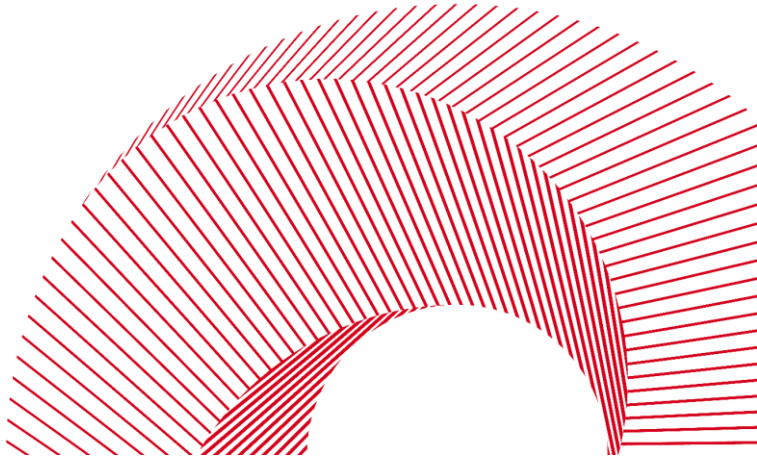


Climate Scenario Analysis Report

2023.07



Climate Scenario Analysis Report

■ Background

Hyundai Mobis declared its carbon neutrality strategy in line with the vision ‘Green Transformation to Net-Zero’ in December 2021. We consider various reduction measures that encompass our business sites and value chain, and progressively pursue greenhouse gas reduction with the ultimate goal of achieving Net-Zero.

The climate scenario analysis this time has strengthened the financial impact measurement on various risk and opportunity factors by using climate modeling-based analysis tools compared to the previous scenario analysis conducted.

Various climate change scenarios have been assumed, ranging from scenarios where fossil fuels are heavily used and development is expanded indiscriminately, to scenarios aimed at achieving the international target of 1.5°C or below. These scenarios encompass a wide range of potential future situations related to climate change.

Based on these scenarios, the plan is to identify the medium to long-term impacts on the company and continuously ensure resilience to climate change through alignment with the organization’s business strategy and financial planning.

■ Scenario Used for Analysis

For the scenario analysis, the most representative climate change scenarios publicly available have been adopted, including those from the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA). For the analysis of physical risks, the scenarios used were the ‘[IPCC SSP 8.5, 4.5, 2.6 scenarios](#)’, while for transition risks and opportunities, the analysis was based on the scenarios provided by the ‘[IEA STEPS, APS, NZJ](#)’.

The aim is to utilize these scenarios, considering both the current policy maintenance and high fossil fuel consumption situations, to strengthen strategic decision-making for complex and diverse circumstances. We plan to use these scenarios to assess and adjust our business and financial plans in preparation for future climate situations. By doing so, Hyundai Mobis intends to enhance its ability to adapt to and navigate through different climate scenarios effectively.

SSP 1.9 has been excluded from the analysis as it was projected to have minimal financial impact due to low average temperature increase.

[Chart] Type of Climate Change Scenario

Hyundai Mobis’ Adopted Scenario

Category	IPCC		IEA		
Approach	Academic perspective to climate change		Energy perspective based on policy direction		
Scenario	RCP	SSP	NZE	APS	STEPS
Report	IPCC 5 th Assessment Report	IPCC 6 th Assessment Report	Annually published <i>World Energy Outlook</i>		
Consideration Criteria	<ul style="list-style-type: none"> Selected based on Earth’s radiative forcing in the year 2100 	<ul style="list-style-type: none"> Considering future socio-economic factors with RCP scenarios 	<ul style="list-style-type: none"> Assuming that the energy market will be shaped based on major countries’ policy implementation plans 		
Key Implication	Defined in five stages, from ①staying below 1.5°C to ⑤fossil fuel-based society		Limit to below 1.5°C - Achieving Net-Zero	Full implementation of NDC/carbon neutrality targets by each country	Maintaining the current policy direction
Temperature Rise in the Year 2100 (°C)	① SSP 1 - 1.9: 1.4°C ② SSP 1 - 2.6: 1.8°C ③ SSP 2 - 4.5: 2.7°C ④ SSP 3 - 7.0: 3.6°C ⑤ SSP 5 - 8.5: 4.4°C		1.4°C	1.7°C	2.5°C

Climate Scenario Analysis Report

■ Analysis Scope

The scenario analysis was conducted for domestic and overseas production/logistics sites and major subsidiaries within the operational boundaries of Hyundai Mobis, which covers approximately 99% of the company's consolidated revenue. For transition risk and opportunity, analysis to the company's value chain (upstream & downstream) is partly included.

Physical Risk

	Upstream	V	Direct operations		Downstream
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Transition Risk and Opportunities

V	Upstream	V	Direct operations	V	Downstream
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Hyundai Mobis has set short-/mid-/long-term time horizons for assessing potential climate risks and opportunities. Considering the carbon neutrality strategy within the ranges of (short-term) 0-3 years, (mid-term) 3-10 years, and (long-term) 11-25 years, the company has examined the likelihood and impact of respective risks and opportunities that may arise in 2025, 2030, and 2040.

The year 2040 is the target year for the company's carbon neutrality in own operations, and we will gradually develop strategies and methodologies towards the carbon neutrality goal (Year 2045), including the supply chain.

Strategy Rolling	Short-term: 0~3 years	Mid-term: 3~10 years	Long-term: 11~25 years
Carbon Neutrality Target Year	2025	2030	2040

■ Methodology

For physical risks, analysis on various hazards was conducted using the climate modeling-based tool, Jupiter Intelligence and estimated the financial impacts on Hyundai Mobis' domestic and overseas business sites, as well as its major subsidiaries. Physical risks covered scenarios up to the year 2100, but this report focuses on the impacts until 2040.

Regarding transition risks and opportunities, the report considered the diverse internal and external environments surrounding the company, along with Hyundai Mobis' strategic direction, and incorporated insights from experts.

Category	Type	Methodology
Physical Risk	Acute	<ul style="list-style-type: none"> Total loss amount due to asset impairment and restoration
	Chronic	
Transition Risk and Opportunity		<ul style="list-style-type: none"> Analysis of domestic and overseas regulatory policies Analysis of domestic and overseas energy and automotive market outlooks Analysis of Hyundai Mobis' internal status and key strategic directions (sales strategy, Net-Zero strategy, etc.) Benchmarking on Peer group / Automotive value chain Incorporating insights from experts

Climate Scenario Analysis Report

Risk and Opportunity Factors

Hyundai Mobis is continuously identifying and monitoring potential climate risks and opportunities that may affect the company in response to the changing business environment. In this analysis, factors such as rising raw material costs and the promotion of low-emission vehicles through K-EV100 are perceived as new risks and opportunities, respectively, and have been considered in the analysis.




For certain risk and opportunity factors, a quantitative analysis has been conducted to assess their potential financial impact on the company.

KRW Quantitative Analysis Conducted | Time horizon: Short-term Mid-term Long-term | H: High MH: Medium-High M: Medium L: Low















Category		Risk · Opportunity Factor	Description	Time Horizon	Likelihood	Impact
Transition Risk	Current Regulation	T1 Rise in greenhouse gas emission price KRW	<ul style="list-style-type: none"> Increase in carbon prices due to strengthened carbon regulations and allocations 		H	M
	Potential Regulation	T2 Strengthening international regulations (e.g. Carbon Border Adjustment Mechanism, CBAM)	<ul style="list-style-type: none"> Response to products subject to the CBAM among products exported to the EU 		MH	M
		T3 Regulations and directives for existing products/services	<ul style="list-style-type: none"> Fines incurred due to non-compliance with regulations, further productivity decline due to product recalls and production halt, decrease in asset value 		M	MH
	Legal Risk	T4 Exposure to litigations	<ul style="list-style-type: none"> Group lawsuits arising from the absence of climate change measures and responses by stakeholders including public/environmental organizations, customers, etc. 		L	MH
	Technical Risk	T5 Expansion of low-carbon options for existing products/services	<ul style="list-style-type: none"> Decrease in customer responsiveness when securing technology, adjusting business portfolios become challenging due to expansion of demand for eco-friendly cars 		MH	MH
		T6 Transition costs for low-carbon technology KRW	<ul style="list-style-type: none"> Increase in infrastructure costs for transitioning to low-carbon emission technologies within business sites 		MH	MH
	Market Risk	T7 Customer behavioral changes KRW	<ul style="list-style-type: none"> Reduction of business opportunities due to increased climate change demands from clients, with the risk of losing contracting opportunities if not addressed 		MH	H
		T8 Market signal uncertainty KRW	<ul style="list-style-type: none"> Cost rise due to annual increase in national general electricity cost 		H	H
		T9 Rise in raw materials cost KRW	<ul style="list-style-type: none"> Increase in raw materials procurement costs due to suppliers' climate change response 		H	H
	Reputational Risk	T10 Stigmatization of the industry	<ul style="list-style-type: none"> Talent attrition and increased difficulty in attracting specialized professionals due to reputation deterioration by inadequate climate change response 		M	M
		T11 Increasing stakeholder concerns and negative sentiments	<ul style="list-style-type: none"> Reduction in market value due to negative views from external evaluation agencies /stakeholders. 		M	M

Climate Scenario Analysis Report

KRW Quantitative Analysis Conducted

Time horizon:  Short-term  Mid-term  Long-term

H: High MH: Medium-High M: Medium L: Low

Category		Risk · Opportunity Factor	Description	Time Horizon	Likelihood	Impact	
Physical Risk	Acute	P1	Asset damage due to weather-related disasters such as floods KRW	Increased exposure to flooding risk		MH	M
		P2	Asset loss due to wildfires KRW	Losses incurred due to annual fire incidents within 1km ² vicinity		M	L
		P3	Damage due to typhoons KRW	Occurrence of typhoon damages caused by continuous tropical or subtropical low-pressure systems		L	H
	Chronic	P4	Decreased productivity due to heatwaves KRW	Decreased productivity due to abnormal prolonged high-temperature conditions lasting for several days		M	MH
Opportunity	Resource Efficiency	O1	Use of efficient production and distribution process	<ul style="list-style-type: none"> Productivity improvement through the adoption of energy-efficient operational systems and mitigation technologies 		M	M
	Energy Consumption	O2	Participation in carbon market (Carbon credit sales)	<ul style="list-style-type: none"> Increased opportunities for profit through the activation of the carbon emission trading market and greenhouse gas reduction 		M	M
	Product Service	O3	Development and expansion of low-emission products and services KRW	<ul style="list-style-type: none"> Increasing demand for low-carbon and carbon-emission avoidance products and services 		H	H
		O4	Development of new products and services through R&D/innovation	<ul style="list-style-type: none"> Generating revenue through the expansion of eco-friendly product development 		H	H
		O5	Ability to diversify business activities	<ul style="list-style-type: none"> Exploring new markets, expanding, and diversifying business activities related to climate change response 		M	M
		O6	Changing consumer preferences towards low-carbon products	<ul style="list-style-type: none"> Increasing expectations from stakeholders regarding climate change performance improvement 		H	H
	Market	O7	Access to new market KRW	<ul style="list-style-type: none"> Expanding the discovery and procurement opportunities for new global OE 		H	MH
	Resilience	O8	Participation in renewable energy and energy efficiency programs KRW	<ul style="list-style-type: none"> Cost savings for purchase of carbon credit through transition to renewable energy 		MH	MH
		O9	Supply chain diversification	<ul style="list-style-type: none"> Proactively respond to natural disasters caused by climate change or sanctions due to specific regional regulations by dispersing dependence on specific suppliers 		M	MH
		T10	Transition to low-emission vehicles KRW	<ul style="list-style-type: none"> Cost savings for maintenance and carbon credits by transitioning to low-/zero-carbon vehicles 		MH	M

Climate Scenario Analysis Report

Financial Impact Analysis of Key Risks and Opportunities

Hyundai Mobis has assessed the financial impact levels of risks and opportunities surrounding climate change by applying various scenario analyses.

This report specifically covers the impacts of transition risks such as 'increased greenhouse gas emission prices' and 'uncertainty in market signals (increased electricity prices)', as well as physical risks like 'flooding' and 'heatwaves'. Additionally, it prioritizes the disclosure of the financial impact of opportunity factors such as 'expanding the development of low-emission products and services' and 'participating in renewable energy and energy efficiency programs'.

T1. Rise in Greenhouse Gas Emission Price [Transition Risk]																					
Risk Description	<ul style="list-style-type: none"> Since 2016, Hyundai Mobis has been designated under the domestic greenhouse gas emissions trading system and has undergone third-party verification of Scope 1 and 2 greenhouse gas emissions, reporting the results to the government annually. To achieve the NDC (Nationally Determined Contributions) for carbon neutrality by 2050, the South Korean government is expected to strengthen the allocation of emission allowances within the domestic emissions trading system. As allocated emission quotas decrease, competition for emission allowances among companies subject to the trading system is expected to intensify, leading to higher market prices for emission allowances. 																				
Methodology	<ul style="list-style-type: none"> We have conducted an analysis on business sites that are subject to domestic emissions trading system. To calculate carbon emission liabilities, we estimated each relevant facility's Scope 1 and Scope 2 emissions and BAU, and predicted its free emission allowances and outlook of domestic carbon emission credit prices by year. We conservatively applied a 0% paid allocation ratio for the current 3rd phase of the emissions trading system (2021-2025). However, for future scenarios, we considered a trend of paid allocation ratio based on the assumption that the ratio of paid allocation (11.4% in 2030 compared to 2018, 100% in 2050) correlates with South Korea's NDC industry sector reduction targets. Furthermore, we referenced the carbon price projections of South Korea announced from the International Energy Agency (IEA) to estimate emission credit prices for each scenario. 																				
Financial Impact	<div style="text-align: right;">(Unit: KRW 100 million)</div> <div style="display: flex; align-items: center; justify-content: center;"> $= \sum_{\text{By year}} \left[\begin{array}{l} \text{Projected Scope 1,2 Emissions within} \\ \text{Operational Boundaries} \\ \times \\ \text{Allocation and Paid Allocation Ratio} \\ \text{(purchasing requirement)} \\ \times \\ \text{Carbon Credit Price} \end{array} \right] =$ <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Scenario</th> <th>Short-term (2025)</th> <th>Mid-term (2030)</th> <th>Long-term (2040)</th> <th>Cumulative (~2040)</th> </tr> </thead> <tbody> <tr style="background-color: #f8d7da;"> <td>STEPS (2.5°C)</td> <td>2</td> <td>16</td> <td>154</td> <td>839</td> </tr> <tr style="background-color: #fff3cd;"> <td>APS (1.7°C)</td> <td>4</td> <td>53</td> <td>401</td> <td>2,319</td> </tr> <tr style="background-color: #d4edda;"> <td>NZE (1.4°C)</td> <td>4</td> <td>55</td> <td>470</td> <td>2,615</td> </tr> </tbody> </table> </div>	Scenario	Short-term (2025)	Mid-term (2030)	Long-term (2040)	Cumulative (~2040)	STEPS (2.5°C)	2	16	154	839	APS (1.7°C)	4	53	401	2,319	NZE (1.4°C)	4	55	470	2,615
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APS (1.7°C)	4	53	401	2,319																	
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Response Plan	<ul style="list-style-type: none"> Hyundai Mobis is continuously reviewing options for the replacement of aging equipment, improving process efficiency through technological advancements, and considering the replacement of boilers with biofuels in the medium to long term as part of efforts to reduce greenhouse gas emissions. Furthermore, we are planning to implement strategic renewable energy transitions, considering the domestic renewable energy market environment. 																				

T8. Uncertainty in Market Signal [Transition Risk]	
Risk Description	<ul style="list-style-type: none"> As the increase in fuel costs due to Russia's invasion of Ukraine and phase-out of nuclear power policy have led to a continuous deficit in the operating performance of Korea Electric Power Corporation (KEPCO), it is anticipated that future electricity price hikes will be inevitable for the normalization of management.

Climate Scenario Analysis Report

Risk Description	<ul style="list-style-type: none"> With Scope 2 emissions accounting for 85% of the company's total GHG emissions (based on a three-year average), we are highly sensitive to fluctuations in the electricity market. Consequently, managing the business plan while considering the impact of increasing electricity tariffs becomes essential. 																				
Methodology	<ul style="list-style-type: none"> Based on the electricity consumption of domestic business sites from 2019 to 2022, we assumed that the electricity usage would increase by the Scope 2 BAU (Business-as-Usual) growth rate. Furthermore, we predicted our yearly electricity unit price and utilized it in the analysis. In the case of electricity unit price, we analyzed the gap between the company's current purchasing unit price* and the 2022 SMP (System Marginal Price) unit price. We predicted the annual electricity unit price by applying estimated values based on the government's 10th electricity supply plan and the power mix for achieving carbon neutrality by 2050. (* Calculated the proportional weighted average of electricity unit prices corresponding to the electricity consumption proportion of each domestic business facility.) As the share of renewable energy in the domestic power generation mix gradually increases (reaching 70.7% by 2050), it is anticipated that electricity prices will experience significant increases starting from the year 2037. Consequently, until 2037, the analysis considered the magnitude of price increases based on the recent three-year average electricity tariff levels. 																				
Financial Impact	<p style="text-align: right;">(Unit: KRW 100 million / Cumulative Unit: KRW 1 trillion)</p> $= \sum_{\text{By year}} \left[\begin{array}{c} \text{(Expected) Electricity Consumption (MWh)} \\ \times \\ \text{Electricity Tariff (KRW/kWh)} \end{array} \right] =$ <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Scenario</th> <th>Short-term (2025)</th> <th>Mid-term (2030)</th> <th>Long-term (2040)</th> <th>Cumulative (~2040)</th> </tr> </thead> <tbody> <tr> <td>STEPS (2.5°C)</td> <td>632</td> <td>882</td> <td>1,794</td> <td>1,878</td> </tr> <tr> <td>APS (1.7°C)</td> <td>632</td> <td>882</td> <td>1,798</td> <td>1,928</td> </tr> <tr> <td>NZE (1.4°C)</td> <td>632</td> <td>882</td> <td>1,825</td> <td>1,933</td> </tr> </tbody> </table>	Scenario	Short-term (2025)	Mid-term (2030)	Long-term (2040)	Cumulative (~2040)	STEPS (2.5°C)	632	882	1,794	1,878	APS (1.7°C)	632	882	1,798	1,928	NZE (1.4°C)	632	882	1,825	1,933
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Response Plan	<ul style="list-style-type: none"> We plan to promote greenhouse gas emissions reduction through various renewable energy transition options, including solar power generation, REC (Renewable Energy Certificates), and PPA (Power Purchase Agreements) purchases. 																				

P1. Asset damage due to weather-related disasters such as floods [Physical Risk : Acute]

Risk Description	<ul style="list-style-type: none"> The world is facing a climate crisis with record-breaking rainfall and floods continuing. Flooding at business sites can result in damage to buildings, equipment, and inventory assets, and the operational disruptions during the restoration of damaged facilities can lead to additional losses. Approximately 84% of our domestic/overseas sites seemed geographically exposed to flood risks at a manageable or low level. Some regions in China and Korea appear to have higher risk levels. However, the ratio of financial losses compared to revenue caused by flood events turns out to be relatively high. This highlights the need for continuous attention and efforts to prevent significant damages. 																
Methodology	<ul style="list-style-type: none"> The total loss due to flooding has been calculated as the sum of the amount of asset damage and the loss incurred during the restoration process. The amount of asset damage was calculated by applying damage coefficients to the total asset value, which was assessed using insurance or book values based on Jupiter data for asset valuation by type. The loss incurred during the restoration process was calculated by applying Jupiter data-based downtime loss coefficients to the 2022 revenue. 																
Financial Impact	<p style="text-align: right;">(Unit: KRW 100 million)</p> $= \left[\begin{array}{c} \text{Asset Damage Amount (Total Asset Value X Damage Coefficient)} \\ + \\ \text{Loss Due to the Restoration of Damaged Assets (Revenue) X (Downtime Coefficient)} \end{array} \right] =$ <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Scenario</th> <th>Short-term (2025)</th> <th>Mid-term (2030)</th> <th>Long-term (2040)</th> </tr> </thead> <tbody> <tr> <td>SSP 1 - 2.6 (< 2°C)</td> <td>1,426</td> <td>1,450</td> <td>1,500</td> </tr> <tr> <td>SSP 2 - 4.5 (2-3°C)</td> <td>1,406</td> <td>1,407</td> <td>1,504</td> </tr> <tr> <td>SSP 5 - 8.5 (> 4°C)</td> <td>1,461</td> <td>1,496</td> <td>1,572</td> </tr> </tbody> </table>	Scenario	Short-term (2025)	Mid-term (2030)	Long-term (2040)	SSP 1 - 2.6 (< 2°C)	1,426	1,450	1,500	SSP 2 - 4.5 (2-3°C)	1,406	1,407	1,504	SSP 5 - 8.5 (> 4°C)	1,461	1,496	1,572
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Climate Scenario Analysis Report

Response Plan	<ul style="list-style-type: none"> We are continuously making efforts to review and improve the design and specifications standards of worksites to address the challenges posed by extreme weather conditions and climate change. To prepare for heavy rain and floods, we have improved the specifications of roof scuppers, resulting in a reduction of over 50% in the roof's load burden and an enhancement in drainage capabilities. These improvements are also applied to newly built worksites. Furthermore, to prepare for major disasters that may threaten the safety, we have established an emergency response system based on situational and phased approaches. Hyundai Mobis is also striving to enhance its emergency response capabilities through disaster prevention activities and conducting mock tests. These measures aim to improve the ability to respond effectively in times of crisis.
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P4. Decreased Productivity due to Heatwaves [Physical Risk : Chronic]

Risk Description	<ul style="list-style-type: none"> As global warming continues, abnormal temperature patterns persist, leading to more frequent heatwaves with higher summer temperatures than in the past. Particularly, the phenomenon of 'heat domes,' where hot air gets trapped aloft, is raising temperatures by 5 to 10 °C or more. As a result, heatwaves exceeding 40 °C are occurring in various parts of the world. Unlike natural disasters such as typhoons, heavy rains, and heavy snowfall, which cause both human and physical damage (infrastructure destruction) simultaneously, heatwaves primarily impact human health and life. The effects of global weather changes can be seen as having a direct impact on human health due to the association of heatwaves with health and life-related issues. Heatwaves can lead to fatigue, exhaustion, heatstroke, and dehydration among workers, resulting in decreased labor productivity for companies. According to credit rating agency Moody's, chronic health risks caused by heatwaves could potentially shrink the global GDP by up to 17.6% by the year 2100. More than half of Hyundai Mobis' domestic and overseas business worksites are analyzed to be within the geographical influence of future heatwaves. Particularly, regions like the United States, China, Brazil, and India, which are currently experiencing unprecedented heatwaves, show consistently high risks. In the case of South Korea, it is expected that the risk level will increase significantly in the medium to long term compared to the current situation. While the financial losses due to heatwaves are relatively lower compared to those caused by floods, heatwaves pose a threat to workers' health and can lead to decreased productivity in broad regions, which addresses the necessity of continuous management and monitoring. 																			
Methodology	<ul style="list-style-type: none"> We have calculated the revenue losses for domestic and overseas business sites due to the decrease in labor productivity caused by heatwaves. We considered the revenue for the year 2022 and annual percentage of days with temperatures exceeding 35°C based on Jupiter data, along with the reduction in indoor workers' labor productivity (%) due to heatwaves, using data from PwC UK. 																			
Financial Impact	<div style="text-align: right; font-size: small;">(Unit: KRW 100 million)</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 45%; text-align: center; vertical-align: middle;"> $\left[\begin{array}{c} 2022 \text{ Revenue} \\ \times \\ \text{Annual Percentage of Days with} \\ \text{Temperatures Exceeding } 35^{\circ}\text{C} \\ \times \\ \text{Productivity Loss Coefficient} \end{array} \right] =$ </td> <td style="width: 5%; text-align: center; vertical-align: middle;">=</td> <td style="width: 50%; text-align: center;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #f2f2f2;">Scenario</th> <th style="background-color: #f2f2f2;">Short-term (2025)</th> <th style="background-color: #f2f2f2;">Mid-term (2030)</th> <th style="background-color: #f2f2f2;">Long-term (2040)</th> </tr> </thead> <tbody> <tr> <td style="background-color: #fff9c4;">SSP 1 - 2.6 (< 2°C)</td> <td>5,066</td> <td>5,213</td> <td>5,452</td> </tr> <tr> <td style="background-color: #ffcdd2;">SSP 2 - 4.5 (2-3°C)</td> <td>4,889</td> <td>5,051</td> <td>5,349</td> </tr> <tr> <td style="background-color: #e57373;">SSP 5 - 8.5 (> 4°C)</td> <td>5,110</td> <td>5,323</td> <td>5,820</td> </tr> </tbody> </table> </td> </tr> </table>	$\left[\begin{array}{c} 2022 \text{ Revenue} \\ \times \\ \text{Annual Percentage of Days with} \\ \text{Temperatures Exceeding } 35^{\circ}\text{C} \\ \times \\ \text{Productivity Loss Coefficient} \end{array} \right] =$	=	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #f2f2f2;">Scenario</th> <th style="background-color: #f2f2f2;">Short-term (2025)</th> <th style="background-color: #f2f2f2;">Mid-term (2030)</th> <th style="background-color: #f2f2f2;">Long-term (2040)</th> </tr> </thead> <tbody> <tr> <td style="background-color: #fff9c4;">SSP 1 - 2.6 (< 2°C)</td> <td>5,066</td> <td>5,213</td> <td>5,452</td> </tr> <tr> <td style="background-color: #ffcdd2;">SSP 2 - 4.5 (2-3°C)</td> <td>4,889</td> <td>5,051</td> <td>5,349</td> </tr> <tr> <td style="background-color: #e57373;">SSP 5 - 8.5 (> 4°C)</td> <td>5,110</td> <td>5,323</td> <td>5,820</td> </tr> </tbody> </table>	Scenario	Short-term (2025)	Mid-term (2030)	Long-term (2040)	SSP 1 - 2.6 (< 2°C)	5,066	5,213	5,452	SSP 2 - 4.5 (2-3°C)	4,889	5,051	5,349	SSP 5 - 8.5 (> 4°C)	5,110	5,323	5,820
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Response Plan	<ul style="list-style-type: none"> To prepare for heatwaves, we are enhancing the conditions for the intake air temperature of air conditioning systems and actively striving to maintain a comfortable temperature to increase work efficiency. To ensure the health management of our employees, we have set up health care rooms (nursing rooms for overseas sites) in each business site and are operating them with professional medical staff always available. This infrastructure is in place to facilitate disease prevention and handle emergency situations effectively. 																			

Climate Scenario Analysis Report

O3. Development and Expansion of low-emission products and services [Opportunity]

<p>Opportunity Description</p>	<ul style="list-style-type: none"> In order to actively respond to the increasing global demand for low-emission vehicle, Hyundai Mobis established the portfolio of key components across all areas, including electricity production(fuel cells), storage(battery), conversion(motor), that are essential for electric and hybrid vehicles and aims to accelerate commercialization. According to the IEA (International Energy Agency)'s Global EV Outlook, global total spending on electric vehicles (EVs) has been showing steady growth since 2017. It is estimated that the global total spending on EVs in 2022 has increased by 50% compared to 2021. In the scenario of fully implementing the Nationally Determined Contributions (NDCs) and carbon neutrality goals by each country, it is projected that one out of seven vehicles on the road will be electric vehicles (EVs) by the year 2030. This can further expand accordingly with the country-specific regulatory policies applied to internal combustion engine vehicles. In 2022, our revenue of electric vehicle components reached 9.7 trillion KRW, accounting for 18.6% of total sales revenue, and there is a consistent upward trend in alignment with the company's business direction and strategy. The company aims to achieve an annual average sales growth of 14% until 2031 (based on estimated annual sales in 2022) through the expansion of development and production efforts of electrification parts, including electric powertrain systems, drivetrain systems, battery systems, fuel cells, etc. 						
<p>Methodology</p>	<ul style="list-style-type: none"> Based on Hyundai Mobis' goal of achieving an annual average growth of 14% in total electric vehicle product sales until 2031, we have calculated the revenue for the period up to 2030. 						
<p>Financial Impact</p>	<p style="text-align: right;">(Unit: KRW trillion)</p> $= \sum_{\text{By Year}} \left[\begin{array}{c} \text{Revenue of Electrification Parts} \\ \times \\ \text{Compound Annual Growth Rate} \end{array} \right] =$ <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Short-term (2025)</th> <th>Mid-term (2030)</th> <th>Cumulative (~2030)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">14</td> <td style="text-align: center;">28</td> <td style="text-align: center;">146</td> </tr> </tbody> </table>	Short-term (2025)	Mid-term (2030)	Cumulative (~2030)	14	28	146
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<p>Implementation Plan</p>	<ul style="list-style-type: none"> Hyundai Mobis has established three directions, which are enhancing cost competitiveness, technological competitiveness, and manufacturing competitiveness, and actively implements these to accomplish our objectives. We will continuously strive to expand investments in electric vehicle components to develop globally competitive products and make efforts to ensure stable mass production and supply. 						

O8. Participation in Renewable Energy and Energy Efficiency Programs [Opportunity]

<p>Opportunity Description</p>	<ul style="list-style-type: none"> As RE100 is the core approach to achieve carbon neutrality for Hyundai Mobis, which has large ratio of electricity consumption, the company has established mid-to long-term goals for RE100 transitions, aiming to achieve 35% by 2025, 65% by 2030, and 100% by 2040. Along with the implementation of initiatives such as the EU's REPowerEU and the Biden administration's Inflation Reduction Act (IRA) and Nationally Determined Contributions (NDCs) for greenhouse gas reduction by each country, the domestic and overseas renewable energy market environment is expected to further expand. Hyundai Mobis aims for a 100% transition to renewable energy by 2030 in countries such as the United States and the Czech Republic, where the renewable energy market is active. For domestic operations, the company is planning a 35% transition to renewable energy by 2030, considering the expansion plans for national renewable energy supply. It is anticipated that carbon emissions trading costs can be reduced until 2050 through the recognition of emissions reductions achieved by purchasing renewable energy. We will continuously monitor the domestic and overseas renewable energy market environments for a successful transition to renewable energy and proceed with a strategic transition, considering the prioritization of renewable energy procurement options.
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Climate Scenario Analysis Report

<p>Methodology</p>	<ul style="list-style-type: none"> We analyzed the costs that can be saved through purchasing carbon credits and the costs of transitioning to renewable energy programs respectively, and utilized them in the analysis. Firstly, regarding the costs that can be saved through purchasing carbon credits, we calculated the greenhouse gas emissions reduction (BAU Scope 2 domestic emissions) based on the renewable energy conversion targets for each year. Then, considering the trend of the proportion of allocated costs in the domestic electricity market and IEA's projected carbon prices for South Korea, we determined the emission credit price trend for each scenario. As for the transition costs of the renewable energy program, we calculated the expected usage for Hyundai Mobis' domestic and overseas business sites from 2023 to 2040. We applied the renewable energy ratio based on the global RE100 transition targets of 65% by 2030 and 100% by 2040. Additionally, we considered the usage of each facility and incorporated the proportion of Power Purchase Agreements (PPA) or Renewable Energy Certificates (REC) based on predicted domestic and international PPA/REC unit prices. 																				
<p>Financial Impact</p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Cost Savings through Carbon Credits Purchase</p> $= \sum_{\text{By year}} \left[\begin{array}{c} \text{Greenhouse Gas Reduction} \\ \times \\ \text{Cost Allocation Ratio} \\ \times \\ \text{Carbon Credit Price} \end{array} \right]$ </div> <div style="text-align: center;"> <p>Transition Cost for Renewable Energy</p> $= \sum_{\text{By year}} \left[\begin{array}{c} \text{Projected Electricity Consumption} \\ \times \\ \text{Implementation Rate of Yearly} \\ \text{Renewable Energy Target} \\ \times \\ \text{PPA or REC Adoption Ratio} \\ \times \\ \text{PPA or REC Unit Price} \end{array} \right]$ </div> <div style="text-align: center;"> <p>-</p> </div> </div> <p style="text-align: center;">(Unit: KRW 100 million)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Scenario</th> <th>Short-term (2025)</th> <th>Mid-term (2030)</th> <th>Long-term (2040)</th> <th>Cumulative (~2040)</th> </tr> </thead> <tbody> <tr> <td>STEPS (2.5°C)</td> <td>(58)</td> <td>(134)</td> <td>108</td> <td>(1,186)</td> </tr> <tr> <td>APS (1.7°C)</td> <td>(58)</td> <td>(116)</td> <td>339</td> <td>(53)</td> </tr> <tr> <td>NZE (1.4°C)</td> <td>(58)</td> <td>(115)</td> <td>416</td> <td>214</td> </tr> </tbody> </table>	Scenario	Short-term (2025)	Mid-term (2030)	Long-term (2040)	Cumulative (~2040)	STEPS (2.5°C)	(58)	(134)	108	(1,186)	APS (1.7°C)	(58)	(116)	339	(53)	NZE (1.4°C)	(58)	(115)	416	214
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<p>Implementation Plan</p>	<ul style="list-style-type: none"> In April 2022, Hyundai Mobis was the first company in the domestic automotive industry to join RE100, publicly declaring a proactive transition to renewable energy. As of the end of 2022, the total renewable energy consumption and transition rate for Hyundai Mobis stands at 7.3% and the company is actively progressing in its transition to renewable energy by purchasing renewable energy certificates (REC*, iREC, GO**) and joining green pricing for its business sites in Slovakia, Germany, Turkey, etc. (*Renewable Energy Certificates, **Guarantees of Origin) In 2023, we continuously strive to secure the transition motivation by designating renewable energy transition rates as the Key Performance Indication(KPI) for each business division and linking it with the evaluation of individual organizations and executives. In the future, we are also planning to further expand renewable energy transition activities by utilizing Power Purchase Agreement (PPA) options for electricity procurement. 																				

Disclaimer

We would like to inform that the quantitative figures derived from this climate scenario analysis report are projected values from a long-term perspective until 2040. Assuming unpredictable future scenarios, we estimated climate change risks and opportunities that can affect the company from various angles, and this analysis was conducted in collaboration with PwC Consulting.

Climate change risks and opportunities that Hyundai Mobis considers important may vary in response to changes in domestic and international business environments in the future. To address this, we intend to maintain transparent communication through continuous monitoring and analysis.

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