

Hyundai Glovis

TCFD Framework

1. Governance

2. Strategy

3. Risk management

4. Metrics and Targets

I. Governance

1. The Board of Directors (BOD)'s supervision of climate change-related risks and opportunities
 - a. At Hyundai Glovis, the CEO is responsible for and supervises climate change issues within the Board of Directors (BOD). The BOD of Hyundai Glovis is the top decision-making body of the company composed of nine members, including 2 Executive Directors, 5 Independent directors, and 2 Other Non-executive Director. The CEO, who is a member of the Board of Directors, holds significant decision-making authority and responsibilities as the representative in charge of operating the company for its continuous growth. Hyundai Glovis operates a business risk management committee chaired by the CEO to make prompt and systematic responses to the issue of climate change, which is being intensified. Centering around the CEO, the business risk management committee joined by all internal directors makes decisions on critical issues, including climate change.
 - b. When significant issues arise relating to business, including climate change, the Business Risk Management Committee chaired by the CEO, makes a decision on the agenda. In cases where decision-making is difficult due to the seriousness of the issue, the final decision is made by the BOD. Material issues subject to decision-making are shared with the BOD through business performance reports, and plans to react to material issues, such as climate change, are established through relevant departments.
 - c. The Hyundai Glovis Environmental Management Team and Chief Risk Officer (CRO) report to the CEO through weekly company-wide business reports on key activity plans and major achievements. When establishing plans for promoting climate change-related tasks, issues regarding domestic and international regulations and agreements are comprehensively reported to the CEO each year before proceeding with the tasks. Greenhouse gas (GHG) emissions are calculated on a quarterly basis to analyze performance in relation to emission reduction targets and review the achievement status. Upon completion of the performance, emissions, and major achievements are reported to the BOD and made public through business performance reports. The Hyundai Glovis Environmental Management Team monitors and manages issues related to climate change, and in the event of an issue occurring, the Team assesses its materiality of it and reports it to the CRO. The CRO reports significant issues to the Business Risk Management Committee, which is operated by the CEO, and the results of the decision-making are reflected in the weekly company-wide business report conducted by the CRO and the team leader of the Environmental Management Team and reported to the CEO, who is an Executive Director. The head of Safety & Environment Center shall be the CRO for Hyundai Glovis.
2. Role of management in assessing and managing risks and opportunities related to climate change
 - a. Hyundai Glovis faces significant risks posed by climate change as it is greatly affected by physical climate change, related laws and regulations, and market changes. In order to quickly and organically respond to such risks, the Environmental Management Committee has been established, and the CRO makes decisions on climate change-related issues as the head of the Environmental Management Committee. The CRO manages risk factors related to quality, safety, health, and the environment within Hyundai Glovis and is responsible for safety and health management under the Occupational Safety and Health Act, while holding the position of the head of the Carbon Management Committee. Therefore, in the event of a climate change risk, the CRO is in a position to make swift decisions organically and directly report to the CEO and the Board of Directors if it is deemed to be a significant risk.
 - b. The Environmental Management Team regularly monitors environmental issues that may arise in related departments. In particular, climate change issues, risks, and opportunities are

monitored by the Environmental Management Team along with greenhouse gas emissions. Progress is monitored in accordance with the Risk Management Manual. Risks of lesser materiality are decided by the CRO according to relevant regulations, while matters classified as significant risks are reported to the CEO.

3. Climate-Related Management Incentives

Hyundai Glovis provides incentives for the management of climate-related issues to Chief Risk Officer (CRO) according to performance indicators, which include the company's performance of a climate-related sustainability index (e.g., KCGS Environment related score, etc.). The purpose of the CRO performance indicator review is to assess our environmental management performance based on the evaluations from key external initiatives and assessment agencies. Our environmental management performance is measured through the evaluations such as of KCGS' ESG Environment assessment. The achievement of performance goals is determined based on the number of ratings that exceed or fall short of the target rating. ESG evaluations are conducted annually, resulting in the calculation of performance achievements on a yearly basis. In the long term, the promotion process considers the achievement of goals across multiple years. The environmental evaluations such as KCGS provide an objective assessment of the company's impact on the environment through ratings. In addition, we are increasing the sense of responsibility of each person in charge by linking climate change-related factors with the KPIs and compensation system of climate change management officers, managers, and team members.

II. Strategy

1. Climate change-related risks and opportunities identified by the organization over the short, medium, and long term

a. Emissions Trading System (ETS) (Short-term Risk/Opportunity)

Since it has been designated as subject to the emissions trading system in 2021, Hyundai Glovis is exposed to financial risk, depending on greenhouse gas (GHG) emissions from domestic vehicles and buildings. As a subject to emit allocation, Hyundai Glovis is required to emit GHGs within the limit allocated by the government for emissions generated by domestic business sites. If submitted credits are fewer than actual GHG emissions, penalties may be imposed, which could lead to increased direct costs. On the other hand, there also exist financial opportunities in GHG reduction. By emitting GHGs within the allocation limit, Hyundai Glovis can sell its excess credits to other companies and generate revenue.

Hyundai Glovis is subject to domestic regulations on the Emissions Trading Scheme, as it exceeded the GHG emission limit set by the government. The regulated facilities include Pyeongtaek Port Logistics Base and Ulsan 2CC, etc. Under this scheme, penalties are imposed if emissions exceed the allocated emission permits, with a fine of approximately KRW 10,000 per ton of shortfall. Adding surcharges, the estimated penalty for the current year in accordance with the Emissions Trading Scheme is KRW 158 MN.

b. GHG regulations on international ships: IMO DCS, EU MRV (Short-term risk)

The IMO Data Collection System (DCS) requires measurement, third-party verification, and submission GHG emissions to all ships over 5,000 GT. As all of Hyundai Glovis' ships are over 5,000 GT, they are subject to the IMO DCS requirement.

Internationally, Hyundai Glovis has been directly affected by the IMO DCS regulation since 2019 due to its maritime operations. Failure to comply with this regulation for two consecutive years would result in a ban on ship operations, leading to a decrease in revenue. If Hyundai

Glovis fails to meet this regulation, the estimated loss is expected to be KRW 4,211,264 MN based on the revenue in 2023. Given the significant business and financial impact of these climate-related regulations, a systematic response is necessary. Hyundai Glovis evaluates and manages the Emissions Trading Scheme based on the risk management manual, considering the impact and enforceability of the regulations. The management cost to respond to domestic GHG regulations add up to about KRW 170 MN. The Maritime Safety team handles the IMO DCS regulation, conducting assessments and management based on the impact and enforceability of criteria within the business risk evaluation framework. The management cost to respond to international GHG regulations add up to about KRW 45MN. In total, the financial investment cost amounts to KRW 215 MN.

*Management cost: cost to respond to domestic GHG regulations + cost to respond to international GHG regulations = about KRW 215 MN

(1) cost to respond to domestic GHG regulations: Target Management System consulting cost + external verification cost + system operation cost = about KRW 170 MN

(2) cost to respond to international GHG regulations: IMO DCS related system cost + external verification cost = about KRW 45 MN

c. Short-term physical environmental changes: Typhoon (Short-term risk)

The frequency of typhoons is increasing due to weather abnormalities, and typhoons have a direct impact on Hyundai Glovis. While Hyundai Glovis was conducting maritime logistics in the United Kingdom, its ship was damaged by a powerful typhoon, leading to significant damage to the ship and logistics products. In addition, powerful gusts of wind caused damage to the exterior walls and external facilities of the office (lights, breakers, access gates, signage, etc.). As typhoons affect human lives and financial affairs such as assets, they are classified as physical risks caused by climate change, and Hyundai Glovis responds to such risks by establishing countermeasures.

d. Changes in consumer behaviors (Short-term risk)

As consumers' awareness of the environment is growing and their preference for environmentally friendly companies is increasing, manufacturers including OEMs and consumer goods companies are making efforts to adopt eco-friendly transportation methods. In addition, global automotive OEMs are declaring carbon neutrality and demanding eco-friendly transportation. These companies are requesting CSI (Clean Shipping Index) certification transportation even during contract signing and transportation transactions, and more recently, CDP rating and average shipping efficiency data, etc. are constantly being demanded to prove eco-friendliness of transportation. If they fail to respond adequately, it may lead to a decrease in contracted volumes.

e. Utilization of new technologies (Short-term opportunities)

Considering GHG reduction as an important business opportunity, Hyundai Glovis is taking into account and analyzing the financial, market, and other implications of the emission reduction project. Accordingly, Hyundai Glovis has explored GHG reduction technologies as well as new technologies that can save energy, which led to the introduction of Eco-driving. Eco-driving is a technology that analyzes the driving habits of vehicle drivers, provides them with real-time information, and monitors vehicle fuel efficiency in real-time to improve their driving habits and enhance fuel efficiency, thereby reducing GHG emissions. Therefore, the introduction of this technology will not only contribute to GHG reductions but also reduce operating costs through energy savings.

f. Utilization of public incentives (short-term opportunities)

The Ministry of Land, Infrastructure, and Transport of Korea is striving to reduce GHG emissions in the transportation sector by supporting various GHG reduction activities, such as

inducing GHG reduction through subsidies. In order to join such national policy on GHG reduction, Hyundai Glovis has also implemented the green logistics conversion project (such as automotive air conditioners, automotive heaters, and lightweight trailers). The project is partially subsidized by the government, but Hyundai Glovis also invested its own funds. Hence, prior to implementing the project, the materiality of risks and opportunities was thoroughly assessed and approval from the CRO was obtained. Although the project is partially subsidized by the government, its impact on investment costs is limited. However, in addition to reducing greenhouse gas emissions, Hyundai Glovis decided to implement the project, considering various opportunities presented by it, such as energy savings, strengthening cooperation with the government, and enhancing brand value through eco-friendly transportation.

Hyundai Glovis regards greenhouse gas reduction as an important business opportunity and considers and analyzes the reduction projects various impacts (i.e. financial and market). We searched for new technologies to save energy using greenhouse gas reduction technology, and thus introduced Eco-driving. Eco-driving is a technology that provides real-time information to the driver by analyzing the driver's driving habits, and improves the driver's driving habits by monitoring the vehicle's fuel efficiency in real time to improve fuel efficiency and reduce greenhouse gas emissions. If the technology is introduced, it is possible to reduce both greenhouse gas emissions and energy use which can also decrease operating costs. Hyundai Glovis has implemented the eco-driving system in 855 freight vehicles. Total fuel consumption before eco-driving was 26,160 kL, the estimated total fuel consumption after eco-driving installation is 24,852kL., and thus fuel savings are 1,308kL. When converted to the average fuel cost in 2023, the potential financial impact is calculated to be KRW 2,038 MN.

*Financial impact calculation method: Fuel savings through Eco-driving installation (1,308kL) × diesel unit price (KRW 1,558/L) = KRW 2,038 MN

In 2023, eco-driving terminals were installed in approximately 855 vehicles, including those from collaborating transportation companies. The installation and maintenance cost for each terminal is KRW 14,000 per month. Among this amount, KRW 4,500 is borne by Hyundai Glovis, while the remaining KRW 9,500 is covered by the drivers. When calculated annually, the total management cost for 2023 amounts to approximately KRW 46 MN.

*Opportunity utilization cost calculation method: the number of trucks equipped with Eco-Driving in 2023 (855 trucks) × 1 month maintenance fee paid by Hyundai Glovis (KRW 4,500/truck) × 12 months = KRW 46 MN

g. Reduced investments in companies with low environmental ratings (Medium-term risk)

With growing interest in climate change, companies are being asked by various stakeholders to transparently disclose their policies and response capabilities related to climate change, which is directly related to their reputation and growth. The disclosed information, which is non-financial information, is an important measure for external investors to assess a company's investment value, alongside its financial information. The National Pension Service, one of the leading institutions engaged in socially responsible investment, is a major shareholder of Hyundai Glovis which owns 9.50% of the company shares as of the 2023 Annual Report. If non-financial management issues such as climate change and GHG reduction are not adequately addressed, there is a risk of a market value decline in the stock price caused by an investment decrease.

h. Use of high-efficiency transportation (Medium-term opportunities)

Korea has introduced GHG regulations to reduce GHGs and set GHG reduction targets, including the GHG reduction target for transportation, which is quite high. To achieve the target, transitioning to eco-friendly cars is needed, along with changing means of transportation. The Modal Shift, which is being promoted by the Ministry of Land, Infrastructure, and Transport, is the most representative method for reducing GHGs by changing transportation methods. Modal Shift is a project that converts land logistics to maritime logistics to reduce greenhouse

gases, utilizing efficient transportation. It has shown positive effects of lowering operating costs in addition to decreasing risks through GHG reduction.

The potential financial impact has been assessed as an opportunity factor based on the difference in operating costs, and it has been calculated to be KRW 58,073 MN. Efforts are being made to expand the cost of opportunity utilization with the maintenance cost of the in-house coastal shipping system for the vessel operation system in 2023, which amounted to KRW 115 MN.

* Direct cost reduction caused by operating costs: land transportation cost – ship transportation cost = KRW 58,073 MN.

i. Change of consumer preferences (medium-term opportunities)

With consumers' growing awareness of the environment and their increasing preference for eco-friendly companies, manufacturers including OEMs and consumer goods companies are making efforts to adopt eco-friendly transportation means. In addition, global automotive OEMs are declaring carbon neutrality and demanding eco-friendly transportation. In order to secure competitiveness in the face of increasing demand for eco-friendly transportation, Hyundai Glovis established a non-financial information management system and systematically responds to customer inquiries. If the market shifts towards eco-friendly transportation, Hyundai Glovis is expected to gain an advantage over its competitors and further expand its sales.

j. Long-term rise in average temperature (Long-term risk)

Due to climate change caused by GHG, global temperatures are constantly rising, leading to a rapid increase in damages caused by heatwaves not only in Korea but also around the world. Hyundai Glovis is also experiencing damages from heat waves, which requires a systematic response. To minimize damages caused by heatwaves, Hyundai Glovis has reviewed the number of financial damages, utilizing the Ministry of Environment's "Climate Change Adaptation Risk Assessment Support Tool (CRAS)". It has also analyzed the impact of heatwaves on its operation through information and research results from the Korea Meteorological Administration.

2. Impact of climate change-related risks and opportunities on the organization's business, strategic and financial planning

a. How climate change-related risks and opportunities affect the business and strategy

As consumers' awareness of the environment changes and their preference for eco-friendly companies increases, manufacturers including OEMs and consumer goods companies are making efforts to adopt eco-friendly transportation methods. Recently, global automotive OEMs that have declared carbon neutrality encompassing the transportation process are frequently requesting emission reduction plans and transportation efficiency improvement plans from not only automobile manufacturers but also shipping companies responsible for transportation. Failure to adequately respond to such requirements may result in significant disadvantages, such as reduced transportation volumes and contract termination. Accordingly, since 2016, Hyundai Glovis has established dedicated organizations for environmental management and ship technology and has proactively responded by improving transportation efficiency for automobile carriers, establishing mid- and long-term GHG reduction targets, and developing reduction strategies.

b. How climate change-related risks and opportunities affect financial planning

Increasing domestic and international regulations on climate change, government policies on energy efficiency, and demands for eco-friendly logistics are serving as risks and opportunities factors to corporate reputation and investment. Hyundai Glovis is striving to actively identify opportunities and risks related to climate change and make an adequate response. The

Environmental Management Team conducts weekly monitoring of climate change-related risks and opportunities, and when risks and opportunities are identified, they are reported to the CRO after assessing their materiality. The CRO reviews the reported climate change-related risks and opportunities and directly makes decisions on less significant matters. Significant climate change-related risks and opportunities are reported to the CEO, and decisions are made through the CEO's Business Risk Management Committee. As such, decisions on climate change-related risks and opportunities are made by the relevant chief officer based on the results of the materiality assessment. After decisions are made, countermeasures are established to reflect them in the business strategy. Once the business strategy is established, the necessary budget is estimated while developing detailed business plans, and the final budget is set in consultation with the finance team.

c. Time range affected by the company's strategy

With the increasing demand for eco-friendly transportation from our customers, if Hyundai Glovis fails to implement appropriate responses, it will lead to a decline in reputation as well as ratings in supply chain evaluation carried out by shippers. This will result in a lower percentage of volumes being allocated to Hyundai Glovis and is expected to have a significant impact on its revenue in the short term over 3 years and in the long term over 15 years. In the worst-case scenario, it could lose customers, so the risk is very serious. Therefore, it is necessary to respond systematically and proactively.

d. Cases of critical and strategic decisions on identified risks and opportunities

As consumer awareness of the environment and preference for eco-friendly companies are increasing, one of the major customers of Hyundai Glovis, a leading global company, has requested CSI certification, CDP rating, and vessel average transportation efficiency data in the phase of soliciting bids for carriers. Hyundai has obtained a Leadership rating by reporting its CDP annually and has constantly monitored its average shipping efficiency data. Furthermore, by obtaining the Clean Shipping Index (CSI) certification, Hyundai Glovis met the requirements for participating in the tender and was able to sign a medium- to long-term transportation contract with the customer. If this certification is revoked, the company fails to meet the requirements for mid-to-long-term transportation contracts that have already been signed, resulting in transportation volume adjustments or contract termination. To obtain the initial acquisition of certification, it was reported to the CEO, and since then, management of targeted ships have been continued to maintain the certification. The information management system was also developed to systematically provide the company's non-financial information (environmental, social, etc.) to customers who value eco-friendly logistics.

3. Flexibility of management strategy, considering scenarios related to climate change, including the 1.5°C scenario

a. Reasons for applying the IEA NZE 2050, RCP 6.0 scenarios

Two types of scenarios, the existing transition scenario, and the physical scenario, were applied to the scenario analysis. For the transition scenario, IEA NZE 2050 was applied. It aims to accord with the Paris Agreement, which set a target of keeping the global average temperature rise well below 2°C and striving to limit it to 1.5°C. IEA NZE 2050 set the limit for the global average temperature rise to well below 1.5°C by 2050. To achieve this, a three-fold increase in investment in zero-emission energy is required by 2030, while fossil fuel use must be drastically reduced, and sales of internal combustion engines must be halted by 2035. The scenario also assumed that carbon neutrality in electricity production will be achieved by 2040 and that the share of electric vehicles will increase.

The RCP 6.0 scenario, a physical scenario that was applied states that carbon dioxide concentrations will continue to increase until 2100 if the current trend of GHG emission continues. According to the Korean Peninsula Climate Change Projection Analysis analyzed by the Korean Meteorological Administration, the scenario assumes that the subtropical climate

zone will expand to some regions in Korea in the second half of the 21st century. In line with the global warming projections, the RCP 6.0 scenario also predicts that the number of heatwave days, tropical nights, and summer days will increase, while the number of cold and freezing days are expected to decrease.

b. Organizational boundaries and time frame reflected in the Scenario Analysis

The organizational boundaries used for analyzing climate change scenarios encompass domestic vehicles and buildings, and all international ships (fleet) owned by Hyundai Glovis. The target setting based on the climate change scenario analysis was conducted in 2021. Scenario analyses were conducted for the 2030 and 2050 climate change by setting 2019 as the reference year, which can best reflect the accuracy of GHG emissions and data on vehicles, buildings, and ships within the organizational boundaries and the recent status and characteristics of emissions.

c. Results of scenario analysis

Hyundai Glovis uses climate-related scenario analysis both qualitatively and quantitatively to inform the company's strategy. Firstly, in terms of transition scenario, the International Energy Agency's Net Zero Emissions by 2050 (IEA NZE 2050) scenario provides a roadmap to limit the global average temperature increase to within 1.5°C by 2050. To achieve this scenario, clean energy investments need to increase by more than three times by 2030, and the use of fossil fuels must be significantly reduced, with a discontinuation of internal combustion engine vehicle sales by 2035. Additionally, the scenario assumes carbon neutrality in electricity production by 2040 and an increase in the share of electric vehicles. It assumes strengthened domestic and international GHG emission regulations and enhanced policies to achieve carbon neutrality by 2050. Hyundai Glovis is expected to continue its efforts in transitioning to environmentally friendly transportation modes, eco-driving practices, and implementing transportation services utilizing electric vehicles. Increased investment in emission reduction activities and the adoption of electric vehicles will be crucial for achieving the goals in line with the scenario. Secondly, Hyundai Glovis uses RCP 6.0 for physical climate scenario analysis. According to the scenario, if GHG emissions continue on the current trajectory, it is projected that carbon dioxide concentrations will continue to increase until 2100. The Climate Change Projection Analysis for the Korean Peninsula, conducted by the Korea Meteorological Administration, assumes that by the latter half of the 21st century, parts of South Korea will experience an expansion of tropical and subtropical climate zones. Under the RCP 6.0 scenario, which represents a warming projection, an increase in the number of heatwave days, tropical nights, and summer days is anticipated, while the number of cold wave days and freezing days is expected to decrease. The increase in heatwave days may also have implications for the health of personnel within business facilities.

d. Cases of business plans affected by GHG reduction projects based on scenario analyses

1) Case 1: Eco-driving

In order to reduce GHG emissions by improving driving efficiency, Hyundai Glovis planned to upgrade the integrated transportation management system in its logistics business and reflected it in its business plan. In consultation with the finance team, the company secured a budget annually to upgrade the system. As a result, approximately 800 trucks owned by Hyundai Glovis are equipped with digital tachographs (DTGs), allowing real-time monitoring of fuel efficiency, and providing drivers with information in real-time by analyzing their driving habits. This system improved drivers' driving habits and enhanced fuel efficiency, thereby contributing to GHG reduction. For efficient operation of the eco-driving system, Hyundai Glovis includes the monthly communication fee for all DTG terminals in its business plans.

2) Case 2: Modal Shift

Hyundai Glovis reflected Modal Shift in its business plans to apply energy-efficient transportation methods in transportation. To proceed with the project, the company evaluated the possibility of government cooperation, while engaging in constant consultation with customers. As a result, Hyundai Glovis won the contract for the Modal Shift project, which aims to shifting transportation methods for steel raw materials from vehicles to ships, not only for existing but also for new customers. Despite the disadvantage that Modal Shift requires a long time compared to vehicle transportation, it reduces the number of shipping by using ships, resulting in a significant reduction in GHG emissions.

3) Case 3: Transition to zero-emission vehicles

Based on the analysis of the transition scenario, the use of electric vehicles using renewable energy is expected to increase by 2050. In line with the trend of transitioning to electric vehicles, Hyundai Glovis introduced two hydrogen cargo trucks to its steel transportation offices and signed an MOU with SSG for a cold chain system, a refrigerated/frozen logistics transportation system. In 2020, the company piloted one electric truck as a delivery vehicle for fresh products for SSG.com, and is gradually increasing the number. Additionally, in line with the domestic initiative K-EV100 for zero-emission vehicle transition, Hyundai Glovis has set a strategy to convert 100% to zero-emission vehicles, specifically electric and hydrogen vehicles, for replaceable (approved by the Ministry of Environment) vehicle types by 2025.

4) Case 4: Platform container

As the electric vehicle market grows, the amount of discarded electric vehicle batteries is increasing, and the demand for collecting end-of-life batteries is predicted to increase. The Korea Institute of Energy Economics forecasts that the number of used batteries will increase to around 80,000 in 2030. Currently, Hyundai Glovis has developed a dedicated container named 'platform container' that can economically transport end-of-life electric vehicle batteries. The company has obtained a patent and is planning to expand the relevant business.

5) Case 5: Smart logistics

According to the RCP 6.0 scenario, a physical change scenario, the risk of heatwaves in Korea is forecasted to significantly increase. In particular, Ulsan, where the KD logistics center is located, is projected to be in a subtropical climate under the RCP 6.0 scenario. Therefore, it is predictable that all business sites, including Ulsan, will have to come up with measures to protect employees from heatwaves by refraining from outdoor activities and maintaining the appropriate temperature within the logistics center. Based on the automation of some production lines in logistics centers, an increase in the conversion to automated devices can be expected in the future. In addition, the introduction of unmanned vehicles and hardware packaging robots indicates the anticipated transformation to smart logistics factories.

III. Risk Management

1. Organization's process for identifying and assessing climate change-related risks
 - a. How to identify climate change-related risks and opportunities

Hyundai Glovis endeavors to efficiently respond to risks caused by new regulations, market changes, natural disasters, etc. and create new businesses taking them as opportunities. To this

end, it has established and operated a risk management manual to identify risks that have a direct impact on the company's business operations or have compulsive nature. The Environmental Management Team monitors the risk of climate change according to the risk management manual. Risks and opportunities are identified by considering their short-, medium-, and long-term impacts.

Hyundai Glovis has established a process to identify, assess, and respond to climate-related risks and opportunities. The process covers direct operations, upstream, and downstream in the value chain, and it covers short-, medium-, and long-term time horizons. The time horizons are defined as: short-term up to 3 years; medium-term from 3 years to 10 years; long-term from 10 years to 30 years. The types considered in climate-related risk assessment are current and emerging regulations, technology, legal, market, reputation, and acute and chronic physical risks. Climate change risks are monitored by the Environment Management Team based on the risk management manual, and this risk management process is also integrated into multi-disciplinary company-wide risk management process.

b. How to evaluate climate change-related risks

Hyundai Glovis identifies risks based on the risk management manual and conducts a materiality assessment of identified risks using the matrix technique. The matrix technique sets the criteria for business impact on the x-axis and compulsive nature on the y-axis. When risks occur, such as climate change regulations, physical damage, or stakeholder requirements, their impact on the business and compulsive nature are evaluated. The evaluation grades for the impact on the business and compulsive nature are scored, multiplied together, and the final score is calculated. Among them, risks with a final score of 0.45 or higher are defined as having a significant strategic impact on the business (maximum score: 0.81).

2. Organization's process for managing climate change-related risks

a. How to identify climate change-related risks and opportunities

Hyundai Glovis endeavors to efficiently respond to risks caused by new regulations, market changes, natural disasters, etc. and create new businesses taking them as opportunities. To this end, it has established and operated a risk management manual to identify risks that have a direct impact on the company's business operations or are compulsory. The Environmental Management Team monitors the risk of climate change on a weekly basis according to the risk management manual. Risks and opportunities are identified by considering their short-, medium-, and long-term impacts.

Short-term impacts include climate change-related risks such as emissions trading system, IMO DCS regulations, and short-term physical environmental changes such as typhoons and heavy rainfall that accrued within three years based on the reporting year and must be fulfilled annually. Medium-term impacts include risks within the transition period, reflecting Hyundai Glovis' 2030 reduction target, such as the transition to electric and hydrogen vehicles. The long-term time frame includes the 2050 National Carbon Neutrality Plan that accords with the 1.5°C scenario, long-term business strategies reflecting Hyundai Glovis' 2050 reduction targets, and long-term physical environment changes.

b. Cases where physical risks and opportunities reflected in the process

Hyundai Glovis recognizes global warming as an important issue, and in order to minimize damage caused by physical risks such as heat waves and heavy rain, the Safety and Environment Team has obtained the CRO's approval and is promoting the "Climate Change Adaptation Risk Assessment Support Tool (CRAS)". "CRAS evaluated the financial impact of physical risk factors up to the year 2100, and large-scale damage was expected due to heavy rain and heat waves. Also, Ulsan, where the KD logistics center is located, is projected to be in a tropical climate zone according to the RCP 6.0 scenario, which would require measures to protect employees from heatwaves and to maintain the appropriate temperature in the facility.

Therefore, to minimize the risk, we have insurance against natural disasters every year, building an emergency response process and training people in charge. "

In addition, from 2019, in order to minimize the physical risk damage caused by climate change, the SHEQ (Safety, Health, Environment, Quality) regulatory guidelines were upgraded and established reflecting all recently strengthened climate change standards. In addition, not only physical risks caused by climate change, but also opportunity factors are being reviewed. To assess the financial impact of heatwaves, the company has utilized the "Climate Change Adaptation Risk Assessment Support Tool (CRAS)" provided by the Ministry of Environment. The financial risks associated with heatwaves have been calculated until the year 2100. The maximum potential loss is projected to be around 68-92 million won between 2091 and 2100.

Hyundai Glovis utilizes the latest weather information provided by Weathernews to accurately predict and manage the weather along the ship's navigation route, thereby minimizing fuel consumption and equipment loss due to adverse weather conditions as well as safety. Hyundai Glovis minimizes ship operation losses due to weather conditions and prepares for cargo damage due to typhoons, heavy rain, and tsunamis.

The shipping industry's consolidated sales in 2023 are KRW 4.2 trillion, which corresponds to the maximum possible financial impact due to adverse weather conditions. Moreover, Hyundai Glovis pays KRW 444 MN annually to Weathernews Inc. to obtain weather information on the routes along which Hyundai Glovis' ships (PCC and bulk carriers) pass. This applies equally to existing ships as well as new ships.

c. Cases where transition risks and opportunities reflected in the process

As consumers' awareness of the environment changes and their preference for eco-friendly companies increases as climate change intensifies, manufacturers including OEMs and consumer goods companies are adopting eco-friendly transportation methods. Leading global automotive OEMs are taking a strong stance on green logistics. Representatively, they are increasingly demanding to present responding status to environmental issues when selecting a carrier. Some leading companies require CSI certification at the contracting stage. If certifications related to eco-friendly shipping are not properly managed, it may result in issues such as a reduction of contracted volume and contract termination, which directly impact revenue. Hyundai Glovis determined eco-friendly shipping certification related to CSI certification as a significant risk, and they tabled the issue to the Business Risk Management Committee chaired by the CEO to decide the introduction of CSI certification. As a result, the relevant business unit obtained CSI certification for certain ships, contributing to signing long-term contracts with customers who prefer eco-friendly transportation.

d. Low-carbon Product or Service

Hyundai Glovis classifies modal shift to coastal shipping as low-carbon product. To reduce GHG emissions, transportation of steel-related logistics can be achieved by using coastal shipping, which has better unit efficiency, instead of short-distance truck transportation which requires additional processes such as loading and unloading. Coastal shipping involves the process of cargo loading onto ships rather than using trucks, which allows for the avoidance of GHG emissions. In 2023, Hyundai Glovis transported 4,682,188 tons of cargo through 9,674 tons of coastal shipping instead of 25 tons of road transportation. Based on the performance of road transport and coastal shipping in 2023, the estimated avoided emissions were 78,956 metric tons CO₂e per functional unit. The revenue generated from modal shift to coastal shipping takes up 0.2% of total revenue in 2023.

e. Internal Carbon Pricing

Hyundai Glovis has set an internal carbon price based on the results of the IDB GHG Accounting Manual, with a price of KRW 53,750. The type of price used is shadow price, and it covers Scope 1 and Scope 2. The price is determined by aligning with the price of allowances

under an Emissions Trading Scheme. The pricing approaches used are uniform in terms of spatial variance and evolutionary in terms of temporal variance. The internal carbon price calculation standard for 2023 is \$43, which is equivalent to 1,250 KRW based on the current year exchange rate. We are calculating an internal carbon price for the purpose of Changing internal behavior, Driving energy efficiency, Driving low-carbon investment, Identifying and seizing low-carbon opportunities, and Navigating GHG regulations.

Firstly, in the case of environmentally friendly transportation, Hyundai Glovis considers regulations, stakeholder requirements, company conditions, and social impacts. The internal carbon price is utilized to enhance the cost-effectiveness of environmentally friendly transportation. In terms of facility investment, only energy savings and investment costs were considered previously. However, in recent years, Hyundai Glovis have also considered the internal carbon price, thereby increasing the cost-effectiveness of facility investments for GHG reduction. By implementing internal carbon price, Hyundai Glovis aims to change internal behavior, drive energy efficiency and low-carbon investment, identify and seize low-carbon opportunities, and navigate GHG regulations.

3. How the process of identifying, assessing, and managing climate change-related risks is integrated into the organization's overall risk management

a. Process for responding to climate change-related risks and opportunities

The Environmental Management Team reviews risks and opportunities based on the risk management manual on a weekly basis from short-, medium-, and long-term perspectives. When risks and opportunities are identified, their materiality is assessed and the results are reported to the CRO. Based on the assessment result, the CRO makes direct decisions on risks and opportunities with low materiality and reports those with high materiality to the Business Risk Management Committee, which includes the CEO, CFO, and other Executive Directors. The Business Risk Management Committee makes decisions on significant risks and opportunities, and the BOD makes final decisions on matters that are difficult to decide. The results of decision-making on significant risks and opportunities are shared with the BOD through the BOD's Business Performance Report. When decisions are made on climate change risks and opportunities, results are notified to relevant departments, through which the directions for response are established and actual responses is implemented in consideration of financial and technical aspects.

b. Integration into company-wide issue management

Climate change risks are reflected in the company-wide risk management process and are managed as core risks based on the results of sensitivity analysis. At the same time, changes in eco-friendly trends are managed separately as potential risks. These core and potential risks are evaluated as financial and non-financial risk factors and are reported in an integrated manner to the Business Investment Review Working Group. They are then managed company-wide according to the decisions of the Business Investment Review Committee and the Transparency Management Committee.

c. Integration into materiality assessment

In accordance with the materiality methodology presented by the GRI Standards guidelines, material issues are identified annually and reported externally. Using the matrix methodology, a total of 15 material issues were assessed. Among them, the provision of eco-friendly logistics services was selected as a material issue with high stakeholder interest, and energy consumption management GHG reduction was also reported as a material issue with high risks.

IV. Matrices and Targets

1. Matrices used by the organization to assess climate change-related risks and opportunities in accordance with its management strategy and risk management process
 - Hyundai Glovis conducts a materiality assessment of climate change risks by utilizing the matrix technique, where the x-axis of the matrix represents the impact on the business, while the y-axis represents the compulsive nature. The x-axis and y-axis of the matrix consider not only the financial impact but also the impact on business strategy.
- a. X-axis (Business impact)
 - 1) Definition of the X axis (business impact) when identifying and assessing climate change risks

Materiality assessment is conducted only for risks that have an impact on the business strategy due to legal requirements, stakeholder demands, or financially influence the business by less than 10 million KRW, between 10 million KRW and 1 billion KRW, or more than 1 billion KRW
 - 2) Criteria for evaluating the materiality of the X-axis (impact on business) (classified into three grades: High, Medium, and Low)
 - i. Risks that have an impact on the business strategy due to legal regulations, stakeholder demands, and financially influence the business by more than KRW 1 billion: High grade
 - ii. Risks that have an impact on the business strategy but financially influence the business between KRW 10 million and KRW 1 billion: Medium grade
 - iii. Risks that do not have an impact on the business strategy or financially influence the business by less than KRW 10 million: Low grade
- b. Y-axis (Compulsive nature)
 - 1) Definition of the Y-axis (compulsive nature) when identifying and assessing climate change risks

Materiality is assessed based on the existence of compulsive nature or penalties. Violation of mandatory compliance is reflected in the business strategy as it affects the business such as corporate reputation and market entry. Financial factors caused by the penalty are also considered.
 - 2) Criteria for evaluating the materiality of the X-axis (impact on business) (classified into three grades: High, Medium, and Low)
 - i. Mandatory compliance (affecting business strategy) with legal regulations and stakeholder requirements, with penalties for non-compliance: High grade
 - ii. Mandatory compliance (affecting business strategy) with legal regulations and stakeholder requirements, but no penalty: Medium grade
 - iii. Risks that have an impact on the business strategy but financially influence the business between KRW 10 million and KRW 1 billion: Medium grade
 - iv. Legal regulations and stakeholder requirements are not mandatory compliance: Low grade
- c. As such, Hyundai Glovis utilizes the matrix technique to evaluate and classify the materiality

of risks, considering the respective materiality assessment criteria for the X-axis and Y-axis. If both the X and Y axis fall into high grade, it is classified as a material risk. The case where one of the X and Y axes is rated high and the other is rated medium also regarded to be a material risk. Hyundai Glovis annually conducts a materiality assessment for climate change risks.

2. GHG emissions and related risks under Scope 1, 2, and Scope 3 (if applicable)
 - a. Hyundai Glovis' Scope 1 emissions in 2023: 3,489,416 tCO₂eq
 - 1) Domestic vehicles: 66,576 tCO₂eq
 - 2) Domestic buildings: 2,104 tCO₂eq
 - 3) Foreign Fleet: 3,420,736 tCO₂
 - b. Hyundai Glovis' Scope 2 emissions in 2023: 10,598 tCO₂eq
 - 1) Domestic vehicles: 10 tCO₂eq
 - 2) Domestic buildings: 10,588 tCO₂eq
 - c. Hyundai Glovis' Scope 3 emissions in 2023: 33,189 tCO₂eq (all verified by a third party)
 - 1) Domestic coastal shipping of suppliers: 31,425 tCO₂
 - 2) Domestic and international employee travel: 1,764 tCO₂eq
 - 3) GHG emissions from the purchase of other products and capital goods, production of fuel and energy, and use/disposal of sold products are disclosed through the CDP Report.
 - d. Risks related to GHG emissions
 - 1) Current regulations
 - i. Hyundai Glovis is subject to domestic and international GHG regulations. In Korea, it is included in the emission trading scheme and falls under the paid allocation industry. Compared to other industries, Hyundai Glovis bears an additional burden for reducing GHG emissions by 10% (paid allocation rate). If it fails to achieve the target, the financial burden will increase. Based on an analysis of the financial impact of the GHG reduction obligation, considering the reduction rate, adjustment factor, and paid allocation, it is estimated that a financial loss of at least KRW 4.5 billion and up to KRW 9.4 billion may occur within the planning period (Phase 3), which the company has been included in 2021. Additionally, as Hyundai Glovis has less reduction potential compared to other industries, the company's risk of responding to the emissions trading scheme is quite significant.
 - ii. As the proportion of ships among GHG emission sources has increased, separate GHG regulations for ships have been newly enforced. Since 2019, the International Maritime Organization (IMO) has implemented the IMO DCS regulation, which mandates all ships over 5,000 tons to have a monitoring plan, GHG emissions measurement, third-party external verification, and submission. If fuel efficiency reporting is not submitted for two consecutive years, all ships will be prohibited from the operation, and lead to revenue losses with suspension of the shipping business.
 - iii. With the IMO's constant expansion of GHG regulations, operational measures (Carbon Intensity Index, CII) and technical measures (Energy Efficiency Existing Index, EEXI) have been implemented as part of medium-term measures. The regulation mandates international ships over 400 GT to limit their GHG emissions. Under EEXI, ships that do not meet the baseline figure are required to install

maximum speed-limiting devices and bills of lading must be issued. In addition, to comply with the CII regulation, continuous average speed restrictions must be imposed to maintain the lowest ranking of "C". Failure to fulfill the above system may result in restricted operations and reduced revenue.

2) New Regulations

- i. The EU includes the shipping sector in the EU ETS Directive from 2024. This will mandate the purchase and settlement of emission allowances for international voyage ships over 5,000 GT calling at EU ports. The amount of allowances to be purchased will be based on the emissions reported under the existing EU MRVs (Monitoring, Reporting and Verification) system, and non-compliance will result in fines. After two consecutive years of non-compliance, the ships are expelled from the EU. This could lead to financial losses, including reduced sales, for Hyundai Glovis, which engages ongoing business in Europe.

3. Goals set by the organization to manage climate change-related risks and opportunities and performance against them

- a. Hyundai Glovis plans to achieve Net Zero by 2045 by carrying out various activities such as converting business vehicles to eco-friendly vehicles, introducing eco-friendly trucks and carbon-free ships, and implementing carbon offset projects to reduce 3.95 million tons of carbon emissions domestically and internationally as of 2021. According to the Net Zero Pathway plan, we will reduce GHG emissions by 20.7% by 2030 compared to 2021 through the introduction of LNG fueled ships and eco-friendly freight vehicles, 70.5% by 2040 through the introduction of carbon-free ships and expansion of renewable energy transition, thereby achieving Net Zero by 2045.
- b. Internally, the climate change-related performance of Hyundai Glovis is evaluated by CDP, DJSI, and the ESG evaluation of the Korea Institute of Corporate Governance and Sustainability. In particular, as CDP recognizes companies that effectively respond to climate-related issues and contribute to GHG reduction and energy efficiency improvement projects with positive results, climate-related issues, energy, and GHG reduction targets, and energy efficiency improvement projects are key factors in evaluating performance.

TCFD Framework

Category	TCFD Recommendation	Remarks	
Governance	a) BOD's supervision of climate change-related risks and opportunities	CDP	C1.1a, C1.1b
	b) Role of management in assessing and managing risks and opportunities related to climate change	CDP	C1.2a
Strategy	a) Climate change-related risks and opportunities identified by the organization over the short, medium, and long term	CDP	C2.2a, C2.3a, C2.4a
	b) Impact of climate change-related risks and opportunities on the organization's business, strategic and financial planning	CDP	C3.1, C3.2, C3.3, C3.4, C3.5, C3.5a
	c) Flexibility of management strategy, considering scenarios related to climate change, including the under 2.0°C scenario	CDP	C3.3, C3.5
Risk Management	a) Organization's process for identifying and assessing climate change-related risks	CDP	C.1.2a, C2.2
	b) Organization's process for managing climate change-related risks	CDP	C2.2
	c) How the process of identifying, assessing, and managing climate change-related risks is integrated into the organization's overall risk management	CDP	C2.2
Metrics and Targets	a) Metrics used by the organization to assess climate change-related risks and opportunities in accordance with its management strategy and risk management process	CDP	C2.1b
	b) GHG emissions and related risks under Scope 1, 2, and Scope 3 (if applicable)	CDP	C2.2a, C6.1, C6.3, C6.5
	c) Goals set by the organization to manage climate change-related risks and opportunities and performance against them	CDP	C1.3, C4.1, C4.2, C4.3

Disclaimer:

All environmental reporting information contained in this document is aligned with the Company's annual Carbon Disclosure Project Reporting. Current presentation material information contained herein has been prepared in advance, prior to the disclosure of 2024 CDP report (subjected to be verified by third-party) and is subject to change after the final verification of CDP report.