, and thoroughly implement sustainable corporate development. Advantech's short term sustainable development goal - International environmental protection legislation - RoHs • JGPESS • REACH - Green supply chain management Supplier management • Green procurement specifications - Energy saving projects
Medium-term	3	5	Policy, market and technology development will change due to the trend of climate change, Advantech will always pay attention on this or understand the future of the market and technology. Therefore, Advantech used the life cycle assessment (LCA) method to define the company's 10-year sustainable development goals. Advantech has successfully established identification procedures and declarations that conform to relevant laws and regulations, formulated green supply chain management standards, set design criteria for green products, achieved green product certifications, conducted GHG inventory, and published CSR reports. In the future, the scope of corporate disclosure will be expanded from organization-level inventory to include investigations related to product carbon/ water footprints. Advantech also aims to identify additional opportunities for managing GHG and water resources within supply chains, develop low-carbon, water-saving products, and thoroughly implement sustainable corporate development. Advantech's Medium term sustainable development goal - Ecological design Green product design - Life cycle assessment - Environmental information disclosure/ Green labels - Greenhouse gasses inventory /Carbon footprint/carbon neutrality/water footprint
Long-term	5	10	For other low-risk or low-incidence phenomena, the company will regularly review the risk assessment and consider these risks in the future related operational decisions, Advantech used the life cycle assessment (LCA) method to define the company's 10-year sustainable development goals. Advantech has successfully established identification procedures and declarations that conform to relevant laws and regulations, formulated green supply chain management standards, set design criteria for green products, achieved green product certifications, conducted GHG inventory, and published CSR reports. In the future, the scope of corporate disclosure will be expanded from organization-level inventory to include investigations related to product carbon/ water footprints. Advantech also aims to identify additional opportunities for managing GHG and water resources within supply chains, develop low-carbon, water-saving products, and thoroughly implement sustainable corporate development. Advantech's long term sustainable development goal - Sustainable corporate development Corporate social responsibility activities - Sustainable corporate development strategies

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Annually	>6 years	Advantech focuses on heating two degrees C, Governments around the world, including Taiwan and China, have focused on sustainable development, smart cities, energy conservation and environmental protection issues, and with the trend of Internet of Things and Industry 4.0, the complete solutions provided by Advantech have the following analysis. 1) Climate risk assessment and management 2) Advantech established BCP (Business Continuity Plan) based on both corporate vision and sustainability. We defined significant natural environmental changes that pose impact or threat on Advantech's operation and business continuity. 3) Frequency of monitoring Monthly: KPI Report Annually: CSR committee meeting /Management Review Meeting

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

1 Framework for climate risk categories (what types of climate risks are available to companies)

The risks facing an organization and its operations can result from factors both external and internal to the organization. The following key risk categories and risk sources are identified: Six Key risk categories: - Climate Risks - Financial Risks - Operational Risks - Technology Risks - Quality Risks - Human Resource Risks. Sources: Natural Hazard: Significant geographical & natural environmental changes that pose impact or threat on Advantech's operation and business continuity.

2 How is the risk associated with climate change at the company level assessed? (Company level risk is representative, and this risk has an impact on the overall company group, such as reputation, regulations...)

- Risks/opportunities are assessed at a Company Level:

Advantech established BCP (Business Continuity Plan) based on both corporate vision and sustainability. We defined significant natural environmental changes that pose impact or threat on Advantech's operation and business continuity.

- Government units are exploring the possibilities of introducing a carbon tax or energy tax, which would increase the cost of business operations and raise the price of raw materials.

- Regulatory requirements on a product's energy efficiency are likely to increase verification costs that are required during product development.

- Extreme climates increase the likelihood of drought, powerful typhoons, and higher power consumption, which exert a direct influence on production and operation.

3 How is the risk associated with climate change at the asset level assessed (the impact of the company's production equipment or personnel, the risk to the operation)

- Risks/opportunities are assessed at Asset Level

EHS/CSR annual Management Review Meeting is arranged to review the KPIs and establishment of future direction and target. Advantech will collect data from all sites and review in the annual Management Review Meeting

4 How to assess the priority of climate risks (Show the process of assessing climate risks, how to classify risks, how to assess the scope of risks, and how to assess the magnitude of risks.)

Advantech considers corporate risk management as the responsibility of every member in the company. Department directors fully promote risk management policies and conduct process trainings, as well as manage those potential risks within their scope of

responsibilities. All employees are requested to understand the company's risk management policies and incorporate risk management in their daily work, as well as report all possible risk factors in a timely manner. We expect to adopt a top-down education and management approach to internalize risk management as an essential part of the organizational culture, thus minimizing the possibility of risks.

5 How to assess the substantial financial impact of risk

The organization of risk management steering committee: Board Chairman : CEO; Director on Board: COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. Everyone in Advantech has responsibility for enterprise risk management. The Chief Executive Officer is ultimately responsible and assumes ownership. Management team supports the risk management policy & process, promote compliance with its risk appetite, and manage risks within their spheres of responsibility. And the CFO is Responsible for financial decisions related to climate change

Frequency of monitoring Monthly: KPI Report Annually: CSR committee meeting /Management Review Meeting

[Please refer to Advantech CSR website for detail reference]

http://www.advantech.com/csr/social_contribution/care_for_environment_overview/cwgcchange

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Government units are exploring the possibilities of introducing a carbon tax or energy tax, which would increase the cost of business operations and raise the price of raw materials.
Emerging regulation	Relevant, always included	Government units are exploring the possibilities of introducing a carbon tax or energy tax, which would increase the cost of business operations and raise the price of raw materials.
Technology	Relevant, always included	1) Advantech evaluates and understands future climate risks and invests in research and development to reduce risks. Intelligent building design can reduce risks and solve excessive energy consumption. 2) Extreme climates increase the likelihood of drought, powerful typhoons, and higher power consumption, which exert a direct influence on production and operation. 3) Proposing energy conservation solutions by Advantech's smart building team
Legal	Relevant, always included	If the risk is not disclosed enough, there may be a risk of litigation, and the current company's practices are satisfied by investors or shareholders.
Market	Relevant, always included	1) Regulatory requirements on a product's energy efficiency are likely to increase verification costs that are required during product development. 2) Employing energy-efficient designs and products must comply with energy star regulations 3) Formulating green product design criteria and obtaining green product labeling certification
Reputation	Relevant, always included	Advantech considers corporate risk management as the responsibility of every member in the company. Department directors fully promote risk management policies and conduct process trainings, as well as manage those potential risks within their scope of responsibilities. All employees are requested to understand the company's risk management policies and incorporate risk management in their daily work, as well as report all possible risk factors in a timely manner. We expect to adopt a top-down education and management approach to internalize risk management as an essential part of the organizational culture, thus minimizing the possibility of risks.
Acute physical	Relevant, always included	Acute risk (flooding, lack of electricity...) Advantech has considered in the strategic planning, immediate response or improvement for short-term risks, regular tracking and evaluation of long-term risks, and planning for phased response or improvement
Chronic physical	Relevant, always included	Regarding to Chronic risk (sea level rise...) Advantech has considered in the strategic planning, immediate response or improvement for short-term risks, regular tracking and evaluation of long-term risks, and planning for phased response or improvement
Upstream	Relevant, always included	If the upstream does not do a good job in climate risk management, or if Advantech does not control the upstream climate risk, it will have any impact. Therefore, Advantech has the following risk management or risk dispersion for suppliers. 1) Building Sustainable Supply Chain With the sustainable development operating concept, we and supply chain partners have built stable cooperating relationships. Except quality considerations, we also hope through building sustainable supply chain, we and the partners live up to our corporate social responsibilities and contribute to environmental protection together. Advantech has gone all out in supply chain management in order to guarantee all products are green and conform to environmental safety and sanitation regulations. Following government environmental protection and labor safety and sanitation regulations concerning pollution control and disaster prevention, we adopted ISO 14001 environment management systems in 1996, and OHSAS 18001 employee safety and sanitation management systems in 2005. We call on all Advantech suppliers to respond to environmental improvement and labor safety maintenance, and follow the 3R (Reuse, Recycle, Reduce) principles in design, production, services and all other kinds of operating activities to reduce and prevent pollution and to conform to environmental protection regulations. We also include "environmental management" in our "supplier/vendor assessment" criteria. For current manufacturer partners, we'll consider their contribution to environmental protection during the cooperation, and actively assist suppliers to commit to environmental protection and labor safety requirements. 2) Supplier on-site audit Advantech will appraise: supplier environment safety and sanitation management, customer service, product schedule management, procurement, asset management, design management, file management and quality records, material supplier management, product identification and tractability, test and measurement, instrument measurement and other affairs through a supplier quality system audit. The results will be used as an important consideration for future cooperation to ensure all incoming materials into Advantech conform to environment safety and sanitation regulations and environmental protection requirements.
Downstream	Relevant, always included	Downstream customers' requirements for company-style risks, if they do not or do not expose/manage climate risks, they will affect orders

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

1 How Advantech makes decisions to reduce, transfer, accept or control the risks associated with climate change and take advantage of opportunities

Advantech focuses on heating two degrees C, Governments around the world, including Taiwan and China, have focused on sustainable development, smart cities, energy conservation and environmental protection issues, and with the trend of Internet of

Things and Industry 4.0, the complete solutions provided by Advantech have the following analysis.

1) Smart cities, and Industry 4.0, as evidenced by an IoT report from McKinsey & Company. The report points out that by 2025, the output value related to IoT applications will reach US\$11 trillion, which is equivalent to China's total annual GDP. In particular, smart factory applications not only exhibit the fastest growth rate but also account for the largest market output (approximately 33%), and this is followed by the combined output of smart city and smart healthcare applications (approximately 15%). I believe that the main reason that Industry 4.0 has developed faster than smart city applications is that smart cities rely more heavily on public investment.

2) Advantech not only provides solutions for smart retail applications, such as cash register loss prevention, customer flow analysis, business information analysis, and energy analysis and management, but the company also offers basic facilities for daily operations, which includes equipment such as POS devices, handheld inventory equipment, and electronic signage. The company can cover all the IT needs of retailers and naturally became the first choice for green supermarkets.

3) Apart from hardware, Advantech also considers the operator's management requirements. System integrators can employ Advantech's WebAccess and SUSIAccess software for remote monitoring/control and equipment management capabilities. For example, Shanghai Metro has installed over 100 sets of AFC equipment. To promptly transport passengers during peak hours, all TVMs are activated, whereas some of them are switched to power-saving mode during off-peak hours to fulfill energy management objectives.

2 How to prioritize the risks and opportunities associated with climate change;

Advantech implement the risk management steering committee to prioritize the risks and opportunities associated with climate change. For natural disaster risk management, we'll review climate regulations, climate disasters and other climate relative subjects, and take effective measures to reduce and eliminate the risks.

Climate regulation review includes hazardous substance restriction directives, air pollution prevention, energy efficiency improvement plan, ecological design, as well as product hazardous substance and recovery and disposal symbol regulation among others. Climate disaster review includes earthquake, hurricane, nuclear radiation and lethal infectious disease status among others. Other climate related subject reviews include corporation reputation, consumer behavior, and social unrest among others.

Please refer to Advantech CSR website for detail reference

http://www.advantech.com/csr/social_contribution/care_for_environment/overview/cwgcchange

4 How to manage related opportunities derived from climate change

According to the Advantech CDP questionnaire in 2017, Advantech has already carried out risk identification, strategic planning and financial impact descriptions on the risk opportunities that climate change can generate. Advantech's specific practices include the continuous promotion of low-carbon ENERGY STAR product certification and integrated manufacturing in Linkou Intelligent Park (Green Building).

And the development of intelligent solutions (energy management systems) and implement in supermarkets, hospitals, etc.

5 Which teams/departments/committees are involved in monitoring the risks and opportunities associated with climate change and who to report the results?

The organization of risk management steering committee: Board Chairman : CEO; Director on Board: COO, CFO, CTO, CIO, HR, Procurement V.P., Logistics V.P., Manufactory V.P. Everyone in Advantech has responsibility for enterprise risk management. The Chief Executive Officer is ultimately responsible and assumes ownership. Management team supports the risk management policy & process, promote compliance with its risk appetite, and manage risks within their spheres of responsibility.

6 The time frame of risk and opportunity considerations.

Advantech perform risk and opportunity assessment per year and summary the outputs in CSR/CDP reports.

7 Risk and opportunity considerations

Risk Management Committee/Climate Regulation Risk Management/Climate Disaster Risk Management

Please refer to Advantech CSR website for detail reference

http://www.advantech.com/csr/social_contribution/care_for_environment/overview/cwgcchange

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Enhanced emissions-reporting obligations

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Based on the current GHG emissions requirement in Taiwan, the company is still voluntary to report. However, organizational emissions may be enforced before the Law to establish baseline data. Therefore, the government probably will enforce all the companies to submit the GHS emission information as well as the carbon reduction plan.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Potential financial impact

2000

Explanation of financial impact

Although so far GHS emission reporting is not mandatory in Taiwan , in the future if the company refused to report GHG data, it will be fined approximately US\$100 to US\$2000.

Management method

Advantech conducted the first GHG emissions inventory and reduction planning based on the ISO14064-1 standard from 2010. The outcomes of which were published in relevant reports and on the company website. From last year, Advantech GHG data was verified by third party SGS , as well as participating in CDP disclosure. Advantech implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy conservation can be achieved and resource wastage prevented. 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply

Cost of management

279000

Comment

Cost of Energy Star verification is around USD 279,000

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Technology: Substitution of existing products and services with lower emissions options

Type of financial impact driver

Technology: Reduced demand for products and services

Company- specific description

The carbon footprint of products is the major use due to energy consumption. In Taiwan, EPA has launched Taiwan Product Carbon Footprint Labeling System in 2010. Therefore, how to design the green and energy-saving product is an important issue now.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Potential financial impact

1810000

Explanation of financial impact

So far the green concept is emphasized as a well-known idea, a consumer become more realizing of energy-efficient product is important to environment protection. A product without energy-efficiency feature will have risk to loss clients' trust in market. Therefore, assuming a worse case 15% loss in the market share due to the poor energy-efficiency, it would have a financial impact around US\$ 181 million decrease of the annual revenue.

Management method

Eco-Friendly Product Design Advantech believes in protecting the environment by preventing pollution, using less energy and raw

materials, reducing waste generation, and using clean production technologies, which involves modifying production processes to reduce the pollutants generated rather than using end-of-pipe solutions to resolve pollution. Regarding waste reduction, the company recycles packaging materials and minimizes the use of raw materials and energy when designing products and selecting technologies. The ENERGY STAR® label was established by the U.S. Environmental Protection Agency in 1992 and has been adopted in many countries worldwide including Canada, Japan, Taiwan, Australia, New Zealand, and the European Union. ENERGY STAR® serves as the international standard for energy efficient consumer goods. Computer equipment is required to conform to the specifications of not only ENERGY STAR® Computer Specifications 5.0, but also ENERGY STAR® EPS 2.0. Advantech has voluntarily achieved ENERGY STAR® certifications for 14 product lines. Moreover, all Advantech computer equipment and power supplies conform to the latest ENERGY STAR® regulations and requirements. This evidences Advantech's contribution to the development of green products.

Cost of management

279000

Comment

Cost of Energy Star verification is around USD 279,000

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver

Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism)

Company- specific description

In Taiwan, the situation of precipitation extremes and droughts are getting worse. The amount of precipitation that falls during the wet and dry seasons differs significantly. Because of the challenge involved in storing water resources, when water reserves are low, various industries can face severe water shortages. This unstable water supply will cause some operation risk.

Time horizon

Current

Likelihood

Likely

Magnitude of impact

Medium

Potential financial impact

4800000

Explanation of financial impact

According to Advantech's 2017 revenue report, if there is any production interruption per day caused, Advantech may lose USD 4.8 million.

Management method

In order to manage this kind of risk, Advantech defined the BCP (business continuity plan) and water saving strategies, including the use of water-saving faucets and toilets, to reduce the average water consumption per capita. Advantech's campuses are located in developed industrial zones or technology parks in urban areas. For all of these campuses, tap water serves as the primary source of water, no extraction of underground or well water is conducted, and water consumption activities exert no negative impact on the surrounding water resources.

Cost of management

1000000

Comment

Advantech's main initiatives regarding water conservation are listed below and the cost is within USD 1 million. 1) Monitor/manage cooling water towers 2) Monitor/manage the conductivity of cooling water towers 3) Install water-saving faucets 4) Install an intelligent water-saving irrigation system 5) Monitor/manage cooling water and chiller systems

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Other

Type of financial impact driver

Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants)

Company- specific description

Currently, the average temperature in Taiwan is still getting higher which means it needs more consumption in electricity for air-conditioning.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Potential financial impact

100000

Explanation of financial impact

According to Taiwan government's requirement, they request company should control the overall electronic consuming and the annual average energy-conservation rate have to reduce 1%. If companies cannot achieve it would cause a fine of NTD 20k-100k.

Management method

Advantech Taiwan implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply. 3) These intelligent energy-saving projects were officially implemented at Advantech's Linkou Campus in August 2014. Between August and December of 2014, 220,000 kWh of electricity was saved, reducing energy consumption by 16%. Intelligence-based estimates indicate that power consumption can be reduced by 17%

Cost of management

500000000

Comment

Over NT\$5 billion was investigated in the construction of green buildings at the Linkou Smart Industrial Park.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Other

Type of financial impact driver

Reputation: Reduced revenue from decreased demand for goods/services

Company- specific description

With the green concept concerns, Advantech's customers pay much attention to climate change performance. This is one of the key factors when they evaluate the suppliers or affecting investor's decision. Due to consumer's green awareness, it will be a huge risk because bad green management will damage company's reputation.

Time horizon

Short-term

Likelihood

Unlikely

Magnitude of impact

Low

Potential financial impact

30000000

Explanation of financial impact

As a leader of IPC industry, Advantech is a publicly listed company and well-known international brand. Reputation to the public will affect the product sales but shareholders' willingness of investment and estimated to impact the 1-2% revenue.

Management method

Global climate change is a much concerned topic to us all. As a global citizen, Advantech is devoted to reducing greenhouse gas emission and reduce energy use, and pays attention to climate disaster risk management, and never stops the cause of energy conservation and carbon reduction. To create low carbon emission operating environment, based on the related greenhouse gas examination quantization, supervision, report and investigation systems provided by Taiwan greenhouse gas reduction laws and ISO 14064-1 standards, Advantech set up their "Greenhouse Gas Examination Executive Committee" to facilitate greenhouse gas examination and reduction, gradually reducing direct or indirect emissions of CO2, CH4, N2O and HFCs. Advantech also joins the international organization CDP (Carbon Disclosure Project) from 2011, discloses the reduction plan and performance for carbon once a year.

Cost of management

178500

Comment

The 3rd verification cost of CSR Report is about NTD 178,500 per year.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

The ENERGY STAR® label was established by the U.S. Environmental Protection Agency in 1992 and has been adopted in many countries worldwide including Canada, Japan, Taiwan, Australia, New Zealand, and the European Union. ENERGY STAR® serves as the international standard for energy efficient consumer goods. Computer equipment is required to conform to the specifications of not only ENERGY STAR® Computer Specifications 5.0, but also ENERGY STAR® EPS 2.0. Advantech has voluntarily achieved ENERGY STAR® certifications for 22 product lines. Moreover, all Advantech computer equipment and power supplies conform to the latest ENERGY STAR® regulations and requirements. This evidences Advantech's contribution to the development of green products. [Please kindly see the Advantech Energy and Environment Solutions Introduction and Video as below] <https://www.youtube.com/watch?v=TckWku3hEgl&feature=youtu.be> With the rapid advancements of Internet of Things which provides a huge range of opportunities for all industries. Energy and Environment have become issues of concern for the public. Industrial IoT technologies focus on the processes of sensing, control monitoring, and remote communication and by combining these technologies with intelligent software that performs information integration and data analysis, they can be widely used in Factory Environmental Monitoring, Urban Environments and Infrastructure, Water and Wastewater Treatment, Power and Energy, Air Quality Monitoring, Intelligent Energy Saving, Intelligent Agriculture and other industries. These technologies will greatly enhance efficient management and decision-making processes.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Potential financial impact

181000000

Explanation of financial impact

So far the green concept is emphasized as a well-known idea, a consumer become more realizing of energy-efficient product is important to environment protection. A product with excellent energy-efficiency feature will have change to win clients' trust in market. Therefore, assuming a best case to have 15% increasing in the market share, it would have around US\$ 181 million increase of the annual revenue.

Strategy to realize opportunity

1) Providing Green Products We invest in green equipment and green product manufacturing, and apply Energy Star, CECP and other international certificates for all products. Product lifecycle assessment is also integrated into the process to guarantee sustainable development. 2) Manufacturing Green Equipment and Products Advantech focuses on developing and manufacturing energy-saving industrial equipment and products which are widely used in medical, production and machine automation, energy, finance, transportation, hospitality and home application fields. 3)Energy Star Energy Star is a voluntary energy conservation plan jointly issued by the US Environmental Protection Agency and US Department of Energy. The purpose is to have consumers recognize energy efficient electronic products through the energy symbol on the products, and thus improve energy use efficiency, reduce energy consumption and mitigate the greenhouse effect. Energy Star compliance is the most representative energy conservation certificate in the world currently. 4)China Energy Conservation China issued and implemented the "Regulation on Energy Conservation Product Certification" in Feb 1999, and started to carry out its energy conservation symbol plan formally. The Energy Conservation Product Certification is voluntary, which is the only national authorized energy conservation certificate in Mainland China.

Cost to realize opportunity

279000

Comment

Cost of Energy Star verification is around USD 279,000

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	Advantech provides Intelligent Building (Energy Management System) solution to help Factory, Hospital and University for energy management. Core of central control system 1) Real time energy monitoring 2) Define reasonable & wasting usage 3) Solid reference for energy invest 4) Green company & building image Intelligent Building (Energy Management System) solution 1) EMS concentrate all energy consumption data, and colleagues can setup condition to alarm all kinds of information to remedy issue immediately. 2) EMS recommend contract capacity and predict next period usage & unload device to control energy expense. Monitoring heavy power consumption equipment, (ex: Chiller / air compressor / heat pump), to eliminate UN-scheduled operation condition. 3) Optimize indoor temperature by sunshine degree and outdoor temperature from weather station, keeping human comfort at priority.
Supply chain and/or value chain	Impacted	Green Supply chain management is also a part of CSR. Advantech built SQA (supplier quality assurance) team to perform the on-site audit and evaluate vendors' green management such as capability to cope with risks from climate changes. 1) According to the Supplier survey questionnaire, Advantech require our suppliers to prepare contingency/backup plans to reduce the impact of some urgent situations. 2) By on-site audit to verify our vendors' environmental performance and risk level of climate change.
Adaptation and mitigation activities	Impacted	Based on the current GHG emissions requirement in Taiwan, the company is still voluntary to report. However, organizational emissions may be enforced before the Law to establish baseline data. Therefore, the government probably will enforce all the companies to submit the GHS emission information as well as the carbon reduction plan. Advantech conducted the first GHG emissions inventory and reduction planning based on the ISO14064-1 standard from 2010. The outcomes of which were published in relevant reports and on the company website. From last year, Advantech GHG data was verified by third party SGS , as well as participating in CDP disclosure. Advantech implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy conservation can be achieved and resource wastage prevented. 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply.
Investment in R&D	Impacted	Advantech built R&D investment and provides Intelligent Building (Energy Management System) solution to help Factory, Hospital and University for energy management. Core of central control system 1) Real time energy monitoring 2) Define reasonable & wasting usage 3) Solid reference for energy invest 4) Green company & building image Intelligent Building (Energy Management System) solution 1) EMS concentrate all energy consumption data, and colleagues can setup condition to alarm all kinds of information to remedy issue immediately. 2) EMS recommend contract capacity and predict next period usage & unload device to control energy expense. Monitoring heavy power consumption equipment, (ex: Chiller / air compressor / heat pump), to eliminate UN-scheduled operation condition. 3) Optimize indoor temperature by sunshine degree and outdoor temperature from weather station, keeping human comfort at priority.
Operations	Impacted	Currently, the average temperature in Taiwan is still getting higher which means it needs more consumption in electricity for air-conditioning. According to Taiwan government's requirement, they request company should control the overall electronic consuming and the annual average energy-conservation rate have to reduce 1%. If companies cannot achieve it would cause a fine of NTD 20k-100k. Advantech Taiwan implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply. 3) These intelligent energy-saving projects were officially implemented at Advantech's Linkou Campus in August 2014. Between August and December of 2014, 220,000 kWh of electricity was saved, reducing energy consumption by 16%. Intelligence-based estimates indicate that power consumption can be reduced by 17% .
Other, please specify	Impacted	The carbon footprint of products is the major use due to energy consumption. In Taiwan, EPA has launched Taiwan Product Carbon Footprint Labeling System in 2010. Therefore, how to design the green and energy-saving product is an important issue now. Eco-Friendly Product Design Advantech believes in protecting the environment by preventing pollution, using less energy and raw materials, reducing waste generation, and using clean production technologies, which involves modifying production processes to reduce the pollutants generated rather than using end-of-pipe solutions to resolve pollution. Regarding waste reduction, the company recycles packaging materials and minimizes the use of raw materials and energy when designing products and selecting technologies. The ENERGY STAR® label was established by the U.S. Environmental Protection Agency in 1992 and has been adopted in many countries worldwide including Canada, Japan, Taiwan, Australia, New Zealand, and the European Union. ENERGY STAR® serves as the international standard for energy efficient consumer goods. Computer equipment is required to conform to the specifications of not only ENERGY STAR® Computer Specifications 5.0, but also ENERGY STAR® EPS 2.0. Advantech has voluntarily achieved ENERGY STAR® certifications for 14 product lines. Moreover, all Advantech computer equipment and power supplies conform to the latest ENERGY STAR® regulations and requirements. This evidences Advantech's contribution to the development of green products.

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Advantech provides Intelligent Building (Energy Management System) solution to help Factory, Hospital and University for energy management. Core of central control system 1) Real time energy monitoring 2) Define reasonable & wasting usage 3) Solid reference for energy invest 4) Green company & building image Intelligent Building (Energy Management System) solution 1) EMS concentrate all energy consumption data, and colleagues can setup condition to alarm all kinds of information to remedy issue immediately. 2) EMS recommend contract capacity and predict next period usage & unload device to control energy expense. Monitoring heavy power consumption equipment, (ex: Chiller / air compressor / heat pump), to eliminate UN-scheduled operation condition. 3) Optimize indoor temperature by sunshine degree and outdoor temperature from weather station, keeping human comfort at priority.
Operating costs	Impacted	#Implement Green and intelligent building to reduce the operation costs Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy Campus conservation can be achieved and resource wastage prevented. Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply.
Capital expenditures / capital allocation	Not yet impacted	Capital expenditures / capital allocation is not yet impacted.
Acquisitions and divestments	Not yet impacted	Acquisitions and divestments is not yet impacted.
Access to capital	Not yet impacted	Access to capital is not yet impacted.
Assets	Not yet impacted	Assets is not yet impacted.
Liabilities	Not yet impacted	Liabilities is not yet impacted.
Other	Not yet impacted	Not yet impacted.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

- i. A company-specific explanation of how business objectives and strategy have been influenced by climate-related issues;

Advantech used the life cycle assessment (LCA) method to define the company's 10-year sustainable development goals. Advantech has successfully established identification procedures and declarations that conform to relevant laws and regulations, formulated green supply chain management standards, set design criteria for green products, achieved green product certifications, conducted

GHG inventory, and published CSR reports. In the future, the scope of corporate disclosure will be expanded from organization-level inventory to include investigations related to product carbon/ water footprints. Advantech also aims to identify additional opportunities for managing GHG and water resources within supply chains, develop low-carbon, water-saving products, and thoroughly implement sustainable corporate development.

ii. Explanation of whether your business strategy is linked to an emissions reductions target or energy reduction target;

1) Environmental Protection Management To sustain human life and protect the earth's natural environment, Advantech endeavors to reduce the impact of its product design/application and waste disposal operations. In addition to complying with relevant regulations, the company encourages all employees to participate in environmental protection and sustainable corporate development. To accomplish these goals, Advantech has initiated environmental protection management projects that emphasize energy conservation, carbon reduction, and waste reduction.

2) Advantech's environmental declarations and policies

2-1 Reduce impact on the environment

2-2 Fulfill environmental protection responsibilities

2-3 Implement resource recycling

2-4 Promote industrial waste reduction

2-5 Comply with environmental protection regulations

iii. What have been the most substantial business decisions made during the reporting year that have been influenced by the climate change driven aspects of the strategy

1) Advantech built the Linkou green building and implement Intelligent Building Energy Management to perform effective green energy management. Moreover, we provide Intelligent Building Energy Management as a total solution with our customers such as hospital, retailers and department stores.

2) Based on climate change and IoT trend, Advantech focus on the Business Spirit of openness and Co-Creation: Advantech's Collaboration with Partnerships in Smart City and Industry 4.0 Applications such as below application.

Energy & Environment

-Continuous Monitoring to Ensure PM2.5 Detection

-A Powerful IoT Solution for City Flood Control Systems

-Active Monitoring of Wastewater Treatment Clears

-New Challenges for Clean Energy

[Important] Please kindly find the below for the detail how climate-related issues are integrated into Advantech objectives and strategy

<http://advcloudfiles.advantech.com/ecatalog/2017/12061708.pdf>

iv. What aspects of climate change have influenced the strategy

1) Energy conservation and carbon reduction is a contemporary manifestation, echoing the "Energy Conservation and Energy Efficiency Regulations for the Electronics Industry" promulgated by the Taiwan government in March 2015. The Energy Management System (EMS) developed by Advantech through the WebAccess software platform and remote terminals.

2) The installation of the device and smart meter fully monitors the energy consumption of the plant air-conditioning and equipment room, and through the accumulation and analysis to identify hidden power consumption traps, improved power behavior patterns, and continuously optimize the energy-saving benefits of Advantech customers.

3) EMS is helping enterprises to save electricity and operating costs, it is more conducive to shaping the company's environmental image, and greatly increasing its competitiveness.

v. How the short-term strategy has been influenced by climate change;

Advantech's short term sustainable development goal

- International environmental protection legislation - RoHs • JGPSSI • REACH
- Green supply chain management Supplier management • Green procurement specifications
- Energy saving projects

Advantech's Medium term sustainable development goal

- Ecological design Green product design
- Life cycle assessment
- Environmental information disclosure/ Green labels
- Greenhouse gasses inventory /Carbon footprint/carbon neutrality/water footprint

vi. How the long-term strategy has been influenced by climate change;

Advantech's long term sustainable development goal

- Sustainable corporate development Corporate social responsibility activities
- Sustainable corporate development strategies

vii. How this is gaining a strategic advantage over your competitors;

Please refer to Advantech EMS show case as below report (page22-23)

"According to the statistics of the Energy Bureau of the Ministry of Economic Affairs of Taiwan, the electricity consumption of the industrial sector accounts for 53.07% of the country's total electricity consumption. Therefore, with the increasing supply and demand of electricity Tension, the efficiency of upgrading the power consumption of industrial plants and equipment is becoming more and more important. In view of the introduction of energy management system into Advantech, Through accumulation and analysis, we can find hidden power consumption traps and greatly improve the mode of power usage.

http://advcloudfiles.advantech.com/ecatalog/MyAdvantech/MyAdvantech_No_43_cht.pdf

viii. How the Paris Agreement has influenced the business strategy

Advantech ascribes to the altruistic LiTa Tree concept, where the growth of a corporation is compared to that of a tree and society can be considered the soil that provides a foundation and nourishment for growth. Therefore, similar to how fruits that fall from a tree renourish the soil, we must reinvest the “fruits” of our labor back into society. Although Advantech’s achievements can be attributed to over 30 years of dedicated effort, their ongoing success depends on the continued provision of environmental resources. Considering its responsibility to society and aim of creating a beautiful life, Advantech is committed to investing the utmost effort into improving the environment and ensuring labor safety. Accordingly, Advantech not only implemented the ISO 14001 Environmental Management System standards in 1996, OHSAS 18001 Occupational Safety and Health Management System standards in 2005, as well as practices that comply with government regulations for environmental protection, labor safety, and health, but also endeavors to reduce the environmental impact of its GHG management, product design/use, and waste disposal operations. Through these efforts, and the participation and commitment of employees, Advantech has established appropriate strategies that ensure environmental protection and sustainable corporate development.

C3.1d

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
RCP 2.6	<p>[Background , Risk and Opportunity] According to the Advantech CDP questionnaire in 2017, Advantech has already carried out risk identification, strategic planning and financial impact descriptions on the risk opportunities that climate change can generate . Advantech's specific practices include the continuous promotion of low-carbon ENERGY STAR product certification and integrated manufacturing in Linkou Intelligent Park (Green Building). And the development of intelligent solutions (energy management systems) and implement in supermarkets, hospitals, etc. [Climate-related scenario analysis] Advantech focuses on heating two degrees C, Governments around the world, including Taiwan and China, have focused on sustainable development, smart cities, energy conservation and environmental protection issues, and with the trend of Internet of Things and Industry 4.0, the complete solutions provided by Advantech have the following analysis. 1) Smart cities, and Industry 4.0, as evidenced by an IoT report from McKinsey & Company. The report points out that by 2025, the output value related to IoT applications will reach US\$11 trillion, which is equivalent to China's total annual GDP. In particular, smart factory applications not only exhibit the fastest growth rate but also account for the largest market output (approximately 33%), and this is followed by the combined output of smart city and smart healthcare applications (approximately 15%). I believe that the main reason that Industry 4.0 has developed faster than smart city applications is that smart cities rely more heavily on public investment. 2) Advantech not only provides solutions for smart retail applications, such as cash register loss prevention, customer flow analysis, business information analysis, and energy analysis and management, but the company also offers basic facilities for daily operations, which includes equipment such as POS devices, handheld inventory equipment, and electronic signage. The company can cover all the IT needs of retailers and naturally became the first choice for green supermarkets. 3) Apart from hardware, Advantech also considers the operator’s management requirements. System integrators can employ Advantech’s WebAccess and SUSIAccess software for remote monitoring/control and equipment management capabilities. For example, Shanghai Metro has installed over 100 sets of AFC equipment. To promptly transport passengers during peak hours, all TVMs are activated, whereas some of them are switched to power-saving mode during off-peak hours to fulfill energy management objectives. 4) Finance Analysis Please kindly find the finance analysis is growing based on the on-trend business model. http://www.advantech.com/investor/performance-overview [Advantech Business Strategy Summary report] Smart City X Industry 4.0 case study (Including energy saving solution) http://advcloudfiles.advantech.com/ecatalog/2017/12061708.pdf [Media exposure] 1) https://buzzorange.com/techorange/2018/07/16/advantech-wisepass-platform/ 2) http://www.chinaitimes.com/realtimenews/20180323001898-260412 [Please kindly see the Advantech Energy and Environment Solutions Introduction and Video as below] https://www.youtube.com/watch?v=TckWku3hEgl&feature=youtu.be With the rapid advancements of Internet of Things which provides a huge range of opportunities for all industries. Energy and Environment have become issues of concern for the public. Industrial IoT technologies focus on the processes of sensing, control monitoring, and remote communication and by combing these technologies with intelligent software that performs information integration and data analysis, they can be widely used in Factory Environmental Monitoring, Urban Environments and Infrastructure, Water and Wastewater Treatment, Power and Energy, Air Quality Monitoring, Intelligent Energy Saving, Intelligent Agriculture and other industries.</p>
Please select	

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Scope

Scope 2 (location-based)

% emissions in Scope

97.34

% reduction from baseline year

19.71

Metric

Metric tons CO₂e per unit of production

Base year

2016

Start year

2017

Normalized baseline year emissions covered by target (metric tons CO₂e)

9769

Target year

2023

Is this a science-based target?

Yes, this target has been approved as science-based by the Science Based Targets initiative

% achieved (emissions)

100

Target status

Underway

Please explain

Advantech Taipei 2016 : Emissions in scope 2= 9769 tones CO₂e, Total Production : 1373181 pcs (9769/1373181=0.0071) 2017 : Emissions in scope 2= 9492 tones CO₂e, Total Production : 1653902 pcs (9492/1653902=0.0057) Reduction target is (0.0057-0.0071)/0.0071= 19.71% The main reason is research through the integrated manufacturing system, the company is located in the Linkou factory and the Donghu plant area. Through the improvement of manufacturing efficiency and the effective use of Linkou energy-saving system. The overall electricity consumption has dropped.

% change anticipated in absolute Scope 1+2 emissions

97.34

% change anticipated in absolute Scope 3 emissions

0

Target reference number

Int 2

Scope

Scope 2 (location-based)

% emissions in Scope

91.34

% reduction from baseline year

17.07

Metric

Metric tons of CO₂e per liter of product

Base year

2016

Start year

2017

Normalized baseline year emissions covered by target (metric tons CO2e)

15568

Target year

2023

Is this a science-based target?

Yes, this target has been approved as science-based by the Science Based Targets initiative

% achieved (emissions)

100

Target status

Underway

Please explain

Advantech China (Kunshan) 2016 : Emissions in scope 2= 15568 tones CO2e, Total Production Liter : 216916.9 (15568/216916.9=71.7) 2017 : Emissions in scope 2= 16022 tones CO2e, Total Production Liter : 269202.2 (16022/269202.2 =59.5) Reduction target is (71.7-59.5)/71.7= 17.07%

% change anticipated in absolute Scope 1+2 emissions

91.34

% change anticipated in absolute Scope 3 emissions

0

Target reference number

Int 3

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

% reduction from baseline year

19.63

Metric

Metric tons CO2e per unit of production

Base year

2016

Start year

2017

Normalized baseline year emissions covered by target (metric tons CO2e)

10074

Target year

2023

Is this a science-based target?

Yes, this target has been approved as science-based by the Science Based Targets initiative

% achieved (emissions)

100

Target status

Underway

Please explain

Advantech Taipei 2016 : Emissions in scope 1+2= 10074 tones CO2e, Total Production : 1373181 pcs (10074/1373181=0.0073) 2017 : Emissions in scope 1+2= 9751 tones CO2e, Total Production : 1653902 pcs (9751/1653902=0.0058) Reduction target is

$(0.0058-0.0073)/0.0073= 19.63\%$ The main reason is research through the integrated manufacturing system, the company is located in the Linkou factory and the Donghu plant area. Through the improvement of manufacturing efficiency and the effective use of Linkou energy-saving system. The overall electricity consumption has dropped.

% change anticipated in absolute Scope 1+2 emissions

19.63

% change anticipated in absolute Scope 3 emissions

0

Target reference number

Int 4

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

% reduction from baseline year

27.68

Metric

Metric tons of CO₂e per liter of product

Base year

2016

Start year

2017

Normalized baseline year emissions covered by target (metric tons CO₂e)

19545

Target year

2023

Is this a science-based target?

Yes, this target has been approved as science-based by the Science Based Targets initiative

% achieved (emissions)

100

Target status

Underway

Please explain

Advantech China (Kunshan) 2016 : Emissions in scope 1+2= 19545 tones CO₂e, Total Production Liter : 216916.9 (19545/216916.9=0.09) 2017 : Emissions in scope 1+2= 17541 tones CO₂e, Total Production Liter : 269202.2 (17541/269202.2 =0.065) Reduction target is $(0.065-0.09)/0.09= 27.68\%$

% change anticipated in absolute Scope 1+2 emissions

27.68

% change anticipated in absolute Scope 3 emissions

0

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	1	430000
Not to be implemented		

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Activity type

Energy efficiency: Building services

Description of activity

Building controls

Estimated annual CO2e savings (metric tonnes CO2e)

430000

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

350000

Investment required (unit currency – as specified in CC0.4)

15100000

Payback period

1-3 years

Estimated lifetime of the initiative

>30 years

Comment

Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy Campus conservation can be achieved and resource wastage prevented. Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply. Please refer to Advantech Linkou Green Building Video <https://www.youtube.com/watch?v=9Ax2wLIR6g8>

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	EU ErP Directive, Energy Star, ISO14064, PAS2050
Dedicated budget for energy efficiency	Purchase energy efficient products
Dedicated budget for low-carbon product R&D	EU ErP Directive, Energy Star, ISO14064, PAS2050 certification budget
Employee engagement	Control building temperature, Use energy efficient light bulbs , Promote use of stairs instead of elevators, Turn off lights when not in use, Greater use of public transportation
Financial optimization calculations	Budget review
Internal price on carbon	Advantech Energy Efficiency Programs
Partnering with governments on technology development	Energy efficiency products development Intelligent building total Solution.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Product

Description of product/Group of products

The ENERGY STAR® label was established by the U.S. Environmental Protection Agency in 1992 and has been adopted in many countries worldwide including Canada, Japan, Taiwan, Australia, New Zealand, and the European Union. ENERGY STAR® serves as the international standard for energy efficient consumer goods (e.g., computers, printers, photocopy machines, monitors, and scanners). Computer equipment is required to conform to the specifications of not only ENERGY STAR® Computer Specifications 5.0, but also ENERGY STAR® EPS 2.0.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Low-Carbon Investment (LCI) Registry Taxonomy

% revenue from low carbon product(s) in the reporting year

15

Comment

Advantech has voluntarily achieved ENERGY STAR® certifications for 14 product lines. Moreover, all Advantech computer equipment and power supplies conform to the latest ENERGY STAR® regulations and requirements. This evidences Advantech's contribution to the development of green products.

Level of aggregation

Group of products

Description of product/Group of products

Advantech provides Intelligent Building (Energy Management System) solution to help Factory, Hospital and University for energy management. (Please refer the attachment report for detail reference) Core of central control system 1) Real time energy monitoring 2) Define reasonable & wasting usage 3) Solid reference for energy invest 4) Green company & building image

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Low-Carbon Investment (LCI) Registry Taxonomy

% revenue from low carbon product(s) in the reporting year

10

Comment

1) EMS concentrate all energy consumption data, and colleagues can setup condition to alarm all kinds of information to remedy issue immediately. 2) EMS recommend contract capacity and predict next period usage & unload device to control energy expense. Monitoring heavy power consumption equipment, (ex: Chiller / air compressor / heat pump), to eliminate UN-scheduled operation condition. 3) Optimize indoor temperature by sunshine degree and outdoor temperature from weather station, keeping human comfort at priority. [Please kindly see the Advantech Energy and Environment Solutions Introduction and Video as below] <https://www.youtube.com/watch?v=TckWku3hEgl&feature=youtu.be> With the rapid advancements of Internet of Things which provides a huge range of opportunities for all industries. Energy and Environment have become issues of concern for the public. Industrial IoT technologies focus on the processes of sensing, control monitoring, and remote communication and by combining these technologies with intelligent software that performs information integration and data analysis, they can be widely used in Factory Environmental Monitoring, Urban Environments and Infrastructure, Water and Wastewater Treatment, Power and Energy, Air Quality Monitoring, Intelligent Energy Saving, Intelligent Agriculture and other industries. These technologies will greatly enhance efficient management and decision-making processes.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

1924.3

Comment

Advantech follow ISO14064-1 and IPCC to disclosure GHG emissions. All the data is reviewed and certificated by SGS.

Scope 2 (location-based)

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

27696

Comment

Advantech follow ISO14064-1 and IPCC to disclosure GHG emissions. All the data is reviewed and certificated by SGS.

Scope 2 (market-based)

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

27696

Comment

Advantech follow ISO14064-1 and IPCC to disclosure GHG emissions. All the data is reviewed and certificated by SGS.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

Taiwan - GHG Reduction Act

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

1778.2

End-year of reporting period

<Not Applicable>

Comment

Enlarge the reporting scope to Advantech China. 2017 Scope 1 emission (Taiwan) : 259.2 2017 Scope 1 emission (China) : 1519
259.2+1519=1778.2

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Enlarge the reporting scope to Advantech China. 2017 Scope 2 emission (Taiwan) : 9492 2017 Scope 2 emission (China) : 16022
9492+16022=25514

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Row 1

Scope 2, location-based

25514

Scope 2, market-based (if applicable)

25514

End-year of reporting period

<Not Applicable>

Comment

Enlarge the reporting scope to Advantech China. 2017 Scope 2 emission (Taiwan) : 9492 2017 Scope 2 emission (China) : 16022
9492+16022=25514

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

450.2

Emissions calculation methodology

(1). Scope: Waste generated in the operations of Advantech Taipei factory and Advantech China Kunshan Factory . The waste generated includes general waste and hazardous waste. (2). Methodology: Ton method GHG emission (ton) = Σ [weight of waste (ton) x Waste related emission factors by disposal types (ton CO2/ton)]. The calculation is based on the Corporate Value Chain (Scope 3) Accounting and Reporting Standard developed by WRI&WBCSD. (3). Emissions factors: EPA Emission Factor Management Table" General Waste Emission Factor :0.7451((ton CO2/ton)) (4). Waste generated : Advantech Taiwan:132.6 ton / Advantech China:471.96 ton (5). Scope 3 emissions: (132.6+471.96) x0.7451=450.6 ton CO2

Percentage of emissions calculated using data obtained from suppliers or value chain partners

10

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

170.2

Emissions calculation methodology

(1). Scope: Only Taiwan employees (2). Methodology: Ton method GHG emission (ton) = Σ [flight distance x emission factors] 3. Emission factor: Carbon Emissions Calculator – ICAO <https://www.icao.int/environmental-protection/CarbonOffset/Pages/default.aspx>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

10

Explanation

The disclosed data only covered GHG emissions of business travel by Advantech Taiwan employees.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

0.65

Emissions calculation methodology

(1) Advantech collected information on Taiwan commute bus's carbon emission (2) The calculation is based on the Corporate Value Chain (Scope 3) Taiwan Carbon footprint computing service platform exposes information

Percentage of emissions calculated using data obtained from suppliers or value chain partners

1

Explanation

Advantech employees are encouraged to commute using public transportation. In order to reduce GHG emissions,our employees take commute bus.

Upstream leased assets

Evaluation status

Relevant, not yet calculated

Metric tonnes CO₂e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Metric tonnes CO₂e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Scope 3 emissions (other indirect GHG emissions) are primarily attributed to emissions resulting from supply chains, employee business trips, product use and disposal, outsourced waste treatment, and external delivery and logistics operations. Currently, Advantech employees are encouraged to commute using public transportation in order to reduce GHG emissions. Emissions resulting from raw material sourcing and product shipments are handled by government-approved contractors. Because Advantech's Scope 3 emissions primarily result from supply chains, in the future, relevant emissions inventories will be conducted in accordance with PAS2050/ISO14067 standards.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

18.75

Metric numerator (Gross global combined Scope 1 and 2 emissions)

27292.2

Metric denominator

unit total revenue

Metric denominator: Unit total

18.75

Scope 2 figure used

Location-based

% change from previous year

18.5

Direction of change

Decreased

Reason for change

1. 2016: (Emissions) / (total revenue) = (29620 ton CO2) / (1290 M,USD) =23 (ton CO2/ M,USD) 2. 2017: (Emissions) / (total revenue) = (27292.2 ton CO2) / (1455 M,USD) =18.75 (ton CO2/ M,USD) 3. Reduction % = (18.75.-23) / (23) = 18.5%

Intensity figure

0.0055

Metric numerator (Gross global combined Scope 1 and 2 emissions)

27292.2

Metric denominator

unit of production

Metric denominator: Unit total

0.0055

Scope 2 figure used

Please select

% change from previous year

24.87

Direction of change

Decreased

Reason for change

1. 2016: (Emissions) / (total unit of production) = (29620 ton CO2) / (3967699 pcs) =0.0073 (ton CO2/ pcs) 2. 2017: (Emissions) / (total unit of production) = (27292.2 ton CO2) / (4926360 pcs) =0.0055(ton CO2/ pcs) 3. Reduction % = (0.0073-0.0055) / (0.0073) = 24.87%

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO ₂ e)	GWP Reference
CH ₄	269.2	IPCC Fourth Assessment Report (AR4 - 100 year)
N ₂ O	28.8	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	712.28	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
Taiwan (Province of China)	259.2
China	1519

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO ₂ e)	Latitude	Longitude
Advantech Taiwan Facility	259.2	25.069357	121.582625
Advantech China-Kunshan Facility	1519	31.419074	120.969291

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Taiwan (Province of China)	9492		17977	
China	16022		18702	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2 location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Advantech Taiwan Facility	9492	
Advantech China-Kunshan Facility	16022	

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption		<Not Applicable>		Without significant change
Other emissions reduction activities	2328	Decreased	7.8	The total GHS emissions (scope 1 and 2) is 29620 (Y2016) , 27292(Y2017) $(27292-29620)/29620 = 7.8\%$
Divestment		<Not Applicable>		Without significant change
Acquisitions		<Not Applicable>		Without significant change
Mergers		<Not Applicable>		Without significant change
Change in output		<Not Applicable>		Without significant change
Change in methodology		<Not Applicable>		Without significant change
Change in boundary		<Not Applicable>		Without significant change
Change in physical operating conditions		<Not Applicable>		Without significant change
Unidentified		<Not Applicable>		Without significant change
Other		<Not Applicable>		Without significant change

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	No
Consumption of purchased or acquired electricity	No
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

2017 Advantech CSR-Report.pdf

Advantech AA1000 License GRI Standards (Type 2 High).pdf

Advantech Taipei GHG summary.xls

Advantech China GHG summary.xlsx

Page/ section reference

Page 74~75/ Please refer to the 3rd party SGS assurance statement. (AA1000 Type 2 High level assurance) For detail report, please check Advantech CSR website as below. <http://www.advantech.tw/csr/>

Relevant standard

SGS Sustainability Report Assurance

Proportion of reported emissions verified (%)

100

Advantech AA1000 License GRI Standards (Type 2 High).pdf

2017 Advantech CSR-Report.pdf

Advantech Taipei GHG summary.xls

Advantech China GHG summary.xlsx

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	ISO14064-3	Advantech GHG data was verified by third party SGS , as well as participating in CDP disclosure. Advantech implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy conservation can be achieved and resource wastage prevented. 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply. 2017 Advantech CSR-Report.pdf Advantech Taipei GHG summary.xls Advantech China GHG summary.xlsx
C3. Business strategy	Emissions reduction activities	GRI AA1000	Advantech GHG data was verified by third party SGS , as well as participating in CDP disclosure. Advantech implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy conservation can be achieved and resource wastage prevented. 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply. 2017 Advantech CSR-Report.pdf
C1. Governance	Emissions reduction activities	GRI AA1000	Advantech GHG data was verified by third party SGS , as well as participating in CDP disclosure. Advantech implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy conservation can be achieved and resource wastage prevented. 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply. 2017 Advantech CSR-Report.pdf
C2. Risks and opportunities	Other, please specify (Climate Change Risk and Opp analysis)	GRI AA1000	Climate Change Risk Management The rise of awareness on global warming and climate change issues has necessitated businesses to manage risks associated with climate changes in order to ensure sustainable development. Advantech has participated in the Carbon Disclosure Project (CDP) since 2009, which requires the company to publish its greenhouse gas inventory data regularly on the CDP website for customers and stakeholders. Advantech has also identified potential risks and opportunities as shown in CSR report 2017 Advantech CSR-Report.pdf 2016-CSR-Report-EN.pdf
C3. Business strategy	Emissions reduction activities	GRI AA1000	According to the Advantech CDP questionnaire in 2017, Advantech has already carried out risk identification, strategic planning and financial impact descriptions on the risk opportunities that climate change can generate . Advantech's specific practices include the continuous promotion of low-carbon ENERGY STAR product certification and integrated manufacturing in Linkou Intelligent Park (Green Building). And the development of intelligent solutions (energy management systems) and implement in supermarkets, hospitals, etc. Advantech focuses on heating two degrees C, Governments around the world, including Taiwan and China, have focused on sustainable development, smart cities, energy conservation and environmental protection issues, and with the trend of Internet of Things and Industry 4.0 Smart City X Industry 4.0.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

In 2008, Advantech used the life cycle assessment (LCA) method to define the company's 10-year sustainable development goals for 2008 to 2017. In the 7 years since then, Advantech has successfully established identification procedures and declarations that conform to relevant laws and regulations, formulated green supply chain management standards, set design criteria for green products, achieved green product certifications, conducted GHG inventory, and published CSR reports.

In the future, the scope of corporate disclosure will be expanded from organization-level inventory to include investigations related to product carbon/ water footprints. Advantech also aims to identify additional opportunities for managing GHG and water resources within supply chains, develop low-carbon, water-saving products, and thoroughly implement sustainable corporate development.

According to the research from State and Trends of Carbon Pricing 2017 by World Bank Group: "Taiwan, China has continued working toward the implementation of an ETS. In February 2017, plans were published to meet a target of halving its GHG emissions by 2050 compared to the 2005 baseline level through the implementation of an ETS." Therefore, Advantech is intensively studying relevant regulations, such as carbon trading prices in China and Taiwan, and will subsequently convert external carbon prices into internal carbon prices. Please also find the reference information as below.

[Reference information]

[1] State and Trends of Carbon Pricing 2017 by World Bank Group

<https://www.ecofys.com/files/files/world-bank-ecofys-vivid-2017-state-and-trends-of-carbon-pricing.pdf>

[2] 2017 CHINA CARBON PRICING SURVEY by China Carbon Forum

<http://www.chinacarbon.info/wp-content/uploads/2017/11/2017-China-Carbon-Pricing-Survey.pdf>

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

No, but we anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

Code of conduct featuring climate change KPIs

Climate change is integrated into supplier evaluation processes

% of suppliers by number

99

% total procurement spend (direct and indirect)

95

% Scope 3 emissions as reported in C6.5

50

Rationale for the coverage of your engagement

Regarding suppliers' environmental management, Advantech has not only incorporated environment protection principles into its supplier management mechanisms, but in 2010 also adopted the EICC® Code of Conduct in an effort to encourage its suppliers to emphasize and promote the importance of CSR (for example, when encountering conflicting regulations). Currently, the company has integrated key CSR-related indicators, including RoHS (HSF) QC08000, ISO14000, OHSAS18000, and supplier localization, into its supplier evaluation and management criteria. Furthermore, Advantech requires that its suppliers uphold the protection of human rights and comply with relevant labor laws; these requirements are also included in the criteria for new suppliers.

Impact of engagement, including measures of success

[Building Sustainable Supply Chain] With the sustainable development operating concept, we and supply chain partners have built stable cooperating relationships. Except quality considerations, we also hope through building sustainable supply chain, we and the partners live up to our corporate social responsibilities and contribute to environmental protection together. [Green Supply Chains] Advantech has gone all out in supply chain management in order to guarantee all products are green and conform to environmental safety and sanitation regulations. Following government environmental protection and labor safety and sanitation regulations concerning pollution control and disaster prevention, we adopted ISO 14001 environment management systems in 1996, and OHSAS 18001 employee safety and sanitation management systems in 2005. We call on all Advantech suppliers to respond to environmental improvement and labor safety maintenance, and follow the 3R (Reuse, Recycle, Reduce) principles in design, production, services and all other kinds of operating activities to reduce and prevent pollution and to conform to environmental protection regulations. We also include "environmental management" in our "supplier/ vendor assessment" criteria. For current manufacturer partners, we'll consider their contribution to environmental protection during the cooperation, and actively assist suppliers to commit to environmental protection and labor safety requirements. [Supplier on-site audit] Advantech will appraise: supplier environment safety and sanitation management, customer service, product schedule management, procurement, asset management, design management, file management and quality records, material supplier management, product identification and tractability, test and measurement, instrument measurement and other affairs through a supplier quality system audit. The results will be used as an important consideration for future cooperation to ensure all incoming materials into Advantech conform to environment safety and sanitation regulations and environmental protection requirements. Supplier On-site Audit [Reference Link] http://www.advantech.com/csr/social_contribution/care_for_environment_overview/bsschain

Comment

Regarding suppliers' environmental management, Advantech has not only incorporated environment protection principles into its supplier management mechanisms, but in 2010 also adopted the EICC® Code of Conduct in an effort to encourage its suppliers to emphasize and promote the importance of CSR (for example, when encountering conflicting regulations). Currently, the company has integrated key CSR-related indicators, including RoHS (HSF) QC08000, ISO14000, OHSAS18000, and supplier localization, into its supplier evaluation and management criteria. Furthermore, Advantech requires that its suppliers uphold the protection of human rights and comply with relevant labor laws; these requirements are also included in the criteria for new suppliers.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Mandatory carbon reporting	Support	In the establishment of environmental, health and safety management system, Advantech already hired environmental engineering expert to identify our activities, products and services process.	According to GRI KPI index, collect the data once a month.
Energy efficiency	Support	Advantech built the Linkou green building and implement Intelligent Building Energy Management to perform effective green energy management.	Energy Saving : 19.4% Expense saving: NT\$ 1.63M
Clean energy generation	Support	In the establishment of environmental, health and safety management system, Advantech already hired environmental engineering expert to identify our activities, products and services process.	According to GRI KPI index, collect the data once a month.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

1. In the establishment of environmental, health and safety management system, Advantech already hired environmental engineering expert to identify our activities, products and services process which might be involved in legislation and regulations, and recorded it in list by assigner.
2. There are the consultants of the research organizations e.g. SGS, TUV and IST.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports in accordance with the CDSB Framework

Status

Complete

Attach the document

2017 Advantech Annual Report English.pdf

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets

Publication

In mainstream reports in accordance with the CDSB Framework

Status

Complete

Attach the document

2017 Advantech CSR-Report.pdf
Smart City X Industry 4.0.pdf

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Please kindly find the Advantech CSR website for detail reference

<http://www.advantech.com/csr>

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	CSR,CDP Committee Chief	Chief Executive Officer (CEO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

Advantech GHG data was verified by third party SGS , as well as participating in CDP disclosure. Advantech implemented the following energy-saving projects: 1) Advantech's Linkou Intelligent Campus features building energy management and people-sensing energy conservation systems, which include intelligent air-conditioning and parking systems, as well as all-in-one access cards aimed at achieving smarter buildings. By ensuring comprehensive detection, reliable transmission, and instrumented, interconnected, and intelligent processing, as well as cloud systems for convenient use, Advantech successfully constructed an intelligent building. Through intelligent management, effective energy conservation can be achieved and resource wastage prevented. 2) Intelligent power management is implemented by using a single button to control the lights and projectors in the conference room; various different settings such as presentation mode or discussion mode are also provided. This prevents unnecessary resource waste should employees forget to switch off the power supply.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	1455000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1		

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Nokia Group

Scope of emissions

Scope 1

Emissions in metric tonnes of CO2e

7.415

Uncertainty (±%)

5

Major sources of emissions

2017: (Scope II Emissions) / (Number of products produced) = (25514) / 4926360 pcs) x 20572 pcs = 106.389 tonnes CO2 Total volume of products purchased by NSN is 20572 pcs

Verified

Yes

Allocation method

Allocation based on the number of units purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

2017: (Scope I Emissions) / (Number of products produced) = (1778.2) / 4926360 pcs) x 20572 pcs = 7.415 tonnes CO2 Total volume of products purchased by NSN is 20572 pcs

Requesting member

Nokia Group

Scope of emissions

Scope 2

Emissions in metric tonnes of CO2e

106.389

Uncertainty (±%)

5

Major sources of emissions

2017: (Scope II Emissions) / (Number of products produced) = (25514) / 4926360 pcs) x 20572 pcs = 106.389 tonnes CO2 Total volume of products purchased by NSN is 20572 pcs

Verified

Yes

Allocation method

Allocation based on the number of units purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

2017: (Scope II Emissions) / (Number of products produced) = (25514) / 4926360 pcs) x 20572 pcs = 106.389 tonnes CO2 Total volume of products purchased by NSN is 20572 pcs

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

Please refer to Advantech CSR website and CSR report

<http://www.advantech.com/csr>

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
-----------------------	--

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

1) Advantech endeavors to reduce the impact of its product design/application and waste disposal operations. In addition to complying with relevant regulations, the company encourages all employees to participate in environmental protection and sustainable corporate development. To accomplish these goals, Advantech has initiated environmental protection management projects that emphasize energy conservation, carbon reduction, and waste reduction. 2) Advantech built the Linkou green building and implement Intelligent Building Energy Management to perform effective green energy management and reduce the energy using for producing customer's products

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

Nokia Group

Group type of project

Relationship sustainability assessment

Type of project

Aligning goals to feed into customers targets and ambitions

Emissions targeted

Actions that would reduce our own operational emissions (our scope 1 & 2)

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

7.2

Estimated payback

0-1 year

Details of proposal

1) Advantech endeavors to reduce the impact of its product design/application and waste disposal operations. In addition to complying with relevant regulations, the company encourages all employees to participate in environmental protection and sustainable corporate development. To accomplish these goals, Advantech has initiated environmental protection management projects that emphasize energy conservation, carbon reduction, and waste reduction. 2) Advantech built the Linkou green building and implement Intelligent Building Energy Management to perform effective green energy management and reduce the energy using for producing customer's products

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2018-2019 CDP Action Exchange initiative?

Yes

SC3.1a

(SC3.1a) Identify which member(s), if any, have motivated you to take part in Action Exchange this year.

Nokia Group

SC3.1b

(SC3.1b) Select the types of emissions reduction activities that your company would like support in analyzing or in implementing in the next reporting year.

Energy efficiency: Building services

Energy efficiency: Processes

Product design

SC3.1c

(SC3.1c) As part of Action Exchange, would you like facility level analysis?

Yes

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2017-2018 Action Exchange initiative?

Yes

SC3.2a

(SC3.2a) Describe how your company actively considered emissions reduction projects as a result of Action Exchange. If you do not have any emissions reduction activities resulting from Action Exchange at any stage of implementation, please explain why not in the second column.

	Type of project	Details of proposal
Row 1	Energy efficiency: Building services Energy efficiency: Processes Product design	1) Advantech endeavors to reduce the impact of its product design/application and waste disposal operations. In addition to complying with relevant regulations, the company encourages all employees to participate in environmental protection and sustainable corporate development. To accomplish these goals, Advantech has initiated environmental protection management projects that emphasize energy conservation, carbon reduction, and waste reduction. 2) Advantech built the Linkou green building and implement Intelligent Building Energy Management to perform effective green energy management and reduce the energy using for producing customer's products

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services, if so, what functionality will you be using?

Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.

1

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

SC4.2c

(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
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SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Public	Investors Customers	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms