C0. Introduction

C0.1

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

Founded in 1977, Hanwha Aerospace is a member of Hanwha Group engaging in space, aviation, land, sea and air defense industries. We acquired and merged Hanwha Munition in November 2022 and incorporated it as an affiliated company in December of the same year with the goal of becoming a top 10 comprehensive defense company by 2030, from ground to aerospace. Based on our core technologies in the field of highly advanced precision machinery, we are engaged in the production and sales of domestic and overseas aircraft and gas turbine engines, self-propelled artillery, armored vehicles, and CCTV satellite systems, as well as the provision of services using IT technology. We are headquartered in Seoul and have business sites and research centers in Daejeon, Boeun, and Changwon.

<Space>

Hanwha Aerospace produces and supplies various core components including engines, supply system valves, attitude control systems, and propellant test facilities for the Korean launch vehicle Nuri. In particular, we were selected as a comprehensive company for the Korean launch vehicle upgrade project system in December 2022 and are leading a total of four Nuri launch projects to be launched by 2027. At the same time, we are exploring various possibilities for new space businesses such as launch service business and space exploration business.

<Aviation>

Hanwha Aerospace is Korea's only gas turbine engine and aviation machinery company. Based on more than 40 years of technology and experience, we are positioning ourselves as a leader in the advanced aviation industry by developing, producing, and maintaining engines and components for commercial and military aircraft. In the field of civil engine parts, we supply more than 500 types of engine parts to major engine manufacturers and partners. In the military aeroengine business, we provide MRO (Maintenance, Repair and Overhaul) services and assemble and supply engines for major weapon systems of each military.

<Defense>

Hanwha Aerospace's defense division has contributed to the security of the Republic of Korea with know-how and technology accumulated over 40 years. We develop, produce, and manage ground defense systems such as firepower, maneuver, anti-aircraft, and waterborne and unmanned systems. We also plan to expand our business areas to include guided weapons and ammunition systems, lasers, and navigation based on gunpowder technology.

<Future Mobility>

In line with the trend of improving energy efficiency and developing eco-friendly aircraft technology, Hanwha Aerospace is promoting the development of electric actuators on airplanes (PAV, eVTOL) for the Urban Air Mobility (UAM) market. We are leading next-generation technologies such as lightweight fuel cell for air mobility, and will cooperate in the development and supply of future hybrid electric propulsion systems that combine gas turbines or hydrogen fuel cell systems with electric batteries for UAM airplanes.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date
January 1 2022

End date
December 31 2022

Indicate if you are providing emissions data for past reporting years
No

Select the number of past reporting years you will be providing Scope 1 emissions data for
<Not Applicable>

Select the number of past reporting years you will be providing Scope 2 emissions data for
<Not Applicable>

Select the number of past reporting years you will be providing Scope 3 emissions data for
<Not Applicable>

C0.3

(C0.3) Select the countries/areas in which you operate.

Republic of Korea

C0.4

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

KRW

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 chosen approach for consolidating your GHG inventory.

Operational control

C-TO0.7/C-TS0.7

(C-TO0.7/C-TS0.7) For which transport modes will you be providing data?

Heavy Duty Vehicles (HDV)

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	KR7012450003

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) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Director on board	1. Governance Position and Responsibilities As the highest decision-making body of Hanwha Aerospace, the Board of Directors (BOD) established the ESG Committee in June 2021 for responsible governance of climate change. The ESG Committee is composed of four independent directors to ensure transparency and independence in management and is responsible for establishing mid- to long-term ESG strategies and policies, continuously checking the status of implementation, and realizing long-term sustainable growth. 2. Level of Responsibility for Climate Change Issues The ESG Committee holds regular meetings once a quarter and meets as needed to deliberate and review important issues related to climate change and environmental, and continuously monitors the establishment and implementation of the company's mid- and long-term strategies for achieving carbon neutrality. Under the ESG Committee, we operate the ESG Consultative Group, which includes the Chief Safety & Environment Officer (CSO), the head of the Safety & Environment Department, and working staff. The ESG Consultative Group establishes a company-wide climate change response and eco-friendly management operation plan based on directions for the promotion of ESG management and manages the implementation of detailed tasks. The ESH Office, under the direct supervision of the CEO, including the CSO, serves as a control tower for accident prevention activities such as establishing safety and environmental systems for domestic and overseas business sites and responding to various issues. Based on the ESH strategies and goals established by the ESH Office, the safety and environment teams at each business site establish plans and manage implementation.

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	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding annual budgets Overseeing and guiding employee incentives Reviewing and guiding strategy Overseeing and guiding the development of a transition plan Monitoring the implementation of a transition plan Overseeing the setting of corporate targets Monitoring progress towards corporate targets Reviewing and guiding the risk management process	<Not Applicable>	The ESG Committee holds regular meetings once a quarter and holds ad hoc meetings as needed. The committee mainly deliberates on Hanwha Aerospace's environmental, social, and governance policies and other various matters necessary for ESG management. Under the ESG Committee, we are running the ESG Consultative Group, which includes the Chief Safety & Environment Officer (CSO), the Head of the Safety & Environment Department, and working staff. Under the ESG Committee, the ESG Consultative Group, comprised of CSOs and heads of safety and environment departments from each division, monitors company-wide directions for the promotion of ESG management and detailed implementation tasks by each division based on issues related to climate change response and reports to the ESG Committee if there are any issues on the consultative group's agenda.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	ESG plays an important role in determining corporate value by affecting the financial performance of a company. Specifically, climate change is a critical ESG risk but it is also a huge opportunity. In particular, climate change is a major ESG risk, but it is also a major opportunity, and it is essential to consider climate change in major decision-making in corporate activities. For long-term sustainable growth, Hanwha Aerospace has established an environmental, social, and corporate governance system and newly installed the ESG Committee, the highest decision-making body for climate change and ESG. In addition, to realize social value, the CEO of Hanwha Aerospace recognizes and emphasizes strengthening ESG management as a major task. The company also conducts ESG competency training to strengthen ESG awareness and believes that it has expertise in environmental issues including climate change.	<Not Applicable>	<Not Applicable>

C1.2

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

Position or committee
Other C-Suite Officer, please specify (CSO (Chief Safety and Environment Officer))

Climate-related responsibilities of this position
Managing annual budgets for climate mitigation activities
Providing climate-related employee incentives
Developing a climate transition plan
Implementing a climate transition plan
Integrating climate-related issues into the strategy
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line
Quarterly

Please explain
1. Chief Executive Officer's Position in Corporate Governance and Why
In 2021, Hanwha Aerospace established the ESG Committee, comprised of all independent directors, under the Board of Directors to deliberate and review important issues related to climate change and environment, and to continuously oversee the establishment and implementation of the company's mid- to long-term strategy to achieve carbon neutrality. The ESG Committee holds regular meetings once a quarter and holds ad hoc meetings as needed. The committee mainly deliberates on the performance of internal compliance control activities, compliance management policies, ESG-related policy activities including climate change, policy goals, and implementation status of ESG initiatives including climate change issues. The BOD appoints CSOs (Other C-Suite Officer, Chief Safety and Environment Officer), who are the executives of the group, to responsibly manage climate change issues at Hanwha Aerospace in practice. As we are conducting business activities closely related to national security facilities in areas of aerospace, defense, etc., we are particularly aware of the importance of safety and climate change. To that end, we have appointed a separate safety and environment officer at the group level, giving him or her C-level authority and responsibility. In addition, the KPIs of the CSO, who is the leader of the ESG-related organization, reflect items such as CDP rating and greenhouse gas emission reduction assessment, so that the goals and performance for climate change response are systematically managed by linking them with the performance of management.

2. Monitoring Methods and Evaluation of Climate Change Issues
Under the umbrella of Hanwha Aerospace's ESG Committee, we operate the ESG Consultative Group, which is composed of the head of the Safety & Environment Department, chaired by the CSO, and working staff. The ESG Consultative Group identifies climate change-related risks and opportunities at least once a year by considering various regulations, physical and environmental aspects, stakeholder requirements, and issues faced by the company. The CSO reports to the ESG Committee any substantive issues identified that meet the materiality assessment criteria. The ESG Committee discusses the substantive issues and submits them to the to make decisions. For issues that are deemed not substantive after the substantiality impact assessment, the CSO makes the final decision after gathering opinions from the ESG Consultative Group.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive
Other C-Suite Officer

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary

Performance indicator(s)
Achievement of climate transition plan KPI
Progress towards a climate-related target
Implementation of an emissions reduction initiative
Energy efficiency improvement

Incentive plan(s) this incentive is linked to
Long-Term Incentive Plan

Further details of incentive(s)
As a KPI item for the CSO, who is the leader of the ESG-related organization, we reflect the status of achieving accident-free workplaces, activities to reduce environmental legal risks, greenhouse gas emission management status, and CDP ratings to systematically manage climate change response goals and performance in conjunction with management's performance.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
Hanwha Aerospace has internalized ESG management as a core value and is upgrading its ESG management system with the goal of sustainable growth. A carbon neutrality scenario has been established for the integration of the three companies, and as part of our ESG priorities, we are managing climate change response goals and performance in conjunction with management's performance to achieve carbon neutrality by 2050. In the electricity sector, which accounts for about 64% of total GHG emissions, we are actively considering investments in renewable energy facilities. We reduce energy usage and costs at our business sites by reducing heat losses through steam pipe blocking and reduce fuel consumption through steam condensate recovery, and highly efficient facilities.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?
Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	
Medium-term	1	7	
Long-term	7	28	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

1. Substantive financial or strategic impact standards

Hanwha Aerospace defines a substantive financial impact as one that involves costs or gains in excess of KRW 1 billion. In terms of business strategy, Hanwha Aerospace evaluates the risk level according to an evaluation matrix defined as "① probability of occurrence ② impact with the X and Y axes set as ① probability of occurrence X ② impact, and the level is classified as three categories low (L), medium (M), and high (H). Among them, if the evaluation level is high (H), it is defined as a substantive/significant strategic impact.

As such, we are conducting an assessment of climate change risks and opportunities in line with the substantive financial and strategic impacts, and when substantive financial impacts are identified, we conduct a materiality assessment of the strategic aspects of our business to determine the substantive financial and strategic risks and opportunities.

Climate change risks and opportunities that meet the criteria of material financial impact and business strategic impact are discussed by the ESG Committee and presented to the BOD of Hanwha Aerospace as an agenda item for decision-making by the BOD. In addition, in cases where the financial and business strategic substantiality is assessed and deemed not to be substantive, the CSO makes the final decision after collecting opinions from the ESG Consultative Group.

The ESG Consultative Group identifies risks and opportunities for our business at least once a year in consideration of various regulations, physical and environmental aspects, stakeholder requirements, and issues that we face. Among those identified, significant issues are reported to the ESG Committee. The ESG Consultative Group, which includes the CSO and the Head of the Safety & Environment Department and working staff, defines risks by type and establishes, implements, and manages divisional strategies and implementation tasks for identified risks. We also periodically monitor risk management performance to derive mid- to long-term improvements. Based on the established ESH strategies and goals, the Safety & Environment Team at each business site conducts planning and implementation management.

2. Description of the qualitative indicator used to define substantive financial or strategic impact.

The indicators we use to define financial impacts include operating costs, internal carbon prices, greenhouse gas emissions and energy, and investment costs to improve energy efficiency. On the strategic side, in the evaluation matrix defined as "① Likelihood of occurrence X ② Impact", ① Likelihood of occurrence is evaluated on a scale of 1 to 3, considering the range of sites (factories) physically affected, whether they are subject to laws, regulations, and regulations, and the possibility of disruption to our business operations; and ② Impact is evaluated on a scale of 1 to 3, depending on the damage impact (no damage, partial damage, damage) on production, business operations, etc. Therefore, if the value of the two indicators, "① Likelihood of occurrence X ② Impact", is 9, the risk rating is considered high (H) and it is evaluated as a substantive strategic impact.

As such, Hanwha Aerospace defines a substantive financial impact as one that involves costs or gains in excess of KRW 1 billions. In terms of business strategy, Hanwha Aerospace evaluates the risk level according to an evaluation matrix defined as "① probability of occurrence ② impact with the X and Y axes. The assessment matrix is structured as "Probability of Occurrence X Impact," allowing for the determination of risk severity grades. In cases where the rating falls into the high (H) category, it is defined as a significant strategic impact. Firstly, if it aligns with significant financial impact criteria, a strategic significance impact assessment is conducted. This assessment aims to determine whether the identified risk or opportunity factor holds substantial financial or strategic implications.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
• Climate change risk/opportunity identification, assessment management process

To minimize the impact of climate change-related risks and opportunities, Hanwha Aerospace integrates a company-wide risk identification, assessment, and management system into its processes. The ESG Committee holds regular meetings once a quarter and holds ad hoc meetings as needed. The committee mainly deliberates on Hanwha Aerospace's environmental, social, and governance policies and other matters necessary for ESG management. Under the ESG Committee, we operate the ESG Consultative Group, which includes the Chief Safety & Environment Officer (CSO), the Head of the Safety & Environment Department, and working staff. Under the ESG Committee, the ESG Consultative Group, comprised of CSOs and heads of safety and environment departments from each division, monitors issues related to climate change response and detailed implementation tasks by division based company-wide directions for the promotion of ESG management, and reports to the ESG Committee if there are any issues on the consultative group's agenda.

(Value Chain Stages) Hanwha Aerospace identifies climate change-related risks and opportunities by considering the value chain stages across its business, not only at its direct operating sites but also upstream and downstream, where raw materials are supplied and products are delivered.

(Time-based) Hanwha Aerospace is establishing an overall business plan with the goal of 2050 carbon neutrality. Also, we are identifying climate change risks and opportunities based on short-, medium-, and long-term time frames, setting goals and establishing business strategies based on time frames to achieve carbon neutrality by 2050.
* Short-term: Every 1 year as of 2022, medium term: 1-7 years, long term: 7-28 years

• Detailed stages of process

(Identification stage)
Under the umbrella of the ESG Committee, the ESG Consultative Group, which includes the heads of the CSO and Safety & Environment departments and working staff, monitors all environmental issues, including climate change at least once a year. The ESG Consultative Group identifies risks and opportunities due to environmental regulations and natural disasters, market and reputation issues, etc. and analyzes business and corporate impacts based on company-wide directions for the promotion of ESG management for each risk, including management strategy, financial impact, and R&D direction.

(Assessment Stage)
We define a material financial impact as one that involves an expense or loss exceeding KRW 1 billion. In terms of business strategy, we evaluate risk ratings based on an evaluation matrix defined as "① likelihood of occurrence ② impact" with X and Y axes, respectively, and if the evaluation rating is high (H), it is defined as a significant strategic impact. In this way, we evaluate climate change risks and opportunities in line with material financial and strategic impacts, and if they meet the criteria for material financial impact, we then proceed with the materiality assessment matrix for strategic aspects of the business to select and manage material climate change risks and opportunity factors.

(Response Stage)
Climate change risks and opportunities that meet the standards for substantiality are discussed by the ESG Committee and presented to the Board of Directors of Hanwha Aerospace as an agenda item for decision-making by the Board of Directors. If the financial and business strategic substantiality is assessed and determined not to be substantive, the CSO makes the final decision after receiving input from the ESG Consultative Group.
The ESG Consultative Group defines risks by type and establishes, implements, and manages divisional strategies and implementation tasks for identified risks. We also periodically monitor risk management performance to derive mid- to long-term improvements. Based on the established ESH strategies and goals, the Safety & Environment Team at each business site conducts planning and implementation management.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	• GHG Target Management System The GHG Target Management System is a system that requires companies and business sites to set GHG emission reduction targets and reduce emissions in order to achieve a 40% reduction from 2018 to meet the 2030 Nationally Determined Contribution (NDC) under 「Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Crisis」. As a managed company in GHG & Energy Target Management System, we are assigned GHG reduction targets based on absolute amounts through negotiations with the government by September of each year, report GHG emissions through a statement in March of the following year and report the achievement of the targets through an implementation performance report. If a company fails to submit a statement for calculating GHG emissions or submits a false statement, it will be fined up to 10 million won. Hanwha Aerospace has been designated as a managed company under the domestic GHG regulation since 2014, and we report our GHG emissions to the government every year and strive to reduce GHG emissions. In 2022, we negotiated with the government and were allocated an emission allowance of 23,997 tons for Changwon Plant 1. We recognize that failure to fulfill the domestic GHG target management system may result in financial damages such as fines, as well as reputational risks. In response, we have been steadily carrying out activities to reduce and efficiently manage energy at our business sites, continuously managing GHG emissions, and exploring various activities to reduce emissions. As a result, in 2022, we implemented various activities at Changwon Plant 1, such as replacing LED lights, shortening the operating hours of electric furnaces, adjusting the operating hours of high-load equipment, and successfully reduced approximately 1,200 tCO2eq.
Emerging regulation	Relevant, always included	• Emission Trading Scheme (ETS) As for Korea, the emissions trading scheme has been fully implemented for mandatory companies since 2015 under the "Act on the Allocation and Trading of Greenhouse-gas Emission Permits." According to the current law, the system covers companies that emit more than 125,000 tCO2 per year or workplaces that emit more than 25,000 tCO2 per year, but we are not included in the scheme as only our Changwon Plant 1 emits about 24,000 tCO2eq. With the merger of Hanwha Munition , an emissions trading company, in December 2022, we expect that from 2023, Hanwha Aerospace will also become an emissions trading company and will be obligated to report and reduce emissions at all of its sites. Therefore, if we were to be included in the emission trading scheme, we would need to reduce our GHG emissions by 6,950 metric tons in 2022, assuming a reduction of approximately 7.6% across all emission baselines, including Hanwha Munition, using an industry adjustment factor. If we do not implement GHG reduction activities, we will have to purchase emission allowances from the market, which will result in a financial liability of approximately KRW 143 million, assuming an average price of KRW 20,686 for emission allowances in 2022.
Technology	Relevant, always included	• Developing eco-friendly and highly efficient product technologies In response to climate change, the IPCC has outlined a pathway to carbon neutrality by 2050, and the International Civil Aviation Organization (ICAO) has agreed to reduce greenhouse gas emissions from aircrafts significantly to achieve carbon neutrality by 2050, in line with the global low-carbon agenda and the need to reduce greenhouse gas emissions. Hanwha Aerospace recognizes the importance of green business in the future. In order to actively respond to this, we are taking the lead in developing sustainable products by promoting the development of eco-friendly and high-efficiency product and portfolio technologies. In particular, the electric propulsion system business can improve the performance and efficiency of an aircraft by replacing the engine, one of the main systems of an aircraft, with an electric motor, or by utilizing electric technology as a supplement. By applying electric propulsion systems, fuel consumption can be reduced and emissions can be reduced as well to minimize environmental impact. Therefore, if we do not develop eco-friendly and highly efficient products in the field of aviation components, which is one of our main businesses, there is a risk that we may be eliminated from the market in the future. If we do not develop eco-friendly mobility product technologies, we expect to incur financial damages of approximately KRW 13.7 billion in 2022, assuming a 1% drop in sales of the aviation engine and parts business. In order to accelerate the commercialization of eco-friendly mobility products, Hanwha Aerospace is working on the next-generation lithium-ion battery system for submarines and is also focusing on securing future core technologies such as lightweight fuel cell systems for aviation
Legal	Relevant, always included	Hanwha Aerospace complies with the provisions of laws and regulations related to environmental regulations, including climate change. Revisions are reflected in the regular and occasional risk assessment process. If we do not actively respond to the revision of the target management system and ESG disclosure, including climate change, there is a risk of legality violations. Thus, we continue to monitor our activity to maintain the legitimacy as this can adversely affect both our ESG assessment results and reputation. As such, we do not anticipate any legal issues due to our systematic response and management of climate change-related laws, which are always reflected in our risk assessment. We have not encountered any issues related to climate change legality to date and we do not expect that we will have any legal issues in the future as well due to our continuous management.
Market	Relevant, always included	• Capturing the Urban Air Mobility (UAM) Market With the recent transition from the era of internal combustion engine to the green mobility, the future of sustainable mobility is emerging, and the sustainable mobility is expanding from the center of automobiles such as electric vehicles and hydrogen vehicles to advanced means of transportation such as urban air transportation (UAM). According to the Korean Urban Air Transportation Roadmap (K-UAM) released by the Ministry of Land, Infrastructure, and Transport in 2020, the UAM market is expected to grow to a global market size of KRW 730 trillion by 2040. The UAM market is expected to be an important part of the future urban transportation system, and if we do not take the lead in this field, we may lose our UAM market share and which may pose a negative impact on our future earnings and growth. With regard to this, we consider the preoccupation of UAM market as a risk factor and intend to provide various values to the market through synergies of radar and communication technologies accumulated from the 40-year experience in our defense business and low-orbit satellite antenna technology secured from acquisition and investment. We invested USD 25 million to secure a stake in Overair, a U.S. eVTOL (electric vertical takeoff and landing) aircraft developer and signed an MOU with Korea Airports Corporation (KAC) and other related organizations to proactively design UAM models and infrastructure solutions to realize UAM. Since then, we have been focusing on the development of the U.S. Overair aircraft, which is the most important part of the UAM business, while promoting various collaborations to realize the Korean UAM business.
Reputation	Relevant, always included	• ESG non-financial disclosures The importance of ESG is growing as non-financial information on a company's ESG impacts investment decisions. As a result, investment institutions are requiring disclosure of climate change information to review the impacts and risks of climate change on companies and utilize it as an investment indicator. In addition, stakeholders are increasingly demanding disclosure of non-financial information, including climate change. Failure to respond to these demands from customers, investors, and other stakeholders may cause a decline in reputation and credibility, resulting in a decrease in corporate value, increased credit risk, and investor withdrawal. Hanwha Aerospace actively discloses and responds to ESG non-financial information, including information related to climate change, through the Sustainability Report and CDP, and strives to maintain its reputation.
Acute physical	Relevant, always included	• Extreme weather events, such as heavy rain and flooding Natural disasters caused by climate change, such as droughts, heat waves, heavy rainfall, and sea level rise, are recognized as risks. Therefore, we constantly monitor short-term changes in physical environment and conduct risk assessments to prepare for countermeasures. As for mountainous areas, inundation by sudden floods and burial of roads and factory buildings due to landslides may occur. Also, inundation by rising sea levels in coastal areas can have a significant impact on our business. At each site, we have established an emergency response system in accordance with weather forecasts and maintained a system to enable rapid normalization of business by responding to accidents through periodic emergency drills. In addition, at Changwon Plant 2, we installed an infiltration reservoir to respond to floods and heavy rains, so that rainwater that cannot soak into the ground flows directly into the river during heavy rains, preventing floods and other damages.
Chronic physical	Relevant, always included	• Rising sea level due to an increase in average precipitation If greenhouse gases are emitted at the current rate without efforts to mitigate climate change worldwide, precipitation in business site areas in Korea is expected to increase by 20.4% from 2070 to 2099. Increased precipitation can lead to rising sea levels, which can soon lead to direct damage to businesses and infrastructure located near the coast. Damage to production facilities, warehouses, and power caused by flooding can cause disruptions and increased costs in business. Therefore, Hanwha Aerospace also analyzed the impact of sea level rise on its company in the mid-to-long term. The company assessed the risks and impact of each business site, assuming the worst-case scenario of sea level rise. As a result of the evaluation, it was determined that areas outside of the company's business site might partially be flooded, but it would not affect production in the mid-to-long term. However, considering the unpredictability of climate, there is a need for continuous monitoring. If the frequency and intensity of flooding at business sites increase, the company will take precautionary measures, such as installing water barriers to prevent flooding.

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) 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 & Primary climate-related risk driver

Emerging regulation	Enhanced emissions-reporting obligations

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
The Korean government has also declared its intention to achieve carbon neutrality by 2050, and the government and the Carbon Neutrality Commission have proposed an upward revision of the 2030 Nationally Determined Contribution (NDC), aiming for a 40% reduction from 2018. With such approaches, it is expected that domestic demands for reduction will gradually increase and the pressure on domestic companies to reduce emissions will continue to increase as well. Hanwha Aerospace is under greenhouse gas target management regulations only for Changwon 1 plant in 2022, but as Hanwha Munition , an emission trading company, was incorporated as an affiliate in December 2022, it is likely to be subject to emission trading regulations from 2023.
Accordingly, we conducted a materiality assessment of the strategic criteria, defined as the "① likelihood of occurrence X ② impact" criterion, if it entails a cost or loss of more than KRW 1 billion based on short-, medium-, and long-term time horizons. According to the evaluation, the strengthening of the obligation to report greenhouse gas emissions due to the emission trading scheme is estimated to generate about KRW 11.9 billion in emissions debt by 2030 based on the scenario of an increase in the carbon price and paid allocation ratio.
In response, we have identified the strengthening of mandatory emissions reporting in 2030 as a risk that is very material to us in the medium term. In order to respond to this, we are continuously promoting various efforts to reduce emissions, such as replacing LED lights, reducing energy consumption by shortening the operating hours of electric furnaces, improving the refrigeration water supply system, adjusting the operating hours of high-load equipment, and improving the cooling water supply system.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
11910632487

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
To estimate the financial impact of the domestic emission trading scheme on Hanwha Aerospace, we assumed that the emission trading scheme will continue until 2030, the government reduction target in 2030 will be around 11.4%, and the paid allocation rate for the industrial sector will increase to 40% in 2030. Hanwha Aerospace's 2030 reduction requirement was estimated by subtracting its 2030 allotment (68,681 tons) from its projected 2030 emissions (193,796 tons) to a limit value of 125,113 tons. Our financial risk is estimated to be KRW 11,910,632,487 if we purchase our 2030 reduction requirement of 125,113 tons from the carbon market.

Financial Damage Calculation = Our projected 2030 reduction requirement (tCO2eq) × Internal carbon price (KRW/tCO2eq) = 125,113 tCO2eq × 95,199 KRW/tCO2eq = KRW11,910,632,487

Cost of response to risk
1480000000

Description of response and explanation of cost calculation
(Situation) Hanwha Aerospace will become part of Hanwha Munition in December 2022, which will increase its greenhouse gas emissions. As a result, it is highly likely that we will be subject to emission trading scheme, and the direct cost of reporting GHG emissions is expected to be significant. Therefore, GHG reduction is essential to mitigate the financial burden.
(Task) In order to respond to risks, we need to identify and manage them by predicting the increase in the price of carbon allowances/credits due to the enforcement of regulations at home and abroad, and calculating the amount of money needed for the short-, medium-, and long-term emission trading scheme. In addition, in order to minimize risks, we need to make efforts to continue to use the existing measures for reduction, explore ways to upgrade them, and identify medium- and long-term energy saving projects.
(Action) In response, Hanwha Aerospace has established the 2050 Net Zero policy, which defines a reduction target that is stricter than the emissions trading scheme regulation, and explores and implements reduction measures to fulfill it.
(Result) In order to reduce GHG emissions and actively respond to the 2050 carbon neutrality goal, Hanwha Aerospace is actively implementing activities to reduce GHG emissions by establishing an in-house GHG database, identifying energy rationalization themes, and implementing energy efficiency investments under the Environment & Safety Department. We are also conducting company-wide energy/greenhouse gas reduction activities through the Energy Rationalization Task Force. Representative projects of the Energy Rationalization Task Force include reducing heat losses by cutting off steam pipes in 2022, saving fuel by recovering steam condensate, and improving process air prevention facilities, which reduced GHG emissions by about 3,200tCo2eq in 2022. As such, we are engaging in various activities to improve the environment, including greenhouse gas reduction, and invested KRW 1,480,000,000 in 2022.

* Basis for calculation of management costs: Amount of environmental investments including GHG reduction technologies (2 projects to reduce heat loss by blocking steam

pipes, 4 projects to save fuel by recovering steam condensate, improvement of process air prevention facilities, and greenhouse gas reduction projects through energy saving peaks) = KRW 1,480,000,000.

Comment

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?

No

C2.4b

(C2.4b) Why do you not consider your organization to have climate-related opportunities?

	Primary reason	Please explain
Row 1	Opportunities exist, but none with potential to have a substantive financial or strategic impact on business	Hanwha Aerospace monitors all environmental issues, including climate change, at least once a year through the ESG Council, which includes the CSO, the head of the Safety & Environment Department, and working staff under the ESG Committee. The ESG Council identifies risks and opportunities arising from environmental regulations, natural disasters, market and reputation issues, etc. and analyzes business and corporate impacts based on company-wide directions for the promotion of ESG management for each risk, including management strategy, financial impact, and R&D direction for each risk. In terms of business strategy, we evaluate the risk level according to the evaluation matrix defined as "① probability of occurrence ② impact" by setting the X and Y axes as "① probability of occurrence X ② impact", and the level is classified as three categories: low (L), medium (M), and high (H). Among them, if the evaluation level is high (H), it is defined as a criterion for significant strategic impact. As such, we are assessing climate change risks and opportunities against the criteria of substantive financial and strategic impacts, and if substantive financial impacts are met, we are conducting a materiality assessment of the strategic aspects of our business to identify substantive financial and strategic opportunities. In 2022, Hanwha Aerospace's climate change opportunity factors include activating the use of hydrogen energy and increasing sales by converting the electric propulsion system to an eco-friendly business, but none of these factors were deemed to be substantive when assessed for substantiality based on the financial and strategic impact definitions and criteria. We will continue to conduct financial and strategic materiality assessments every year to identify and manage the risks and opportunities of climate change and proactively identify significant opportunities that may arise in the future, and after establishing countermeasures, we plan to reflect the opportunities in appropriate business strategies so that they can be activated.

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan

Yes, we have a climate transition plan which aligns with a 1.5°C world

Publicly available climate transition plan

Yes

Mechanism by which feedback is collected from shareholders on your climate transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

Hanwha Aerospace has established a 2050 Net Zero goal to achieve net zero of scope 1 and 2 emissions by 2050 based on the carbon emissions rate in 2022 and implemented multifaceted efforts such as emissions management through supply chain and others to reduce carbon emissions generated not only at business sites but also upstream and downstream for Net Zero by 2050. We share our plans and business strategies through shareholder reports on ESG management performance once a quarter and continue to gather feedback.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your climate transition plan (optional)

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future

<Not Applicable>

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios: IEA NZE 2050	Company-wide	<Not Applicable>	Hanwha Aerospace has established organizational boundaries for all of its domestic business and its operational boundaries are set to include Scope 1 and 2 as well as Scope 3.We have established short-term targets for each year through 2026, with 2022 as the baseline, and a long-term goal of 2050 Net Zero to achieve 1.5℃, with a mid-term target for 2030. To analyze climate change scenarios, we utilized data such as changes in energy demand and consumption, and product output, and to examine our growth rate and prospects, we considered linear and multiple regression analyses as well as product cost per unit. We also examined sales projections based on market conditions as well as regulatory intensity.
Physical climate scenarios: RCP 8.5	Company-wide	<Not Applicable>	If the world continues to emit greenhouse gases at the current rate without efforts to mitigate climate change, the average annual temperature in the region where our business sites are located is expected to increase by 6.0℃ from 2070 to 2099, precipitation is expected to increase by 20.4%, and the number of heat wave days per year is expected to increase from the current 7.5 days to 31.9 days. As global warming intensifies, climate impact factors such as heat waves and cold waves are expected to increase in East Asia, including Korea, and heavy rains, floods, typhoons, and droughts are also expected to become stronger and more frequent. Hanwha Aerospace is conducting risk analysis on short- and long-term physical impacts such as flooding, sea level rise, and heat waves. In the case of sea level rise, for instance, we assessed the risk and impact of each plant under the worst-case scenario of rising sea levels and determined that Changwon Plant 3 may experience some flooding, but not enough to affect production. Given the unpredictable weather patterns, however, we continue to monitor and explore countermeasures such as review on installing floodwalls for flood control. In the case of flood, we analyzed the risk of flooding at our workplaces based on physical scenario analysis, estimating the maximum precipitation in the area where the workplace is located and the rate of precipitation increase caused by temperature rise along with the drainage capacity of the workplace and the history of flooding. In the scenario analysis, we determined that there is no significant short- or long-term risk to our sites, but at Changwon 2, we installed infiltration tanks to prevent damage such as flooding by allowing rainwater that cannot be soaked into the ground to flow directly into rivers during heavy rains. In addition, at Changwon 3, we operate front and rear gate barriers and stormwater outlet blocking facilities to prevent river flooding. To prevent damages caused by climate variability, we have established an emergency response system at each site in accordance with weather forecasts and maintain a system for rapid accident response through periodic emergency drills to enable quick normalization of business

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

An analysis of the scenario on the IEA NZE 2050 basis has shown that all leading and participating companies and countries need climate change mitigation policies, thereby raising the need to set NET ZERO targets. The Republic of Korea also unveiled its carbon-neutral goal in 2050 and promised to participate in climate change mitigation, which requires companies subject to greenhouse gas regulations to achieve the Net Zero goal. However, Hanwha Aerospace is expected to increase its greenhouse gas emissions due to the merger and acquisition of Hanwha Munition in November 2022 and the inclusion of Hanwha Munition as an affiliate in December 2022, which will likely result in the company being included in the emissions trading scheme from 2024. Looking ahead to the emissions market, we recognize that there are limitations in GHG reduction technologies and that the price of emissions credits is expected to rise significantly due to the shortage of emissions credits to consider energy supply and demand plans. Therefore, we identified the emissions trading scheme as a risk and analyzed the likelihood and impact in accordance with our internal risk assessment system and identified the cost of responding to the inclusion of the emissions trading scheme as a substantive risk.

Results of the climate-related scenario analysis with respect to the focal questions

As Hanwha Aerospace is increasingly likely to be included in the emissions trading scheme, the GHG reduction targets required of us are expected to increase significantly over time if the emissions trading scheme is operated in conjunction with the national policy of Net Zero. In particular, since we are likely to be included in the paid allocation, we are expected to incur increased financial costs in addition to the burden of GHG reduction compared to industries without paid allocation. In fact, when we reviewed the reduction targets required of companies as the emissions trading scheme operated from the 1st to the 3rd plan periods, we found that the reduction targets have become more stringent over time, which means that net zero will be required by 2050. However, when analyzing the reduction potential that can be applied, the reduction technologies that can be applied across the country are limited, and even when analyzing the energy supply and demand plan, it is unlikely that the transition to green energy will be easy. Therefore, the price of carbon allowance/credits is expected to continue to rise until 2050, and the rising cost may soon be turned into the debt of Hanwha Aerospace. In order to minimize its carbon debt under the emissions trading scheme, Hanwha Aerospace has set a net zero goal for itself along with the government's goal, Hanwha Aerospace is establishing an implementable goal considering its own reduction potential and energy supply status To achieve the goal, Hanwha Aerospace is implementing various reduction activities such as replacing high-efficiency equipment, changing fuels, optimizing processes, and introducing new energy facilities. In addition, Hanwha Aerospace constantly monitor the government's energy supply plan and examining ways to procure eco-friendly energy in areas where reductions are insufficient. As such, Hanwha Aerospace has identified in advance the emissions trading scheme and the carbon market, which are expected to become a significant risk in the future, and is establishing countermeasures, and will systematically respond as planned.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	In response to climate change, the IPCC has outlined a pathway to carbon neutrality by 2050, and the International Civil Aviation Organization (ICAO) has agreed to reduce greenhouse gas emissions from aircrafts significantly to achieve carbon neutrality by 2050, in line with the global low-carbon agenda and the need to reduce greenhouse gas emissions. Hanwha Aerospace recognizes the importance of an eco-friendly future, and in order to actively respond to this, we are taking the lead in developing sustainable products by promoting the development of eco-friendly and high-efficiency product and portfolio technologies.. In particular, the electric propulsion system business can improve the performance and efficiency of an aircraft by replacing the engine, one of the main systems of an aircraft, with an electric motor, or by utilizing electric technology as an auxiliary. By applying electric propulsion systems, both fuel consumption and emissions can be reduced, and environmental impact can be minimized. In addition, electrified aircraft have advantages such as lower noise levels and reduced maintenance costs. To further promote this, we have formed the Electric Propulsion Task Force under the Aerospace Research Institute to study eco-friendly electric propulsion systems for aviation to reduce the amount of carbon emitted when running aviation engines and to design sustainable power systems. We are also working on a lithium-ion battery system for next-generation submarines and are focusing on securing future core technologies such as lightweight fuel cell systems for aviation.
Supply chain and/or value chain	Yes	In order to manage eco-friendly supply chain and produce eco-friendly products, Hanwha Aerospace conducts activities such as preliminary environmental checks on parts and supplies. In addition, we have prepared a purchasing manual to prioritize eco-friendly certified products for auxiliary materials, facilities, and office supplies. We also conduct systematic green purchasing activities by evaluating the environmental impact of purchased products at the stage of use and reflecting the evaluation results in product purchase decisions. Green purchasing is a corporate activity that evaluates the environmental management capabilities of suppliers in the selection of suppliers and procurement of supplies and consumes eco-friendly products and services. It is a socially responsible consumption behavior aimed at environmental protection and sustainable development. We aim to comply with product regulatory standards, use eco-friendly certified products for at least five items per business site, and acquire products certified with environmental labels or carbon labels.
Investment in R&D	Yes	With the recent transition from the era of internal combustion engine to the green mobility, the future of sustainable mobility is emerging, and the sustainable mobility is emerging, and eco-friendly mobility is expanding from automobiles such as electric vehicles and hydrogen vehicles to advanced means of transportation such as urban air transportation (UAM). According to the Korean Urban Air Transportation Roadmap (K-UAM) released by the Ministry of Land, Infrastructure, and Transport in 2020, the UAM market is expected to grow to a global market size of 730 trillion won by 2040. Hanwha Aerospace aims to provide various values in the UAM market with the synergy of more than 40 years of radar and communication technology accumulated through the defense business and the technology of low-orbit satellite antenna companies secured through acquisition/investment. As UAM can reliably support real-time positioning of multiple UAM aircraft at the same time, three-dimensional precise route monitoring for flight safety, and autonomous flight by utilizing satellite communication in addition to ground communication, we expect to create future synergies with the satellite communication antenna business and the low-orbit satellite communication business, in which we invested/acquired a stake in 2020 and 2022, respectively. To participate in the UAM business, we invested $25 million in Overair, a U.S. developer of electric vertical takeoff and landing (eVTOL) aircraft, in 2020 to acquire a stake, and in June 2022, we invested $50 million in Overair's Series-B in the form of convertible notes. Together with Overair, we plan to build a full-scale unmanned prototype and conduct initial flight tests in 2023, as well as participate in the Korean Urban Air Transportation Grand Challenge (K-UAM GC) hosted by the Ministry of Land, Infrastructure, and Transport and conduct demonstration flights for FAA certification in 2024 and 2025.
Operations	Yes	As the global movement to limit global warming to 1.5 degrees Celsius has intensified, many countries have declared their intention to achieve Net Zero by 2050, and the Korean government has also declared 2050 carbon neutrality. The government has proposed an increase in the 2030 Nationally Determined Contribution (NDC) to 40% from 2018. With such approaches, it is expected that domestic demands for reduction will gradually increase and the pressure on domestic companies to reduce emissions will continue to increase as well. In order to actively respond to the government's climate change policy, the Environment & Safety Department is actively implementing activities to reduce GHGs by establishing an in-house GHG database, identifying energy rationalization themes, and implementing energy efficiency investments. In addition, we have established and operated a GHG inventory in the in-house EHS IT system for effective GHG data management and environmental management system operation. Through the Energy Rationalization Task Force, we are conducting company-wide energy/greenhouse gas reduction activities. Moreover, we have identified and improved items that can efficiently reduce energy usage, and rewarded employees based on their improvement performance to raise their interest in energy reduction.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Capital expenditures	Hanwha Aerospace held a ceremony to launch the national project 'Development of Materials and Parts Manufacturing Technology for Composite Shapes of Nickel-based Super Heat Resistant Alloys' with the Korea Institute of Industrial Technology Evaluation and Management, under the Ministry of Trade, Industry and Energy. With a total project cost of KRW 26.5 billion over four years until the end of 2025, the project aims to develop 3D printing materials and localize parts manufacturing technology for nickel-based super heat-resistant alloys, which are mainly used in gas turbine equipment for power generation and propulsion engines for the aerospace industry. By succeeding in this national project, we plan to contribute to the achievement of Korea's 2050 carbon neutrality goal by localizing repair and regeneration technologies for existing power generation gas turbine parts, as well as expanding our business to the eco-friendly industrial hydrogen turbine market that can burn 100% hydrogen in the future. In addition, we installed a solar power generation facility on the roof of the production facility building at the Boeun Plant in 2022 to reduce energy costs and GHG gas emissions by using renewable energy, and we have a history of reviewing the amount of greenhouse gas reduction, investment costs, and savings by installing solar power generation facilities at the integrated scrapyards and logistics centers of our other business sites.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	Yes, we identify alignment with our climate transition plan	<Not Applicable>

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's climate transition.

Financial Metric
Revenue/Turnover

Type of alignment being reported for this financial metric
Alignment with our climate transition plan

Taxonomy under which information is being reported
<Not Applicable>

Objective under which alignment is being reported
<Not Applicable>

Amount of selected financial metric that is aligned in the reporting year (unit currency as selected in C0.4)
80600000000

Percentage share of selected financial metric aligned in the reporting year (%)
1.7

Percentage share of selected financial metric planned to align in 2025 (%)
1.9

Percentage share of selected financial metric planned to align in 2030 (%)
10

Describe the methodology used to identify spending/revenue that is aligned
Hanwha Aerospace recognizes the importance of eco-friendly future business and is taking the lead in developing sustainable products by promoting the development of eco-friendly and high-efficiency product and portfolio technologies to actively respond to this. In particular, the electric propulsion system business can replace the engine, one of the aircraft's main systems, with an electric motor, or use electric technology as an auxiliary to improve the performance and efficiency of the aircraft. We are developing and supplying energy storage systems (ESSs) to be applied to the aviation and ship sectors, and we plan to continue to increase the proportion of sales by 2030. In addition, we are actively striving for climate change by issuing and operating green bonds, an eco-friendly investment promotion project operated by the state.

C4. Targets and performance

C4.1

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

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Is this a science-based target?
No, but we anticipate setting one in the next two years

Target ambition
<Not Applicable>

Year target was set
2022

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Base year
2022

Base year Scope 1 emissions covered by target (metric tons CO2e)
29280

Base year Scope 2 emissions covered by target (metric tons CO2e)
61648

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
90928

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
14

Target year
2030

Targeted reduction from base year (%)
30

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
29280

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
61648

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
90928

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

Target status in reporting year
New

Please explain target coverage and identify any exclusions
Hanwha Aerospace is reporting to the CDP for the first time in 2022. In 2022, "Hanwha Munition, Hanwha Defense, Hanwha Aerospace" were consolidated into 'Hanwha Aerospace', and Hanwha Aerospace has publicly set new goals for 2022. The scope for setting and monitoring goals is based on the entirety of Hanwha Aerospace, and there are no omitted emission sources.

Plan for achieving target, and progress made to the end of the reporting year
Hanwha Aerospace has set a greenhouse gas reduction target of 11.47% by 2026 compared to 2022 and is reviewing reduction initiatives to achieve this target.
For direct reductions, various initiatives such as replacement with high-efficiency LEDs, disposal of idle equipment, installation of power timers, and driving efficiency improvement are planned to be implemented.
In addition, we have a plan to convert to renewable energy through the installation of solar panels. Starting with our Pangyo Research Institute, we are expanding the installation of solar panels on the rooftops of buildings, and the amount of renewable energy generation is also increasing.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

Target reference number
Abs 2

Is this a science-based target?
No, but we anticipate setting one in the next two years

Target ambition
<Not Applicable>

Year target was set
2022

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Base year
2022

Base year Scope 1 emissions covered by target (metric tons CO2e)
29280

Base year Scope 2 emissions covered by target (metric tons CO2e)
61648

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
90928

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
14

Target year
2050

Targeted reduction from base year (%)
100

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
29280

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
61648

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
90928

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

Target status in reporting year
New

Please explain target coverage and identify any exclusions
Hanwha Aerospace is reporting to the CDP for the first time in 2022. In 2022, "Hanwha Munition, Hanwha Defense, Hanwha Aerospace" were consolidated into 'Hanwha Aerospace', and Hanwha Aerospace has publicly set new goals for 2022. The scope for setting and monitoring goals is based on the entirety of Hanwha Aerospace, and there are no omitted emission sources.

Plan for achieving target, and progress made to the end of the reporting year
"Hanwha Aerospace has set a net zero target by 2050 compared to 2022 and is reviewing reduction initiatives to achieve this target.
For direct reductions, various initiatives such as replacement with high-efficiency LEDs, disposal of idle equipment, installation of power timers, and driving efficiency improvement are planned to be implemented.
In addition, we have a plan to convert to renewable energy through the installation of solar panels. Starting with our Pangyo Research Institute, we are expanding the installation of solar panels on the rooftops of buildings, and the amount of renewable energy generation is also increasing.
For emissions that cannot be reduced, we plan to achieve a net zero goal through renewable energy and absorption of emissions."

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

Target reference number
Abs 3

Is this a science-based target?
No, but we anticipate setting one in the next two years

Target ambition
<Not Applicable>

Year target was set
2022

Target coverage
Company-wide

Scope(s)
Scope 3

Scope 2 accounting method
<Not Applicable>

Scope 3 category(ies)
Category 1: Purchased goods and services
Category 2: Capital goods
Category 11: Use of sold products
Category 15: Investments

Base year
2022

Base year Scope 1 emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 2 emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)
78433

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)
67977

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
378957

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
31402

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
556769

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
556769

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
<Not Applicable>

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
<Not Applicable>

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
13.5

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
11.7

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)
65.24

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
5.41

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
95.85

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
86

Target year
2050

Targeted reduction from base year (%)
100

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)
78433

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)
67977

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)
378957

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)
31402

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)
556769

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
556769

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

Target status in reporting year
New

Please explain target coverage and identify any exclusions
Hanwha Aerospace is reporting to the CDP for the first time in 2022. In 2022, "Hanwha Munition, Hanwha Defense, Hanwha Aerospace" were consolidated into 'Hanwha Aerospace', and Hanwha Aerospace has publicly set new goals for 2022. The scope for setting and monitoring goals is based on the entirety of Hanwha Aerospace, and there are no omitted emission sources.

Plan for achieving target, and progress made to the end of the reporting year
Hanwha Aerospace has set a net zero target by 2050 compared to 2022. Hanwha Aerospace plans to manage our value chain to achieve the goal. We plan to implement ESG management for the supply chain and investment institution to establish a transition plan that can reduce greenhouse gas emissions. We also plan to manage in a way that the LCI factor can be lowered by performing LCA for sold products in the future. Finally, we plan to engage in using eco-friendly raw materials and fuels.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Net-zero target(s)

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number
NZ1

Target coverage
Company-wide

Absolute/intensity emission target(s) linked to this net-zero target
Abs1
Abs2

Target year for achieving net zero
2050

Is this a science-based target?
No, but we anticipate setting one in the next two years

Please explain target coverage and identify any exclusions
Hanwha Aerospace has established a Net Zero target for Scope 1 and 2. Nothing has been excluded.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?
Yes

Planned milestones and/or near-term investments for neutralization at target year
Hanwha Aerospace has set a net zero target by 2050 compared to 2022 and is reviewing reduction initiatives to achieve this target.
For direct reductions, various initiatives such as replacement with high-efficiency LEDs, disposal of idle equipment, installation of power timers, and driving efficiency improvement are planned to be implemented.
In addition, we have a plan to convert to renewable energy through the installation of solar panels. Starting with our Pangyo Research Institute, we are expanding the installation of solar panels on the rooftops of buildings, and the amount of renewable energy generation is also increasing.
For emissions that cannot be reduced, we plan to achieve a net zero goal through renewable energy and absorption of emissions.

Planned actions to mitigate emissions beyond your value chain (optional)

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 initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	1	2557
Implementation commenced*	1	177
Implemented*	7	2984
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Energy efficiency in buildings	Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
38

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
10000000

Investment required (unit currency – as specified in C0.4)
62000000

Payback period
4-10 years

Estimated lifetime of the initiative
6-10 years

Comment
Hanwha Aerospace reduced GHG by replacing lamps with high-efficiency LEDs.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
145

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
225000000

Investment required (unit currency – as specified in C0.4)
48000000

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment
Hanwha Aerospace carried out various reduction initiatives such as adjusting the use of steam pressure, managing traps, and reducing heat loss, which led to a reduction in GHG.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
2386

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
648000000

Investment required (unit currency – as specified in C0.4)
214000000

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment
Hanwha Aerospace implemented various reduction initiatives such as shutting down idle equipment, adjusting operation hours, and improving the cooling water supply system to reduce GHG.

Initiative category & Initiative type

Energy efficiency in production processes	Other, please specify (Introducing energy-saving facilities)

Estimated annual CO2e savings (metric tonnes CO2e)
16

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
8000000

Investment required (unit currency – as specified in C0.4)
55500000

Payback period
4-10 years

Estimated lifetime of the initiative
6-10 years

Comment
Hanwha Aerospace reduced GHG through the installation of heat exchangers.

Initiative category & Initiative type

Energy efficiency in production processes	Machine/equipment replacement

Estimated annual CO2e savings (metric tonnes CO2e)
205

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
104000000

Investment required (unit currency – as specified in C0.4)
118000000

Payback period
1-3 years

Estimated lifetime of the initiative
6-10 years

Comment
Hanwha Aerospace carried out various reduction initiatives such as replacing cooling tower packing and condensate piping in air conditioners, leading to a reduction in GHG.

Initiative category & Initiative type

Energy efficiency in production processes	Fuel switch

Estimated annual CO2e savings (metric tonnes CO2e)
11

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
6000000

Investment required (unit currency – as specified in C0.4)
3000000

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment
Hanwha Aerospace reduced GHG by changing the fuel required for heating.

Initiative category & Initiative type

Low-carbon energy consumption	Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)
184

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
49978513

Investment required (unit currency – as specified in C0.4)
1363500000

Payback period
1-3 years

Estimated lifetime of the initiative
21-30 years

Comment
Hanwha Aerospace installed solar power generation facilities to reduce GHG caused by electricity.

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Hanwha Aerospace is subject to a regulation that requires us to reduce greenhouse gases annually through Korea's Target Management System. As a result, we negotiate annual target with the Korea government and introduce reduction technologies that can be applied by reviewing various reduction initiatives such as high-efficiency equipment replacement, process efficiency improvement, investment in new reduction equipment, and installation of solar panels to achieve the target. Hanwha Aerospace is executing greenhouse gas reduction every year, and to participate in the 1.5℃ transition plan, we have set a net zero for 2050. We have established an internal target standard that is stronger than the government's target, and plan to put more effort into greenhouse gas reduction to achieve this target.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?
No

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?
Yes

C5.2

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

Scope 1

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
29280

Comment

Scope 2 (location-based)

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
61648

Comment

Scope 2 (market-based)

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
0

Comment

Scope 3 category 1: Purchased goods and services

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
78433

Comment

Scope 3 category 2: Capital goods

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
67977

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
6246

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
3843

Comment

Scope 3 category 5: Waste generated in operations

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
949

Comment

Scope 3 category 6: Business travel

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
3945

Comment

Scope 3 category 7: Employee commuting

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
3787

Comment

Scope 3 category 8: Upstream leased assets

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
0

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
1985

Comment

Scope 3 category 10: Processing of sold products

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
0

Comment

Scope 3 category 11: Use of sold products

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
378957

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
149

Comment

Scope 3 category 13: Downstream leased assets

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
3225

Comment

Scope 3 category 14: Franchises

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
0

Comment

Scope 3 category 15: Investments

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
31402

Comment

Scope 3: Other (upstream)

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
0

Comment

Scope 3: Other (downstream)

Base year start
January 1 2022

Base year end
December 31 2022

Base year emissions (metric tons CO2e)
0

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
ISO 14064-1
Korea GHG and Energy Target Management System Operating Guidelines

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
29280

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

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 have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based
61648

Scope 2, market-based (if applicable)
<Not Applicable>

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 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 gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
78433

Emissions calculation methodology
Hybrid method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
40

Please explain
Hanwha Aerospace calculated Scope 3 emissions by compiling direct data from some supply chains, and for suppliers where data collection is difficult, Scope 3 emissions were calculated considering the average emission factor based on the product.

For supply chains with data: Direct data
For supply chains with no data: Purchased goods × Emission factor

Capital goods

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
67977

Emissions calculation methodology
Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace calculated emissions in 2022 based on the capital goods purchased by the entire company.

Calculation method: Purchased Capital goods × Emission factor

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

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
6246

Emissions calculation methodology
Fuel-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace calculated Scope 3 emissions for all the fuel we purchased. The emissions generated in the process of producing this energy are classified as Scope 3 and are separately calculated and managed.

Calculation method for manufacturing stage of Scope 1, 2 energy = Amount of energy purchased × Emission factor at energy manufacturing stage.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
3843

Emissions calculation methodology
Supplier-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Hanwha Aerospace calculated upstream transportation emissions by directly gathering data from some of our supply chain.
For upstream transportation emissions where data collection is difficult, Scope 3 emissions are indirectly calculated considering the energy used in transportation and the emission factor.

Upstream transportation data directly collectable: Direct data collection
Upstream transportation data not directly collectable: Fuel consumption × Emission factor per transports

Waste generated in operations

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
949

Emissions calculation methodology
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace calculated emissions based on landfill, incineration, and recycling of the waste generated in our operations, according to each waste's characteristics. The emissions were calculated by multiplying the amount of waste generated per type and treatment method by the corresponding emission factor.

Calculation method: Amount of waste generated × Emission factor per waste treatment method and type.

Business travel

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
3945

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace has calculated for both domestic and international business trip emissions. For international cases, emissions were only calculated for air trips. Domestic business trips included emissions calculations for various transports such as rail, air, and car.

Calculation method: Distance × Number of business travelers × Emission factor per transports

Employee commuting

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
3787

Emissions calculation methodology
Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace calculated emissions based on the public transportations used by employees for commuting.

Calculation method: Employees × Proportion of public transportation usage for commuting × Average annual travel distance per public transportation × Emission factor

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Hanwha Aerospace's upstream leased assets are within the same boundary and already have been calculated as Scope 1 and Scope 2 emissions under the K-ETS. Therefore, there are no upstream leased assets to report in Scope 3.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
1985

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace calculated the total distance traveled based on the shipment weight, considering the transportation distance, average shipment weight, and number of shipments. We then calculated the emissions by multiplying the emission factor.

Calculation method: Number of transports × Average shipment weight × Travel distance × Emission factor

Processing of sold products

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The products sold by Hanwha Aerospace are classified as military confidential information, and thus, it is not possible to compile emissions data. Therefore, the emissions from processing of sold products are excluded from the calculations.

Use of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
378957

Emissions calculation methodology
Methodology for direct use phase emissions, please specify (Based on usage of sold product method)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanwha Aerospace calculated the Scope 3 emissions that occur during the use of sold products.

Calculation method: Sold Product volume × Product fuel efficiency × Total product usage time × Emission factor

End of life treatment of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
149

Emissions calculation methodology
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Hanhwa Aerospace calculated emissions that occur when the sold products are disposed of. The method of disposal varies depending on the nature of the sold products, and the emission factors that differ for each type of waste and disposal method were applied accordingly to calculate the emissions.

Calculation Method: Sold Products Volume × Product Weight × Emission Factor by Disposal Method

Downstream leased assets

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
3225

Emissions calculation methodology
Supplier-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Hanwha Aerospace calculated emissions based on the energy usage of other companies renting our buildings. the emissions were determined by directly compiling the data.

Franchises

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Hanwha Aerospace does not operate a franchise.

Investments

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
31402

Emissions calculation methodology
Supplier-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Hanwha Aerospace directly compiled the emissions of investment institutions, and calculated the emissions by multiplying the compiled emissions by the equity ratio.

Calculation method: Greenhouse gas emissions of the investment institution × Equity ratio

Other (upstream)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
N/A

Other (downstream)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
N/A

C6.7

(C6.7) Are carbon dioxide emissions from biogenic 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
0.000000046

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
90928

Metric denominator
unit total revenue

Metric denominator: Unit total
1956745411297

Scope 2 figure used
Location-based

% change from previous year
37.17

Direction of change
Decreased

Reason(s) for change
Change in revenue

Please explain
Hanwha Aerospace is conducting various initiatives to reduce greenhouse gases, and in 2022, we carried out various reduction initiatives such as process efficiency improvement, replacement with high-efficiency equipment, and substitution with low-carbon fuels. As a result, we reduced greenhouse gas emissions by 2,800 tCO2eq in 2022.
Hanwha Aerospace's sales increased by over 60% compared to the previous year. However, with emissions only increasing by 1%, the sales intensity in the previous year decreased by 37% compared to the sales intensity in 2022.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
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 CO2e)	GWP Reference
CO2	29027	IPCC Second Assessment Report (SAR - 100 year)
CH4	22	IPCC Second Assessment Report (SAR - 100 year)
N2O	92	IPCC Second Assessment Report (SAR - 100 year)
HFCs	0	IPCC Second Assessment Report (SAR - 100 year)
PFCs	0	IPCC Second Assessment Report (SAR - 100 year)
SF6	139	IPCC Second Assessment Report (SAR - 100 year)
NF3	0	IPCC Second Assessment Report (SAR - 100 year)

C7.2

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

Country/area/region	Scope 1 emissions (metric tons CO2e)
Republic of Korea	29280

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
PGM Business Department	21737
Aviation & LS Business Department	7543

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	28186	<Not Applicable>	
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

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

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Republic of Korea	61648	0

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
PGM Business Department	28915	0
Aviation & LS Business Department	32733	0

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

No

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	57654	0	
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-TO7.8

(C-TO7.8) Provide primary intensity metrics that are appropriate to your indirect emissions in Scope 3 Category 11: Use of sold products from transport.

Activity
Heavy Duty Vehicles (HDV)

Emissions intensity figure
0.0001742

Metric numerator (Scope 3 emissions: use of sold products) in Metric tons CO2e
2508

Metric denominator
p.km

Metric denominator: Unit total
14400000

% change from previous year
0

Vehicle unit sales in reporting year
75

Vehicle lifetime in years
10

Annual distance in km or miles (unit specified by column 4)
6400

Load factor
3

Please explain the changes, and relevant standards/methodologies used
Hanwha Aerospace calculated the intensity by dividing the total distance traveled by the HDV during its lifecycle by emissions.
For your information, Hanwha Aerospace has collected only 2022 data due to the new CDP report in 2022, and will continue to manage it in the future.

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?
Increased

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 in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	184	Decreased	0.2	Hanwha Aerospace has installed solar power in Boeun-gun site. In 2022, we produced and used 400,699kWh of renewable energy, which is equivalent to 184 tCO2eq when converted to GHG. We checked that this reduction amount has an impact of 0.2% when compared to 2021's GHG emissions. Calculation method: 2022 renewable energy reduction amount (184 tCO2eq) ÷ 2021 emissions (90,582 tCO2eq) × 100 = 0.2%
Other emissions reduction activities	2800	Decreased	3.1	Hanwha Aerospace is conducting various initiatives to reduce greenhouse gases, and in 2022, we carried out various reduction initiatives such as process efficiency improvement, replacement with high-efficiency equipment, and substitution with low-carbon fuels. As a result, we reduced greenhouse gas emissions by 2,800 tCO2eq in 2022. To analyze the impact of this reduction, we compared it with the emissions in 2021, and found a decrease of 3.1% in emissions. Calculation method: 2022 non-renewable energy reduction amount (2,800 tCO2eq) ÷ 2021 emissions (90,582 tCO2eq) × 100 = 3.1%
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output	3330	Increased	3.7	Hanwha Aerospace experienced a 60% increase in sales in 2022 compared to 2021 due to an increase in production. Despite the significant increase in sales, the greenhouse gas emissions did not increase significantly, thanks to greenhouse gas reduction activities. Hanwha Aerospace consistently explores and implements various reduction activities each year to reduce greenhouse gases, so even with an increase in production, emissions do not significantly increase.
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

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 undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	138219	138219
Consumption of purchased or acquired electricity	<Not Applicable>	0	129514	129514
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	10850	10850
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	401	<Not Applicable>	401
Total energy consumption	<Not Applicable>	401	278583	278984

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Other biomass

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Coal

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Oil

Heating value
HHV

Total fuel MWh consumed by the organization
51641

MWh fuel consumed for self-generation of electricity
90

MWh fuel consumed for self-generation of heat
40785

MWh fuel consumed for self-generation of steam
10766

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Gas

Heating value
HHV

Total fuel MWh consumed by the organization
86578

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
8113

MWh fuel consumed for self-generation of steam
78465

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value
HHV

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Total fuel

Heating value
HHV

Total fuel MWh consumed by the organization
138219

MWh fuel consumed for self-generation of electricity
90

MWh fuel consumed for self-generation of heat
48898

MWh fuel consumed for self-generation of steam
89231

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	401	401	401	401
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area
Republic of Korea

Consumption of purchased electricity (MWh)
129514

Consumption of self-generated electricity (MWh)
401

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
10850

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

C-TO8.5

(C-TO8.5) Provide any efficiency metrics that are appropriate for your organization's transport products and/or services.

C9. Additional metrics

C9.1

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

C-TO9.3/C-TS9.3

(C-TO9.3/C-TS9.3) Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	No	

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 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Verification Statement_En_한화에어로스페이스_목표관리.pdf
Verificaion Statement_EN_한화에어로스페이스_한화방산.pdf

Page/ section reference
P.1

Relevant standard
Korean GHG and energy target management system

Proportion of reported emissions verified (%)
88

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Verification Statement_En_한화에어로스페이스_자발적.pdf

Page/ section reference
P.1

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
12

C10.1b

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

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement
Verification Statement_En_한화에어로스페이스_목표관리.pdf
Verificaion Statement_EN_한화에어로스페이스_한화방산.pdf

Page/ section reference
P.1

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
80

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Verification Statement_En_한화에어로스페이스_자발적.pdf

Page/ section reference
P.1

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
20

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
C1. Governance	Other, please specify (Climate change responsibilities)	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C2. Risks and opportunities	Other, please specify (Risk & Oppuetunity)	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C3. Business strategy	Other, please specify (Climate Change-related Business Strategy)	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C4. Targets and performance	Emissions reduction activities	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C6. Emissions data	Other, please specify (Emission data)	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C7. Emissions breakdown	Other, please specify (Emission details)	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C8. Energy	Energy consumption	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.pdf
C12. Engagement	Other, please specify (Engagement Activities)	AA1000	The accuracy for the question was verified in the Sustainability Report HanwhaAerospace_SustainabilityReport_2022_ENG.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 you are regulated by or anticipate being regulated by?

1) Strategies established to cope with the emission trading scheme

Hanwha Aerospace expects to incorporate the emission trading scheme (ETS) within the next three years. Accordingly, the company monitors and manages energy usage through the Emergency Operations Center to respond to ETS efficiently. The Yeosu plant has implemented projects for process cooling water system improvement and refiner no-load power cutoff. The Boeun plant operates an energy rationalization TF to reduce energy use and cost at business sites by improving the grounding of steam pipes and the operation method of air dryers. In addition, by installing and operating solar power generation facilities at business sites, the company is actually reducing greenhouse gases by more than 184 tons per year.

To reduce the GHG emissions within the electricity sector, which accounts for about 64% of GHG emissions, the company actively takes part in renewable energy equipment investment and seeks various greenhouse gas reduction technologies, such as high efficiency of equipment. It also monitors ETS prices in the ETS market and analyzes price fluctuations to enhance its capability to respond to future changes in carbon prices.

2) When the emission trading scheme is expected to be incorporated

Hanwha Aerospace Changwon has been designated as a greenhouse gas target management company since 2014 and has been assigned and managed greenhouse gas emission targets through government negotiations every year. As a result, Hanwha Aerospace is also expected to become a regulated workplace of the emission trading scheme from 2023 as Hanwha Munition, a company subject to the emission trading scheme, is incorporated as of December 2022.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?

No

C11.3

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

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Type of internal carbon price
Shadow price

How the price is determined
Cost of required measures to achieve emissions reduction targets

Objective(s) for implementing this internal carbon price
Drive energy efficiency
Drive low-carbon investment

Scope(s) covered
Scope 1
Scope 2

Pricing approach used – spatial variance
Uniform

Pricing approach used – temporal variance
Evolutionary

Indicate how you expect the price to change over time
Hanwha Aerospace utilizes internal carbon pricing for GHG reduction investments such as reducing energy usage and costs at its business sites. We set the internal carbon price in consideration of the market price trend of emission rights, and we expect the internal carbon price to gradually increase in the mid- to long-term due to the expansion of the paid allocation ratio of the domestic emission trading system and the strengthening of GHG emission reduction.

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)
20686

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)
498890

Business decision-making processes this internal carbon price is applied to
Capital expenditure
Operations
Product and R&D
Remuneration

Mandatory enforcement of this internal carbon price within these business decision-making processes
Yes, for some decision-making processes, please specify (energy efficiency and eco-friendly investments.)

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan
Hanwha Aerospace is actively responding to domestic and international demands for GHG reduction and is conducting internal GHG emission reduction activities and investments to achieve carbon neutrality by 2050. We have utilized internal carbon pricing for energy rationalization TF operations to reduce energy usage and costs at our business sites by reducing heat losses through steam pipe blocking, saving fuel through steam condensate recovery, and improving air prevention facilities for concentrated nitric acid processes. In addition, we are estimating the amount of GHG reduction from upcoming and additional energy rationalization TF projects and using internal carbon pricing to calculate the amount to be saved In addition, we installed solar power generation facilities at Changwon 3 Plant and Pangyo R&D Campus and so on to generate and use about 400,699KW, and we analyzed that it would have saved about KRW 3,800,000 per year (applying the minimum internal carbon price, analyzed as a reduction of 184.09 tCO2eq per year). As such, we expect that the introduction of internal carbon pricing will promote greenhouse gas emission reduction activities and facilitate the achievement of our 2050 carbon neutrality.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, other partners in the value chain

C12.1a

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

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change

% of suppliers by number
19

% total procurement spend (direct and indirect)
50.18

% of supplier-related Scope 3 emissions as reported in C6.5
32

Rationale for the coverage of your engagement
• Purpose
- Hanwha Aerospace practices the management philosophy of 'Going Further Together' by building a foundation for shared growth, enhancing the competitiveness of suppliers, and developing a roadmap for sustainable growth. As part of our efforts to achieve shared growth with our suppliers, we encourage suppliers to actively participate in voluntary climate change response and reduction activities, and provide penalties or incentives based on the results of regular evaluations of suppliers to improve their capabilities and loyalty.

• Selection criteria
All suppliers are evaluated according to the ESG evaluation model, including climate change-related issues. For climate change-related issues, we evaluate the level of eco-friendly business operations, investment in environmental facilities, possession of environmental management, year-on-year increase and decrease in greenhouse gas emissions, and year-on-year increase and decrease in greenhouse gas emissions per unit sales as indicators of the ESG evaluation model.

* Number of engaged suppliers (%): Calculated based on the number of engaged suppliers out of the total number of suppliers.
- Number of suppliers targeted for engagement (162) / total suppliers (845) × 100 = 19%

* Percentage of supplier-related Scope3 emissions (%): Calculated as the percentage of Hanwha Aerospace's Category1, 4 SCOPE3 emissions generated by engaged suppliers out of the total Category1, 4 SCOPE3 emissions of Hanwha Aerospace.
- Engagement Target Supplier's Category 1+4 SCOPE3 emissions (26,091tCO2eq) / Hanwha Aerospace's total Category 1+4 SCOPE3 emissions (82,276tCO2eq) × 100 = 32%.

Impact of engagement, including measures of success
• Performance Measurement Standards and Methods
- Based on the GRI Guidelines, UNGC 10 Principles, ISO26000, CSR indicators of the Productivity Division, and major SME codes of conduct, we developed Ecredible ESG Evaluation Indicator Model by reflecting clear and collectible indicators in consideration of the characteristics of scale of SMEs and established companies. The ESG rating is divided into seven levels, including very poor, fair, good, and excellent, and expressed as ESG + 'number' to evaluate the level of environmental, social, and management system and performance for sustainable management.

• Performance measurement engagement results and specific examples
- If a supplier receives best, excellent, good scores from the evaluation, it will receive incentives such as management consulting support such as certification of a win-win PMS, capacity building support such as decentralization within the sourcing group and priority for new development, financial support such as exemption from warranty insurance claims, and ESG management consulting support. In the case of suppliers that need improvement, we conduct meetings with them, provide guidance on business trips, motivate them to make voluntary improvements along with follow-up management, and give penalties such as restrictions on participation in quotations and transactions. According to the results of the regular evaluation of suppliers in 2022, the best suppliers accounted for 10% of all total, confirming the continuous improvement of management levels throughout the supply chain and raising awareness of the importance of ESG and sustainable management among all major suppliers in the shared growth relationship.

Comment

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

• Defining Other Partners in the Value Chain

Hanwha Aerospace defines employees as other partners in the value chain to raise awareness of climate change among our employees and promote their participation and contribution to be helpful for sustainable growth, social responsibility and carbon neutrality of the company.

• Climate Change Engagement Strategy and Examples

Hanwha Aerospace operates a program to encourage employees to engage in low-carbon green activities and has signed an agreement with the social service organization 'Beautiful Store' to practice environmental protection and sharing activities. Employees receive ECO Milage for various activities and can use it to purchase items from 'Beautiful Store'. Through these activities, we motivate our employees to live a low-carbon life, and furthermore, we enable them to carry out individual low-carbon activities to participate in carbon neutrality. Some of the activities that employees can earn ECO Milage for include: (1) suggesting energy-saving measures in the workplace through the company's suggestion system; (2) using eco-friendly ways to **commute** work, such as using public transportation, carpooling, and bicycles; (3) zero waste activities in the company; (4) evaluating environment & safety for each department and (5) participating in environmental safety events. In addition, as part of community environmental protection activities, all employees work together to lean up nature by selecting mountains, rivers, etc. near the workplace through One River and One Mountain campaign, plogging at the Hanbat Arboretum in Daejeon.. In addition, we designate June, the month of Environment Day, as Environment Month, and conduct various activities such as campaigns to reduce disposable products, evaluation and rewards for excellent departments operating environmental facilities, cleanup activities around the workplace, and participation in International Exhibition on Environmental Technology & Green Energy to raise employees' environmental awareness including climate change.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

No, but we plan to introduce climate-related requirements within the next two years

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

HanwhaAerospace_SustainabilityReport_2022_ENG.pdf

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

Hanwha Aerospace is responding to climate change by establishing strategies to set and achieve the 2050 carbon neutrality goal. Accordingly, the Environment & Safety Department is actively implementing activities to reduce greenhouse gas emissions by establishing an in-house greenhouse gas database, identifying energy rationalization themes, and implementing energy efficiency investments. In order to effectively manage GHG data and operate the environmental management system, we have established and operated a GHG inventory within our EHS IT system, and through the Energy Rationalization TF, we are conducting company-wide energy/greenhouse gas reduction activities. In addition, the Changwon Plant has obtained ISO14001/50001 certification for its environmental/energy management system, and we are making efforts to reduce carbon emissions in various ways, such as conducting employee-participatory low-carbon activities such as ECO Mileage.

In addition, the ESG Committee under the BOD deliberates and reviews important issues related to climate change and environment and continuously supervises the establishment and implementation of mid- and long-term strategies to achieve carbon neutrality.

By setting its net zero vision, Hanwha Aerospace supports the goals of the Paris Agreement and engages in activities indirectly to contribute to achieving the government's goal of net neutrality by 2050.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Specify the policy, law, or regulation on which your organization is engaging with policy makers
2050 Net Zero
The Youth Environmental Forum, organized by the Ministry of Environment for 2050 Carbon Neutrality, is an information exchange platform for sharing and discussing ideas on environmental policies and promoting policy reflection in order to engage and support the young generation. Hanwha Aerospace participated in the Youth Environmental Forum and proposed an agenda to realize carbon neutrality by 2050 and discussed major environmental policy development plans.

Category of policy, law, or regulation that may impact the climate
Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate
Climate-related targets

Policy, law, or regulation geographic coverage
National

Country/area/region the policy, law, or regulation applies to
Republic of Korea

Your organization's position on the policy, law, or regulation
Support with no exceptions

Description of engagement with policy makers
In this process, we regularly organize the Youth Environmental Forum so that young people who are engaged in environment-related activities in various fields such as companies, public institutions, and schools can propose various ideas on environmental policies and discuss related issues. Hanwha Aerospace participated in the Youth Environmental Forum and discussed various policy measures such as incentives for companies to switch to renewable energy, increase energy efficiency, and manage carbon sinks, carbon credit pricing, support for the climate vulnerable, and a point system for citizens to practice carbon neutrality, and is taking the lead in contributing to and realizing 2050 carbon neutrality.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation
<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?
Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?
The Republic of Korea has finalized the National Strategy to Realize Carbon Neutrality by 2050 and the National Plan for Carbon Neutral Green Growth to achieve the national greenhouse gas reduction target by 2030. Based on the Basic Plan, various policy measures are being explored to ensure the smooth implementation of sectoral measures so that the entire economy and society can transit to a low-carbon structure. The Youth Environmental Forum provides opportunities for young people, the future generation, to demonstrate their interest and capabilities in environmental issues, and aims to derive the direction of environmental policies by collecting their opinions. By sharing various opinions and ideas on realizing carbon neutrality in 2050, the forum contributes to improving the quality of environmental policies and strengthening the role of young people for sustainable development and environmental conservation.

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association
Other, please specify (Korea Environmental Preservation Association in Daejeon Chungnam)

Is your organization's position on climate change policy consistent with theirs?
Consistent

Has your organization attempted to influence their position in the reporting year?
Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
Korea Environmental Preservation Association is a public institution under the Ministry of Environment and is responsible for implementing the national environmental conservation policy. The association is making efforts to provide various environmental services to preserve the environment and realize carbon neutrality. Hanwha Aerospace participates in programs held by the Korea Environmental Preservation Association in Daejeon Chungnam for member companies to receive various information on carbon capture, carbon reduction, resource circulation, and policy issues to secure competitiveness in related industries and reflect them in relevant business strategies to achieve carbon neutrality. We also attend trainings held by the association for environmental managers to acquire the latest knowledge and skills and strive to improve our environmental performance.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)
600000

Describe the aim of your organization's funding
Hanwha Aerospace provides funding to the Korea Environmental Preservation Association in Daejeon Chungnam to participate in seminars and exhibitions held by the association to create networking opportunities with other companies and identify market trends based on the latest environmental technologies and products. We also attend environmental trainings to understand the latest policies and regulations and acquire environmental management methods to achieve environmental performance.

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
Yes, we have evaluated, and it is aligned

C12.3c

(C12.3c) Provide details of the funding you provided to other organizations or individuals in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

Type of organization or individual
Trust or foundation

State the organization or individual to which you provided funding
Gyeongsangnam-do Ramsar Envrironnmental Foundation

Funding figure your organization provided to this organization or individual in the reporting year (currency as selected in C0.4)
7000000

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate
Gyeongsangnam-do Ramsar Environmental Foundation is a foundation established in Gyeongsangnam-do specializing in the ecology of wetland ecosystems and has been closely interacting with international conventions and organizations and has prepared a document on "Measures for cooperation between Ramsar convention and climate change convention" through UNFCCC and Climate Change Convention. In addition, as the climate crisis and carbon neutrality issues have grown in recent years, we held the Eco LifeStyle Fair, a "exhibition on carbon neutral lifestyle" to promote awareness of carbon neutrality among citizens and trigger behavior change. Furthermore, in response to the climate crisis, we have set up four policy tasks of 'wetland policy support,' 'wetland activity support,' 'wetland information exchange,' and 'citizen awareness promotion' and are planning and implementing various projects.
Hanwha Aerospace has been sponsoring the 'Gyeongnam Ecological Nuri Voucher' project since 2019 to raise climate change awareness among vulnerable social groups. The 'Gyeongnam Ecological Nuri Voucher Project' is a program that provides various activities such as tours, experiences, and ecological explanations to the underprivileged in Changnyeong Upo Wetland, Namhae Angang Bay, Gimhae Hwapo Stream, Miryang Jaeyaksan Sajapyeong Alpine Wetland, and Changwon Junam Reservoir designated by the Ministry of Environment, as well as Hadong Carbon-Free Village and Hapcheon Jeongyang Swamp designated by Gyeongnam Province. The program has conducted 18 activities in 2022 with designated donations and provincial subsidies from 11 organizations and companies in the province, including us.
Through the Gyeongsangnam-do Ramsar Environment Foundation, we support various activities to raise awareness of climate change among vulnerable members of society, and actively cooperate in promoting and realizing ecotourism and preserving the environment.

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?
Yes, we have evaluated, and it is aligned

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

Status
Complete

Attach the document
[한화에어로스페이스][정정]사업보고서(2023.03.21).pdf

Page/Section reference
- Governance : P.351, P.354~356
- Stragegy : P. 427
- Emission figures : P.427
- Other, please specify(Activities to reduce GHG emissions) : P.67~68, P.71, P.427

Content elements
Governance
Strategy
Emissions figures
Other, please specify (Activities to reduce GHG emissions)

Comment

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Pledge to Net Zero Task Force on Climate-related Financial Disclosures (TCFD)	Although Hanwha Aerospace does not currently have any official initiatives for cooperate and/or pledge, we have declared a 2050 carbon neutrality goal to achieve the 1.5 C goal of the Paris Agreement by, and we are striving to achieve 2050 carbon neutrality by developing eco-friendly technology solutions, expanding eco-friendly products, making facilities more efficient, and investing in renewable energy facilities. We also disclose our 2050 carbon neutrality strategy to achieve the goal of the UN Paris Agreement through our Sustainability Report. We transparently disclose climate change-related information in our Sustainability Report in line with the TCFD framework, and from 2022, we will continue to disclose details in line with the TCFD criteria through our CDP reporting.

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	No, but we plan to have both within the next two years	<Not Applicable>	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	No, but we plan to do so within the next 2 years	<Not Applicable>	<Not Applicable>

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment
No, but we plan to within the next two years

Value chain stage(s) covered
<Not Applicable>

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
<Not Applicable>

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
<Not Applicable>

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment
No, but we plan to within the next two years

Value chain stage(s) covered
<Not Applicable>

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
<Not Applicable>

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
<Not Applicable>

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?
Yes

C15.4a

(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (Changwon City, Republic of Korea (nearby industrial area))

Country/area
Republic of Korea

Name of the biodiversity-sensitive area
- Namcheon (River in front of Changwon Plant)
- Rivers, parks, and wetlands within the jurisdiction

Proximity
Up to 25 km

Briefly describe your organization's activities in the reporting year located in or near to the selected area
Recognizing urban biodiversity as a valuable resource, Hanwha Aerospace signed a public-private business cooperation agreement with Changwon City for sustainable ecosystem conservation. In response, the company installed observation cameras to monitor endangered species such as otters and toads in the southern stream in front of the Changwon site, and regularly surveyed protected species in the stream with experts. In addition, employees and their families participated in the Ecological Survey Group of to investigate the distribution of organisms and pollution conditions in rivers, parks, and wetlands and supported participation in various events to protect biodiversity, such as biodiversity exploration competitions and observation experiences of fireflies and aquatic insects.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
No

Mitigation measures implemented within the selected area
<Not Applicable>

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	No, we are not taking any actions to progress our biodiversity-related commitments, but we plan to within the next two years	<Not Applicable>

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	Please select

C15.7

(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
Other, please specify (ESH Activities Book)	Impacts on biodiversity	ESH Activities Book: pg. 11 2023 ESH Activites Book_환경분야(R00-230627).pdf

C16. 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.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	CEO	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms