Road to Sustainability

2022 Sustainability Report

HYUNDAI

Contents

ESG Magazine

Progress through Vision

The 2022 Hyundai Motor Company ESG Magazine illustrates Hyundai's "Progress for Humanity". For the irreplaceable Earth environment, for the humanity of today, and for a sustainable future for which futures generations will be grateful, the progress continues.

Interactive PDF

This report has been published as an interactive PDF, allowing readers to move quickly and easily to pages in the report, and including shortcuts to the related web pages.

CEO Message

“Progress for Humanity”
We connect possibilities to our daily lives through our ceaseless innovations and commitment.

Dear valued customers, partners and friends,
It’s a true pleasure to share our Sustainability Report for this year with you.

2021 was a difficult year for everyone, including Hyundai Motor Company. The world’s economic recovery was tempered by the resurgence of the COVID-19 pandemic, the worldwide supply shortage of semiconductors and the rising price of raw materials and logistics outlays.

Even amid such a challenging environment, Hyundai Motor Company managed to progress steadily while delivering tangible results. This was possible with our steadfast efforts to secure a competitive edge that created economic value; with our focus on quality management that increased our customer value; and with our corporate citizenship that promoted various social values.

First and foremost, we minimized production discrepancies through flexible production and sales operations. Furthermore, we achieved global sales of 3.9 million units and an operating profit margin of 5.7 percent through improved profitability and cost efficiency. Last year was also momentous in terms of Hyundai Motor Company’s transition to electrification. We launched our first-ever dedicated EV platform, the E-GMP (Electric-Global Modular Platform), thereby securing competitiveness in electrification. Based on the E-GMP, we launched the all-electric compact crossover IONIQ 5 and the all-electric subcompact luxury crossover GV60, which helped boost our EV sales to 141,000 units in 2021, a 44 percent year-on-year increase. Alongside these advances, we set a goal of reaching an annual sales volume of 1.87 million EVs by 2030. In order to achieve this goal, we will secure a qualitatively differentiated product competitiveness and strengthen our lineups; establish a stable battery procurement process and develop next-generation high-performance batteries; and create a software strategy that will enable us to swiftly incorporate various new technologies.

For the purpose of further solidifying the trust of our customers, we have steadily sharpened our focus on improving the quality of our products, solutions and services, which significantly elevated the industry recognition of Hyundai Motor Company.

As a leading example, the U.S. News & World Report included five Hyundai models across its 11 vehicle categories at the “2022 Best Cars for the Money Awards.” Also, the IONIQ 5 was named the “World Car of the Year” at the 2022 World Car Awards as well as the “2022 German Car of The Year.”

On ESG (Environmental, Social and Governance) management, we identified existing shortcomings and undertook various activities to rectify them, with the goal of better fulfilling our corporate citizenship and responsibilities.

In the area of environment, we declared our goal to achieve carbon neutrality by 2045, and joined the global renewable energy initiative RE100. In the area of society, we strengthened human rights management; improved the safety and health of our employees; and bolstered ESG-oriented management of our supply chains and expanded support for the supply chains. In governance, we made various substantive efforts to enhance our corporate governance. We expanded the role and authority of the former Corporate Governance and Communication Committee, replacing it with the Sustainability Management Committee; to strengthen the expertise and diversity of the committee directors, we created a guideline for appointing directors.

On the back of these efforts, Hyundai Motor Company was proudly listed on the Dow Jones Sustainability World Index by S&P Global, an honorable recognition of our efforts to fulfill our external social responsibilities.

We are now entering an era of “stakeholder capitalism,” in which all stakeholders, including shareholders, employees, customers, suppliers and local communities, pursue sustainable growth. To better respond to the paradigm change, we will further strengthen our ESG capabilities by applying the following objectives.

We will communicate more transparently.
We will strengthen our ESG data management system, which forms the most fundamental aspect of any ESG management, and further raise the quality of our information disclosure. By establishing more accurate and efficient ESG data management processes, we will more rigorously comply with various ESG information disclosure guidelines both at home and abroad; enhance transparency of our operations; and invigorate communication with diverse stakeholders.

We will work on internalizing ESG management.
We will raise our employees’ awareness of the importance of ESG management and align our diverse ESG-related items with the performance objectives of our businesses. By doing so, we will proactively discover areas that can be improved upon and implement appropriate related actions.

As indicated above, Hyundai Motor Company will not waver in our quest to progress towards a sustainable future.
Like the proverbial phrase, “If you want to travel fast, travel alone, but if you want to travel afar, then go on a journey with companions,” Hyundai will always move forward in tandem with our customers and partners on our shared journey towards a sustainable world.

On this meaningful exploration of our potentials and possibilities, I would like to cordially ask for your continued interest and support, for the benefit of our shared humanity and boundless progress.

Thank you.

Sincerely,

JaeHoon Chang
President and CEO, Hyundai Motor Company

Company Overview and Major Achievements

Hyundai Motor Company has been providing customers with the best products and services possible ever since its establishment in 1967. In 2021, we were included in the DJSI World Index and are achieving an excellent performance in other external sustainability management evaluations as well. Going forward, we will enhance sustainability management, thereby positioning ourselves as “smart mobility solution provider”.

General Information

KRW 233,946.4 billion

TOTAL ASSETS

KRW 117,610.6 billion

SALES REVENUE

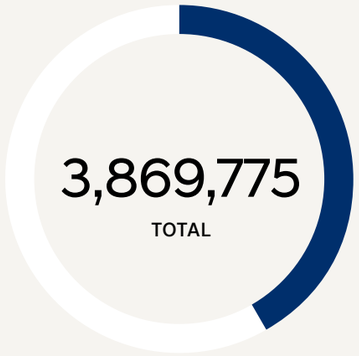
Credit Ratings

Baa1	BBB+	AA+
Moody's	S&P	NICE Investors Service

* As of the end of 2021; Based on K-IFRS consolidated financial statements

Global Production and Sales in 2021 (Unit: Vehicles)

PRODUCTION



Domestic	1,620,231
Overseas	2,249,544

SALES

Domestic	726,838
Overseas	3,163,888

* As of the end of 2021

Sustainability Management Performance in 2021

Classification	Performance	Institution
Dow Jones Sustainability Indices (DJSI)	• Included in DJSI World Index • Included in DJSI Korea Index since 2019	Member of Dow Jones Sustainability Indices Powered by the S&P Global CSA
Carbon Disclosure Project (CDP)	• Climate Change B Score • Water A- Score	CDP DISCLOSURE INSIGHT ACTION
Chinese Academy of Social Sciences' CSR Assessment (CASS-CSR)	• Ranked first in automotive company category for the sixth consecutive year in China's Corporate Social Responsibility Development Index Evaluation	CSR
iF Design Award	• Received 2021 iF Design Award for 2020 Hyundai Motor Sustainability Report in Communications category	DESIGN AWARD 2021

2021 Best-selling Models (Unit: Vehicles)

Tucson
505,967

Elantra (AVANTE)
391,899

Santa Fe
277,536

Accent
190,833

Sonata
168,878

* As of the end of 2021

ESG Management

Hyundai Motor Group's ESG Direction

In March 2022, Hyundai Motor Group revealed "The Right Move for the Right Future", which embodies the Group's ESG management commitment and mid- to long-term direction.

The Group also made known its commitment – a sustainable future is an obligation we should pursue for the next generation and a basic right that everyone on Earth should be able to enjoy, and we will lead the right move through the right action for a desirable future that everyone dreams of.

In addition, the Group disclosed three major mid- to long-term directions – Move for Our Planet, 'Move for Our People, 'Move for Our Community – and 15 key management areas to put this commitment into action.

In line with the Group's directions, Hyundai will continue the right movement to create a sustainable future for the Earth's environment and all stakeholders.

ESG Governance

Hyundai is strengthening management activities to preemptively identify and remove risk factors related to ESG, and explores new business opportunities and strives to secure a new competitive edge by strategically using various ESG factors.

In particular, based on ESG governance that we newly established in 2020, discussions on major pending issues take place on a semi-annual basis at the Sustainability Management Committee under the BOD, which is the highest decision-making body, and the ESG Committee. In addition, we encourage each organization to autonomously carry out ESG improvement activities, such as by establishing a performance goal for each working-level division and reflecting the performance in KPIs, thereby striving to internalize corporate-wide ESG management.

Amid growing importance of responding to climate change and preventing accidents both in Korea and abroad, we created the Carbon Neutrality Execution Team and Serious Accident Prevention Team, and established a more professional and systematic management/response system.

[1)2)] Created organizations in charge (Carbon Neutrality Execution Team, Serious Accident Prevention Team, etc.)

BOD (Sustainability Management Committee)

- Strengthens the ESG management system, such as establishing major ESG policies and discussing improvement plans
- Examines/supervises plans and execution in relation to major issues, including safety, health, and ethics
- Reports and deliberates/decides on major pending issues related to ESG on a semi-annual basis

* Major agenda in 2021: Carbon neutrality strategies, social contribution activity details, examination of employee practice of Code of Ethics, matters related to compliance program implementation and execution plan, compliance support activity details, progress with health & safety plans, product/service trading with affiliates, etc.

ESG Committee

- A small meeting group within the Hyundai Business Strategy Meeting. Top management in each area review/discuss ESG-related matters.

Secretary (ESG-dedicated division)
- Planning & Finance Division (Sustainability Management Team)

- Establish/advance the system
  - Establish a reporting system, set up ESG management indexes, and build a data platform, etc.
- Internalize ESG management
  - Provide support for employee ESG training and KPI reflection, etc.
- Induce/implement improvement activities
  - Handle collaboration/mediation to identify matters that require improvement and implement improvement activities, etc.
- Disclose information/communicate
  - Sustainability Report publication, ESG evaluation responses, stakeholder communication, etc.

ESG Council (Working-level divisions)

- Discuss the improvement direction of each division, implement improvement activities, and share improvement performance

ESG Performance in 2021

ENVIRONMENTAL

- **Declared and received the approval for the joining of RE100 initiative**
  - Developed a roadmap to replace electrify used at business sites with renewable energy by 2045
- **Declared 2045 net zero**
  - Set strategies for vehicle electrification, hydrogen business synergy, carbon neutrality at business sites, encouraging auto-part supply chains to achieve carbon neutrality, and social carbon reduction
- **Focused on eco-friendly new business based on second life batteries**
  - Propelled energy storage system (ESS) based on second life batteries and EV batteries remanufacturing businesses for aftersales support, and established a foundation for rare metal recycling system
- **Recorded annual eco-friendly vehicle sales of 422,000 units in 2021**
  - Recorded 150,000 units of annual global sales of EVs and FCEVs in 2021

SOCIAL

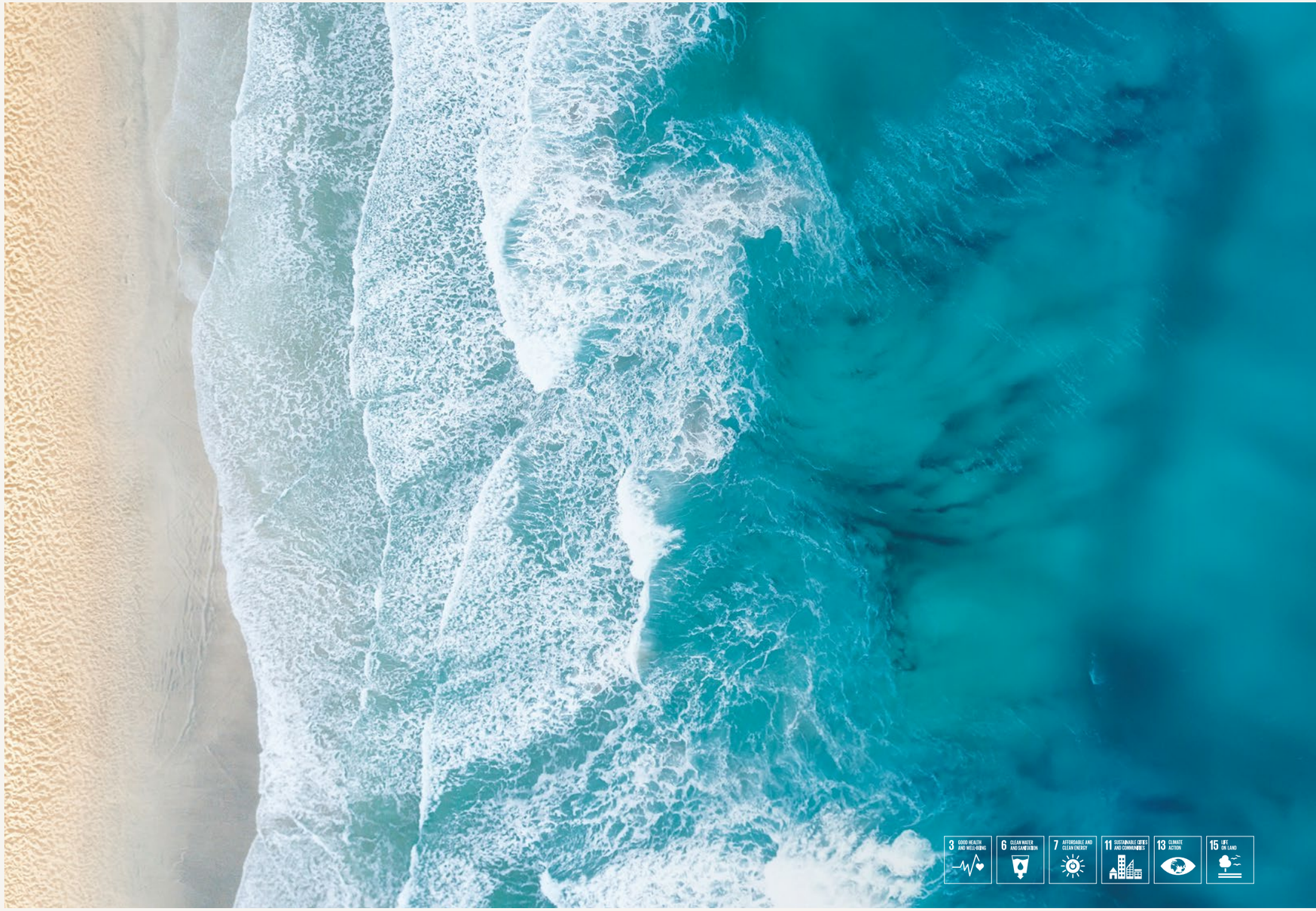
- **Strengthened workplace safety**
  - Appointed a Chief Safety Officer (CSO)
- **Strengthened supply chain ESG management**
  - Conducted a written assessment of 400 tier-1 and core tier-2 suppliers and an onsite due diligence of 10 high-risk suppliers
- **Expanded the scope of employee human rights risk management**
  - Conducted a human rights impact assessment on employees at overseas business sites in Europe, Americas, India, and China
- **Provided ESG-related in-house training**
  - Provided 7,980 hours of on/offline trainings a year in areas of human rights, safety, environment, and quality
  - Provided online education on ESG mindset to 22,000 staff in general/research/legal positions

GOVERNANCE

- **Operated the Sustainability Management Committee under the BOD**
  - Strengthened the ESG system, such as establishing major policies related to ESG and discussing improvements
- **Enhanced BOD diversity**
  - Appointed a director with a foreign nationality (global business field) and a female director (field of guaranteeing stability of intelligent transportation systems)
- **Strengthened shareholder communication**
  - Provided an online real-time broadcasting service for shareholders who couldn't attend in person
  - Held a presentation on areas of interest of shareholders (General shareholder's meeting in March 2021 – Automobile market outlook)
- **Provided compliance training**
  - Provided compliance training 11 times to employees in Korea (21,567 persons attended) and 9 times to overseas employees (80 persons attended)

Environmental

Hyundai is committed to innovation for people and the planet in the hope and belief that the basic value of human mobility will be realized in a way that does not burden the earth, while striving to minimize the environmental impact of Hyundai's value chain. In particular, we will take the lead in achieving carbon neutrality that is healthy, inclusive, and eco-friendly, thereby reaching beyond mobility innovation to build a circular economy ecosystem and thus creating a sustainable future for all.



Environmental Management

Environmental Management System

Hyundai has established environmental management policies and principles, in order to minimize the negative environmental impacts of its corporate activities, and constantly updates them to meet the rapidly changing business environment and the diverse environmental management needs of stakeholders. In addition, we have set a governance system required to implement environmental management and are striving to identify and manage major environmental issues through close and regular communication with stakeholders. Major activities and decision-making issues related to improving our environmental performance are regularly discussed at the ESG Committee, in which the top management participates, and at the Sustainability Management Committee, a BOD subcommittee.

Environmental Management Policy

In June 2022, Hyundai revised its environmental policy in its continuous efforts to improve environmental performance through eco-friendly management, and to minimize negative environmental impact throughout the entire value chain. The employees of Hyundai's domestic headquarters and business sites, overseas subsidiaries, subsidiaries, etc. are subject to this environmental policy. In addition, we recommend this environmental policy to stakeholders such as suppliers and business partners including joint ventures, outsourcing partners, and service providers.

Hyundai Motor Company Environmental Management Policy

Environmental Management Principles

Upon implementing its environmental management policy, Hyundai complies with the following principles – 1) complying with environmental laws and regulations; 2) declaring environmental management implementation policies; 3) establishing an environmental management system and adopting internal management standards; 4) monitoring environmental performance; 5) identifying risks and developing tasks; and 6) operating processes designed to improve environmental performance. Our environmental management-related organizations periodically reflect any revisions of the laws and regulations, changes in social issues, and the peculiarities of corporate environment so as to keep implementation measures up-to-date.

Implementation of Environmental Management System

Hyundai assesses the impacts of its value chain on the environment and associated risks through its environmental management system, and manages environmental management performance on a systematic basis, thereby minimizing negative environmental impacts of its value chain including products and business sites. Regarding products, the company's R&D Center has taken the lead in promoting the reduction of carbon and harmful tailpipe emissions by new cars, the development of material recycling technologies, the minimization of the content of harmful substances in products, and the development of electrified vehicles.

In particular, to reduce carbon and harmful tailpipe emissions from new models, Hyundai is applying the "eco-design", whereby it manages fuel efficiency improvement and harmful tailpipe reduction as major goals in the new model development process. We also apply the life cycle assessment (LCA) based on ISO 14040 & 14044, having established different LCA processes for internal combustion engine vehicles (ICEVs), EVS and FCEVs since they have different value chains. These efforts have been enabling us to improve the environmental-friendliness of our new models.

Hyundai has formed dedicated environmental teams for each of its production plants, and they have established an environmental management system (EMS) that meets the ISO 14001 requirements, obtained the ISO 14001 certification, and successfully undergone a renewal audit every three years. Hyundai Motor Manufacturing Indonesia, which began operations in January 2022, is now in the process of acquiring the ISO 14001 certification. Apart from the ISO audits, Hyundai's business sites are striving to improve their environmental management systems on a continuous basis through regular internal inspections or external audit/verification by external environmental experts such as TÜV SÜD.

In addition, we include the GHG reduction performances of domestic and overseas plants in key performance indicators (KPIs), and are also operating a company-wide Greenhouse Gas Council that oversees reductions in the company's GHG emissions at all its domestic sites. As an enterprise subject to the requirements of the Korean government's GHG and Energy Target Management Scheme, we set the GHG reduction targets of our domestic business sites based on the annual GHG quota allocated by the Korean government and act on them vigorously.

Basic Principles of the Environmental Management Policy

Classification	Basic principles	Classification	Basic principles
1. Raw materials	Efficient use of raw materials	5. Waste	Waste treatment tracking and management
	Reuse of production waste in the production cycle		Waste recycling
	Traceability of raw material production sites		Waste upcycling
2. Energy	Promotion of energy reduction	6. End-of-life products	Disclosure of end-of-life product recovery information
	Introduction of renewable energy		Recovery of end-of-life products
	Operation of energy management systems		Recycling of end-of-life products
3. Water	Water recycling	7. Environmental pollutants	Reduction of air pollutants
	Water storage		Reduction of water pollutants
	Traceability of water sources		Reduction of harmful substances
4. Greenhouse Gas	Reduction of GHG emissions at business sites		
	Reduction of value chain GHG emissions		
	Reduction of GHG emissions due to products and services		

Status of ISO 14001 (EMS) Certification

Site	Certification term	Remarks
Domestic sites	2020-2023	Integrated certification from 2014
Hyundai Motor Manufacturing Alabama (HMMA)	2021-2024	
Beijing Hyundai Motor Company (BHMC)	2021-2024	
Hyundai Motor India (HMI)	2020-2023	
Hyundai Motor Manufacturing Russia (HMMR)	2019-2022	
Hyundai Motor Brasil (HMB)	2021-2024	
Hyundai Motor Manufacturing Czech (HMMC)	2021-2024	
Hyundai Assan Otomotive Sanayi (HAOS)	2021-2024	
Hyundai Motor Manufacturing Indonesia (HMMI)	Plan to be certified in 2022	Began operations in January 2022
Hyundai Truck & Bus China (HTBC)	2020-2023	

Management of Environmental Performance

Environmental Management Governance

Roles of the Management and BOD

Regarding the product environment, the head of the R&D Center is responsible for efforts to reduce harmful tailpipe emissions including CO2, use recycled materials, and develop electrified models when developing new cars as part of constant attempts to improve the environmental performance of our products. The Carbon Neutrality Execution Team, established under the direct control of the CEO, takes the lead in achieving carbon neutrality to reduce or neutralize carbon emissions in our entire value chain, including supply chain, as well as to reduce carbon emissions from new models. In 2021, we appointed a Chief Safety Officer (CSO), who is responsible for worksite environment, health and safety. Hyundai manages environmental management risks through the ESG Committee, in which the company's key decision makers participate to promote and manage overall performance improvement activities. In relation to our business operations, mid- to long-term environmental management strategies and investment plans for environmental management are reported and reviewed by the BOD or the Sustainability Management Committee.

Roles of the Dedicated Environmental Organization

The main roles of the dedicated organization include all aspects related to the implementation of environmental management system, preparations for licenses and permits to install and operate environmental facilities, the protection and restoration of environmental capital, the management & reduction of pollutant emissions generated in the course of business operations, the identification and mitigation of environmental risks, the coordination of environmental protection measures, the registration and resolution of environmental grievances, and external public relations.

Evaluation of Environmental Performance

As for products, Hyundai conducts annual performance management by using such factors as average fleet fuel efficiency or CO_2 emissions by region as well as sales proportion of EVs as KPIs. As for business sites, we manage each plant's GHG emission reduction as a KPI.

Planning and Making Environmental Investments

On the 2022 CEO Investor Day held in March 2022, Hyundai announced its 2030 mid-to long-term electrification investment plan, accordingly we will invest a total of KRW 19.4 trillion by 2030 to develop electrification technology and build the relevant infrastructure. In 2021, to implement our environmental management initiatives, we established an investment plan worth KRW 848.9 billion, of which KRW 722.5 billion has been executed.

Environmental Issue Grievance Handling System

Hyundai operates a grievance filing process that allows its employees and the members of other organizations (individuals) to report their environmental-related grievances arising in the course of its business operations. We thoroughly review the received grievances and set response plans accordingly. The ESG Committee takes the lead in developing countermeasures in the event that a grievance may lead to a violation of laws and regulations or have a significant impact on the local community or stakeholders, ultimately resulting in a risk to Hyundai's corporate reputation.

Key Reporting Channel

- E-mail: ESG@hyundai.com

Environmental Education

Hyundai provides its employees and other stakeholder with environmental education designed to raise or improve their awareness of the necessity of environmental management. This education course also focuses on encouraging employees to develop an eco-friendly mindset in the course of carrying out their work. In 2021, 47,637 employees completed 651 hours of environmental education.

Environmental Management Goals and Performance

Armed with a commitment to protecting the global environment while achieving sustainable progress for the future of mankind, Hyundai aims to achieve carbon neutrality by 2045 across all phases from raw material production to vehicle production and operations. To this end, we have set a number of carbon-neutral goals and worked to achieve them, as shown in the table below.

Carbon Neutral Goals and Performance

Classification	Goal	Performance
Vehicle electrification	Plan to sell 840,000 units by 2026, 1.87 million units by 2030 Achieve 100% electrification of Genesis by 2030 Achieve 100% electrification of vehicles sold in Europe by 2035 Achieve 100% electrification of vehicles sold in main markets by 2040	• Sold 141,101 units in 2021, a year-on-year increase of more than 40% (more than Hyundai's 2021 sales target)
Hydrogen business synergy	Expand hydrogen mobility Produce and supply green hydrogen	• Collaborating with H2Pro to develop high-efficiency hydrogen production technology • Collaborating with NextHydrogen to develop a green hydrogen water electrolysis system • Sold 9,620 units of FCEV, a year-on-year increase of 41.9% • Gained 53.5% share of the global FCEV market
Carbon neutrality in our factories	Achieve RE100 by 2045	• Renewable energy accounted for 12.8% of total electricity consumption at HMMC in 2021 • Renewable energy accounted for 35.5% of total electricity consumption at HMI in 2021
Encouraging our supply chain to achieve carbon neutrality	Reducing carbon emissions by 10% or more by 2030 and by 65% or more by 2040 to achieve carbon neutrality by 2045	• Conducted investigation of GHG emissions by tier-1 suppliers, and reviewed major companies' reduction plans

Consultation & Communication with Stakeholders on Environmental Issues

Hyundai conducts an annual stakeholder survey to identify its sustainability issues including the environment. We discuss our sustainability performance and improvements through continuous consultation and communication with investment institutions such as APG and Hermes, and also with ESG rating providers such as Sustainalytics. Furthermore, on the basis of consultation and communication with industry associations (Korea Automobile Manufacturers Association, European Automobile Manufacturers Association (ACEA), etc.), environmental groups and government organizations (Healthy Seas, Korea Forest Service, etc.), we present opinions and conduct eco-friendly activities in areas related to our business.

1. Government Agencies Hyundai shares its environmental management performance with government agencies and proactively responds to changes in the direction of their policies. Overseas, the company systematically monitors and complies with each country's environmental laws and regulations.

2. Shareholders and Investors Hyundai will achieve environmental performance that meets the requirements of its shareholders and investors, thereby building long-lasting, trusting relationships and expanding investments aimed at improving its corporate value.

3. Supply Chain Hyundai shares its know-how and experience in environmental management across entire supply chain, while operating communication channels to enable continuous consultation with its suppliers aimed at creating environmental values throughout value chain.

4. Customers Hyundai provides environmental information on its products and services while reflecting opinions gathered through customer contact channels in the process of developing eco-friendly products and services.

5. Local Communities To mitigate the environmental impacts of its business operations, Hyundai collects opinions from local organizations and public-private consultative bodies, while also striving to identify and resolve grievances raised by local communities.

6. Employees Hyundai shares its environmental management principles and policies with its employees and raises their awareness of environmental management through environmental education. The company also reflects its employees' proposals to improve environmental performance.

Response to Climate Change

Climate Change Strategies

Hyundai has established a governance system and climate risk management process to manage its climate change risks systemically. We have set major climate change strategies through the climate change governance to analyze the potential impact of climate change on our business and respond to macroscopic changes in the business environment caused by changes in laws and regulations. We identify various climate risk and opportunity factors, and preemptively responds to changing market demands through the development of eco-friendly vehicles and various mobility solution technologies.

Climate Change Management System

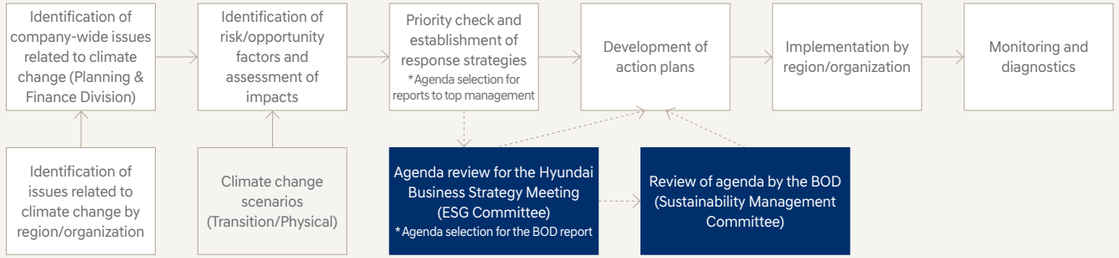
Climate Change Governance

At Hyundai, the ESG Committee, composed of the company's key decision makers, manages matters deemed necessary to respond to climate change, such as reviewing climate change risks, discussing countermeasures, and evaluating the performance of climate change response initiatives. In order to respond to climate change more actively, in 2021 we launched an organization dedicated to promoting carbon neutrality and establishing strategies in such areas as products, business sites, and supply chains in collaboration with the related departments.

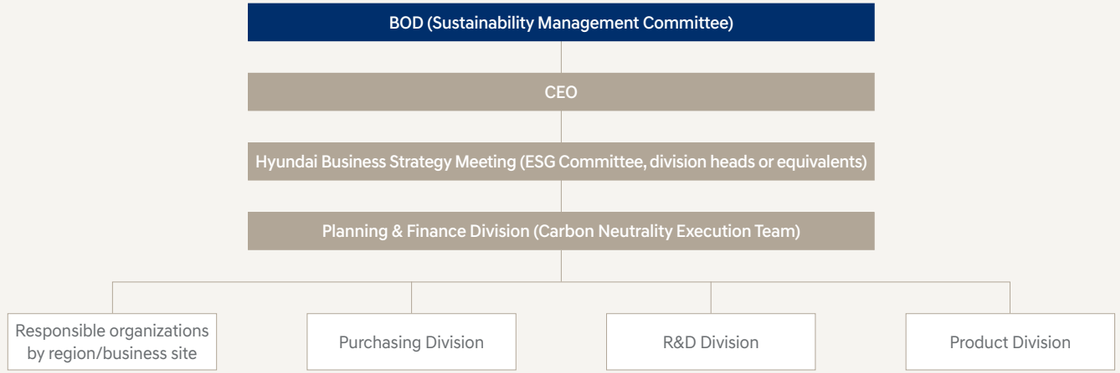
Climate Risk/Opportunity Management Process

Hyundai identifies, assesses, and manages risk and opportunity factors to respond to climate change issues at the company level. The climate change issues identified by each region/organization are submitted to the head office's Planning & Finance Division, which then figures out risk and opportunity factors for each issue, assesses the strategic and financial impacts of each factor on the company, and determines company-wide response strategies. Material issues are reported to the BOD or top management, and specific action plans are drawn up according to the decisions made. The established climate change response plans and policies are implemented by each region/organization, while the headquarters continuously monitors their progress and makes any necessary improvements.

Identification, Assessment, and Management Process of Climate Risk/Opportunity



Climate Change Governance



Methodology for Deriving Climate Risk/Opportunity Factors

Climate scenarios in use	Scenario analysis	Application timelines	Application scope
☑ Transition ☑ Physical	☑ Quantitative ☑ Qualitative	☑ Short term (0-3 years) ☑ Medium term (3-10 years) ☑ Long term (10-25 years)	☑ Business sites ☑ Upstream ☑ Downstream

- **Transition**
  Usingforecast reports from the IRENA, EIA, IEA, and BP[1] and nationally determined contributions (NDC[2]), considering IEA B2DS and NZE 2050
- **Physical**
  RCP 8.5 (baseline scenario), RCP 2.6[3] (below 2°C scenario), RCP 1.9[4] (1.5°C scenario)
- **Business sites**
  All global operations (including new ones, expected facility life-cycle considered).
- **Upstream activities**
  Supply chain
- **Downstream activities**
  Transportation, use (customers), end-of-life treatment and recycling

[1] Renewable Power Generation Costs (IRENA), Future of Solar Photovoltaic (IRENA), Annual Energy Outlook (EIA), World Energy Outlook (IEA), Energy Outlook (BP)
[2] Goals submitted by each UN member country under the Paris Agreement in such areas as reduction, adaptation, finance, technology, capacity building, and transparency
[3] One of four scenarios based on the GHG concentration announced in the 5th Assessment Report (ARS) of the International Panel on Climate Change (IPCC) to keep global warming to within 2°C above pre-industrial levels
[4] Scenario announced in the IPCC Special Report on the Impacts of Global Warming of 1.5°C to achieve net zero by 2050 so as to keep global warming to within 1.5°C above pre-industrial levels

Cases of Climate Change Risk Management

Regulatory Risk

In order to respond to climate change, Hyundai manages the laws and regulations of various countries and regions where it operates as regulatory risk. We faithfully comply with laws and regulations, preemptively respond to expected regulations according to climate change scenarios, and minimize the impact and damage.

Response to the Emission Trading System at Business Sites

Subject to the allocation of emission rights in accordance with the "Act on the Allocation and Trading of Greenhouse Gas Emission Permits", Hyundai participates in the Korea Emissions Trading Scheme (K-ETS). Accordingly, if we emit more GHGs than allocated by the law, we must purchase rights for the shortfall or, in the event of failure to do so, pay a fine equivalent to three times the average price of emission permits. The company's quota for GHG emissions in 2021 was about 1.45 million tCO_2-eq.

In order to avoid financial losses due to excess carbon emissions, Hyundai has set a more stringent reduction target than allowed by the government while continuing to invest in GHG emissions reduction and energy conservation programs.

Furthermore, when purchasing emission permits, we strive to minimize the purchase cost by selecting the most optimized option based on an analysis of transaction prices and volumes.

Vehicle CO_2 Emissions Regulations and Tax Reforms

As part of each government's efforts to reduce GHG emissions in the transport sector in accordance with the Paris Agreement, regulations on CO_2 emissions by new vehicles are being strengthened along with those on corporate average fuel economy. In 2021, the European Commission significantly increased the target of CO_2 emission reduction for 2030 from 37.5% to 55% compared to the 2021 level, while announcing the goal of lowering it to 0g/km by 2035. This means that from 2035 the sale of new vehicles with internal combustion engines will be banned in the EU market. Apart from these regulations, major Western European countries such as France and Germany have long imposed an eco-friendly vehicle tax that differentially imposes automobile taxes based on vehicles' CO_2 emissions.

The Korean government has also significantly lowered the average level of CO_2 emissions for automobiles from 97g/km in 2020 to 70g/km in 2030, while preparing to introduce an eco-friendly tax that imposes a car tax based on CO_2 emissions, as is already the case in some European countries, in order to further reduce the country's GHG emissions in the transport sector.

If Hyundai fails to meet its CO_2 emissions target, it may incur significant additional costs in proportion to its sales volume, which will lead to higher manufacturing costs and product prices.

Hyundai is focusing on improving the fuel efficiency of the internal combustion engine vehicles (ICEVs) of its Genesis brand and mid-to-large SUV vehicles to respond to major countries' tightening of the regulations on CO_2 emissions and corporate average fuel economy and changes in market demand caused by the expansion of the automobile tax based on CO_2 emissions. To reduce the carbon emissions of all Hyundai products, we are striving to improve the fuel efficiency of existing ICEVs in the short term and develop and distribute eco-friendly vehicles in the long term.

Transition Risk

Hyundai is making various efforts to analyze the trends in the rapidly changing vehicle market and satisfy consumer preferences. Hyundai has taken the lead in expanding hybrid/plug-in hybrid EVs (HEVs/PHEVs), EVs, and fuel cell EVs (FCEVs) and occupying their markets early on, as well as bolstering its related technology development capabilities.

Vehicle Electrification

Electrification regulations are being strengthened around the world. For instance, the EU Commission is getting ready to introduce a carbon border tax to reduce net GHG emissions by at least 55% compared to 1990 by 2030, while proposing legislation to ban the sale of new ICEVs in the EU starting in 2035. Meanwhile, France has banned the sale of ICEVs starting from 2030, and Norway has announced that it will phase out new vehicles with internal combustion engines from 2025.

Hyundai has established a mid- to long-term roadmap for the transition from ICEVs to EVs and has begun accelerating the relevant technology development and EV launching. It will set up an electrified lineup for all its commercial vehicles, including buses and heavy trucks, with high carbon emissions by 2028 while completing electrification in Korea by 2035 and gradually promoting 100% electrification in other regions as well. Hyundai is preparing to expand its FCEV lineup from one to three starting in 2023, and ultimately plans to achieve the goal of 100% electrification of all its vehicles sold in the European market in 2035 and in other major markets by 2040.

Changing Consumer Preferences

According to the International Energy Agency (IEA), approximately 6.6 million EVs were sold in 2021, more than three times the number in 2019 (2.2 million units), indicating an intensifying trend towards eco-friendly vehicle consumption by consumers. In line with increasing EV sales, demand for EV batteries is growing, with an estimated rise of as much as 4,028 GWh by 2030.

Hyundai has signed a joint investment agreement with LG Energy Solution to build a battery cell factory as part of its efforts to secure batteries of the highest quality. We are also developing technology for the solid-state battery, a next-generation battery, to improve the stability, mileage, and charging time of EVs.

Physical Risks

Due to climate change, the frequency and intensity of extreme weather events are increasing. Hyundai identifies business sites that are exposed to short-term physical risks such as typhoons, floods, and heat waves, as well as long-term physical risks such as changes in precipitation and sea levels, in order to take preemptive countermeasures to physical risks.

Preparations for Extreme Weather Events

Hyundai is faced with a great physical risk as it runs a manufacturing plant in Alabama in the southeastern part of the U.S. which is vulnerable to tornado damages in the summer. Compared to 2010, GHG emissions are expected to increase significantly by 2030, leading to more severe abnormal climate events such as hurricanes and tornadoes that may hit the company's business in the US hard. To cope with such a situation, we have developed emergency response manuals, purchased disaster insurance, and improved the stability of facilities.

Preparations for Declining Average Precipitation

A decrease in average precipitation due to climate change can have a significant impact on business operations, such as insufficient water supply and an increase in the cost of water use. As such, Hyundai assessed the risk of depletion of water resources at its major domestic and overseas business sites and found that that five of them were rated as high risk, for which it is considering building "a zero wastewater discharge system" in stages. The Asan Plant has built wastewater reuse facilities to secure sufficient water and reduce the amount of wastewater generation, and now reprocesses and re-supplies all its wastewater as industrial water.

Key Climate Risks/Opportunities and Responses

Type		Issues	Risks	Opportunities	Response Directions	Financial Impacts
Rules and Regulations	Current	• Emissions Trading Scheme • Vehicle CO_2 emissions regulations	• Increased operating costs due to purchasing allowances/ credits to achieve regulatory or legal compliance	• Revenue generation through sale of spare allowances/credits	• Increase use of renewable energy • Increase proportion of EV/FCEVs in vehicle portfolio • Improve fuel efficiency of internal combustion engine vehicles	Mid 
	Emerging	• Prohibition of ICEV sales • Regulatory target expanded due to the strengthening of CBAM[1] of EU	• Decline in sales due to ban on sales of internal combustion engine vehicles in developed markets like the EU and the U.S. • Rise in costs and shifts to customers due to tax increases	• Sales increases due to enhanced EV/FCEV performance and price competitiveness • Cost savings in responses to regulations through energy conversions and reductions in CO_2 emissions	• Establish differentiated EV expansion strategy for each region • Increase use of renewable energy	High 
Technologies		• Acceleration in competition for technology development for eco-friendly vehicles	• Decrease in market share if not achieving superior performances (EV mileage, FCEV fuel cell efficiency, etc.) compared to competitors	• Preemptive response to FCEV market based on hydrogen fuel cell technology competitiveness	• Increase investments in R&D • Promote partnerships with companies with leading technologies • Implement Eco-design	High 
Markets		• Increased sales of EVs and FCEVs in line with the expansion of EV markets	• Increase in procurement costs of raw materials (lithium, cobalt, nickel) due to limited supply following rising demand for EV batteries • Decrease in sales if not achieving sufficient FCEV profitability	• Achieving large potential EV/the second life EV battery customers, including car rental/car sharing/ESS[2] companies • New industrial fuel cell (ship/AAM[3]) business expansion • Increased sales of EV/FCEV models	• Establish a vehicle electrification plan • Build mass production system using dedicated EV platform • Launch EV brand and build a dedicated lineup • Scale up FCEV/fuel cells	High 
Reputations		• Increase in demand from investors and other stakeholders to respond to climate change	• Falls in stock prices, withdrawal of investors, and customer churn at perceived lack of will to respond to climate change	• Rising stock prices, increasing investments, and enhancing brand image due to climate change response activities and reduction performances	• Aim for transparent information disclosure • Set and implement carbon neutrality targets • Utilize green financing and investments	Mid-high 
Physical	Acute	• Increase in abnormal weather conditions, such as typhoons/floods/heavy snowfalls	• Plant downtimes due to damage to facilities • Production disruptions due to discontinuance of raw materials and parts supplies	• Increased market share due to stable product supply when compared to competitors	• Develop emergency response manual (business sites, supply chain) • Reinforce stability of facilities • Buy insurance against disasters • Develop real-time inventory management system for raw materials and parts • Assess suppliers' supply stability	High 
	Chronic	• Changes in average temperatures and precipitation	• Lack of available resources (water/energy, etc.) • Disruption of drinking water in areas with high water resource risks (such as India) • Destruction of ecosystems	• Reduced operating costs due to improved resources efficiency • Attracting potential customers by supporting local communities and helping them adapt to climate change • Earning offset credits through carbon absorption	• Use water and energy more efficiently • Develop better resource recycling and reuse technologies • Assist in increasing supply of drinking water for the vulnerable in developing countries • Promote forest conservation	High 

[1] Carbon Border Adjustment Mechanism [2] Energy Storage System [3] Advanced Air Mobility

Carbon Neutrality

Hyundai's vision of "Progress for Humanity" includes not only technological development for the convenience of mobility, but also advancement for a sustainable future. Hyundai has instituted "Integrated Solutions to Climate Change" to achieve carbon neutrality by 2045, and is striving to build a sustainable operating system for future generations by expanding its electrification capabilities and making a successful transition to renewable energy with clean mobility, the next-generation platform, and green energy as its core values. We will make every effort possible to achieve carbon neutrality by 2045, including reducing our actual carbon dioxide emissions to zero through advanced responses to climate change based on eco-friendly technologies.

Carbon Neutral Strategy

Carbon Neutral Direction

Hyundai hopes that its vision of Progress for Humanity will be realized in ways that the value of human mobility does not burden the planet. In order to do the right thing for mankind and pass on a sustainable global environment to future generations, in September 2021 we announced our plan to achieve carbon neutrality by 2045, primarily through electrification and establishment of the hydrogen society, smart cities and circular economy ecosystems. Hyundai's carbon neutrality plan includes not only the reduction of GHG emissions across our entire value chain, including the purchase and procurement of raw materials and subsidiary materials, design, production, and sales of vehicles, but also activities to reduce or offset GHG emissions from the incidental activities necessary for business operations outside its value chain. To this end, we manage Scope 1 and Scope 2 emissions generated by the business sites that we owns operate and manage, while also strengthening the management of Scope 3 emissions from indirect activities such as upstream partners and downstream distribution networks. Based on Scope 1, Scope 2, and Scope 3 emission data, Hyundai will promote effective GHG reduction activities and investment based on scientific estimation, analysis, and verification processes.

Reducing Scope 1 Emissions

Scope 1 emissions refer to GHG emitted by the company's direct energy use within the boundaries of business sites owned, operated and managed by the company. Hyundai uses LNG as its main fuel to produce the heat necessary for vehicle production and to heat its business sites, with GHG emissions from LNG combustion accounting for a significant portion of Scope 1 emissions.

We are striving to reduce fuel consumption, such as LNG, across our global business sites by improving the efficiency of production processes, facilities and equipment in addition to our efforts to recover and recycle energy. In the long term, we are planning to replace fossil fuels such as LNG with eco-friendly energy such as green hydrogen.

Reducing Scope 2 Emissions

Scope 2 emissions refer to GHG emitted by energy purchased from outside the boundaries of the business sites owned, operated, and managed by the company. Scope 2 emissions from electric energy used by Hyundai's business sites account for about two-thirds of all Scope 1 and Scope 2 emissions. In order to convert electricity into renewable energy, we are exploring various approaches such as the construction of renewable energy facilities, the signing of a Power Purchase Agreement (PPA), and the purchase of renewable energy certificates (RECs). Hyundai Motor India has converted about 35.5% of its total electricity consumption to renewable energy through such efforts as installing solar panels and purchasing wind energy. We plan to expand the introduction of renewable energy in stages, starting with production sites in regions with favorable conditions for renewable energy generation, excellent power generation infrastructure, or relatively low institutional constraints.

Reducing Scope 3 Emissions

Scope 3 emissions refer to other indirect GHG emitted during the process of providing goods and services for the company from outside the company's boundaries and during the use of products and services supplied by the company. Of Hyundai's Scope 3 emissions, those emitted during the use of sold vehicles account for the largest share (about 80%). We will therefore not only improve the fuel efficiency of ICEVs but also shift our business portfolio to electrification, including EVs and FCEVs, in the long term as a way to reduce emissions generated by vehicle usage. In addition, we have set up and implemented a basic emission reduction plan for supply chain including suppliers. We plan to reduce emissions originating from employees' business trips and commuting by gradually electrifying our business vehicles. Hyundai is also reducing emissions at the disposal stage by expanding the recycling and reuse of materials and parts from end-of-life vehicles.

Scope 1 and Scope 2 Emissions (Unit: tCO_2-eq, tCO_2-eq/Vehicle)

Classification	2019	2020	2021
Scope 1	807,498	716,237	723,966
Scope 2[1]	1,897,885	1,680,079	1,660,238
Scope 1 + Scope 2	2,705,383	2,396,316	2,384,204
Emission intensity (GHGs emissions per vehicle produced)	0.603	0.642	0.616

Scope 3 Emissions (Unit: tCO_2-eq)

Categories		2019	2020	2021
Upstream emissions	Supply chain (purchase of raw materials and parts)	20,024,630	17,014,155	18,359,619
	Capital goods (purchase of furnishings and equipment)[2]	265	22	139
	Other energy-related activities (excluding Scope 1 and 2)[2]	97,253	93,518	149,556
	Waste generated in operation	2,053	1,760	1,911
	Business travel[2]	24,836	5,222	7,069
	Employee commuting (commuting buses)[2]	15,093	14,314	5,911
Downstream emissions	Transportation and distribution (by sea and land)[2]	954,579	655,831	838,575
	Use of sold vehicles (Tank to Wheel)[3][4]	97,941,942	81,598,073	80,887,513
	End-of-life treatment of sold vehicles (recovery, disassembly, disposal)[4][5]	922,294	780,338	810,794
	Leased assets (headquarters and leased office buildings)[2]	4,126	3,325	804
	Investments (6 affiliates)	394,946	369,926	728,902
Scope 3		120,382,017	100,536,484	101,790,793

[1] Used a location-based method to calculate Scope 2 emissions
[2] Based on the country where the Headquarters is located
[3] Excluding emissions before vehicles are fueled/charged (Well-to-Tank)
[4] Figures of previous years have been changed because the number of vehicles is now based on sales units instead of production units, and they now some completely knocked down (CKD) units as well.
[5] Figures of previous years have been changed as we have updated the emission factor database and applied a specific incineration emission factor to each type of material.

Carbon Neutrality Targets

Hyundai has announced its target to achieve carbon neutrality (Net-Zero) by 2045 in the hope that future generations will be able to breathe comfortably and enjoy a beautiful natural environment and a sustainable global society. Hyundai's carbon neutrality target goes far beyond simply reducing GHG emissions at its business sites, and aims to completely eliminate or offset GHGs generated at all stages of its value chain, including purchase, procurement, production, marketing, use and disposal. With regard to vehicle emissions, we aim to achieve 100% electrification in the European market and in other major markets by 2035 and 2040, respectively, with the goal of 100% vehicle electrification by 2045. In order to reduce GHG emissions in the process of vehicle production, we will strive for the establishment of a cooperative system between affiliates; direct production of renewable energy through solar panels, etc.; power purchase agreements and renewable energy certificates (PPAs/RECs) for renewable energy; and purchase of green premium electricity, thereby achieving RE100 (Renewable Energy 100%) by 2045.

Hyundai will also encourage its supply chain of raw materials and parts to achieve carbon neutrality, aimed at reducing their emissions by more than 10% by 2035, more than 65% by 2040, and carbon neutrality by 2045.

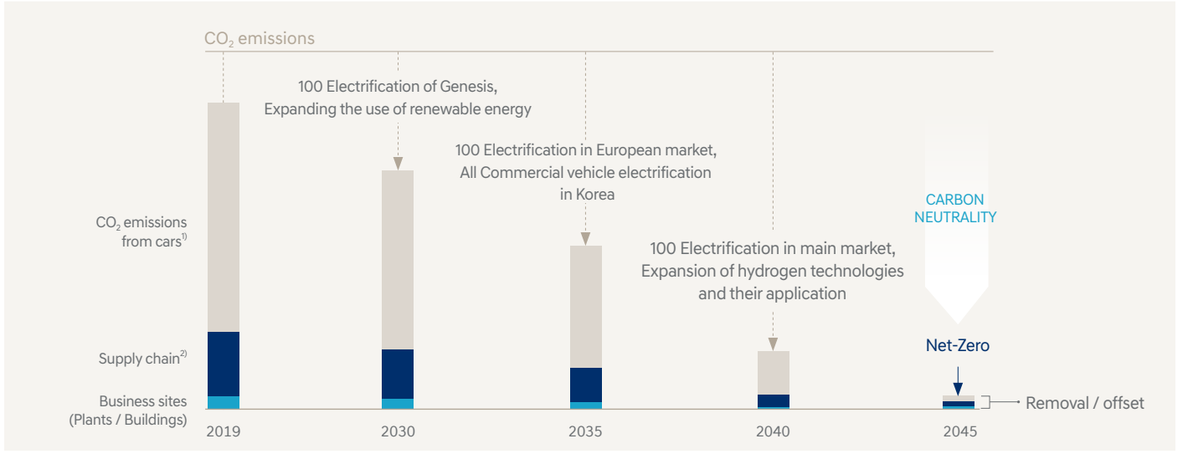
We will manage the rest of our carbon emissions through investments in carbon capture and utilization & storage (CCUS) technologies, offset activities to recycle second life batteries into energy storage devices, and REDD+ (Reducing Emissions from Deforestation and Forest Degradation Plus Conservation). To achieve true carbon neutrality by 2045, Hyundai will expand the production and conversion of green hydrogen based on renewable energy, promote electrification based on the hydrogen fuel cell system, and maximize the synergy between hydrogen business and carbon neutrality through hydrogen power generation and processes.

Carbon Neutrality by Area

The five key areas on which Hyundai is focused on achieving carbon neutrality are vehicle electrification, reducing our carbon emissions at work, support for net zero in the supply chain, social activities for reducing carbon emissions, and hydrogen business synergy effects. For a detailed explanation of the direction and goals related to each area of carbon neutrality, please refer to the Hyundai Motor Company website.

Hyundai Motor Company's Carbon Neutrality Vision

2045 Net-Zero Roadmap



[1] Tank-to-wheel (TTW) that refers to the use of fuel in the vehicle and emissions during driving
[2] Suppliers' carbon emission that we aim to reduce and achieve net zero through collaboration with partners

Methodology for Setting Carbon Neutrality Targets

To ascertain the current status of its GHG emissions and set carbon neutrality targets, Hyundai measures and verifies its company-wide Scope 1 and Scope 2 emissions in accordance with the GHG Protocol Corporate Standard. In addition, we measure and verify our Scope 3 emissions based on upstream-downstream cooperation. By conducting a comprehensive review of our Scope 1-3 emissions data, the climate change forecast reports of the IRENA, EIA, IEA, and BP, as well as the below 2°C scenario and the 1.5°C scenario, we have set a carbon reduction path – including targets for 2030, 2035, and 2040 – aimed at achieving carbon neutrality by 2045. In the carbon neutrality and interim target setting process, we referred to the science-based target (SBT) establishment methodology to review domestic and overseas policy and regulatory trends, changes in industrial technology development, and their relevance to our business strategies.

Five Key Areas to Achieve Carbon Neutrality

Vehicle electrification To promote carbon zero beyond carbon reduction, Hyundai aims to achieve the shift to 100% electrification in its major markets by 2040, after the 100% electrification in the European market by 2035. We will establish EV lineups of all our commercial vehicles including buses and large trucks by 2028, and will gradually promote 100% electrification to other regions, starting with the Korean market in 2035. In 2023, Hyundai will begin to expand its FCEV lineup from one to three, and we are also planning to launch a facelift for NEXO models and the STARIA-class FCEV model in the second half of 2023, followed by the introduction of a large FCEV SUV model in 2025.

Reducing our carbon emissions at work Hyundai strives to reduce carbon emissions generated by its automobile manufacturing processes by switching to renewable energy, improving the energy efficiency of production processes through the application of high-efficiency motors and inverters, and using hydrogen energy with the goal of achieving carbon neutrality at its workplaces by 2045. In particular, we have received approval of The Climate Group joining the efforts to achieve RE100, aimed to transition to 100 percent renewable energy by 2045. Hyundai Motor India has converted about 35.5% of its total electric energy use to renewable energy through various efforts, including the adoption of photovoltaic power generation systems and the purchase of wind power, while Hyundai Motor Manufacturing Indonesia has installed 3.2 MW solar panels at its production plant. As for the Ulsan and Asan plants in Korea, they now produce electricity using solar panels with a combined capacity of about 19 MW.

Support for net zero in the supply chain Hyundai helps its suppliers not only to improve quality and make technological advances, but also to achieve carbon neutrality. We monitor suppliers' carbon emissions and provide them with a carbon-neutral implementation guide designed to enable them to reduce their carbon emissions substantially. In association with our support for the suppliers' construction of smart factories, Hyundai will continue to improve company-wide ICT-based energy efficiency. In particular, we will join forces with the suppliers of raw materials with a high proportion of carbon emissions in a bid to promote a joint response in conjunction with automotive design technologies, such as recycling materials and expanding the use of new materials.

Social activities for reducing carbon emissions Hyundai monitors the market continuously and promotes technology development to commercialize CCUS technology, which captures and processes carbon generated in the process of burning fossil fuels such as LNG. We are also committed to reducing social carbon emissions through resource circulation, such as recycling and reusing materials from waste resources recovered from end-of-life car parts and waste plastics collected from local communities. In addition, we are planning to secure emission credits to offset residual carbon emissions by promoting GHG reduction projects through forest restoration (REDD+, etc.).

Hydrogen business synergy effects In alignment with the implementation of RE100, Hyundai aims to expand the use and conversion of green hydrogen produced without carbon emissions to secure renewable energy. Green hydrogen will be used as a substitute for LNG in the hydrogen power generation facilities and processes of our business sites. We will ensure that green hydrogen plays a pivotal role in the transition to electrification by installing a hydrogen fuel cell system based on green hydrogen in all mobility groups, such as passenger cars and commercial vehicles, public transportation, trams, ships, and AAM. Going forward, we will make every effort to ensure that hydrogen energy is widely used in all areas of human life and industry, beyond the means of mobility, by 2040.

Creating Hydrogen Ecosystem

Utilization of Green Hydrogen

Green hydrogen is hydrogen produced through the electrolysis of water, hence it is often referred to as “the ultimate eco-friendly hydrogen” because no CO_2 emissions are generated during its production process, whereas hydrogen and oxygen are produced by using electric energy obtained through renewable energy such as solar or wind power. Hyundai is striving to significantly lower the production cost of FCEVs and hydrogen by utilizing green hydrogen technology. We will promote the development of hydrogen production by expanding the application of hydrogen fuel cell systems to various industries, while building close cooperative relationships with businesses and partners in the field of green hydrogen production.

Cooperation for Green Hydrogen Competitiveness Acquisition

According to the International Energy Agency (IEA), grey hydrogen extracted from fossil fuels like natural gas and other by-product gases accounts for about 96% of all hydrogen sources, with carbon being emitted during its production. As such, converting it to green hydrogen based on renewable energy is the most urgent task.

To secure the core technology required to produce green hydrogen, Hyundai is exploring various types of water electrolysis technology including alkaline capable of large capacity with low-cost production, polymer electrolyte membrane (PEM) capable of responding to rapid renewable energy volatility, and next-generation solid oxide electrolysis cell (SOEC) with excellent efficiency. To secure competitive hydrogen production costs of the alkaline type, Hyundai is working with Next Hydrogen and H2Pro.

Not only water electrolysis, but also green ammonia-based hydrogen production is attracting attention in the market as a way to secure the competitiveness of green hydrogen. As regards cracking technology, which produces hydrogen by decomposing ammonia, Hyundai is joining hands with CSIRO/FMG of Australia to develop a technology that uses metal membranes. In this regard, an ammonia cracking system could be used upon importing hydrogen from Australia, etc., ultimately laying the foundation for the supply and use of carbon-neutral hydrogen.

To promote fuel cell power generation that can combine green hydrogen infrastructure and fuel cell technology, we are conducting a pilot project for MW-class power generation in cooperation with a number of domestic power companies.

Expanding Hydrogen Mobility

In September 2021, Hyundai Motor Group announced its vision for the hydrogen society, “2040 Hydrogen for Everyone, Everything, Everywhere”, and introduced various means of hydrogen mobility such as an unmanned transportation system called a trailer drone, a disaster relief vehicle, and a high performance hydrogen vehicle. We also presented a step-by-step plan to achieve the goal of installing hydrogen fuel cells in all our commercial vehicle lineups by 2028 for the first time in the global automotive industry. In accordance with this plan, Hyundai is getting ready to expand hydrogen mobility with particular focus on commercial vehicles.

Hyundai has been striving to achieve economies of scale in fuel cells through FCEVs in the passenger car sector. In 2021, we sold about 9,600 NEXO FCEVs worldwide, consolidating our No. 1 position in the global FCEV market. The creation of such large-scale demand in the passenger car market will provide a basis for providing fuel cell-based hydrogen mobility at a reasonable price.

Building Hydrogen Charging Infrastructure

Hyundai is collaborating with Saudi Aramco to expand its domestic hydrogen charging infrastructure and increase the supply of FCEVs in Saudi Arabia, while securing global competitiveness in robust hydrogen tanks and vehicle weight reduction. Saudi Aramco aspires to develop hydrogen production technology using its petroleum resources, and in order to expand it into a global business, it is working with us for the development of an LPG reformer by applying Hyundai’s reformer technology. Following the execution of a joint development agreement in June 2022, the two companies are planning to conduct a pilot project in 2023 using an LPG refueling station.

We are also making investments and building partnerships in various fields, including acquiring a stake in “H2 Mobility”, a German hydrogen infrastructure company, while working closely with both the private and public sectors to build the hydrogen infrastructure.

Reducing Product Carbon Footprint

To take part in the drive for carbon neutrality, which has been made the focus of all future global economic growth and development, Hyundai is working to achieve carbon neutrality by 2045 through the introduction of an “eco-friendly mobility ecosystem”. To reduce carbon production in its vehicles, the company is shifting its focus from vehicles equipped with an internal combustion engine to EVs. To this end, Hyundai is leading the evolution of transportation by expanding its electrification lineup based on EV technology and infrastructure, such as the E-GMP (Electric-Global Modular Platform), a platform dedicated to EVs, and strengthening the competitiveness of its hydrogen fuel cell system for eventual application to all its mobility groups including passenger cars, commercial vehicles, public transportation, trams, etc. We will newly position ourselves as a leading company that realizes carbon neutrality ahead of others by expanding the electricity and hydrogen charging infrastructure, thereby contributing to the transition of the global energy system to carbon neutrality.

Roadmap for Vehicle Electrification

Vehicle Electrification Strategy

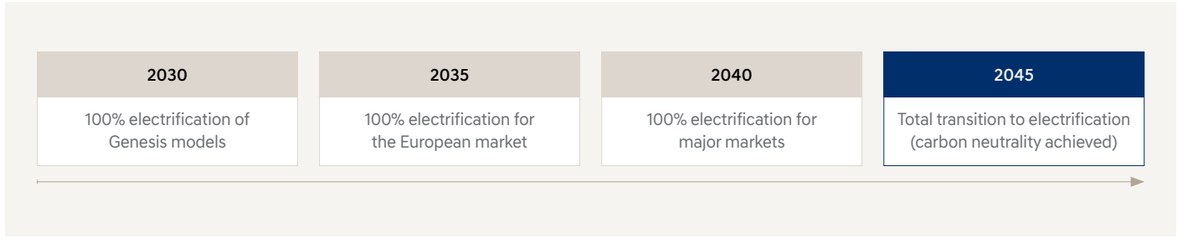
2022 CEO Investor Day

With 2021 as the starting point for the transition to carbon neutrality, Hyundai has declared it goal to achieve carbon neutrality by 2045, centered around the transition from ICEVs to EVs. Hyundai has established a roadmap to achieve carbon neutrality by 2045 through 100% electrification of its Genesis models by 2030, 100% electrification for European markets by 2035, and 100% electrification in other major markets by 2040. Three main innovation themes will play a key role in achieving the goals of the roadmap, namely innovation in production capacity, strengthening of H/W product competitiveness, and enhancement of software expertise and technology development. At the company’s 2022 CEO Investor Day, Hyundai presented investors with a blueprint for the automotive industry of the future.

Major Achievements and Plans for Electrification

In 2021, Hyundai sold 3.89 million automobiles worldwide and recorded a consolidated operating profit of 5.7%. In particular, we sold 140K EVs in 2021, a year-on-year increase of 44% in the proportion of EVs against total vehicle sales. To lead the EV market, Hyundai continues to make bold investments and develop new technologies. It plans to complete the Integrated Modular Architecture (IMA) development system, which standardizes and modularizes core electrification components, and apply it to a platform for passenger EVs (eM) and a PBV-dedicated EV platform (eS) by 2025. In addition, we will invest KRW 12 trillion in software by 2030 to strengthen our competitiveness in software, such as autonomous driving of EVs and vehicle connectivity.

Vehicle Electrification Roadmap

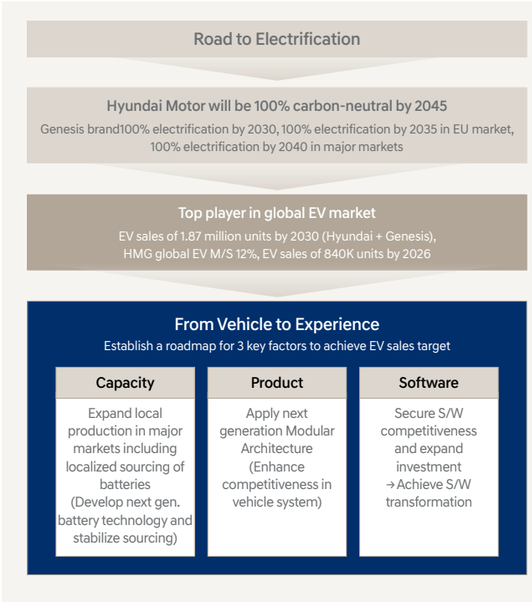


Expanding the EV Market Share

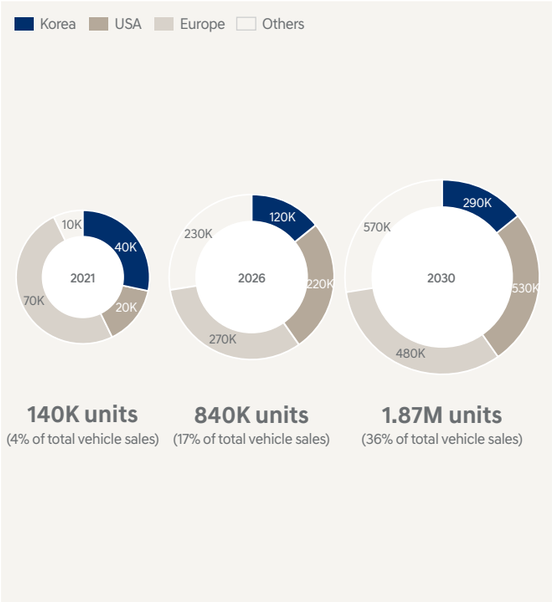
Hyundai has set its EV sales target to 840,000 units by 2026 (17% of total vehicle sales) and 1.87 million units by 2030 (36% of total vehicle sales). More specifically, by 2030, we plan to sell 530,000 units in the US (58% of total sales), 480,000 units in the European market (69% of total sales), 290,000 units in the Korean market (58% of total sales), and 570,000 units in other markets. Once the 2030 sales target is achieved, Hyundai’s global EV market share is expected to rise from 3% in 2021 to 7% in 2030, with the market shares in the US and Europe rising to 11% and 6%, respectively.

To expand its global EV sales and market share, Hyundai plans to launch a total of 17 EV lineups including 11 Hyundai brands and 6 Genesis brands by 2030. We will release the IONIQ 6 in 2022 and the IONIQ 7 in 2024, while launching EV lineups for six types of SUVs, three passenger vehicles, one small commercial vehicle, and another new vehicle by 2030. All new models of the Genesis brand will be launched as EVs starting from 2025, while being equipped with EV lineups for four types of SUVs and two types of passenger vehicles by 2030.

Vehicle Electrification Strategy



2030 EV Sales Target



Securing EV Technology Competitiveness and Expanding the Charging Infrastructure

Compared to the existing internal combustion engine platform, Hyundai's EV-only platform E-GMP offers a number of differentiated advantages such as flexibility in vehicle development, a design and structure optimized for EVs, a standardized large-capacity battery system, a longer cruising range, future-oriented design, and innovative space. The EMP is therefore regarded as the leader of future mobility in various areas such as fast/rapid charging, autonomous driving, and connectivity.

In addition to leading the EV platform technology, it is increasing customer convenience by expanding and building EV charging stations, and is continuously expanding or building ultra-fast EV charging stations such as the E-pit domestically, while strengthening cooperation overseas to expand its charging infrastructure in European and American markets.

E-pit Website (Korean)

E-pit – an Ultra-fast EV Charging Station

E-pit, the fastest charging station for EVs in Korea, is capable of charging the IONIQ 5 within 18 minutes (from 10% to 80% of battery capacity). Hyundai has also launched an ultra-fast charging service based on big data to provide customers with an innovative charging service experience. The service includes the Charging Route Recommendation System, which guides customers to charging stations, the Digital Queue Service, which informs customers of the expected charging time and order, and the Plug-and-Charge Technology, which offers customers a one-stop service from charging to payment. Going forwards we will continue to ensure that EV users can enjoy the best charging service possible through continuous technological innovations and service improvements.

IONITY – EV Charging Infrastructure in Europe

To secure an EV charging infrastructure in the European market, Hyundai has made a strategic investment in IONITY, a European fast charging network for EVs. As of 2021, it has more installed than 1,500 high-power (350 kW) ultra-fast chargers in Europe, with a plan to expand the number to 7,500 by 2025. As Hyundai operates a combination of fast and slow charging infrastructures and various convenience facilities, its charging infrastructure is expected to be used in diverse ways. Having established collaborative relationships with IONITY, Hyundai is expected to enjoy synergistic effects including increased sales of the IONIQ 5 and the Genesis GV60, both of which have been well-received in the European market.

MOU with Shell to Expand Charging Infrastructure in the US

Hyundai has signed an MOU with Shell, a global energy company, for comprehensive cooperation in hydrogen, digital technologies, low carbon energy solutions, and EV charging. Hyundai will leverage Shell's approximately 45,000 gas stations in some 80 countries to expand our EV infrastructure. We are also exploring ways to enhance charging convenience for Shell Recharge Solutions, Shell's EV charging service, and the Genesis brand. Meanwhile, Hyundai has set a goal of using 100% of renewable energy by 2045, and as part of the effort, we plan to adopt Shell's renewable energy solutions.

E-pit charging station

IONITY charging station

Signing of MOU with Shell

Expanded Use of Hydrogen Fuel Cells and Establishment of Hydrogen Infrastructure

Hyundai has been building many milestones such as world's first mass production of FCEVs, sales of 20,000 NEXOs with performance comparable to ICEVs, and export of the Xcient, hydrogen-powered electric truck, to Europe. We are now working to expand the hydrogen fuel cell technology for vehicles to various fields so that hydrogen energy can be used by people and industry across the world, beyond a mere means of transportation. With HTWO, our hydrogen fuel cell system brand, we are accelerating the establishment of the hydrogen ecosystem by selling the system and building cooperative relationships.

Hyundai's competitiveness in hydrogen fuel cell system technologies is recognized by global industry and government agencies, as Hyundai is consolidating its position as a global first mover. To speed up the transition to a hydrogen society where hydrogen serves as the key energy source, Hyundai is striving to build the hydrogen infrastructure and reinforce cross-industry collaboration.

Expanding Hydrogen Fuel Cell System Business

Since its mass-production of the world's first FCEVs in 2013, Hyundai has led the passenger and commercial FCEV market based on the technology it has accumulated. Furthermore, it has expanded the horizon of hydrogen applications by sharing its hydrogen fuel cell systems proven in the automotive industry with other industries. We began to export fuel cells to GRZ Technologies, a Swiss hydrogen storage technology company, in 2020 while widely publicizing the scalability and potential of hydrogen fuel cells through various pilot projects in non-automotive sectors such as hydrogen trams, forklifts, and power generation.

Collaborating for Hydrogen Technology

Hyundai is collaborating with various domestic and foreign organizations to develop hydrogen technology. Overseas, we have joined forces with Hazer Group in Australia to develop technology for reducing CO_2 emissions generated in the process of hydrogen production, as well as introducing and investing in liquid organic hydrogen carrier technology from Hydrogenious of Germany. In Korea, Hyundai participates in the H2 Business Summit to accelerate cooperation in Korea's hydrogen industry, and is building cooperative relations with local governments and public institutions. Going forward, we will expand technological cooperation with various organizations while providing innovative hydrogen services to customers based on outstanding technological competitiveness.

H Moving Station – a Mobile Hydrogen Charging Station

Under its hydrogen vision of "Hydrogen for Everyone, Everything, Everywhere," Hyundai provides a mobile hydrogen charging service that allows consumers to access hydrogen mobility easily by making the service available in areas where the hydrogen charging infrastructure has yet to be established or where demand for charging is rapidly increasing. Hyundai's mobile hydrogen charging station, "H Moving Station", can store 80 kg of hydrogen per unit and charge up to 25 FCEVs per day with a charging pressure of 350 bar. Going forward, we will further strengthen hydrogen infrastructure to make the H Moving Station service available to other types of hydrogen mobility, including heavy equipment and drones powered by hydrogen.

Hydrogen fuel cell system

Hydrogen trains

H Moving Station

Responding to Regulations on Average Fleet CO_2 Emissions & Fuel Economy in Major Markets

Regulations on vehicle carbon emissions are being strengthened in major markets such as the EU and the US. The EU has introduced a regulation to reduce 55% of its CO_2 emissions of passenger cars compared to the 2021 level by 2030, while the US has introduced regulations requiring fuel economy up to 40 miles per gallon by 2026.

Accordingly, in order to preemptively respond to regulations of major markets, Hyundai is striving to achieve zero CO_2 emissions by improving the fuel efficiency of ICEVs and by increasing the proportion of EVs. In addition to main markets, we are paying special attention to the regulation of CO_2 emissions in emerging markets such as Brazil and India.

Regulations in the EU

The EU, the largest EV market in recent years, has enforced a strong carbon reduction policy. The EU will reduce CO_2 emissions limit by 55% by 2030 compared to the 2021 level. Continuous tightening of the regulations is also planned, including prohibition of the sale of new cars with gasoline and diesel engines starting in 2035. CO_2 emission metrics was also be changed to the Worldwide Harmonised Light Vehicle Test Procedure (WLTP), an international standard which measures emissions on real roads. In order to respond to such changes, significant improvements in fuel economy are needed to be made.

Regulations in the US

The US aims to improve vehicle fuel efficiency by 40% and reduce carbon emissions by 30% by 2026. To this end, it has announced that only cars that satisfy a fuel efficiency rate of 40 miles per gallon will be sold starting with models released in 2026. Currently, the fuel economy of vehicles sold in the US is 24 miles per gallon on average. To meet the new fuel efficiency regulation, automobile manufacturers are required to improve their fuel efficiency by 8% in 2023 and 2024, respectively, and by 10% in 2026.

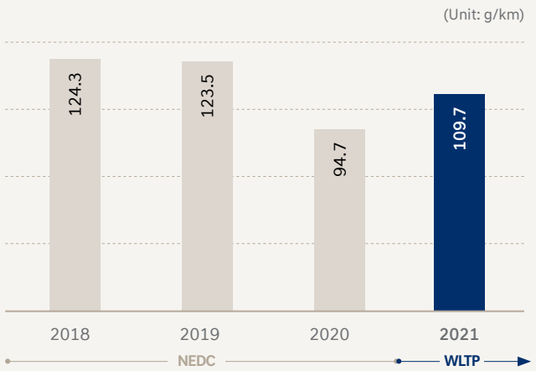
Regulations in China

China is implementing a "New Energy Vehicle Credit Scheme" whereby auto makers are obligated to supply EVs. The scheme requires manufacturers to accumulate credit by producing gasoline vehicles with lower emissions than the national standards or by producing battery EVs, PHEVs, and FCEVs. In addition, China has set the goal of increasing the share of new energy vehicles (NEVs) as a proportion of total vehicle sales to 20% in 2025, 40% in 2030, and 50% in 2035, with the proportion of battery EVs (BEVs) exceeding 95% of NEVs by 2035.

Regulations in Korea

Since announcing Carbon Neutrality 2050, Korea has established carbon regulations and policies comparable to those of advanced countries. As the automobile CO_2-related system of 2012 has been strengthened, auto makers are required to reduce their vehicle emissions from 97 g/km in 2020 to 89 g/km in 2025 and 70 g/km in 2030. Manufacturers that breach the emission limit will receive a fine of KRW 50,000 per 1g. Korea also aims to expand the supply of eco-friendly vehicles to 2.85 million units by 2025, while integrating 1,000 parts companies into the country's car industry of the future by 2030.

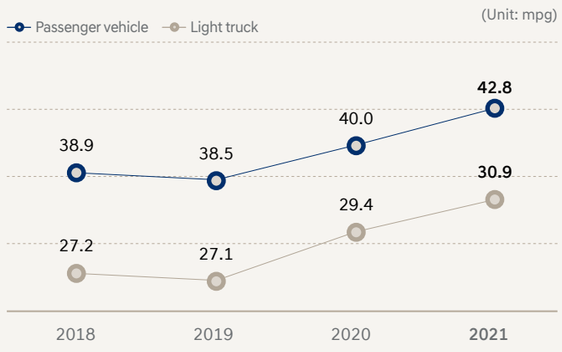
Average CO_2 Emissions in the EU



* 2021 performance is not able to be compared with the performance of prior years for the EU Commission changed the CO_2 emission standard from NEDC to WLTP; and the regulatory value was also from 95g/km(2020) based on NEDC to 112.5g/km(2021) based on WLTP according to the change of methodology.

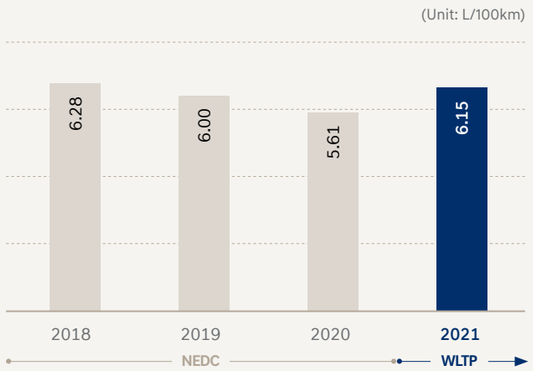
** The average CO_2 emissions of EU reflectthe average CO_2 emission performance calculated/disclosed by the European Commission on the basis of vehicles registered annually by the Commission; and the 2021 figure is an estimate calculated by Hyundai based on its sales performance.

Average Fuel Economy in the US



* The average fuel economy performance in the US and China reflects the average fuel economy performance of each car maker announced by the relevant government agencies (NHTSA, Ministry of Industry and Information of China) each year.

Average Fuel Economy in China



* 2021 performance is not able to be compared with the performance of prior years for the Chinese government changed the fuel economy certification standard from NEDC to WLTP.

Expanding EV Lineups

To meet the goal of achieving carbon neutrality by 2045, Hyundai is constantly expanding its lineup of eco-friendly vehicles. We are striving to become a top player in the EV sector by introducing HEVs and PHEVs, as well as EVs and FCEVs that do not emit any GHG emissions at all. In 2021, we sold 422K EVs, accounting for 10.8% of our global vehicle sales. In particular, we are leading global EV and FCEV markets, posting a 44% increase in sales in 2021.

We plan to continue strengthening our EV lineup in 2022 by launching the IONIQ 6 and GV70 EV. By 2030, we will be equipped with an EV lineup of 17 models, including 11 Hyundai models (3 passenger vehicles, 6 SUV models, 1 light commercial vehicle, 1 other type of vehicle) and 6 Genesis models (2 passenger vehicles, 4 SUV models). In this way we will secure our position as a global EV powerhouse with the goal of selling 1.87 million EVs and achieving a 7% EV vehicle market share by 2030.

HEV and PHEV

Hybrids (HEV) are highly eco-friendly vehicles with lower pollutant emissions and higher fuel efficiency than vehicles powered by internal combustion engines. Hyundai's SONATA hybrid model, for example, boasts a carbon emissions output of only 79 g/km (based on the Korean model), which is 39% less than its gasoline-powered model (131 g/km). We sell hybrid versions of all our models, except for large SUVs and subcompacts. To reduce the carbon emissions of SUVs, which emit more carbon than sedans, Hyundai launched the KONA HEV model in 2019, followed by the TUCSON and SANTA FE HEV models in 2020. In addition, we are expanding the PHEV lineup by launching the IONIQ PHEV in 2016, Sonata PHEV in 2017, and the TUCSON and SANTA FE PHEVs in 2021.

EV

An EV is an eco-friendly vehicle that does not emit GHG. Starting with the launch of the IONIQ in 2016, Hyundai gains traction in developing EVs. In 2018, we launched the KONA EV, the first SUV EV ever released by a popular brand, followed by the IONIQ 5, the first EV based on the E-GMP in 2021, emerging as a leader in the global EV market. Meanwhile, the launch of EVs from the Genesis brand, such as the G80 EV and GV60, is also in full scale. By 2030, we will expand EVs, with a particular focus on SUVs, while the Genesis brand will achieve 100% electrification, taking a big step closer to the goal of becoming carbon-neutral.

FCEV

Like EVs, FCEVs do not emit any pollutants including GHG, generating only energy and water. As they can also remove ultrafine dust from the atmosphere during operation, they are attracting attention as an eco-friendly form of mobility for the future. Hyundai launched the TUCSON ix, the world's first FCEV in 2013, and the NEXO FCEV equipped with a next-generation fuel cell system in 2018. The NEXO, which features a three-stage air purification system, boasts performance comparable to that of an ICEV. It can travel 609 km on a single charge. In addition, we have been expanding our FCEV lineup by launching the ELEC CITY FCEV, a hydrogen electric bus in 2020, and the Xcient Fuel Cell, a hydrogen-powered electric truck, in 2022.

Other Eco-friendly Vehicles

Hyundai has also launched regional eco-friendly models that run on bioethanol and compressed natural gas (CNG). In South America, we launched the HB20, a hybrid fuel vehicle, to meet the demand for bioethanol, while in India we introduced the Aura CNG model to respond to the country's growing demand for CNG. In 2021 alone, Hyundai sold 179,193 biofuel vehicles and 1,489 CNG vehicles.

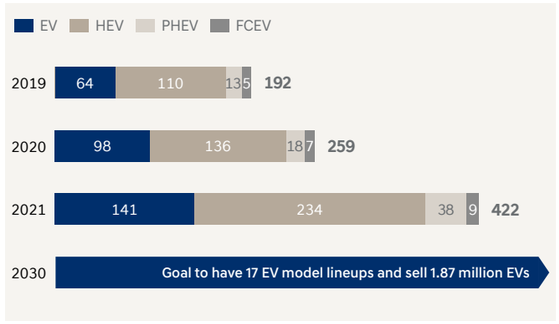
Sales of Other Eco-friendly Vehicles

(Unit: Vehicles)

	2019	2020	2021
Biofuel model	201,874	152,977	179,193
CNG model	3,005	1,352	1,489

Global Sales of Eco-friendly Vehicles

(Unit: 1,000 units)



EV – IONIQ

EV – GV60

FCEV – NEXO

HEV/PHEV – TUCSON

Improving Fuel Economy

In addition to launching new models with improved fuel efficiency, Hyundai makes continued efforts to improve the efficiency of its next-generation powertrain (P/T) to respond to the increasingly stringent regional regulations on fuel economy and carbon emissions, while also reducing carbon emissions significantly. The fuel efficiency of Hyundai's third generation P/T has been improved by 10% on average compared to the second generation, and we are continue developing lineups that incorporate the technology. Although we are aiming for a 100% transition to EV moving forward, at the same time, we are making concerted R&D efforts to improve the P/T fuel economy of ICEVs, which still account for a high proportion of sales, and to improve the fuel economy of the internal combustion engines by reducing their weight and installing solar roofs, while maximizing the fuel economy of each vehicle.

Technologies to Enhance Vehicle Fuel Economy

While making continuous efforts to improve the fuel economy of its new ICEVs aimed at reducing product carbon emissions, Hyundai is increasing R&D efforts to improve the overall fuel economy of per vehicle, such as by reducing vehicle weight and air resistance. As a result, the third-generation Genesis G80, released in 2020, boasts improved fuel economy of more than 20% compared to the second-generation version, which was achieved by engine downsizing and aerodynamic and driving resistance improvements. The fourth-generation Genesis G90, launched in 2021, boasts lower carbon emissions, down from 196 g to 184 g, on the back of various technologies to improve fuel economy, despite increased specifications and enhanced displacement of the main engine compared to models of the previous generation. The latest model's fuel economy has been improved by 5.7% through engine efficiency advancement with an ultra low loss diode (ULLD), friction load improvement with an air-conditioner compressor, and transmission efficiency enhancement with a torque converter with centrifugal pendulum absorber (CPA). Moreover, we improved fuel efficiency by developing an integrated thermal management system that controls the optimum engine temperature under specific driving conditions, while reducing carbon emissions from vehicles by reducing vehicle weight by 40 kg.

Solar Roof

Various forms of renewable energy that do not pollute the environment or pose a risk of depletion are growing in importance as an alternative to fossil fuels and nuclear energy. Solar (photovoltaic) power generation is one of the most common types of renewable energy and is easily available to the public.

Hyundai has applied solar power generation technology to reduce their carbon emissions. Starting with the eighth-generation SONATA Hybrid, allowing it to be driven about 1,300 km a year without producing any carbon emissions, solar roof has been applied to EVs such as the IONIQ 5 and the G80. In particular, the IONIQ 5 can obtain sufficient electricity to drive 1,500 km per year via its solar roof. Hyundai is striving to raise the density levels of solar cells and boost their performance to make the technology more viable. We will continue make efforts to further reduce vehicle carbon emissions by using more renewable energy.

Improve Fuel Economy on the Road (Off-cycle Test)

Hyundai conducts fuel economy tests in accordance with the legal standards in order to obtain certifications in Korea as well as in our major export markets including North America, Europe, China, and India. However, a gap occurs with each certification value in terms of actual road driving conditions due to various external factors such as weather and road congestion, as well as internal factors including gear shifting, vehicle weight, and air conditioning conditions. Hyundai therefore conducts off-cycle tests related to fuel economy (CO_2 emissions) with various driving profiles applied, as well as correlation analysis with the official results.

Hyundai always provides reliable fuel economy data in collaboration with third-party organizations. In the US, we present reliable fuel economy data through comparison with third-party data from EPA, J.D. Power and CR (Consumer Reports) among others. In Europe, which has the strongest regulations on carbon emissions, we are striving to bolster the credibility of fuel economy tests by comparing them with data from agencies such as Green NCAP, Auto Bild, and Spritmonitor.

We receive regular (weekly or monthly) inspections of fuel efficiency and emission measurement facilities by external authorized organizations (KOLOAS, KATECH, etc.), and aim to further raise the reliability of results by conducting fuel economy tests with various national research institutes. The department in charge of on/off cycle comparison reports the results of comparative analysis to the executive in charge of powertrain R&D at least once a year.

G90 engine with improved fuel economy, durability, and acceleration

IONIQ 5 with a solar roof

G80 EV with a solar roof

Carbon Reduction at Business Sites

Hyundai fully supports the direction and goals of the Paris Agreement on Climate Change, recognizes the roles and responsibilities in reducing global GHG emissions as a business, and carries out various activities to contribute to achieving the goals. While continuing energy reduction activities, such as the introduction of high-efficiency facilities and process improvements at all business sites, we aim to realize eco-friendly manufacturing based on the transition to renewable energy sources including solar energy. We will collaborate with the Group affiliates to achieve the goal of 100% renewable energy at all our business sites across the globe by 2045, ahead of the 2050 deadline recommended by the RE100 (The Climate Group).

Direction of Carbon Reduction at Business Sites

Energy Efficiency in Production Processes

Hyundai makes various efforts to increase energy efficiency in production processes and realize carbon neutrality by 2045. To this end, we are increasing the use of renewable energy and introducing high-efficiency motors and inverters in addition to utilization of hydrogen energy. We will replace the fossil fuels and electric energy used in manufacturing process with renewable energy while improving efficiency in painting process, which uses LNG as main fuel, by introducing high-efficiency equipment, recycling waste heat, and improving production processes.

Sites with the Energy Management System Certificate (ISO 50001)

Site	Certificate validation date
Beijing Hyundai Motor Company (BHMC)	Jan. 26, 2025 (Renhe/Yangzhen Plants) Dec. 12, 2024 (Changzhou Plant)
Hyundai Motor India (HMI)	Oct. 04, 2024
Hyundai Assan Otomotiv Sanayi (HAOS, Turkey)	Jul. 16, 2024

Carbon Capture Utilization & Storage

To achieve carbon neutrality, we should stop using fossil energy in automobile manufacturing processes. However, it will take years to complete transition to next-generation deoxygenation energy, carbon capture utilization & storage (CCUS), a new technology that captures and processes CO_2 emitted by fossil energy combustion, is gathering traction as a potential carbon-neutral tool during the transition period.

Hyundai has been developing CCUS technology to capture carbon emitted by LNG in manufacturing processes, given that a large amount of the fuel is used despite its relatively low carbon emissions among fossil fuels. To prepare for the commercialization of the CCUS technology for not only automobile business but other types of business as well, the Namyang R&D Center is conducting empirical research on CCUS in addition to monitoring the market continuously and pursuing the relevant technology development.

RE100 Roadmap

In July 2021, Hyundai Motor Company, along with other Group affiliates including Kia, Hyundai MOBIS and Hyundai WIA, declared the joining of the RE100, which advocates a 100% transition to renewable energy. Having been admitted into the global initiative in April 2022, Hyundai now aims to achieve 100% renewable energy transition by 2045, ahead of the RE100's target year, 2050.

Hyundai will gradually increase the use of renewable energy by 2045, taking into account t the renewable energy supply and demand environment as well as the government policies and regulations by country, such as the Czech Republic, where there is greater availability of renewable energy sources, India and the US. We will also apply optimal solutions for each plant, such as installing solar panels on the roofs of production plants, purchasing renewable energy certificates, and signing a power purchase agreement (PPA) with an external renewable energy generator.

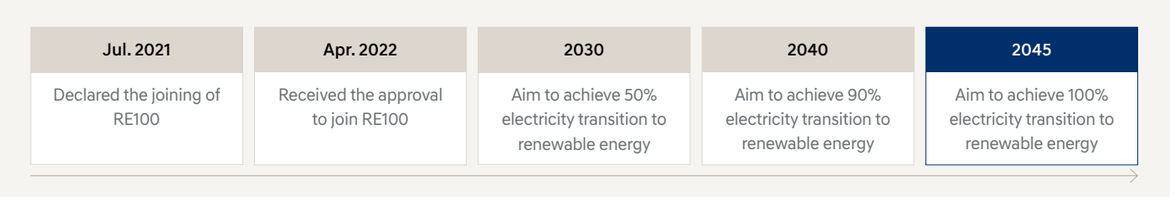
RE100 Implementation Plan

Hyundai Motor Manufacturing Czech (HMMC) converted 100% of electricity consumed at its plant into renewable energy through the Guarantee of Origin (GO) scheme in 2022. Hyundai Motor India (HMI) installed a 10 MW solar panel on the roof of its plant in 2021 while pursuing 100% renewable energy by 2025 through photovoltaic power generation and PPAs. Starting with the US market in 2025, most of Hyundai's overseas business sites in Brazil, Indonesia, Turkey and other countries are set to achieve their RE100 targets by 2030.

In Korea, Hyundai is supplying electricity to the external grid by installing solar panels on the roofs of its production plants under joint investment and rooftop lease agreements with a large public power company. We will standardize the installation of solar panels in new buildings and plants while pursuing a phased expansion of renewable energy through PPAs. We are also carrying out a pilot project to connect with photovoltaic power generation by installing an energy storage device (ESS) that recycles waste batteries.

Hyundai will boost the carbon emission reduction activities of its business sites by developing technology that optimizes energy use in digital technology-based production processes utilizing AI and big data, while taking the lead in achieving RE100 by 2045.

RE100 Roadmap



Carbon Reduction Activities at Business Sites

Carbon Reduction Activities in Korea

Ulsan Plant

Following the completion of a 9 MW photovoltaic power generation facility in the parking lot of its driving test site in 2020, the Ulsan Plant will start construction of a 15 MW second-stage photovoltaic power generation facility in the Seongnae parking lot for finished vehicles in 2022. To reduce its GHG emissions, the plant reduces power consumption by replacing high-efficiency pumps, configuring motor power saving circuits in engine factories, and applying inverters, while reducing gas consumption by extending the electro-deposition oven preheating zone, etc.

Asan Plant

The Asan Plant is concentrating on reducing energy consumption during equipment waiting times. In the finished vehicle part, it applies an inverter to the driving part of the hamming press facility during the car body process, conserving energy during not only waiting times but also brief standby times for the change of vehicle models. In the engine process, the plant has reduced energy use by building a power-saving circuit into all the processing equipment, while also contributing to reducing carbon emissions by setting and implementing aging facility replacement plan.

Jeonju Plant

The Jeonju Plant has introduced high-efficiency equipment to reduce GHG emissions, and has replaced its production system with an eco-friendly system. It has applied an inverter to the supply/exhaust system to block unnecessary energy use, and is replacing old refrigerators with high-efficiency ones. The plant has also reduced LNG consumption by introducing the waterfall washing method, which lowers the water temperature, to the truck paint shop.

R&D Center and Other Business Sites (including Service & Delivery Centers)

Hyundai's R&D center reuses recovered waste heat and steam for boilers, and reduces GHG emissions by using waste heat generated during waste treatment. It is currently operating a 562 kW photovoltaic power generation facility and plans to install an additional 3 MW facility after consultation on the location. Hyundai's R&D center as well as service and delivery centers have improved their energy efficiency by replacing aging facilities, while the company building has reduced its GHG emissions by turning off lights during lunchtime. The head office has reduced electricity use by 135 kWh per month by installing LED lights on the world clock and the world map installed in the lobby on the 1st floor of the West Building.

A photovoltaic power generation facility in the parking lot of the Ulsan Plant's driving test site

A photovoltaic power generation facility in HMI

Carbon Reduction Activities in Overseas Subsidiaries

Beijing Hyundai Motor Company (BHMC)

BHMC has improved the operations of its production facilities to reduce down-time while continuing to reduce standby power in its production facilities. It has reduced GHG emissions by optimizing facility operations, including suspending the supply of steam to the paint shop when the external temperature rises, except in winter.

Hyundai Motor Brasil (HMB)

HMB regularly checks for energy loss factors while making various improvement efforts such as the introduction of an optimized compressed air supply system. It strives to reduce GHG emissions by continuously promoting energy conservation through the introduction of high-efficiency facilities and the replacement with LED lights.

Hyundai Motor Manufacturing Czech (HMMC)

HMMC has improved its energy efficiency by installing the EcoSmart VEC system based on a gas monitoring system at its paint shop. It has conserved energy by controlling the supply of compressed air and replacing the lighting with LED lights. In 2022, HMMC converted 100% of electricity consumed at its plant into renewable energy through GO.

Hyundai Motor Manufacturing Alabama (HMMA)

HMMA minimizes energy waste by using automatic cooling/heating monitoring systems that maintain the appropriate temperature, and has reduced GHG emissions by increasing energy efficiency through the installation of high-efficiency common utility facilities.

Hyundai Assan Otomotiv Sanayi (HAOS)

To conserve energy, HAOS in Turkey has made improvements to various processes including the reduction of compressed air consumption and the minimization of welding processes, while introducing the latest equipment such as high-efficiency inverters. In particular, it has minimized the unnecessary consumption of power in the paint shop at weekends and when the plant is not in operation.

Hyundai Motor India (HMI)

HMI operates its plant with electricity from renewable energy sources supplied through PPAs, thereby meeting about 35.5% of its total electricity consumption. Other than purchasing renewable energy from outside, HMI installed a 10 MW photovoltaic power generation facility in addition to existing 0.69 MW photovoltaic power generation facility in 2021.

Hyundai Motor Manufacturing Russia (HMMR)

HMMR is replacing the lighting at its business sites with high-efficiency LED lights. By the end of 2021, it had replaced 100% of office lighting and about 50% of its plant lighting, with the rest to be replaced by 2025. HMMR has reduced GHG emissions by saving energy during holiday shutdowns by upgrading its compressed air supply system.

Hyundai Motor Manufacturing Indonesia (HMMI)

Since April 2021, HMMI has been running a 3.2 MW photovoltaic power generation facility for its manufacturing plant following a pilot operation. It is now in the process of registering carbon credits with the CDM[1] Secretariat of Indonesia.

[1] Clean Development Mechanism: One of the reduction mechanisms stipulated in the Kyoto Protocol to allow emission-reduction projects in developing countries to earn certified emission reduction credits

Life Cycle Carbon Reduction

Governments around the world are tightening carbon emission regulations in line with the accelerating global efforts to respond to climate change. Automobiles are considered the main culprit of air pollution and thus the automotive industry is being asked to conduct life cycle assessments (LCAs) as part of the governments' environmental regulations. After establishing an assessment process, Hyundai conducted LCAs on the Kona EV in 2020 and four other vehicle models in 2021. We will analyze environmental impacts of each sector in order to continuously identify areas of improvement and make them better to minimize environmental impacts.

Life Cycle Assessment

Hyundai conducts LCAs to assess the environmental impact of each vehicle's life cycle, from the acquisition of raw materials and manufacturing to use, end-of-life treatment, and recycling. We conduct LCAs in accordance with the international standards (ISO 14040 & 14044) for vehicles produced in domestic plants for the Korean and European markets. In 2021, we completed LCAs for 14.4% of total vehicle sales.

LCA Methodology

When conducting LCAs, Hyundai follows the Environmental Product Declaration of Ministry of Environment (Korea) and applies the CML (Centrum voor Milieukunde Leiden) methodology to appraise its performance in the following six categories – global warming potential (GWP), abiotic depletion potential (ADP), acidification potential (AP), eutrophication potential (EP), ozone depletion potential (ODP), and photochemical oxide creation potential (POCP). In addition to these six impact categories, we conduct LCAs on human toxicity and water depletion for the European market.

Expanding Implementation of LCAs

Based on the EV LCA process established in 2020, Hyundai was certified in 2021 by TÜV Rheinland of Germany that its LCA of the IONIQ 5, an EV subject to the E-GMP appraisal, was properly performed according to the ISO standards. In 2021, we expanded the assessment targets and established the LCA process for ICEVs and HEVs, based on which we completed the LCAs of the TUSCON gasoline and hybrid models. In 2022, we will develop an LCA process aligned with those of suppliers as a way to advance the assuagement system.

LCA Results

The LCA results show that of all the assessed models, TUCSON Gasoline emits the largest amount of GHGs in its entire life cycle and use stage, while EVs produce a relatively low level of emissions during use. Furthermore, it has been confirmed that the largest amount of emissions is produced in the operation stage of all assessed models, followed by the pre-manufacturing stage and the manufacturing stage. The result also shows that EVs produce more GHG than others in the pre-manufacturing stage, attributable to the battery system.

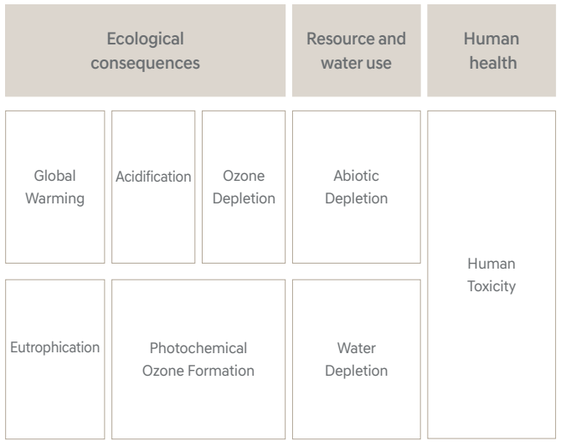
LCA Results

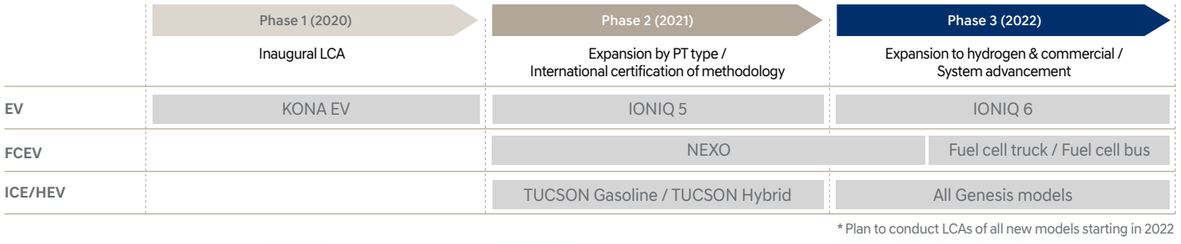
Model	IONIQ 5	TUCSON Hybrid	TUCSON Gasoline
Life Cycle GHG emissions (gCO_2-eq/km)	169.6	241.6	311.1

Utilization of LCA Results

Hyundai is using its LCA results as the basic data to identify the current status of progress in achieving carbon neutrality targets. We also use the data as a preemptive measure regarding the LCA legislation currently being promoted in the EU. Based on the results, we conduct comprehensive analyses of the environmental impacts of each stage and determines the efforts required to improve the environmental performance of products. We are also striving to develop new models with a minimal environmental impact by reflecting the LCA results in new car development process, and have elaborated plans to use them in the development of alternative raw materials and parts as well as eco-friendly recycled materials.

Impacts Covered by LCAs





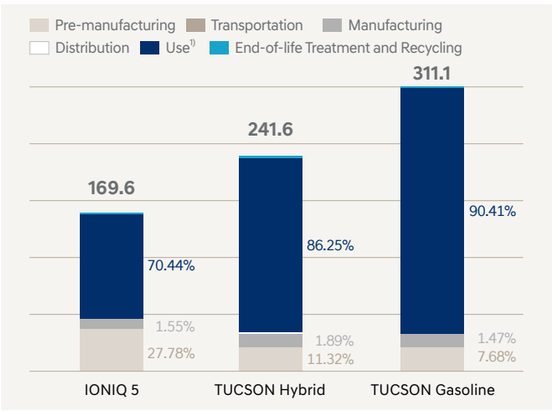
* Plan to conduct LCAs of all new models starting in 2022


KONA EV


IONIQ 5


G90

Global Warming Potential by Life Cycle (Unit: gCO_2-eq/km)



1) Including GHG emissions in the process of producing and distributing energy used for vehicle use (Well-to-Tank)

Carbon Neutrality in the Supply Chain and Logistics/Transportation

Carbon Neutrality in the Supply Chain

The scope of our 2045 carbon neutrality target includes our supply chain such as tier-1 suppliers and raw material suppliers. Estimated GHG emissions of our supply chain are 18.36 million CO2-eq, which is about 18% of total GHG emissions generated throughout the life cycle of Hyundai's products. We aim to achieve carbon neutrality by 2045, following a reduction of more than 10% to be achieved by 2030 through the energy transition of key suppliers, and a reduction more than 65% by 2040 by extending these efforts to include raw material suppliers.

Action Plan to Reduce Carbon Emissions in the Supply Chain

In 2021, Hyundai established a basic action plan to support its suppliers' efforts to reduce their carbon emissions based on the results of a survey of their carbon emissions and reduction plans.

In 2022, we offered them training to improve awareness of carbon reduction and enhance working-level capabilities, while publishing and distributing an implementation guide that they must follow to promote carbon neutrality. In the second half of 2022, we plan to specify the carbon reduction criteria and targets that will apply to suppliers and operate various support programs to contribute to their carbon reduction efforts through the construction or expansion of smart factories.

In particular, the results of the 2021 supplier carbon emission survey show that the top 69 carbon emitters (15,000 tons of CO_2 or more) in the production of tires, aluminum wheels, and batteries, etc. account for 78% of the total supply chain emissions. We will induce them to pursue carbon reduction while helping them to establish their own carbon neutrality management system.

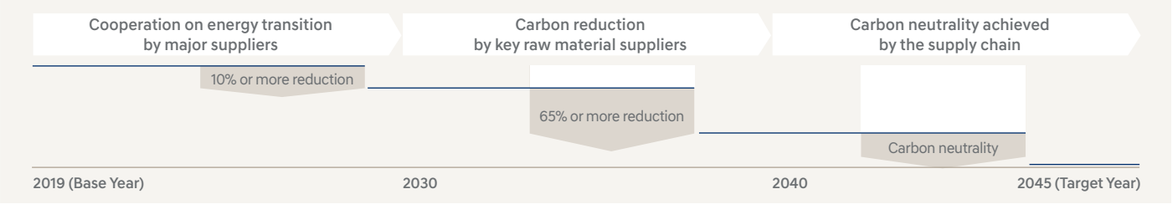
Carbon Reduction at the Logistics/Transportation Stage

Hyundai uses eco-friendly means of logistics and transportation including the procurement of parts and raw materials, the storage of inventory and work-in-process, and the sales and transportation of finished vehicles. Hyundai GLOVIS, which is in charge of Hyundai's major logistics and transportation on consignment, has contributed to reducing the volume of carbon emissions generated in Hyundai's logistics/transportation processes by improving the fuel economy of its freight vehicles and promoting a modal shift toward more energy-efficient means of transportation. We intend to promote a step-by-step modal shift to eco-friendly, low-carbon modes of logistics/transportation, with a plan to switch 100% of company-owned vehicles by 2030.

Creating Eco-friendly Logistics/Transportation Ecosystem

In order to reduce carbon emissions in the logistics/transportation service ecosystem, Hyundai is developing an eco-friendly and autonomous unmanned logistics/transportation business based on new technologies such as EVs, FCEVs, urban air mobility, and robotics. In the first mile stage, where cargo moves from a plant to a warehouse, we will use fuel cell trailers suitable for long-distance driving, while using electric trucks for the middle mile and last mile stages, from a warehouse to each base, leveraging our EV strengths. In addition, we are expanding cooperation with the government and industry to supply them with fuel cell trucks as a way to expand electrification in the logistics/transportation sector.

Roadmap for Supply Chain Carbon Neutrality



2022 Plan to Promote Carbon Reduction in the Supply Chain

Training for and raising awareness of suppliers	• CEOs: Host the Partnership Day for suppliers and introduce Hyundai's carbon neutrality strategies • Employees: Offer online ESG basic/intensive training courses (Global Partnership Center)
Operation of the Supplier Carbon Neutrality Council	• Convene the Supplier Carbon Neutrality Council on a regular quarterly basis • Gather opinions on Hyundai's carbon neutrality strategies and exchange opinions on major issues
Providing suppliers with the carbon neutral guide for suppliers	• Present suppliers with an implementation guide to promote carbon neutrality • Include the establishment of an in-house management system, reduction of GHG emissions at business sites/ supply chain/logistics, and disclosure of emission information, etc.
Survey of suppliers' GHG emissions and energy consumption	• Survey GHG emissions and energy consumption by raw material suppliers, etc. • Develop survey forms and broaden the suppliers subject to the survey
Review of suppliers' reduction targets and development of support programs	• Specify suppliers' GHG emission reduction plans (criteria and targets). • Develop supplier support programs (in connection with smart factory construction, etc.)

Major Activities to Improve Energy Efficiency in Logistics/Transportation

Activities	Main content
Reduction of environmental pollution in ships	Voluntarily reduce pollutants such as nitrogen oxides, sulfur oxides, diesel dust, and carbon dioxide (CO_2) in vehicle carriers
Eco driving of cargo trucks	Improve the fuel economy of cargo trucks by recording/analyzing instantaneous speed, brake signals, acceleration, and mileage
Transition to eco-friendly transportation	Transition to coastal shipping with lower carbon emissions than land transport

MOUs to Supply Fuel Cell Trucks in Korea

To achieve the government's goal of procuring 10,000 fuel cell trucks by 2030, the Ministry of Environment (Korea) provides subsidies for the purchase of fuel cell trucks; the Ministry of Land (Korea), Infrastructure and Transport offers fuel subsidies to reduce the operational burden of fuel cell trucks; and the Ministry of Trade, Industry and Energy (Korea) provides development and demonstration support to improve the performance of the trucks, while logistics companies such as Hyundai GLOVIS are preparing for full conversion to fuel cell trucks. Under the circumstances, we plan to mass produce and distribute fuel cell trucks in earnest starting in the second half of 2022.

Other Types of Cooperation for the Supply of Fuel Cell Trucks

Partner	Content
Pyeongtaek City	Supply a total of 850 fuel cell trucks and buses to Pyeongtaek by 2030
POSCO	Begin supplying fuel cell trucks in 2025 and promote phased conversion for 1,500 trucks at the steelworks
Hyundai Steel	Use fuel cell trucks to transport mobility parts for short/medium distances

Circular Economy

Creating a Recycling Ecosystem

Based on awareness of extended producer responsibility (EPR) regarding the recovery and recycling of end-of-life vehicles, Hyundai is committed to improving the recyclability of end-of-life vehicles and reducing environmental impact from end-of-life vehicles. We comply with the end-of-life vehicle recovery and disposal regulations in countries where we sell our vehicles, while also increasing collection, disposal and recycling rate of end-of-life vehicle, in cooperation with auto dismantling companies. To this end, we have been strengthening design which taking recycling into consideration at the vehicle development stage, and are shifting from a linear (production-consumption-disposal) to a circular (production-consumption-regeneration) business system by evaluating and applying materials and parts from the perspective of recyclability.

Recycled Materials and Recycling Technologies

Designs for Recycling

Having recognized that expanding the use of recycled materials in an eco-friendly way will play an important role in achieving carbon neutrality, the company designs its new vehicles by taking into account the need to reduce carbon and pollutant emissions and promote the circular use of materials during the development stage. On the back of such design practices, Hyundai vehicles are 85% recyclable, and the recyclability rate rises to 95% if the recovery of thermal energy from waste disposal is included. In particular, ferrous and non-ferrous materials, which account for approximately 70% of our vehicle parts and materials, are mostly reused and recycled during the scrap phase. Going forward, we will reinforce eco-friendly factors, including natural and biomaterials as well as recycled materials, in the new car design process and continuously enhance the environmental performance of non-metals such as plastic, glass and rubber.

Increasing the Use of Recycled Materials/Natural Materials and Biomaterials

Hyundai is leading the circular economy by focusing more on plastic recycling. We are striving to improve the recycling rate of waste resources generated by the existing end-of-life vehicle network, and we also operate the Resource Circulation Council, launched in 2021 aimed at seamless implantation of related tasks. Recycled plastics recovered from scrap car parts are no longer limited to wheel guards, undercover parts, battery trays and fan shrouds, as work has now begun to expand recycling to include lamps, exterior parts, and closure parts. In addition, we make continuous efforts to find ways to recycle waste resources as a means to securing a stable supply chain for recycled plastics, while reviewing plastic recycling in various fields such as marine and agricultural pollutants.

We are also establishing a strategic cooperative relationship for the recycling of plastics with leading companies in the chemical industry at home and abroad, and hold technical meetings on a regular basis. Through such processes, Hyundai specifies and clarifies technology roadmap for pursuing a more efficient application of recyclates.

Hyundai continues to develop eco-friendly materials using various natural resources and parts based on them. Leading example includes the development of a TPO sheet for internal parts with a bio content of 20% using non-food resources. It is a sheet suitable for automobile interior parts created through a process of extracting, converting, and polymerizing ethanol from sugar cane discarded during the production of sugar. We also have developed eco-friendly PU artificial leather by manufacturing, processing, and applying bio-polyol extracted from corn starch, as well as an eco-friendly artificial leather that reduces carbon dioxide emissions by 47% compared to petroleum-derived PU artificial leather. We continue developing a bio-composite material using coffee grounds in order to convey the images of premium Hyundai brands and their eco-friendliness to consumers. In particular, bio-composite materials using Starbucks' coffee grounds have been expanded their scope to include parts development stage. We are also developing eco-friendly parts by producing real wood sheets from recycled wood, whiskey/oak barrels and newspapers, while developing technologies to improve product marketability through the application of upgraded interior parts.

The recently launched Genesis brand models, such as GV60, Electrified GV70, and Electrified G80, use recycled and biomaterials as their interior materials. Hyundai has processed yarn from recycled PET bottles into knitted and suede fabrics and applied them to the head linings, pillar trims, sun visors, package trays, and luggage trims of its GV60, Electrified GV70, and Electrified G80 models.

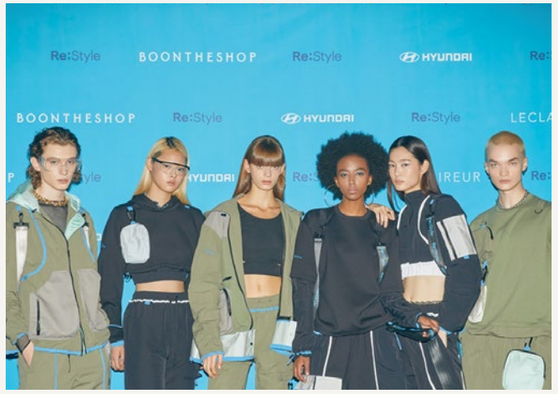
In addition, we have processed bio-yarn mixed with wool and PET into fabric and applied it to the seat covering of Electrified GV70, and applied eco-friendly PU artificial leather containing bio-polyol derived from corn/sugar cane to seat coverings and door trims of GV60. Going forward, we will develop yarn from waste fishing nets into BCF fabrics for carpets and apply them to the floor carpet of the 2023 Genesis G90.

"Re:Style" Upcycling Project

Hyundai constantly explores new uses for parts and materials with a low recycling rate, such as leather seats, glass, and airbags generated during the scrapping process. Hyundai's Re:Style project aims to spread upcycling through a unique collaboration between the worlds of fashion and automobiles. Through the project, we introduced jumpsuits made of scrap leather seats, bags made of discarded car carpets and jewelry made with scrap glass, the proceeds of which are donated to the British Fashion Council to promote eco-friendly fashion products. We will continue exploring ways to create new values for waste generated in the process of scrapping cars, while taking the lead in promoting sustainability in all industries including automobiles and fashion.

Marine Ecosystem Restoration and Upcycling Project

In partnership with Healthy Seas, a marine conservation organization, Hyundai promotes marine pollution-related education while working to prevent marine pollution and restore the marine ecosystem. We began our first action on Greek beaches, while planning to expand our efforts to other European countries including Norway, Germany, Britain, the Netherlands, Spain, Italy and France. Central to the restoration of marine ecosystems is the collection of abandoned fishing nets by a team of volunteer divers. The collected fishing nets are processed into ECONYL®, a biodegradable material made of nylon recovered from upcycled nets and cloths, and we are considering applying ECONYL® as a material for Hyundai vehicles.



"Re:Style" Upcycling Project

Marine Ecosystem Restoration and Upcycling Project © Cor Kuyvenhoven

Recovering and Recycling End-of-Life Vehicles

Establishing the End-of-Life Vehicle Resource Circulation System

In 2011, Hyundai signed an agreement with the Korean Ministry of Environment to implement a pilot project to advance the recycling system for end-of-life vehicles by justifying the adoption of EPR in the automobile sector after introducing it to packaging materials and electronic products. As part of this project, we provide vehicle dismantling manuals and necessary training to scrap car companies, subsidize the recycling of materials that are difficult to recycle, and support the eco-friendly disposal of waste refrigerants contributing to climate and ecosystem change, as well as continuously improving resource reuse and recycling rates at the end-of-life vehicle stage in collaboration with scrap car recycling companies. In 2021, such collaboration enabled us to recover about 195,000 tons of resources at the end-of-life stage, with the recycling rate of end-of-life cars reaching 82.6% without including heat recovery and 92% when included. By the way, Hyundai does not have a financial benefit from the end-of-life vehicles' take back programs.

Eco-friendly End-of-Life Car Service

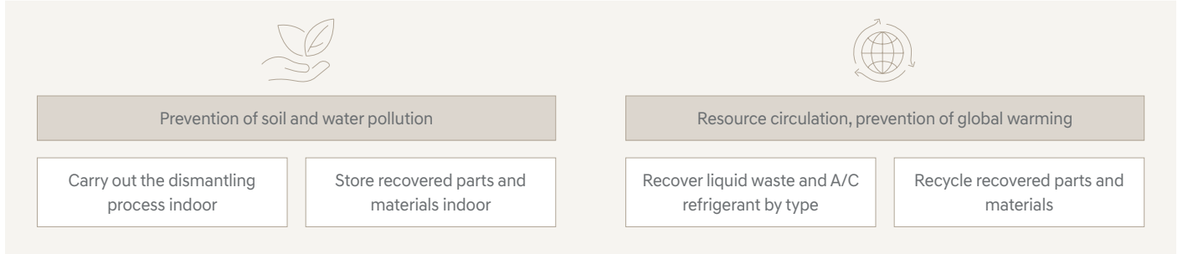
In response to customers' desire for eco-friendly ways of scrapping vehicles, Hyundai provides a one-stop service that assists its customers through the vehicle recovery, dismantling, and recycling processes. When a customer applies for the service at Hyundai's website, we pick up the scrapping vehicle at the time and place desired by the customer, after which the vehicle is sent to an eco-friendly junkyard for eco-friendly dismantling and recycling.

Resources Recovered from End-of-Life Vehicles

(Unit: Tons)

	2018	2019	2020	2021
Volume of annual recovery	262,775	261,971	209,754	195,370

Hyundai's Principles for End-of-Life Vehicle Dismantling and Recycling



Recycling Second Life Batteries

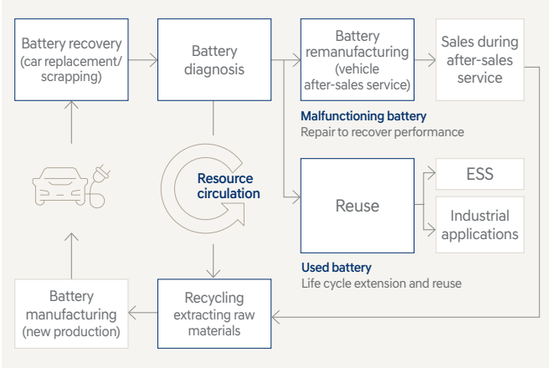
Eco-friendly Business Based on Second-Life Batteries

Based on the battery life cycle, Hyundai is establishing an eco-friendly battery circulation system that pursues sustainability through the recycling and reuse of second life batteries. The battery life cycle consists of an eco-friendly loop encompassing manufacturing to use, reuse of batteries after use, extraction of materials from finally discarded batteries, and application of the extracted materials to battery manufacturing. We launched a TFT in 2022 to establish a group-wide cooperative system throughout the battery life cycle, while exploring green business models and promoting advanced technology development.

Establishing the Second Life Battery Recovery System

In partnership with Hyundai GLOVIS, we are building up a global network and transportation control system to collect and transport used batteries discharged from various places including junkyards and dealers around the world. Hyundai GLOVIS developed and acquired a patent for a dedicated platform container that can transport hard-to-handle used batteries safely and effectively, and is equipped with logistics processes and systems that meet the complex and diverse regulations of various countries. We will use Hyundai GLOVIS' logistics know-how and network to complete the link between recovery and front-to-back business throughout the battery life cycle.

Virtuous Circulation System for Batteries



ESS Business Based on Second-Life Batteries

Hyundai has been conducting pilot projects to reuse second-life EV batteries for energy storage system (ESS). In December 2020, we became the first company in Korea to obtain approval to give a special regulatory sandbox demonstration of an energy storage device for reusing second life batteries. Having built a 2 MWh ESS and a 300 kWh ESS, respectively, at our Ulsan plant and the Gongju plant of OCI, our demonstration partner, we launched solar power-linked commercial operations in January 2021. The Ulsan plant's pilot project showcases our eco-friendly renewable energy power plant model, which combines a solar power plant on a temporary parking lot for produced vehicles with an ESS that reuses second life batteries. In April 2022, in cooperation with the Korea Water Resources Corporation, we built a new 400 kWh ESS in Busan Eco Delta Smart City, which will be used in the P2P-based power transaction pilot project. Going forward, Hyundai's various ESS pilot projects based on second-life batteries will be transferred to Hyundai GLOVIS, which is planning to convert into a full-fledged second-life battery reuse business equipped with a unified pipeline ranging from a recovery system to a reuse business.

Remanufacturing Business for After-Sales Service

The high-quality second-life batteries generated by our battery lifecycle are linked to Hyundai MOBIS' remanufacturing business according to classification criteria of Hyundai MOBIS. Hyundai MOBIS has established a collection system and a remanufacturing base that use the domestic and global after-sales parts supply chains to remanufacture purchased/collected second-life batteries into batteries for old vehicles, and provides an after-sales service, thereby prolonging the service life of batteries.

Establishing a System to Extract and Recycle Valuable Metals from Second-Life Batteries

Second-life batteries that cannot be remanufactured or recycled via Hyundai's battery circulation system are disassembled and sent to a recycling business that extracts from them valuable metals such as lithium, cobalt, and nickel. Hyundai is concentrating on securing technology that can recycle a large amount of second-life batteries in preparation for an era in which a far larger quantity of second-life batteries will be produced. In addition, we will complete the circulation system of batteries by taking the initiative in linking secured raw materials with battery manufacturing processes.

Resources Usage in Business Sites

Corporations are largely responsible for the depletion of the world's resources, and so is Hyundai as well. Due to climate change and reckless business activities, resource shortages including water are getting worse day by day while environmental issues such as air and water pollution are also causing great harm to the earth and all living things. In addition to these direct environmental risks, companies face a variety of crises. The three R's in resource – reduce, reuse and recycle – have become more importance than ever in the face of raw material risks cause by war and inflation and increasingly stringent environmental regulation to strengthen the circular economy. In response, Hyundai makes continuous efforts to use resources more efficiently and responsibly through the three R's.

Raw Materials Efficiency

Global inflation and rising uncertainty have led to rising raw material prices, a factor that directly affects operating profits. Hyundai is therefore striving to minimize the risks associated with raw materials by improving its raw materials efficiency. We place particular emphasis on the efficiency of steel that is easy to sort and recover in order to recycle it repeatedly. In 2021, the Asan Plant cut down its iron consumption by 160 tons by reducing the size of the blanks in the new Grandeur and 8th-generation Sonata models. Meanwhile, HMMR is striving to recycle not only steel but also various other materials to improve its raw materials efficiency. In 2021, HMMR not only recycled 28,044 tons of scrap iron, but also 11,021 tons of cartons and 3,837 tons of plastics, while HMB saved 138 tons of scrap iron and 27 tons of other materials during the year mainly attributable to efforts made at its pressing plant.

Water Reuse

As the global water shortage caused by climate change intensifies, a number of risks associated with water resources have already emerged. The World Resource Institute has warned that seventeen countries, including India and Iran, where about one quarter of the world's population lives, are at risk of running out of water resources.

In response, Hyundai aims to identify water risks that may affect its business operations, increase water reuse, and improve its water resource efficiency. We have not yet suffered any water shortage, nevertheless HMB has built four groundwater pumping stations to prepare for water shortages. The Asan Plant in Korea, HAOS in Turkey, and HMI are taking the leading role in increasing water reuse rate.

HMI and the Asan Plant have established a zero liquid discharge system to reuse 100% of the water they use, and the former actively responds to the risk of water shortage due to the severe water scarcity in Chennai where HMI's plant is located. HMI, which began building reservoirs within its premises in 2019, can now store a total of 335,000 tons of water at six reservoirs as of the first half of 2021. It has also linked all the drainage canals within its premises to collect as much water as possible when it rains. Having installed a super-large pump capable of pumping 4,000 tons per hour in the low-lying area of Plant 1, HMI has increased the maximum precipitation that it can collect from about 500 tons to 1,000-1,500 tons per millimeter of rainfall. HAOS recycles 42% of its water.

In addition, HMB and HMMR reuse pure water and washing water in their painting factories, while HMMC has increased its water reuse through continuous campaigns and inspections.

Zero Waste

In the automobile production process, not only iron and aluminum but also various other kinds of waste materials are generated. Hyundai recycles most of the metals it uses, such as iron and aluminum, and also recycles waste paint, waste thinner, packaging materials and sludge as much as possible. In 2021, we recycled 91.5% of all waste materials generated at our business sites, while treating difficult-to-recycle waste in an environmentally-friendly way. We are also increasing the amount of recycling by promoting the recycling of waste that was previously incinerated or landfilled.

In 2021, the Asan Plant recycled coated waste furniture generated from the renovation of its offices and dining halls rather than incinerating them, while the Jeonju Plant is working to recycle waste foundry sand rather than landfill it. In China, the Beijing Plant has reduced its final waste production by 180 tons by changing the method of drying paint chips generated by its paint shop. HMB has raised its waste recycling rate by implementing the Zero Landfill Campaign since 2018. To achieve the goal, it has also continuously monitored its use of chemicals to reduce the amount of sludge while recycling paint shop packages and construction waste.

Reducing Pollutants

In order to respond to air and water pollution preemptively, Hyundai is applying stricter in-house management standards than the legal standards of the countries in which its business sites are located. We are expanding the use of water-soluble paints to reduce the amount of air pollutants, especially volatile organic compounds (VOCs), while reducing air pollutant emissions by strengthening the monitoring of environmental prevention facilities, such as regenerative thermal oxidizers (RTOs) for oven exhaust gas treatment, improving dust collection efficiency, and replacing aging exhaust facilities. Meanwhile, for the effective management of water resources, an issue to which Hyundai's local communities pay keen attention, we are striving to improve water quality environment and ecosystem by setting water pollutant management and reduction goals for each business site.

Although it is difficult for the Ulsan Plant to check the amount of wastewater it transports in real time due to its vast size (approx. 6 million square meters), it is seeking to minimize its water pollution by operating a monitoring system based on the flow meters installed on its wastewater pipeline, which is 89 kilometers long.

The Jeonju Plant has minimized its air pollutant emissions by investing KRW 1.5 billion in air quality control facilities in 2021. It installed an activated carbon dust collector to remove air pollutants generated during the painting repair process, while improving air pollutant removal efficiency by replacing the filling inside the scrubber in the injection/melting line at the materials plant.

Input and Output at Business Sites

	2019	2020	2021
Resource Inputs			
Energy consumption (MWh)	7,680,491	6,791,668	6,169,739
Energy consumption per vehicle produced (MWh/vehicle)	1.71	1.82	1.59
Water consumption (Tons)	11,770,200	10,307,878	9,275,209
Water consumption per vehicle produced (Tons/vehicle)	2.63	2.75	2.44
Raw materials (steel and aluminum) consumption (Tons)	1,070,595	1,031,112	1,138,929
Raw materials (steel and aluminum) consumption per vehicle produced (Tons/vehicle)	0.242	0.276	0.293
Outputs			
Waste discharge (Tons)	633,300	498,318	538,772
Waste discharge per vehicle produced (Tons/vehicle)	0.143	0.133	0.138
GHG emissions (Scope 1/2, tCO_2e)	2,705,383	2,396,316	2,384,204
GHG emissions per vehicle produced (Scope 1/2, tCO_2e/vehicle)	0.603	0.642	0.616
Air pollutant emissions (Tons)	1,404	936	1,211
Air pollutant emissions per vehicle produced (kg/vehicle)	0.317	0.251	0.311
Water pollutant emissions (kg)	435,473	289,487	296,321
Water pollutant emissions per vehicle produced (kg/vehicle)	0.098	0.078	0.076
VOC[1] emissions (Tons)	10,944	11,047	10,756
VOC emissions per vehicle produced (kg/vehicle)	2.47	2.65	2.76

[1] VOC: Volatile Organic Compounds

Strengthening the Management of Harmful Substances

Management of Harmful Substances

Hyundai is committed to minimizing and strictly managing all harmful substances used in its products or generated by its worksites. To this end, we classify harmful substances not only in our products but also in production plants and take the appropriate measures according to the domestic laws and international standards. In December 2002, we established our own management standards for harmful substances (four major heavy metals), and since then we have been responding preemptively to the rules and regulations on harmful substances such as the Occupational Health and Safety Act and the Chemicals Control Act of Korea and the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) of the EU to protect the health and safety of all our stakeholders, including customers and employees, and to minimize adverse effects on the local ecosystem.

Management Process of Harmful Substances

Hyundai classifies and manages harmful substances in three stages – prohibition of use, limited use, strengthened management – according to international standards and initiatives. Substances classified as "prohibition of use" are banned from use as high-risk regulated substances for which substitutes must be found, while substances falling into the category of "limited use" can only be used for purposes specified in the exception article, and those falling into the category of "strengthened management" can only be used under constant monitoring and systematic management.

Although we strive to minimize harmful substances under internal standards, it is difficult to completely block harmful substances from products because automobiles consist of many thousands of parts. We therefore require the same management standards for harmful substances to be observed throughout our supply chain in order to ensure that the products that are delivered to us do not contain any regulated substances. Since 2004, Hyundai has applied the International Material Data System (IMDS), jointly operated by global automobile manufacturers, to systematically manage information on harmful substances in the materials and parts manufacturing stages, among others. We also apply the Material Analysis Management System (MAMS), developed in-house, to conduct risk assessments based on information on parts collected from the development/design stage of a new vehicle, thereby blocking the use of high-risk substances from the outset.

Moreover, in order to respond to newly regulated substances, we investigate the inclusion of regulated substances during the new car development stage based on the substance information registered with the IMDS. Hyundai also preemptively checks information on substances that are liable to change during the mass production processes through parts and material analysis and inspections during regular supplier site inspections.

Status of Harmful Substances Management

Hyundai strives to prevent the risk of accidents by preemptively reviewing newly announced harmful substances and finding and applying alternative substances. Upon handling hazardous chemicals, we maintain a safe working environment by utilizing the integrated monitoring system of environmental facilities to check for leakages of hazardous chemicals in real time.

Since 2003, we have been sharing information on domestic and international harmful substance regulations and response requirements with our suppliers, as well as strengthening suppliers' management of harmful substances, whenever necessary, by helping them to set up their own systems of response to harmful substance regulations, in addition to running annual IMDS user trainings to improve the consistency of IMDS data.

Response to Harmful Substances Regulations and Initiatives

Hyundai supports international regulations, standards, and initiatives concerning harmful substances and manages harmful substances based on them. We preemptively develop and use alternatives to harmful substances whose prohibition is anticipated at home and abroad, while striving to ban the use of high-risk substances ahead of the European ELV (End-of-Life Vehicles) and REACH regulations, the leading regulations governing harmful substances.

Persistent organic pollutants (PFOAs) that are resistant to environmental degradation accumulate in the body of animals and plants through the food chain, causing disturbances in the immune system and damage to the central nervous system, thereby adversely affecting the ecosystem and human health. As the related regulations have recently been considered in full swing, Hyundai has established the preemptive countermeasures. As for perfluorinated compounds (PFAS), which will be banned in Europe, we will take preemptive actions and replace them by the second half of 2025.

Management Standards for Four Major Heavy Metals

Starting in the European market in July 2003, Hyundai has gradually banned the use of the four major heavy metals – lead, cadmium, hexavalent chromium, mercury – which may accumulate in the human body and cause heavy metal poisoning. In addition, we prohibit the use of high-risk substances such as brominated flame retardants. Hyundai manages such harmful substances in accordance with the harmful substance management standards established in December 2002.

Social

Hyundai values and respects all its stakeholders and, most notably, spares no effort in supporting its employees and suppliers, who play a pivotal role in achieving sustainable growth, so that they can unlock their full potential. In the meantime, we pursue constant innovation with the aim of providing differentiated value to our customers, our raison d'être, while scaling positive impact for local communities on the basis of win-win partnerships.

Winner of the "Brilliant Kids Motor Show" which depicts the future mobility imagined by children

Employees

Strategic HR Management

Hyundai's HR management is focused on responding preemptively to major ongoing changes in the market environment, such as the transition to electrification and competition over autonomous driving, and thus promotes HR management activities enhancing the new growth engines in cutting-edge areas such as PBV, AAM, and robotics. While operating a recruitment system that can secure talents with the skills and capabilities necessary for its "mobility innovation" and "great transformation into new growth engines," Hyundai quantitatively analyzes information obtained from its evaluations of employees' performance, competency identification, organizational engagement, and social relationships in order to establish a mid- to long-term HR management plan based on the comprehensive analysis of data. At the same time, we provide our employees with new opportunities for personal growth by operating a learning support system that empowers them to develop their unique competencies and career paths on their own initiative.

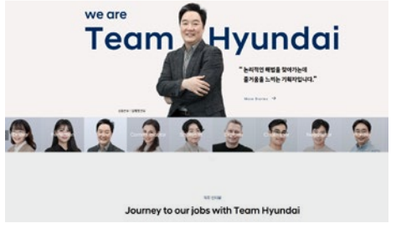
Talent Recruitment and Retention

Direction of Talent Recruitment and Retention

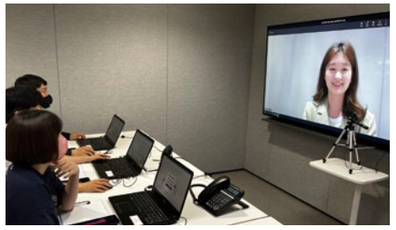
Hyundai is fulfilling its social responsibility of creating jobs even amid a business environment in which uncertainty is increasing due to the global spread of COVID-19, disruptions in the supply of major parts, and the paradigm shift of the automobile industry towards future mobility. In 2021, we hired some 2,000 general and research positions, about twice as many as in 2019 prior to the global pandemic. Most notably, in the midst of youth unemployment that is emerging as a serious social problem in Korea, Hyundai is contributing to the creation of jobs for youth by hiring young people (aged 19-34) for about 88% of all its new general and research posts. Furthermore, we are striving to improve the quality of recruitment by reorganizing recruitment process, expanding quantitative recruitment initiatives, launching a new internal IT system and website, enhancing the skills of our HR personnel, and developing a new recruit training program tailored to the recruitment environment and preferences of young people.

Hyundai's Talent Recruitment Strategies

- Establish a pipeline to discover excellent talents in the field of future strategic technology and timely recruit them
- Operate a regular recruitment system centered on the types of job expertise required on-site and promote continuous improvement of the system
- Run various internship programs such as H-Experience in order to discover excellent talents at home and abroad
- Implement a recommendation system to recruit experienced personnel through employees' social relationships
- Expand the mobile and online recruitment process to increase the efficiency of recruitment-related tasks and costs



Recruitment website


Non-face-to-face recruitment

Employee referral system

Job Rotation System

While securing external talents at the right time, Hyundai promotes job rotation so that existing employees can demonstrate their capabilities in the right place. Based on the needs of its departments and the aspirations of its employees, Hyundai implements job rotation for such purposes as promoting a positive workplace culture, improving employees' productivity, and developing corporate capabilities and technologies. We facilitate the job rotation system as a way to reduce cost and time required to hire and train new employees, while also providing existing personnel with opportunities to develop their managerial skills by experiencing various tasks.

Year-round Recruitment System

Hyundai became the first company in Korea to abolish the long-standing annual recruitment system, to hire people as and when necessary. For the past two years, it has had a positive impact on the country's recruitment market. First, the company no longer has to recruit people based on its rigid recruitment standards. By hiring people as needed, Hyundai has been able to be more flexible to changes in its business. Second, the new policy is drawing attention as a way to respond preemptively to changes in the current labor market led by Millennials and Generation Z. The young generations, who tend to place more importance on their own career and personal life, account for a significant portion of the company's employees. Unlike the former annual recruitment system, whereby the company hired people from the employer's perspective at a fixed time of the year, the new recruitment system allows people to apply for the right jobs at any time, and is consequently expected to meet the demands of the future labor market.

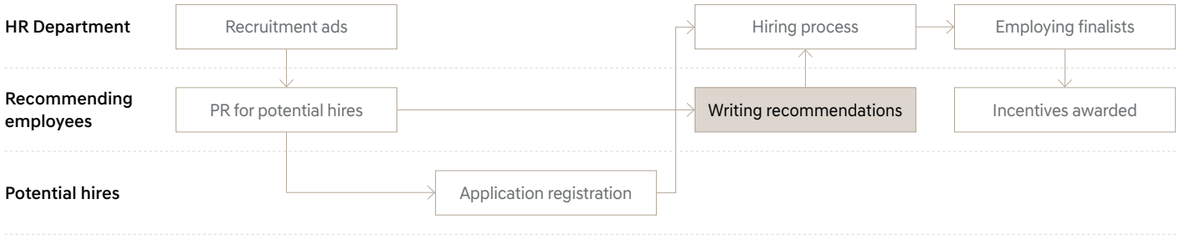
Non-face-to-face Recruitment Process

Since the onset of the COVID-19 pandemic, Hyundai has been invigorating the mobile and online recruitment process. The company has built the infrastructure and procedures required to conduct the entire recruitment process online, including the review of job application documents and the conduct of job interviews. Contrary to initial concerns about the mobile and online recruitment process, the new system has reduced applicants' costs and saved the company's time by enabling efficient and timely recruitment of talented applicants. Going forward, we will expand the non-face-to-face recruitment process, except in cases where face-to-face interaction is essential due to the nature of the tasks involved.

Employee Referral System

Hyundai operates an employee referral system in order to secure outstanding talents in the area of strategic technologies including R&D, electrification, AAM, robotics, and software. This system enables the company to verify the job expertise of recommended, experienced candidates, while allowing the latter to settle in and adapt to the organization easily thanks to their relationship with the employees who recommend them. In order to invigorate the system, the company is widening the recommending employees' access to its recruitment process to the extent that fairness is not compromised, while offering them incentives related to the recruitment of the persons recommended by them.

Employee Referral Process



"H-Experience" to Nurture Talents

As a representative Korean company, Hyundai is faithfully fulfilling its social responsibility of nurturing young talents by expanding its internship program, which provides young people with opportunities to gain experience in various jobs. We run the H-Experience internship program for college students as a part of our efforts to provide them with job opportunities and secure outstanding talents in advance. In 2021, we expanded the program by 250% compared to the previous year, and accordingly the number of jobseekers whom we have hired through the internship program has also increased. In addition, in 2021, we continued to run the Global H-Experience internship program, which we launched in 2020 in a drive to discover global talents among students at home and abroad and build networks with them. During the year, Hyundai launched the ASEAN H-Experience internship program for young people from ASEAN countries, which are growing as a strategic region for the company, in an effort to further expand the diversity of its internship program. As such, the program has successfully extended internship opportunities to young people from the ASEAN region who are preparing for employment opportunities in Korea. We are also making continuous efforts to nurture future talents through various channels, including industry-academia cooperation with major partner schools, in addition to running the internship programs.

2022 Hyundai Mechatronics Traineeship

Hyundai hires interns to perform data-based, high-level diagnostics and maintenance work as well as checking functions at its head office and service centers nationwide. Through the Service High-Tech Internship Program, it offers full-time contracts to interns who perform well. The internship program will enable the company to nurture talents who can handle not only regular automobile maintenance but also high-level maintenance tasks such as data-based analytics and accident prevention.

2021 Global H-Experience

2022 Hyundai Mechatronics Traineeship

Hyundai Talent Analysis

Measuring Employee Performance

Hyundai monitors and checks its employees to determine whether they are carrying out their work according to key performance indicators (KPIs) established in advance and whether they are achieving their individual performance goals. The company considers it a criterion for outstanding talents to receive positive feedback on their performance from superiors and colleagues, and to exceed their individual performance goals over an extended period of time.

Identifying Skill Gaps

Hyundai sets essential competency requirements for each position and determines to what extent each of its individual employees must meet those requirements. For employees in leadership positions, the company categorizes them into five types, namely, "strategic", "nurturing", "responsible", "pushing", and "collaborative", and measures their abilities in their respective category so as to identify outstanding leaders.

Employee Retention

Hyundai conducts an annual organizational culture assessment of its employees to determine whether there is any improvement that needs to be made in its HR and welfare systems to prevent the departure of outstanding talents. When it is anticipated that an employee intends to leave the organization, the company identifies the reason for the person's departure and promptly takes measures.

Network Analysis

Hyundai derives solutions to collaboration problems by analyzing relationships between departments. It quantitatively analyzes the frequency and duration of collaboration to identify inter-departmental relationships and manages any isolated or marginalized department accordingly. To this end, we operate and manage a database that specifically records problems that occur during inter-departmental collaboration.

Competitive Intelligence

Hyundai identifies the anticipated competitive situation due to its entry into new business areas, and, based on the results, defines the capabilities and technologies required to overcome any difficulties. When implementing irregular recruitment, employee referral, or intern-to-full-time conversion, the company places priority on selecting candidates equipped with its pre-defined competencies and skills.

Recruiting & Hiring

Hyundai identifies outstanding talents by analyzing the profiles of talents who have shown interest in the company's recruitment, participated in the hiring process, or been referred by its employees. Further, the company operates a differentiated and diversified recruitment process to secure global talents, including holding briefing sessions for overseas master's and doctoral students.

Systematic Recruitment System and Process

Since shifting to the year-round recruitment system in 2019, Hyundai has promoted a full-scale reorganization of its recruitment process in a bid to respond to large-scale hiring needs. In addition, starting from 2022, we will completely reorganize our recruitment website and recruitment system in line with ongoing changes in the recruitment environment in order to operate a data-based, consistent recruitment process, while seeking to provide a more intuitive and convenient recruitment experience to internal and external customers.

As we changed to field-led year-round recruitment, relevant departments have increased their participation in the recruitment process. Accordingly, we have set a Recruit Support Center in place at each of large-scale business sites to improve the quality of recruitment process by enhancing professionalism in the hiring process. Meanwhile, to ensure fairness in recruitment process, Hyundai has begun operating a selection process in which various decision makers from the business and HR departments participate, whereby the multifaceted strengths of talents are identified through a complex evaluation process designed to verify their excellence and suitability.

In addition, we conduct regular internal audits to continuously improve recruitment process and enhance transparency, while constantly raising employees' awareness about the importance of fair recruitment. Going forward, we will develop a recruitment inspection checklist for a sophisticated system designed to self-check fairness in our recruitment process, while continuing to secure transparency by extending the period and expanding the scope of internal audits.

Strategic Workforce Planning

Opportunity	Use	Outcome
• Introduce various methods of talent analysis to secure excellent human resources and analyze their relative competitiveness	• Use the results of the talent analysis in the core competency analysis of the company's manpower, recruitment process, portfolio of HR planning, recruitment strategy, etc.	• Increase collaboration between departments through organizational network analysis • Conduct organizational culture assessment and make improvements to analyze potential reasons for leaving the organization and establish countermeasures, etc.

Directions of Talent Development

Creating a Culture of Growth

Hyundai has been creating a self-directed learning culture and environment in which its employees and diverse organizations can develop their capabilities and contribute to improving the company's performance and long-term values. The company motivates its employees to actively participate in self-improvement activities by connecting their performance in this regard to its HR processes based on their individual self-growth data, while engaging in close communication with its employees and leaders through various communication channels so as to spread the culture of personal growth company-wide. Also launched is the "Strategic Learning Lab" whereby we strengthen company-wide connectivity and support the formation and maintenance of networks among employees.

Improving Infrastructure for Growth

To empower its employees with a culture of self-directed learning, Hyundai has established a growth platform and an all-year-round learning system, and continues to improve them. We provide our employees with customized curation through new contents that our employees can access all year round according to their individual learning needs. Going forward, we will introduce a next-generation learning platform, where our employees can share not only learning content but also their learning experiences and knowledge, in order to further promote our employees' self-directed learning.

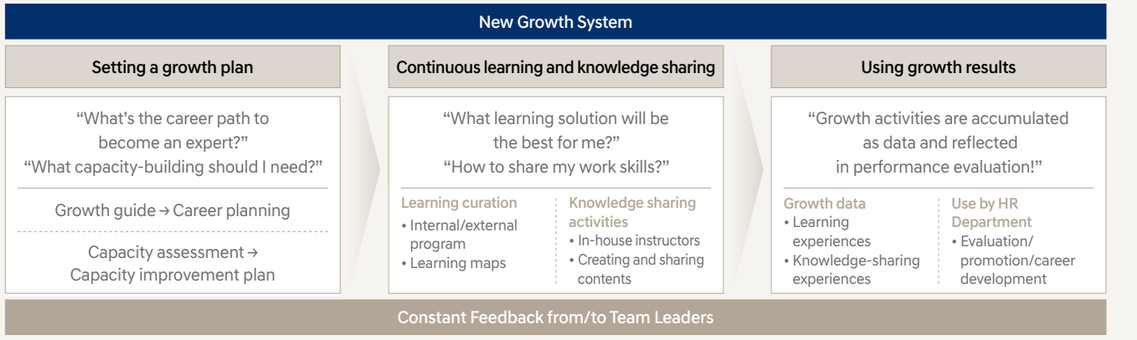
Cultivating Customer-centric Leaders

At Hyundai, leaders always put the interests of customers first when making decisions. They are also committed to building a desirable ecosystem where humans and nature can coexist in a bid to create a better future for the upcoming generations who will be our potential customers. To empower our leaders to fulfill their roles and responsibilities, we help them to internalize all the capabilities required to not only excel in their respective fields but also to respond quickly to the rapidly changing business environment company-wide. Hyundai strives to lay the foundation for changes in its leaders' behaviors to result in changes in their organizations and members as well.

Job and Leadership Training in 2021 (Unit: Hours)

Classification	Job	Leadership	Total
Training hours	26,804	2,271	29,075

* Total operating hours for each course (Not total hours based on number of participants)



Performance Evaluation System

For the efficient management of employees' performance, Hyundai conducts MBO performance evaluations using individual objective standards as well as the multi-faceted evaluation and the ranking evaluation. The MBO performance evaluation concerns general and research staff. However, as those who are excluded from the appraisal also prepare personal goals, and feedback is given on their performance, all employees of Hyundai are ultimately subject to the MBO-based performance evaluation.

Multidimensional Performance Appraisal (Comparative Evaluation Included)

Hyundai conducts the multi-faceted evaluation in two stages – the Leadership Surround View and Peer Surround View. In 2021, we conducted a multi-faceted evaluation of 95.5% of our employees (executives and general and research staff), and in 2022 we have 100% of our employees conduct comparative analysis of peers in the same position, thus helping them ensure objective self-evaluation.

24/7 Feedback (View-T)

On the "HR Lounge (HR support system) – View-T" page, leaders and team members can freely share performance- and growth-related contents and exchange feedback 24/7. Team members can appeal the results of the evaluation of their work performance at any time, while leaders can provide feedback on their members' performance at any time without having to face them. They are also free to communicate whenever the need arises for the purpose of sharing information and ideas or providing feedback.

Performance-based Compensation

Fair Evaluation and Compensation System

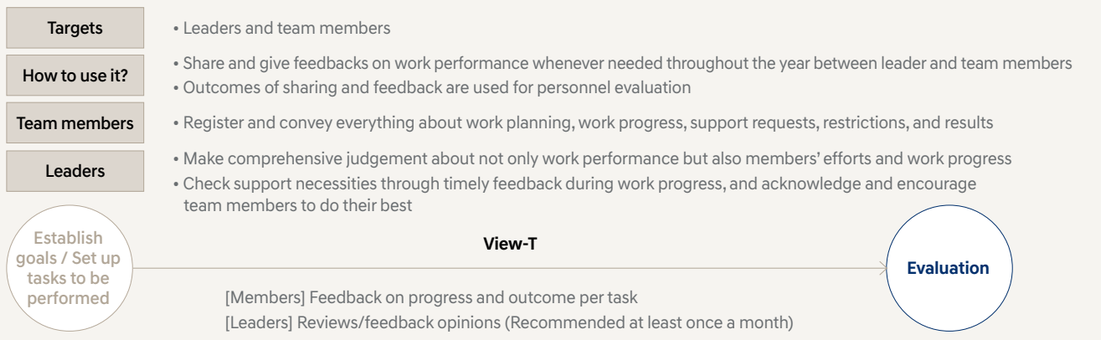
To inspire its employees to always do their best, Hyundai operates an equal and fair compensation system regardless of their gender or nationality. It has established a compensation system in which fair compensation is granted through various kinds of employee evaluation, such as the multi-faceted, MBO, relative, and regular evaluation, while improving its personnel system to ensure that its employees' performance improvements can be reflected in their personal compensation.

Compensation System Aligned with Performance

Hyundai strives to ensure that all of its employees receive fair compensation based on their performance. In particular, we have introduced an absolute evaluation system that compensates for the shortcomings of the existing relative evaluation method, and then reorganized our compensation system so that variable pay items can be fairly determined according to individual work performance. In addition, we inspire our employees to work harder by sharing any excess profits from business performance with them each year.

Employee Stock Ownership Plan

Hyundai implements the employee stock ownership plan (ESOP) for all its employees to improve their social and economic status, facilitate close labor-management cooperation, and increase corporate productivity. Following the granting of 665,870 shares in 2020, the company offered 441,671 shares to its employees in 2021. By 2021 we had granted a total of 1,929,983 shares, equivalent to 0.9% of total shares, to our employees through the ESOP.



Securing Professional Competencies

R&D E-Conference (R&D Technology Forum x Group Conference)

Since 1993, Hyundai has held the annual academic conference with the goal of "securing future competitiveness" by switching to a platform centered on the "virtuous cycle of knowledge" (production → accumulation → reproduction), which enables its researchers' research outcomes to be internalized by transforming their thesis into knowledge-sharing content. Since 2008, participation in this system has been expanded to all Hyundai Group companies including Hyundai research institutes based overseas.

From October to November 2021, Hyundai held a technology forum and an academic conference concurrently under the name of "R&D Technology Forum x Group Conference". Through the event, we were able to present an integrated perspective on the current status of our research activities at the departmental level and the future direction of R&D on major technologies in the industry. Unlike the previous operation centered on research and general staff, the 2021 event was co-hosted by the Research Lab and Academic Conference Division, thereby enabling the personnel of the Hyundai Motor Group to not only present their thesis, but also to attend the conference and share their insights into their respective technologies with other participants. During the Conference, some 299 papers in 19 areas were presented and shared with 3,057 participants through real-time on-site and video presentations. Additionally, 99 papers published in video format were uploaded to the "Learning Lounge", an employee education platform, for five weeks and shared with 3,365 employees.

We are planning to expand and reorganize the academic conference to focus on core technologies based on our R&D strategy, starting in 2020, and will also set the -offline hybrid operation process which was successful in 2021.

R&D Project-based Joint Research Programs

Hyundai has been operating a joint research program in conjunction with leading research institutes at home and abroad to develop future-oriented R&D technologies since 2012. Every year, 20 senior-level researchers participate in the joint research program and apply the fruits of their research to the company's mass-produced vehicles and advanced technologies upon their return to the company, thus playing a key role in helping the company to secure competitiveness in core technologies. The joint research program also promotes knowledge sharing to lay the foundations for internalizing new technologies and enhancing the company's R&D capabilities.

Car Master Training Program

In order to enhance its essential competencies as a global automobile manufacturer, Hyundai implements a car master training program. Currently, 99.7% of its employees are participating in this sales-related training program based around video contents. The training consists in enhancing employees' professionalism (electrification, luxury cars), cultivating their basic product knowledge (training on new vehicles, etc.), and strengthening customer care (CS, CRM). Trainees have the opportunity to acquire specialized knowledge related to vehicles and to further enhance their customer service skills. As a result, Hyundai received higher evaluation scores in the 2021 KCSI (Korean Customer Satisfaction Index, recognized for its long history and public trust), and was selected as the No. 1 company in the customer satisfaction category of the passenger car sector for the 28th consecutive year.

Training to Internalize Sustainability

As the international situation has become highly unstable due to the ongoing COVID-19 crisis and the war in Ukraine, companies are working hard to introduce sustainable management as a way to reduce uncertainty. To position itself at the forefront of this trend, Hyundai has prepared training programs designed to internalize sustainability for its employees. In 2021, it conducted training on human rights, safety, environmental protection, and quality in addition to the regular job training for employees on their duties and leadership skills, for a total of 37,055 hours. Going forward, we will continue expanding the learning experience of its employees to ensure that ESG becomes a key element – and not just a fad – in the company's transformation.

Results of R&D-based Joint Research in 2021

Classification	Number of times
Development of new technologies	13
Creation of solutions to on-site problems	9
Patents, research paper	19
Dissemination of research results	17

Sustainability Training in 2021

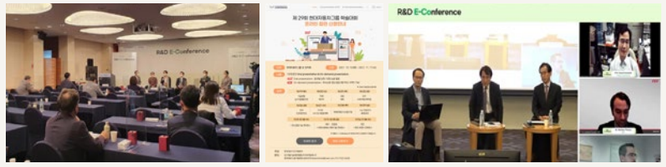
(Unit: Hours)

Classification	Job	Leadership	Sustainability				Sub total	Total
			Human rights	Safety	Environment	Quality		
Training hours	**26,804**	**2,271**	49	4,676	1,250	2,005	**7,980**	**37,055**

* Total operating hours for each course (Not total hours based on number of participants)

Key Achievements and Plans of Hyundai Motor Group Academic Conference

- 19 tech conferences were held from October to November 2021 with the participation of 3,057 people
- 1,368 abstracts were submitted, and 299 papers were presented
- The conference will be expanded and reorganized in 2022 to shift the focus to be centered around core technologies



Areas of Sustainability Training

Human rights
Prevention of sexual harassment, raising awareness of the disabled, etc.

Safety
Factory safety, safety managers' duties, etc.

Environment
Environment-related job training, eco-friendly vehicles, fuel cells, etc.

Quality
Quality-related job training, on-site quality management competency improvement, etc.

Great Workplace Culture

Hyundai aims to become a company where its employees can grow and feel proud of themselves and their role in the company. To this end, we have set three work attitudes – Bold Moves, Positive Energy, Inner Qualities – as our organizational culture goals. Furthermore, based on the opinions of employees, we have set "Hyundai's way of working, CoC (Code of Conduct)" and strive to internalize it company-wide by appointing a person to take charge of changes of the organizational culture and innovation for each organization, working together with leaders. In the midst of the prolonged pandemic, Hyundai is providing full support to create a comfortable work environment, thereby prioritizing its employees' convenience and welfare. Hyundai is also working hard to create an organizational culture that allows employees to immerse themselves in their work in an autonomous and proactive atmosphere based on active communication with and respect for their fellow talents.

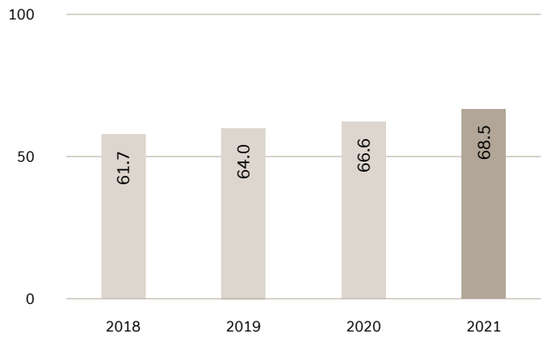
Improving Workplace Culture

Diagnosis of Organizational Culture

The high level of employee engagement is one of several factors that have a big impact on the company's performance and talent growth. In September 2021, Hyundai conducted a culture survey consisting of 71 items in seven areas – business, people, work, leadership, HR system, infrastructure and organizational efficiency – in which 72.9% of all its employees, including general, research and legal staff, participated. Hyundai plans to further improve the level of employee engagement based on the results of the diagnosis.

Results of Culture Survey

(Unit: Points)



Next Big Idea to Innovate Organizational Culture

Hyundai holds the Next Big IDEA contest twice a year as a way to encourage its employees to create an innovative and challenging organizational culture. In 2021, ideas related to eco-friendly technology for a sustainable future, such as reducing carbon emissions and promoting electric vehicle deployment, stood out. In the second half of the same year, Hyundai's employees submitted 2,610 ideas, the largest number ever. The company designated 19 of the proposals as "excellent ideas" and supported their practical implementation by the relevant departments. In addition, we launched a suggestions platform in 2021 to allow our employees to suggest ideas and share various opinions anytime, anywhere. We have also enabled them to initiate change through bottom-up activities such as the "Town Hall Meeting", which allows two-way communication, and the "Hyundai Bamboo Forest", an anonymous communication channel.

Poster for Next Big Idea contest

Town Hall Meeting

Programs to Change Organizational Culture

Hyundai is developing a variety of organizational culture programs to improve its employees' work engagement centered on "Hyundai's Way of Working, CoC". Such efforts include activities designed to internalize the way the organization works and to improve "inner qualities" (work/product quality) in order to enhance the meaning of, and initiate voluntary changes in, employees' work. Hyundai is striving to create an organizational culture in which all its employees can grow and feel pride in their work, while those in charge of change and innovation in each department are encouraged to play a central role in the effort. It has promoted substantial change and innovation in its work processes through "IT infrastructure" and "H-Work Stations" that have laid the foundations for an efficient work environment. Moreover, Hyundai is not only creating a horizontal culture but also an autonomous and active work atmosphere in which it promotes its employees' creativity and challenging spirit through communication, as well as running campaigns that advocate upgrades of its organizational culture.

Internalizing "Hyundai's Way of Working, CoC (Code of Conduct)"

Under the title of "Kill the Company", Hyundai conducted a survey to all employees on ways in which they can "save" the company, as opposed to ways in which they can "kill the company". The results of the survey have led to the development of "Hyundai's Way of Working, CoC", based on which various efforts are being made to have its employees voluntarily comply with the CoC by promoting positive energy, responsibility and perseverance, and new challenges and attempts. Such efforts include the production of videos containing the commitments of its executives and staff, from the CEO to new employees, as well as diverse programs designed to urge employees to implement CoC in their work performance.

Applying Customer's Perspective

Hyundai operates an experience-oriented program that allows its employees to explore the company's products and services from the customer's perspective so that they can pursue perfection to a higher standard, feel rewarded, and immerse themselves in their work performance. In 2021, through a total of seven new vehicle quality verification sessions, Hyundai employees from various sectors were invited to participate as test drivers in the final quality inspection of new car models on the verge of mass production, so that it could carefully review even the smallest details from the customer's perspective and guarantee the quality of the products. We also launched a program in which our researchers and customers are asked to drive a car and discuss product quality and driving sensibility on an insight trip, thus allowing our product development personnel to hear voice of customers first-hand and gain inspiration and motivation for their technology development.

Accelerating Change and Innovation in Divisions

Hyundai promotes innovation of the organizational culture at each division in two directions – a top-down method initiated by leaders and a bottom-up method driven by team members. The company emphasizes the leadership of top leaders through corporate culture sessions held at the monthly management meetings in order to lead to actual changes of behavior. We also monitor organizational culture issues through each division's officer in charge of change and innovation and implement solutions based on voice of employees (VOE).

Building a Creative Work Environment

Hyundai makes continuous efforts to improve its work environment with the aim of establishing a flexible working system. Starting with the trial run of the smart open office system, in which employees select spaces where they work, in 2019, we have since improved the efficiency of individual workspaces and expanded collaboration spaces to increase employee satisfaction. In 2020, while we were expanding the smart office system at the Yangjae headquarters, non-face-to-face way of working expanded due to the COVID-19 pandemic. In 2021, we opened a total of eight "H-Work Stations" in the Seoul and Gyeonggi region, while simultaneously replacing employees' personal computers with laptops, and creating a smart work environment suitable for telecommuting through the groupware system upgrade to increase the utilization of video conferencing and cloud services.

Adopting the Hybrid Work System

Hyundai intends to maintain remote working such as telecommuting and H-Work stations even after the end of the COVID-19 crisis. To create an organizational culture in which people work autonomously by immersing themselves in "work rather than places", we have conducted a remote working campaign. In addition, we informed our employees of desirable telecommuting etiquette, based on opinions collected through VOEs, in order to form a consensus on adopting the Hybrid Work System. We also encouraged our employees to use an IT tool for online meetings, enabling us to maintain operational efficiency in the non-face-to-face environment.

Way of working, CoC

Promoting Employee Diversity

As a global company, Hyundai implements a variety of programs designed to guarantee employee diversity. To establish an equal and healthy workplace culture, it conducts annual online education for all its employees to improve their awareness of the disabled and of sexual harassment in the workplace, respectively. In addition, the Human Resource Development (HRD) Center offers a variety of training programs to foster a global mindset and respect for diversity among employees, while the Global HR Team fosters global talents and enhances their business capabilities through a global exchange program.

Employee Diversity Programs

Diversity Policy

Hyundai encourages the Employee Resource Group activities, in which employees from diverse backgrounds gather to share their common interests in diversity and inclusion through communication and cultural programs. Participating employees can improve their internal teamwork and build external links in order to engage in mentoring, cultural exchanges, and community contributions based on their cultural diversity, in order to spread a positive influence not only within the company but also in the surrounding communities.

Diversity Programs

Onboarding course for new heads of overseas subsidiaries (intercultural leadership workshop)	Discussing on the roles of subsidiary heads in building a healthy communication culture with members from diverse cultural backgrounds
Pre-deployment course for overseas expatriates	Understanding cultural differences and identifying differences in the disposition of the country and appointed employees through GlobeSmart diagnosis
Basic course for team leaders	Creating an HR development culture based on the realization of individual strengths and understanding of employee diversity
Cross Cultural Seminar	Providing education courses to international employees on intercultural understanding and communication
Team dynamics workshops	Building an environment in which individuals' diversity can be demonstrated as an organizational strength, and establishing a plan to embrace employee diversity

Employee Resource Group

Women @ Hyundai	We create an inclusive environment that gives autonomy to female employees, customers, and suppliers' employees. From the perspective of female employees, we provide the necessary support to improve Hyundai's brand awareness, employee career development, and retention rate.	Female staff's ERG
Hyundai @ Soul	Based on the diverse experiences of our employees, we discuss how to enhance the modern brand image within the Black and African American communities. Hyundai management provides advice on how to develop cultural competencies from the perspective of diversity.	Black and African American staff's ERGs
#BecauseAsian	We tap into the characteristics and perspectives of the Asian culture to develop strategies that can make Hyundai a more successful company. We consider opportunities to leverage our employees' talents, skills, and networks. We support Hyundai's corporate promotions and community events.	Asian staff's ERG
Amigos Unidos	We harness the cultural intelligence of our Latino community to generate ideas for innovative management. We propose directions for Hyundai management from the perspective of Latino employees in the context of the growing Latino community.	Hispanic and Latin American staff's ERGs
Young Leaders	By maximizing the strengths of millennials, we propose ideas, solutions, and improvements that can contribute to Hyundai's excellence and success while building the foundation for our employee's individual career development and self-development.	Millennial staff's ERGs
Equality	We provide opportunities for education, career development, networking and workplace collaboration to LGBTQ+ (sexual minorities) employees while creating a positive and inclusive work environment. We also exchange ideas to increase Hyundai's brand awareness within the LGBTQ+ community.	LGBTQ+ staff's ERG
Hyundai CARES	We strive to improve the working conditions of people with disabilities and raise awareness about disabilities. We support employees with congenital or acquired disabilities, middle-aged employees with disabilities due to aging, and employees with children who need special care.	Disabled staff's ERG
Stars & Stripes	We maintain a forum attended by Hyundai employees, their spouses, their families, and supporters of U.S. veterans. We provide a safe and inclusive space for participants to have conversations about common interests, identities, etc., with a sense of belonging.	Veteran's ERG

Basic Principles of Employee Diversity

Employees
Hyundai prohibits discrimination based on gender, race, ethnicity, nationality, cultural background, age, personal gender/identity, differences in political and religious beliefs, or disadvantages in social status, etc. without any reasonable reason, while offering its employees equal opportunities in employment, promotion, education, wages and welfare.

Products and services
Hyundai considers the diversity of its stakeholders, including customers, in the design, production and sales processes of its products and services. It ensures that its values of diversity and inclusion are not violated in marketing, branding or any other forms of internal and external public relations.

Supply chain
Hyundai monitors diversity and inclusion issues in its supply chain to ensure that its values are not compromised, while helping its entire supply chain and related individuals to gain access to fair opportunities and treatment.

Local community
Hyundai does not violate or infringe upon the history, culture, business practices, and other rights and interests of local communities in the course of its business operations, and strives to contribute to promoting diversity and inclusion among its stakeholders, including the members of its local communities.

Win-win Labor-management Culture

Labor Union Communication in Korea

Hyundai complies with the Constitution and the related laws in order to guarantee basic rights such as workers' right to independent association, collective bargaining and collective action.

In addition, the company has established the Collective Bargaining Council and the Labor-Management Council in accordance with the relevant laws and conscientiously engages in discussions to improve its employees' working conditions and resolve their grievances, while striving to boost its corporate competitiveness through the strong partnership it has formed between labor and management. In order to work in unison to respond to the Fourth Industrial Revolution, electrification, and the imminent transformation of business practices, Hyundai has launched the Future Change Response TFT and the Job Stability Committee, which are making notable headway. We also continue making practical efforts to improve the manufacturing competitiveness of our domestic plants in the areas of quality and productivity in particular.

In 2018, in preparation for employment changes and labor-management conflicts due to the 4th Industrial Revolution, we launched the first advisory council for the Job Stability Committee consisting of five experts. The Committee hosted forums, seminars, and training sessions on various topics related to the future of the automotive industry. In 2020, Hyundai appointed seven advisors for the Committee, extending their term into the 3rd Committee in 2021. Acting as mediators between labor and management, the councilors scrutinize employment issues associated with the paradigm shift in the automotive industry.

Labor Union Communication Overseas

Beijing Hyundai Motor Company (BHMC) and China Hyundai Motor Corporation (CHMC) have the Chinese Trade Unions, while Hyundai Motor India (HMI), Hyundai Motor Manufacturing Czech (HMMC), and Hyundai Motor Brasil (HMB) have labor unions. The company's subsidiaries, whose employees are members of labor unions, engage in collective bargaining according to local labor laws in order to produce an agreement that can satisfy the majority of employees through mutually reasonable proposals and constructive discussions. Although its subsidiaries in the US, Russia, and Turkey do not have labor unions, they are striving to improve their compensation and welfare programs through active communication with their employees.

Hyundai's headquarter takes measures to improve its employees' satisfaction company-wide based on the results of surveys and interviews conducted with Hyundai employees worldwide. Each of Hyundai's overseas subsidiaries strives to resolve its employees' grievances by holding regular meetings between labor and management, operating grievance consultation centers, and dispatching the management on visits to business sites. As the COVID-19 situation continues and face-to-face communication with employees is limited, each overseas subsidiary remains committed to active communication through non-face-to-face tools such as mobile apps.

Welfare Benefit System

Operational Direction of the Welfare Benefit System

Hyundai guarantees its employees' quality of life through various welfare benefit programs. It strives to help them maintain a happy family life through various measures designed to promote a work-life balance such as flexible work hours, remote working, and paid leave for childbirth and childcare.

Employee Welfare Programs

Flexible work hours	• Allowing employees in general/research/legal/production sectors to determine their actual working hours on a monthly basis • They can choose their working hours except for daily mandatory working hours (10 am to 4 pm) as long as they meet the monthly required working hours
Remote working	• To protect employees during the pandemic, each business site implements its own telecommuting system • Have been operating a remote working system (an optional hybrid work system including working from home or H-Work Stations) since 2021 as a flexible working scheme for employees, beyond the initial purpose of preventing the spread of infectious diseases
Childcare (Breastfeeding included)	• 120 minutes of paid breastfeeding time per day to female employees for a year after childbirth
In-house daycare centers	• Offering married employees and the children of single-parent families access to in-house daycare centers • Available at five locations: Headquarters, Ulsan Plant, Asan Plant, Jeonju Plant, and Namyang Technology Research Center
Child Happiness Travel	• Providing hotel lodgings and meals within six months before and one year after a childbirth to employees and their spouses. It includes up to two nights and three days at hotels approved by the company
Parental leave	• Providing up to two years of leave of absence (at least one year of paid leave) for each (adopted) child under the age of 8 or a child in second grade to both male and female employees • The 2-year leave of absence shall include reduced working hours for childcare and the period of maternity leave • Benefits such as Management performance pay, Welfare points, and Employee Stock Ownership Plan are provided even during parental leave
Maternity leave	• Providing a 90-day maternity leave to female employees before and after childbirth (120 days for multiple pregnancies)
Reduced hours during pregnancy	• Providing reduced working hours to pregnant employees (2 hours from the start of a shift or before the end of a shift, or 1 hour each from the start of a shift and before the end of a shift) during the first trimester (within 12 weeks) or the last phase of pregnancy (over 36 weeks)
Reduced hours during childcare period	• Allowing employees with children of 8 years old or younger or a child in second grade to have reduced working hours for up to 2 years per child (2 splits allowed in the first year and 1 split in the second) • Three options available – 2 or 4 hours after the shift starts, 2 or 4 hours before the shift ends, or 2 hours each before and after the shift starts and ends
Bereavement leave	• Offering a leave whose period is determined by the pregnancy period in case of miscarriage or stillbirth
Partner's leave	• Offering up to 10 days of partner's leave within 90 days of childbirth
Menstrual leave	• Offering a one-day menstrual leave per month to female employees
Family care leave	• Offering up to 90 days of family care leave per year to employees whose parents, children, spouses or spouses' parents need care due to illness, accident, or old age

Retirement Pension System

Hyundai has set a retirement pension system in place for all its employees so that they can prepare for post-retirement life. The company provides training on pension products to subscribers to help lay a stable foundation for their post-retirement days while protecting their retirement pension by accumulating a retirement pension reserve externally.

Retirement Pension Asset under Management

(Unit: KRW million)

Classification	As of 2021 year-end	As of 2020 year-end
Insurance products	5,840,100	5,436,225
Others	3,235	3,701
Total	5,843,335	5,439,926

Retirement Planning

Hyundai runs a program to help its soon-to-be-retiring employees ease into retirement. In 2021, we offered differentiated retirement planning courses and specialized training programs to a total of 2,056 employees by position and job group.

Retirement Planning Courses

Targets	Managers or below (Union members)		Senior employees	
Course	Future planning 56-60	Counseling	Basic course in planning for life after retirement	Intensive course in planning for life after retirement
Age	56-60	56-60	59	60
Participants (2021)	1,152	173	396	335
Type	Lectures, experiential learning, etc.	Counseling	Lectures and counseling (online)	Lectures and counseling (online)
Curricula	• Self-examination for awareness of changes and happiness in old age • Customized education and consulting according to retirement plans	• One-on-one customized career counseling	• Channing perception about retirement and exploration of careers/ interests • Financial diagnosis and planning	• Career analysis and decisions according to individuals' desired paths

Industrial Health and Safety

Guided by its vision of "Progress for Humanity", Hyundai puts top priority on safety in its business activities, aimed at realizing its health and safety management policy of "providing a safe and healthy work environment to ensure the lasting value of life". To this end, we are doing our utmost to establish a safety culture and prevent serious industrial accidents by taking all necessary health and safety measures preemptively, while each of our business sites operates a situation room to respond to the COVID-19 situation. In order not only to respond to COVID-19 but also to build a safer working environment, we upgraded aging facilities and protective devices in the safety, firefighting, environment and health sectors, with an annual budget increase of 573% compared to the previous year. We are also strengthening our health and safety management system through the management's reinforced safety leadership, while also upgrading on-site safety management system by conducting comprehensive safety inspections in the first and second half of each year.

Strengthening Safety Leadership

Safety and Health Management System

In January 2022, Hyundai launched a general governance system for safety management by appointing a Chief Safety Officer (CSO, Vice President Dong Seock Lee). With the appointment of the CSO, it put the safety management organization under the direct control of the CEO while expanding the company's safety-related budget.

With the safety managers of our business units, we set safety and health priorities and action plans on the basis of regular discussions about health-related issues and risks between the employees and managers of different business units. Hyundai evaluates progress toward safety and health goals in meetings between the industrial health and safety department staff and the company's management and BOD at least once a quarter. In addition, we have established inspection and investigation procedures by industrial safety and health experts about work-related injuries, diseases, and accidents while establishing a company-wide safety and health management system. In order to establish an effective safety and health system, we conduct performance evaluations against industrial safety and health goals for those with safety-related responsibilities such as line managers, as well as the top executives.

Hyundai Motor Company Occupational Health & Safety Policy

Workplace Safety and Health Performance

- Recorded zero serious accidents at domestic business sites for 4 consecutive years (2017-2020)
- Protected employees' health and minimized production loss with preemptive response to COVID-19
  - Ran the COVID-19 Situation Room, established a rapid response system for production lines, and upgraded the access/visitor management system
  - Conducted preemptive quarantine and diagnostic tests in case of suspected infection and joined forces with health authorities to conduct prompt epidemiological investigations and quarantine activities in response to a confirmed case
  - Set thermal imaging cameras at entrances and dining halls and CCTVs on shuttle buses

Ratio of Workplaces Certified for Occupational Health and Safety Systems (ISO 45001, etc.)

2019	2020	2021	Goal for 2022
99%	100%	100%	100%

Preventing Serious Workplace Accidents

Hyundai strives to prevent serious industrial accidents by analyzing major types of work with a high risk of serious accidents and establishing appropriate safety management countermeasures and systems. During the past decade, jamming and vehicle crashes were the most frequent types of serious accidents at the company's domestic manufacturing plants, while irregular construction work on holidays had a higher rate of serious accidents than ordinary work on weekdays. In response, as a way to secure facility safety, Hyundai conducts regular mobile safety inspections based on NFC technology, manages its risks continuously, and manages risk factors thoroughly via the CCTVs installed in all its safety blind spots. We also have installed human body detection sensors and alarms to ensure pedestrian safety, thereby reducing the risk of accident due to workers' carelessness when operating vehicle-based loading and unloading machines such as forklifts. In addition, we have developed and applied safety management regulations for each stage from design to construction, bolstering the management of irregular construction work carried out during holidays.

Preventing Serious Accidents at Suppliers

In order to help our suppliers to improve their level of safety management, we support their safety training and run a reward system for suppliers with outstanding safety records in holiday work. To make sure of its suppliers' appropriate safety management, Hyundai has developed a supplier safety management system which enables it to assess potential suppliers' accident prevention capabilities in advance and select qualified suppliers in the first place. Hyundai has declared its commitment to safety management. Its management conducts on-site inspections on processes with risks of serious accidents. It continuously strives to prevent serious accidents by its suppliers. In 2022, it is planning to dispatch experts in safety diagnosis to its suppliers with records of serious accidents to share best practices of risk management with them.

Management of Leading Indicators for Industrial Accidents

In order to reduce the total number of accidents, Hyundai has introduced H-LWC (Hyundai-Lost Workday Case), a leading indicator for safety management, rather than the existing accident rate-centered indicators. As a result, it reduced the total number of accidents by 9% in 2021 compared to 2019. In addition, as H-LWC data can be used as analytical data to predict the occurrence of occupational accidents based on accumulated accident data, we have conducted a comprehensive analysis of the three major types of accidents (collision/falls/jamming) that occur at our workplaces and taken customized countermeasures, thereby reducing not only the total number of accidents but also the risks of serious accidents.

Assessment of the Safety and Health Management Level

Hyundai developed the H-SAT (Hyundai Safety Assessment Tool) in 2019, aimed at improving the level of health and safety management at all its domestic business sites, and since then it has been conducting health and safety assessment at all its domestic business sites. In terms of evaluation items, we have made the system more effective by continuously revising it to reflect new regulations in the safety, health, firefighting and environmental sectors, being strengthened every year, as well as the new obligations according to international trends. By aligning the evaluation results with the KPIs of our domestic business sites and structuring them to enhance the operability of on-site safety management, Hyundai has enhanced the safety leadership of our management and the effectiveness of on-site accident prevention efforts. In 2022, in order to encourage accident preventing activities for safer workplace to be activated, we will redirect the safety management evaluation system and KPIs management guides such as "intensification of disaster reduction targets by more than 5% year-on-year," "realization of new shutdown accident indicators," and "evaluation of leaders' safety and health responsibilities".

Composition of H-SAT

Areas	Management System Assessments	On-Site Workplace Inspections
Safety	Safety meetings by management, etc.	Robot protection devices, etc.
Health	Management of musculoskeletal diseases, etc.	Ventilation facilities, etc.
Firefighting	Emergency response systems, etc.	Fire-prone areas, etc.
Environment	Environmental facilities licensing, etc.	Air pollution prevention facilities, etc.

Comprehensive Emergency Response Drills

In order to maintain the ability to respond quickly in the event of an emergency, Hyundai conducts comprehensive emergency response drills semi-annually in each plant whose employees are obligated to participate in the drills. In 2021, we strived to minimize human and material damage due to COVID-19 by maintaining our employees' ability to respond to emergency through non-face-to-face training and information sharing. In 2022, with the COVID-19 regulations being eased, we will resume regular comprehensive emergency response drills so that our employees can perform their duties promptly in the event of emergency such as fire, explosion, earthquake, or environmental accidents, while also establishing training evaluation standards to continuously improve the level of its training programs and secure the effectiveness of drills.

Spreading the Culture of Health & Safety

Appling Safe Design Standards

Hyundai has established on-site safe design standards to induce employees to engage in safe behaviors while seeking to apply them gradually. In the second half of 2020, the company piloted safe design standards for on-site passageways, leading to effectiveness in reducing accidents thanks to their improved visibility. Since 2021, we have applied the standards to other factory improvements in addition to their application to loading docks. The company is planning to establish and apply standards for entry prohibition signs to high-risk areas such as automated guided vehicles (AGVs) and for material handling lift tables. We will make it mandatory to apply the safe design standards to new plants, which is expected to help reduce occupational accidents at those locations.

COVID-19 Response

Hyundai has operated the COVID-19 Situation Room 24/7 since the early days of the pandemic, making every effort to prevent the risk of infection at its domestic and international business sites. The Situation Room has been monitoring the status of confirmed cases in the company's workplaces and has taken emergency quarantine measures such as testing, isolation of contacts, and identification of symptomatic persons. In addition, we are doing our utmost to create a healthy environment throughout our workplaces by checking for fever on a one-to-one basis for both employees and visitors, implementing daily quarantine measures including the use of hand sanitizers and thermometers as well as operating thermal imaging cameras at its workplaces. Hyundai has also followed the government's quarantine guidelines, such as social distancing and remote working, taking business environment into consideration.

Preventing Musculoskeletal Disorders with New Technologies

Hyundai is piloting a wearable device that can prevent musculoskeletal disorders in field workers. CEX, a chair-type wearable robot, assists knee joints to help employees maintain a sitting posture, whereas VEX, a wearable robot in the form of a suit, is equipped with a multi-link muscle compensation device to prevent musculoskeletal disorders in employees who work long periods of time looking up and lifting their arms. Since the fourth quarter of 2020, we had field-tested 10 of wearable devices with 104 people working at 36 processes in seven domestic plants. Based on the test results, we identified such issues as the need to reflect physical diversity and lower the operational difficulty and weight of equipment. In 2021, we conducted additional tests and collaborated with Hyundai Rotem to address the technical issues involved in wearable devices and now we are accelerating the commercialization. Hyundai will continue conducting analyses of various types of equipment and data and make active investments and improvements to prevent worker's musculoskeletal disorders.

Safety and Health Training (Advanced Safety Training Curriculum)

Hyundai produced an "Advanced Safety Training Curriculum" so that all its employees can easily take safety and health training courses through an online platform. The online video training consists of 36 courses (6 intensive and 30 microlearning courses) dealing with safety rules, occupational accidents and serious accidents, among others. We have also produced VR safety education contents and built experiential training facilities so that our employees can gain more knowledge and experience about safety.

Safety and Health Training

Classification			Target	Training Hours
Mandatory safety training	New hire training		New hires (some 1,200 persons/year)	8 hours and more
	Special training		Those subject to special training (39 types)	16 hours and more
	Regular training	All employees	On-site employees (some 28,000 persons)	6 hours and more per quarter
		Supervisors	On-site supervisors (some 1,300 persons)	16 hours and more per year
	Training on operational changes		Workers other than daily workers whose duty is changed	2 hours and more
Competency/ specialized training	Specialized training		Productive maintenance/ logistics staff, senior staff, etc. (some 3,350 persons)	About 8 hours a day
	Competency-based training		Safety managers, safety promoters, etc. (some 400 persons)	Up to 2 nights and 3 days
Psychological safety counseling	Psychological counseling and training		Employees, employee families, suppliers, etc. (some 1,470 persons)	About 1 hour each

* Based on Ulsan Plantc

Safety and Health Activities by Business Site

Safety and Health Activities

To prevent serious accidents, Hyundai's domestic plants conduct site-oriented safety inspections and safety training. Notably, it strengthened safety supervision on construction during holidays where accidents occurred frequently and attained accident-free construction during holidays in 2021 while carrying out a total of 3,646 installation projects during the year. To prevent fire risks involved with the mass production of eco-friendly vehicles, we conducted related fire safety inspections in the second half of 2021. We identified 101 areas of improvement by inspecting not only production plants, but also research institutes, maintenance shops, and eco-friendly vehicle facilities, which was followed by the categorization into three groups – management improvement, physical improvement, and process improvement. Going forward, we will make sequential improvements according to the mass production stage involved.

Meanwhile, we have continued training related to occupational health and safety. Despite difficulties due to COVID-19, we conducted online education for supervisors and special safety training for all employees with specially produced training videos on the prevention of serious accidents. In 2021, Hyundai also developed a non-face-to-face mobile safety education system that can be actively used in a pandemic situation. In 2022, we are planning to pilot VR training content and VR Experience Center to raise awareness of occupational accidents in the most vivid way. Meanwhile, Hyundai has continued to promote a smoke-free clean factory campaign launched in 2016, including the installation of smoking booths and smoking bells inside plants, the operation of in-house smoking cessation clinics and external non-smoking camps, guidance in smoking areas, and the promotion of smoke-free clean factories. We also conduct inspections of work environment at all our workplaces twice a year to identify any harmful factors such as noise and hazardous chemicals in a bid to monitor and constantly improve our work environment.

Ulsan Plant

The Ulsan Plant has conducted competency/specialized training beyond legal requirements in addition to psychological safety counseling. It provides specialized 8-hour-a-day training in five areas such as productive maintenance and traffic safety to approximately 3,350 employees in the productive maintenance and logistics departments in addition to five job competency training courses including essence/advanced training for about 400 people including safety managers and safety promoters.

Asan Plant

In September 2021, the Asan Plant signed an MOU with 30 suppliers, the Cheonan branch of the Ministry of Employment and Labor, and the Chungnam Headquarters of the Korea Occupational Safety and Health Agency to create an industrial accident-free automobile parts manufacturing industry. In order to eradicate industrial accidents, the Asan Plant provided safety diagnosis consulting services for its suppliers and held a seminar on preventing industrial accidents in the parts manufacturing industry in December 2021 and shared the results of its safety inspections.

Jeonju Plant

In the first half of 2021, the Jeonju Plant conducted a special safety inspection in preparation for the thawing period. It identified on-site risk factors such as cracks in external walls or oil barriers during the thawing period while taking improvement measures such as cleaning drains and repairing road asphalt immediately.

Investigation procedures and step-by-step actions in case of a safety accident

Step	Secure a Statement	Process Confirmation	Photo Shoot	Cause Analysis	Take Measures
Action	Securing the statement of the first eyewitness	Check the process and listen to the cause of the accident	Entire process and accident reenactment photography	Root cause analysis of accidents	Apply the most appropriate countermeasure after establishing several countermeasures

* Behavioral instructions for an accident investigation: In the event of an accident, follow the steps above and do not omit a step or rush through the steps

** Prevent missing information by conducting an accident investigation that is based on the "5 Ws and 1 H", and start from large causes and then move onto small causes (top down approach)

Human Rights Management

Hyundai supports and complies with international human rights and labor standards and guidelines, such as the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, the Core Conventions of the International Labor Organization, and the OECD Due Diligence Guidance. It fulfills its social responsibilities through human rights management across its business while communicating and striving for human rights not only for its employees, but also for its stakeholders such as business partners and customers. Based on these efforts, we have enacted the Human Rights Charter and disclose our human rights risk assessment and human rights management implementation status in a bid to protect and promote the human rights of our employees and stakeholders.

Introduction of Human Rights Management

Human Rights Charter

Hyundai amended its Human Rights Charter in June 2021 to actively implement human rights management by preventing human rights violations and mitigating related risks in its business operations. The amended version contains Hyundai's commitments to preventing forced labor or child labor, respecting freedom of association and collective bargaining rights, and prohibiting discrimination. The Charter applies to all employees (including part-time workers) of Hyundai at all our domestic and overseas manufacturing plants and sales companies, subsidiaries and sub-subsidiaries, and joint ventures. Hyundai employees follow the Charter when dealing with suppliers and sales/service organizations while all its stakeholders in business relationships are encouraged to respect the Charter as well.

Hyundai strictly prohibits discrimination and workplace harassment under Articles 1 and 2 of its Human Rights Charter, and responds to confirmed violations according to the principle of zero tolerance. In addition, we conduct diversity education for all employees assigned to overseas posts and include it in basic training for team leaders and onboarding courses for those appointed as heads of overseas subsidiaries. We also run various training programs designed to raise our employees' awareness of diversity, such as cross-cultural seminars and team dynamics workshops.

Hyundai Motor Company Human Rights Charter

Promoting Human Rights

In order to expand human rights management to all stakeholders including employees, Hyundai is diversifying its human rights curricula and accelerating the expansion of the cause. To promote employee understanding and awareness of human rights, we conduct human rights management training in addition to the sexual harassment prevention education that is mandatory by law. Through the training, we reveal our human rights management directions and action plans while encouraging our employees to report risks of human rights violations found in their workplaces.

We share information on our Human Rights Charter and action plans, human rights risk assessment procedures and results, etc. not only within the company, but also with our suppliers, sales and service organizations, and other business partners. Our Human Charter is available at our corporate website for everyone, and our employees can access to the company's human rights policies and other related information through the intranet (HR Lounge).

Policy on Prohibition of Discrimination and Harassment

In June 2022, Hyundai enacted the Hyundai Motor Company Policy on Prohibition of Discrimination and Harassment to prevent discrimination and harassment while conducting business and ensure that all its employees receive equal treatment without discrimination at all times.

Non-Discrimination & Anti-Harassment Policy

Management Principles for Discrimination and Harassment Risk

(Reporting) Hyundai has established a reporting channel available 24/7 to eliminate discrimination and harassment and ensures the whistleblower confidentiality all the way from reporting to investigation and disciplinary actions.

(Training and diffusion) Hyundai aims to establish an organizational culture based on mutual respect and dignity by providing its employees with education on discrimination and harassment. Through the education, the company promotes a culture of mutual respect among employees and enables them to follow established procedures to deal with any occurrence of a violation.

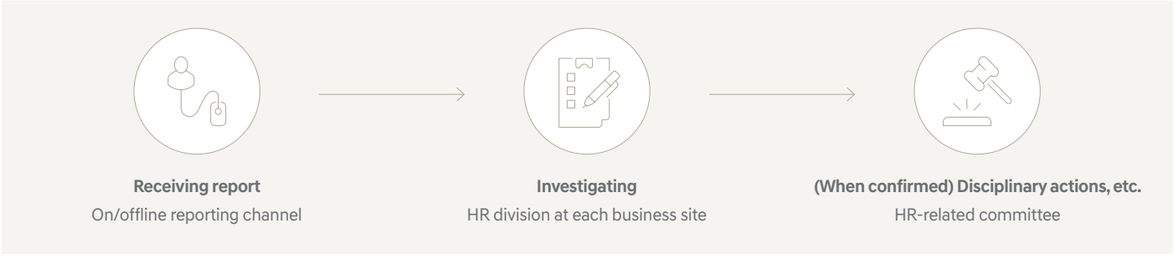
(Principle of zero tolerance) Hyundai addresses acts of discrimination or harassment with the principle of zero tolerance lest any such incident reoccurs.

(Corrective and disciplinary action) Hyundai takes appropriate corrective and disciplinary actions for any kind of discrimination, harassment, or other unlawful infringement in its workplaces, depending on the severity of the situation involved.

Measures to Mitigate Discrimination and Harassment Risk

Hyundai manages risks of discrimination and harassment through its management processes. It conducts incident investigations received through its reporting channels, while constantly ensuring that no discrimination or harassment incidents occur.

Discrimination and Harassment Management Processes



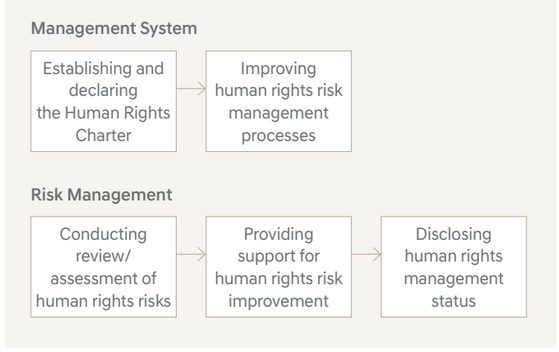
Human Rights Management System

Selecting Human Rights Risk Assessment Targets

Human Rights Risk Assessment Targets

Hyundai has selected its employees as well as its suppliers and joint ventures as targets of human rights risk assessment, developed indexes and conducted diagnosis about its major human rights violation risks during business activities.

Human Rights Risk Management Process



Human Rights Risk Assessment (Diagnosis and Due Diligence)

In order to proactively identify and prevent negative human rights impacts, Hyundai operates a human rights risk assessment process for its employees and suppliers. According to the process, we diagnose in advance of possible risk factors in our business operations, supply chain activities, and new business relationships (joint ventures). Through the preliminary diagnosis, forced labor, child labor, freedom of association, qualification for collective bargaining, and discrimination were recognized as major risk factors, and employees, women, children, indigenous people, migrant workers, and local communities were selected as the subjects to the human rights risk assessment.

We also conducted human rights risk assessments at our overseas business sites in North America, Latin America, Europe, India, and China in addition to business sites in Korea. As a result, some potential risks, such as lack of awareness of the Human Rights Charter at two of 16 overseas branches, were identified. In response, we are planning to distribute the Group Human Rights Charter to overseas business sites to help employees increase the importance and understanding of employee human right protection.

Going forward, we will make continuous efforts to advance risk management processes, such as discovering potential human rights risks, expanding human rights risk assessment targets, elaborating diagnosis process of human rights risks and due diligence, thereby preventing negative human rights impact occurring among our employees and supply chains.

Preliminary Diagnostics of Human Rights Risk and Major Risks Identified

Human Rights Issues	Targets of Human Rights Risk Assessments					
	Employees	Women	Children	Immigrant and Contract Workers	Suppliers	Local ommunities
Work environments (including emotional labor, discrimination, freedom of association, etc.)	Low Risks	Low Risks	Low Risks	Low Risks	Potential Risks	Low Risks
Work conditions (including hours, pay, and child and forced labor, etc.)	Low Risks	Low Risks	Low Risks	Low Risks	Potential Risks	Low Risks
Health and safety (including workplace safety facilities, wearing safety equipment, etc.)	Low Risks	Low Risks	Low Risks	Low Risks	Potential Risks	Low Risks
Business impacts (environmental and social impacts on places near businesses)	Low Risks	Low Risks	Low Risks	Low Risks	Potential Risks	Low Risks
Conflict minerals (concerns about raw materials when procuring raw materials)	Low Risks	Potential Risks	Potential Risks	Low Risks	Potential Risks	Low Risks

Human Rights Risk Assessment Results and Improvement Measures

Hyundai will pay attention to areas identified through the risk assessment as "potential risk" and will strive to improve them. As part of the efforts, having recognized that there was a lack of awareness-raising activities related to human rights among its employees, Hyundai has taken various improvement measures. They include the dissemination of the Human Rights Charter among its employees through the intranet and the issue of English-language pay stubs to non-Korean staff so they can understand them clearly.

We have also conducted online ESG education (Korean/English) for employees at domestic business sites to raise their awareness of ESG and increase their understanding of the definition and importance of human rights management, as well as the Human Rights Charter.

Online Human Rights Violation Prevention Course

Results of Human Rights Risk Assessment

	Unit	2021
Hyundai business sites	Ratio of business sites where human rights impact assessment was conducted	90.4%
	Ratio of business sites with risks	8.3%
	Ratio of mitigation/improvement measures taken	100%
Tier-1 suppliers	Ratio of business sites where human rights impact assessment was conducted	20%
	Ratio of business sites with risks	5%
	Ratio of mitigation/improvement measures taken	100%

Online Human Rights Violation Prevention Course

Composed of a total of five episodes, the online course includes the materiality and trends of ESG and key ESG agenda by module – ethics, human rights, safety, and environment. To make the content easier to understand, it contains plenty of infographics, expert interviews, and case studies.

Major Efforts to Mitigate Human Rights Risks

ESG education	Activity: Developing ESG education programs for employees Key contents – Education about major ESG topics (environment/safety/ ethics/human rights) – Education offered to 22,000 staff in general/research/ legal positions, etc. (completion rate: 90.1%)
English pay stubs	Activity: Providing pay stubs in English to foreign nationals Key contents – English description of wages, allowances, etc. – English version of the payroll inquiry system
Amendment & distribution of the Human Rights Charter	Activity: Upgrading the Charter to the global standards Key contents – Amendment of the Charter in June 2021 – Headway in human rights risk diagnosis and management systems

Suppliers

Win-win Growth

For Hyundai to secure quality competitiveness and differentiated value, it is essential for its suppliers to have improved parts technology. We have therefore established a win-win growth system to help our suppliers to achieve stable and sustainable growth. In 2021, we continued to take various measures for win-win growth, such as running the Quality and Technology School, operating financial support programs, and offering education on cutting-edge technologies. Going forward, Hyundai will lead the way in promoting win-win growth with its suppliers and lay a foundation to stand tall in the global market.

Supporting Win-win Growth and Management Stability

Expanding a Culture of Win-win Growth

Fair-Trade Agreement

As part of its efforts to create a culture of win-win growth, Hyundai enters into a "fair trade agreement" with its suppliers every year. Since signing the first agreement in 2008, we have concluded the 13th agreement with our suppliers in 2021 on various issues such as adjustments according to the rise in raw material prices, funding programs, four major measures about subcontracting, and strengthening support for tier-2 and tier-3 suppliers.

Transparent Purchase Practices Center

Providing suppliers with guidelines on ethical conduct is important for Hyundai and its suppliers to establish a fair and transparent win-win partnership. To this end, Hyundai operates the Transparent Purchase Practices Center on the Hyundai Motor Group's win-win growth website while operating a suggestion box for transparency and ethical practices so that its suppliers can voice their difficulties and propose various system improvements. We operate a suggestion box for tier-2 and tier-3 suppliers as a way to establish fair trade practices and strengthen transparency throughout supply chain.

Awarding Suppliers' Win-win Growth Efforts

Hyundai has been striving to promote the culture of win-win growth by examining and rewarding its suppliers' win-win growth performance since 2009 in the areas of payment terms and durable quality between tier-1 and tier-2 suppliers. In 2021, we held the "R&D Supplier Tech Day" to reward outstanding R&D suppliers as prominent partners in win-win growth.

Foundation of Korea Automotive Parts Industry Promotion

In 2002, Hyundai partnered with Kia and Hyundai MOBIS and launched the Foundation of Korea Automotive Parts Industry Promotion to strengthen its suppliers' capabilities. Hyundai has invested about KRW 6 billion a year in the Foundation, contributing to the overall improvement of its suppliers' quality, technology, and management. It has also dispatched the Quality and Technology Volunteer Group and the Supplier Assistance Group specialized in quality/technology/management consulting to enable its suppliers to improve their parts quality, technology, and management capabilities.

Supporting Joint Entry into Overseas Markets

Through the expansion of its overseas production, Hyundai contributes to increasing exports not only by its tier-1 suppliers with which it has direct relationships but also by tier-2 and tier-3 suppliers. We continue to seek win-win growth with suppliers overseas as well through various programs so that our global expansion can lead to more opportunities for them. We have entered the overseas markets together with a total of 749 suppliers (349 tier-1 suppliers and 400 tier-2 suppliers). In addition, our quality assurance provided supplies with opportunities to expand orders they receive from other car manufacturers. Hyundai has also enabled talents from suppliers to work overseas.

Four Major Criteria for Subcontracts

- Advisable conclusion of contracts
- New supplier registration and management
- Operations of the Internal Subcontract Deliberation Committee
- Advisable document issuance and preservation

Transparent and Ethical Practice Suggestion Box

- Operating a channel through which anyone can anonymously propose system improvements or report violations of the principles of transparency and ethics on the website of the Transparent Purchase Practice Center

Financial Support for Business Stability

Together with Kia, Hyundai pays its suppliers early to relieve financial difficulties on Lunar New Year and Korean Thanksgiving. To encourage its suppliers to pay tier-2 and tier-3 suppliers early, Hyundai reflects their performance in the evaluation of suppliers. In addition, we help suppliers strengthen their foundation for business stability through various financial support programs such as Win-Win Growth Cooperation Loan, Future Growth Mutual Fund, Future Growth Win-Win Fund, Win-win Mold Equipment Fund, and Dedicated Loan for Tier-2 and Tier-3 Suppliers. Notably, Hyundai has operated a new financial support program for its suppliers since 2020 by raising funds at the Group level for low-credit SME supplies suffering from the COVID-19 crisis. Also, we help suppliers relieve the burden of rising raw material prices such as steel plates, aluminum, and precious metals by reflecting the price fluctuations in the payment to the suppliers so that they can continue to supply high-quality parts.

Funding programs	Size (KRW billion)	Deposit (KRW billion)
Win-Win Growth Cooperation Loan (to overcome COVID-19 crisis)	238.0	68.0
Future Growth Mutual Fund	93.5	37.4
Future Growth Win-Win Fund	150.0	100.0
Win-win Mold Equipment Fund	75.0	50.0
Dedicated Loan for Tier-2 and Tier-3 Suppliers	72.3	72.3

Supporting Suppliers' Capacity Building

Hyundai pursues win-win growth with its suppliers through various supplier competency enhancement programs. To ramp up its suppliers' competitiveness, we help them build smart factories. We also offer consulting and facility investment support, enabling them to digitize process data; reduce lead times, defect rates and disposal costs; and increase timely delivery and sales revenues.

In the area of the support for smart factory construction, Hyundai Motor Group contributed a total of KRW 24 billion from August 2015 to 2021 for high-tech intelligent factories that connect all processes from product planning to sales with ICT for approximately 1,100 SME suppliers. Hyundai also supports supplier participation in domestic and foreign auto parts exhibitions while matching them with overseas buyers through its supplier export marketing support program. In Korea, we support the cost of renting booths and consulting rooms at the Korea Automotive Industry Exhibitions as well as arranging one-to-one matching sessions. For overseas exhibitions, we pay all supplier expenses such as airfare and accommodation as well as registration fees.

The Supplier Recruitment Fair, which started in 2012, has supported suppliers having difficulties in securing talent while contributing to relieving the youth unemployment problem. The 2021 fair was participated by 287 suppliers including tier-2 and tier-3 suppliers. In addition, Hyundai helps its suppliers minimize their manpower shortage by operating an online recruitment support system dedicated to them year-round.

Joint Entry into Overseas Markets with Suppliers

Nurturing Suppliers' Competitiveness and Strengthening Networks

Reinforcing Training for Suppliers through the GPC

We opened the Global Partnership Center (GPC) in June 2020 to establish a virtuous cycle in which Hyundai Motor Group and our suppliers can grow together by helping them enhance their competencies and competitiveness in the world's automotive industry. In addition to providing training programs targeting tier-1 and tier-2 suppliers, the Center provides training facilities and instructors to suppliers in need of their own training.

The Center offers 18 tracks and some 450 training programs in five categories – future competitiveness, leadership, basic job training, global competency, and industry expert training – for its tier-1 and tier-2 suppliers.

GPC Education Goals

Training Support for Suppliers (2021)

Classification		No. of participants in 2021	Remarks
Foundation of Korea Automotive Parts Industry Promotion	Quality and Technology School	2,604	22 customized training courses
	General training, etc.	7,033	General training, on-site training, etc.
Global Partnership Center	Training by industry, etc.	59,837	454 courses
Total		69,474	

* Training programs targeting all suppliers to foster their competitiveness

Improving Quality/Technology of Tier-2 and Tier-3 Suppliers

Improving the quality and technology levels of tier-2 and tier-3 suppliers, who supply auto components to tier-1 suppliers is also a key factor in improving the quality of finished vehicles. To help improve their quality, technology and productivity as a way to enhance their global competitiveness, Hyundai dispatches its experts and transfers its expertise and know-how free of charge.

Technical Training (Quality and Technology)

Composition	Technical experts in various production areas
Duration & Frequency	Annually from 3 to 12 months, providing guidance on shortcoming related to manufacturing technologies free of charge
Areas	Cutting and processing, presses, heat treatments, welding, metal plating, forging, aluminum casting, PL injection, rubber, painting, electrical & electronics, IT, safety

Management Consulting (Supplier Support Group)

Composition	Professionals with experience in the automobile industry as senior executives
Duration & Frequency	Annually from 3 to 12 months, providing consultation regarding overall management free of charge
Areas	R&D, production, production technology, quality, logistics, cost, management support

Building Long-term Cooperation System

Win-win growth with suppliers is the source of competitiveness for finished vehicles. Hyundai therefore pursues win-win growth with tier-1 suppliers that supplies parts to it directly, tier-2 suppliers that supply parts to tier-1 suppliers, and general suppliers that deliver general products. The Win-Win Cooperation & Safety Promotion Team takes the lead in promoting win-win cooperation with the company's suppliers.

Hyundai is contributing to enhancing the competitiveness of the domestic auto parts industry by supporting its suppliers in the areas of finance, training, and welfare. Through a long-term cooperation system, we actively support them not only in production technologies but also in R&D efforts.

Average trading periods	Average trading periods with Hyundai/Kia: 34 years (the average lifespan of small and medium-sized Korean manufacturers: 12.3 years)
Growth in corporate size	Sales volume increased by 4.4 times. (2001-2021)[1)]
Joint entries into overseas markets	749 suppliers have entered overseas markets with Hyundai

[1)] Targets of analysis: Tier-1 parts suppliers (excluding affiliates and non-parts suppliers with less than 10% of dependence)

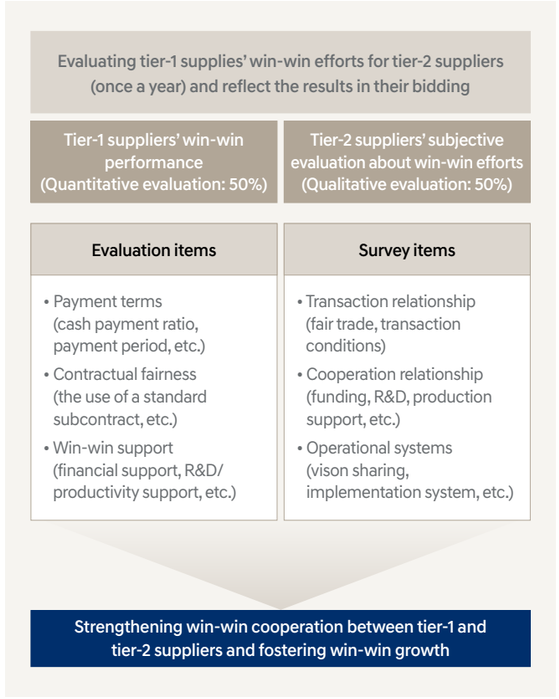
5-Star System for Win-win Cooperation

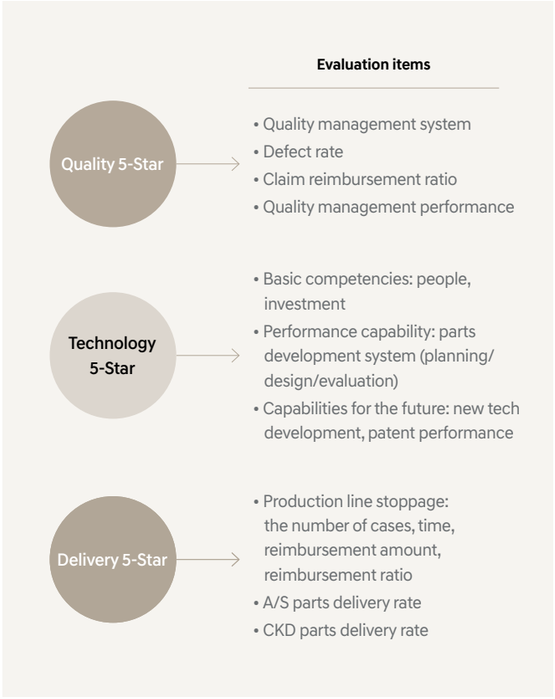
Hyundai launched the 5-Star Win-win Cooperation System in 2019 to promote compliance with fair trade and strengthen win-win cooperation in transactions between tier-1 and tier-2 suppliers. This system evaluates the efforts of tier-1 suppliers for win-win cooperation with tier-2 suppliers once a year and assigns grades to them, with the evaluation results reflected in the evaluation of their new car bids. Outstanding suppliers are rewarded with win-win cooperation awards.

5-star System (Quality/Technology/Delivery)

Hyundai runs a five-star system to quantitatively evaluate suppliers' quality, technology, and delivery level, helping to ramp up their competitiveness. We also disclose evaluation results to offer incentives to outstanding suppliers and reinforce their motivation for improvement. The system not only improves the quality and technical competitiveness of Hyundai and its suppliers but also reduces their quality control costs while helping suppliers secure independent export capabilities.

Win-Win Cooperation 5-Star Evaluation Process





R&D Technical Support

R&D technical support is a key win-win growth program whereby Hyundai shares its R&D know-how with its suppliers and helps them to meet their technological needs. The system enables the suppliers to lay the groundwork for the production of high-quality products by improving their R&D capabilities and empowering them to make technological upgrades on their own. In addition, we seek to improve supplies' approach to quality through training on past cases and function/design concepts while collecting and reflecting their improvement ideas during technical support process as part of our constant efforts to enhance communication and cooperation with them.

Guest Engineer Program

Hyundai operates a guest engineer program in which supplier engineers stay in its research center to participate in parts design and performance development for a certain period of time while it develops new vehicles. In 2021, a total of 31 suppliers dispatched an average of 440 engineers per month to Hyundai. Guest engineers learn about our product development know-how in the process of R&D collaboration for the design of new car parts and performance development. When they return to their companies, they play a key role in improving the company's technological prowess and increasing their development efficiency.

Building Smart Factories

A smart factory is an intelligent factory that integrates the entire production process of products with information and communications technology (ICT) to produce customized products that is cost effective and takes less time. To help suppliers build smart factories, Hyundai supports them in such areas as initial, intermediate, and final product inspection system; a lot tracking and management system; an error-proof system for their parts manufacturing plants; and digitizing their manufacturing processes.

We supported 450 companies from 2015 to 2018 to help them build smart factories. Since 2019, we have contributed KRW 5 billion every year to support about 650 companies. For the past three years, we have upgraded the program by increasing the amount of support from KRW 20 million to a maximum of KRW 100 million for each company. In 2022, we will continue to support suppliers through a separate assistance plan. Going forward, Hyundai will continue to offer its suppliers consulting services and facility investment to reduce inefficiencies in the production process, such as lead time and defect rate, while digitizing its process data to increase sales as a result.

Sharing Technology Patents

Technology sharing with suppliers is essential for Hyundai's product technology improvement and commercialization. Accordingly, Hyundai operates a free patent provision program to provide or transfer its patents to the suppliers free of charge as required by the suppliers. Patent rights are provided free of charge as follows: Hyundai shares the list of patent rights with its suppliers monthly, suppliers make application for patent rights transfer, and Hyundai offers them patent rights following reviews based on its on-site investigations and consultations. In particular, supplier applications of the transferred patent rights are shared at New Technology Exhibitions participated by Hyundai's R&D cooperation suppliers. We also contribute to improving suppliers' technological competitiveness by promoting the commercialization of the technologies transferred by Hyundai at free of charge and strengthening the win-win cooperation system.

Supply Chain ESG

Hyundai's supply chain management strategy prioritizes its supplier's quality, technologies, supply stability, compliance programs, and eco-friendly production systems. Based on the strategy, we evaluate and manage ESG risks that may occur in our supply chain, while offering suppliers training and other support to prevent risks in advance, aimed at building a sustainable supply chain. We operate an ESG evaluation process for suppliers to diagnose and resolve risks related to ethics, environment, labor, human rights, safety, and health that may arise in the process of procuring auto parts and raw and subsidiary materials while asking high-risk suppliers to establish improvement plans and take improvement measures. We also help suppliers strengthen their ESG capabilities so that they may secure sustainable competitiveness on the global stage.

Promoting Supply Chain ESG

Supplier Code of Conduct

Hyundai presents the "Supplier Code of Conduct" as ESG standards that all its suppliers must comply with. The Code includes the purpose of the code, the target of application, and supplier responsibilities and roles, while presenting compliance standards in major areas of ESG such as ethics, environment, labor, human rights, safety, health, and management systems. By complying with the provisions of the Code for business decision-making and business operations, Hyundai suppliers are expected to establish a stable business relationship with it and grow into a company that is widely respected, thereby strengthening sustainability.

Hyundai Motor Company Supplier Code of Conduct

Current Status of Hyundai Suppliers

Hyundai is trading parts with about 1,860 tier-1 suppliers worldwide, who produce parts for Hyundai not only in regions where the company runs its plants (Korea, USA, China, Europe, India, Latin America, Southeast Asia, etc.) but also in other regions. We manage the following as key suppliers – those that supply core technology parts (hydrogen fuel cell parts, battery parts, control parts, etc.) or require intensive management due to their superior technological prowess or the special characters of their parts (replaceability, etc.). As of 2021, 62 tier-1 companies and 20 tier-2 companies fall under this category. We include these suppliers in the priority group in terms of supply chain ESG as well.

Responsible Mineral Management

Responsible Minerals Management Policy

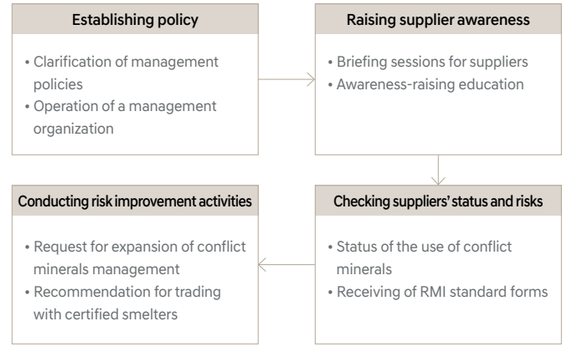
Hyundai has established a conflict minerals management system to prohibit the use of conflict minerals unethically mined in conflict zones. In accordance with the policy stipulated in the Conflict (Responsible) Minerals Report, Hyundai clearly states to inspect whether socio-environmental issues, such as human rights violations, ethical violations, and negative environmental impacts, occur when its parts contain conflict minerals (tin, tungsten, tantalum, gold) and strives to prevent the inclusion of such minerals. To minimize human rights violations and environmental destruction, it is crucial for Hyundai to establish a responsible supply chain management system and urge its suppliers to participate in it. We make every effort possible to fulfill responsibilities as a global company by actively participating in responsible minerals management for a sustainable future.

Complying with relevant laws and requirements, Hyundai continuously improves its responsible minerals management system. Hyundai's conflict minerals (responsible minerals) policy is based on the OECD Due Diligence Guidance, the U.S. SEC's requirements for companies in accordance with the Dodd-Frank Act, and the EU's Conflict Minerals Regulations so that it can continue to conduct ethical and responsible management of conflict minerals and cobalt.

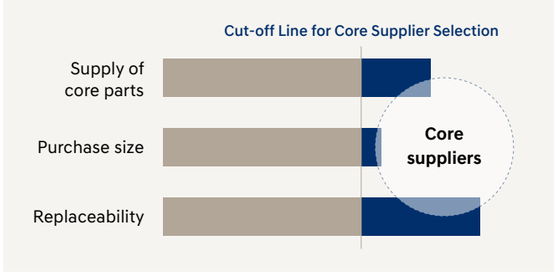
Hyundai Motor Company Conflict Minerals Report

Conflict (Responsible) Minerals Management Process

Based on responsible and clear-cut policies, Hyundai runs a management process in line with the CMRT/CRT (Conflict Minerals Reporting/Cobalt Reporting Template), a standard format provided by the RMI (Responsible Mineral Initiative), and supports the OECD Due Diligence Guidance. Going forward, we will maintain a transparent and stable supply chain management system by making continuous efforts to ensure that our suppliers do business with smelters certified by the Responsible Minerals Assurance Process (RMAP).



Standards to Select Core Suppliers



Status of Supply Chain

Classification	Detailed Classification	Number of Companies	Percentage of purchases
Tier 1 suppliers	Parts suppliers	1,860	100
	– Domestic	380	59
	– Overseas	1,480	41
	Core suppliers	62	65
Tier 2 suppliers	Core suppliers	20	-

Raising supplier awareness	Hyundai implements responsible minerals management policies, and urges its suppliers to comply with them. To this end we offer briefings/trainings to introduce responsible minerals procurement policies and raise awareness of suppliers. The Global Win-Win Cooperation Center is operating regular training courses for suppliers about our minerals management for suppliers according to the annual conflict minerals management plan, regulatory trends about conflict minerals, the introduction of RMI standard forms and the investigation plan, and the need to expand transactions with RMAP-certified smelters in a bid to raise awareness of the conflict minerals management.
Checking suppliers' status and risks	Hyundai requests CMRT/CRT data from its suppliers and conducts necessary monitoring continuously regarding their use of illegal or unethically mined/distributed 3TG (tin, tantalum, tungsten, gold) conflict minerals and cobalt from conflict zones in 10 African countries (Democratic Republic of Congo, Rwanda, Burundi, Sudan, Angola, Uganda, Zambia, Central African Republic, Congo, Tanzania). It also checks the status of RMAP transactions based on CMRT/CRT data submitted by its suppliers.
Conducting risk improvement activities	Hyundai provides training to alleviate conflict minerals risks in its supply chain and to raise supplier awareness. We have also enacted the "Conflict (Responsible) Minerals Report" and the "Supplier Code of Conduct". We work together with suppliers to minimize negative impacts on society and the environment by human rights violations and environmental destruction, which may occur during the mineral extraction process. It establishes an annual conflict minerals management plan to monitor the use of conflict minerals and smelters, recommending that all suppliers trade with RMAP-certified smelters. Further, Hyundai continuously strives to expand the implementation of its mineral purchasing policies by its suppliers' supply chains as well.

Supply Chain ESG Evaluation System

Supplier Risk Diagnostic Indicators

Hyundai has run a 5-star evaluation system (quality/technology/delivery/win-win cooperation) to secure the desired quality and safety of products and services and bolster fair trade and win-win cooperation between parts companies (tier1, tier-2, etc.), accumulating plenty of know-how in supply chain management.

Meanwhile, in relation to the supply chain ESG, Hyundai operates an ESG evaluation system to diagnose and resolve ESG risks that exist in its supply chain so that it can operate a sustainable supply chain beyond the existing concept of CSR. To this end, it has developed supplier ESG evaluation indicators for major ESG issues such as ethics, environment, labor, human rights, safety, health, and management system, based on domestic and foreign laws and regulations, the OECD Due Diligence Guidance, the Responsible Business Alliance, and major initiatives in the automotive industry (Drive Sustainability, etc.) to achieve more accurate supply chain ESG diagnosis and make necessary improvements.

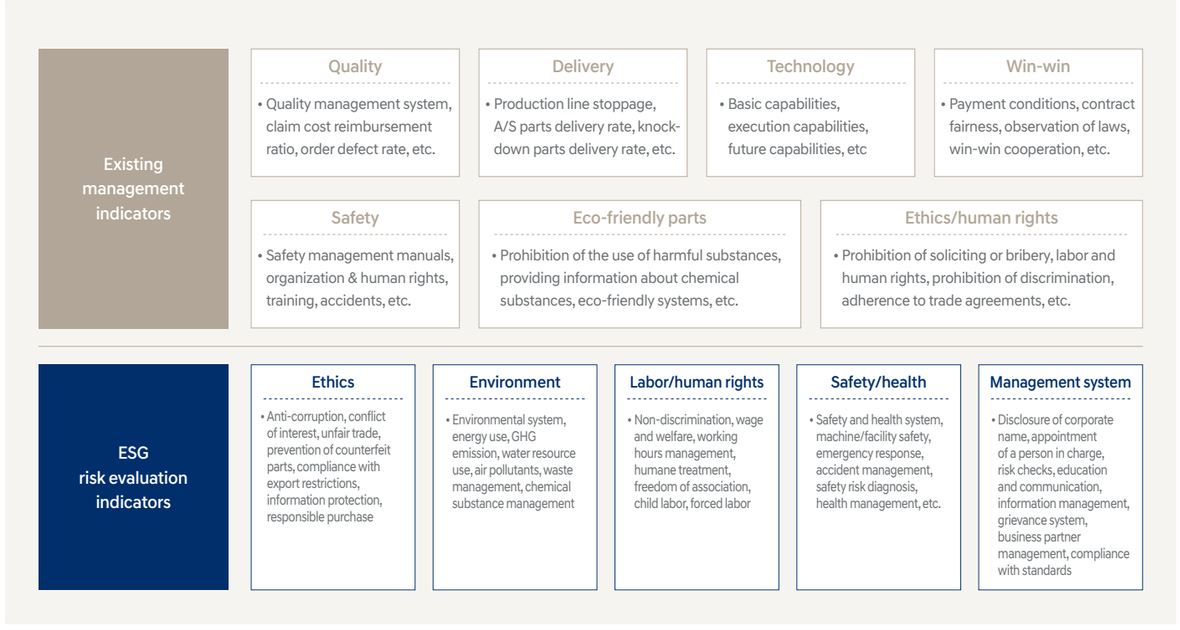
Written assessment

Hyundai conducts ESG risk assessments for its tier-1 and tier-2 core suppliers who must respond to each evaluation index and submit related evidence (data, content, etc.). The information entered by suppliers serves as basic data for identifying supplier ESG risks and classifying/managing high-risk suppliers.

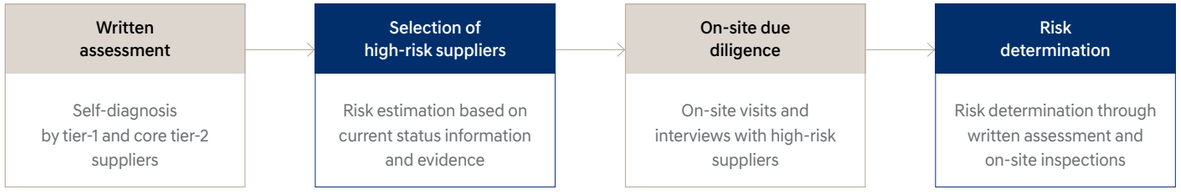
On-site Inspection of High-Risk Suppliers Risks

Following the analysis of assessment results, Hyundai and a third party (evaluation agency) visit the sites of the suppliers with high or potential ESG risks to verify the assessment results. In addition to on-site due diligence, the visit also serves to identify risks that could not be identified through written assessment. In addition, when visiting the site, the evaluation agency provides a consulting service to suppliers by suggesting improvement directions appropriate to supplier situations.

Composition of Supplier Risk Diagnostic Indicators



Diagnosis and Due Diligence Process for Suppliers' Risks



Results of Supplier Risk Assessment in 2021

	Classification	No. of companies	Remarks
Written assessment	Tier-1 suppliers	380	-
	Core tier-1 suppliers	62	-
	Core tier-2 suppliers	20	-
Selection of high-risk suppliers	Tier-1 suppliers	10	2.6% of those subject to written assessment
	Core tier-1 suppliers	10	16% of those subject to written assessment
	Core tier-2 suppliers	0	-
On-site due diligence	Suppliers subject to on-site due diligence	10	All high-risk suppliers
Improvement measures by high-risk suppliers	Suppliers that established improvement plans and completed the implementation	19[1)]	All high-risk suppliers

[1)] Including 10 high-risk suppliers from ESG risk assessment and 9 high-risk suppliers from safety risk inspection other than ESG risk assessment

Risk Determination and Improvement

Hyundai conducts on-site due diligence on core suppliers and high-risk suppliers identified through the supplier ESG evaluation. For high risks, we demand the establishment of improvement plans and their immediate implementation. Hyundai continuously strengthens monitoring of supply chain ESG risks by expanding the number of suppliers subject to ESG evaluation and on-site due diligence. Furthermore, the 5-Star Win-win Cooperation System launched in 2019 has been conducting tier-1 suppliers' risk assessment every year, and its result has been reflected in the supplier selection process.

Helping High-risk Suppliers Make Improvement

Hyundai helps suppliers better manage ESG risks based on the diagnostic results in the areas of safety, health, and environment, where suppliers might be particularly vulnerable, in addition to ESG risk assessment outcomes. To strengthen supplier performance in the safety and health management, we conduct thorough inspection with in-house safety and health experts for vulnerable suppliers, distribute safety and health management guides, share the best practices with them, and hold seminars on the latest trends in safety and health. In addition, to prevent environmental risks that its suppliers may face in the course of business operations, we support them in terms of the prohibition of the use of hazardous substances in the production process and parts and the registration of hazardous substances with the International Material Data System (IMDS).

Support for Field Trips to Outstanding Suppliers in Safety and Health

After identifying outstanding suppliers in safety and health management, Hyundai has conducted field trips to their workplaces with the supplier's safety executives and officers. We have provided them with an opportunity to apply the best practices based on their improvement directions established according to their unique circumstances.

Distribution of Safety and Health Management Guides and Best Practices to Suppliers

Hyundai distributes safety and health guides to its suppliers to help them equip themselves with a safety and health system that can prevent them from suffering occupational accidents while conducting online training with health and safety contents customized for supplier employees.

Safety and Health Improvement Process for Suppliers

Pre-preparation for on-site inspection of suppliers
Preliminary identification of safety and health level

→ **Externally-commissioned inspections**
The lowest 50 suppliers in the preliminary identification

→ **Joint inspection by Hyundai's purchase/safety organizations**
The lowest 30 suppliers in the preliminary identification

→ **Remedial action and monitoring**
Additional on-site evaluation of suppliers with insufficient improvement records

Sustainability Improvement Goals for Supply Chain

Hyundai's supply chain management strategy prioritizes the establishment of the suppliers' criteria for quality, technology, supply stability, fair trade compliance, and an eco-friendly production system. Based on the criteria, we have established and manage goals for supplier safety and health, environmental management, and ESG risk assessment with an aim to improve ESG capabilities of the supply chain.

First of all, we help them to acquire certification from the safety and health management system (ISO 45001, formerly OHSAS 18001) and the environmental management system (ISO 14001, etc.) so that they can systematically manage fires, explosions, occupational accidents, spills of pollutants, damage to natural capital, etc. In addition, we distribute various safety and environmental guidelines to suppliers so that they can manage their own safety and environment. We also conduct safety and environmental inspections based on the guidelines to supervise the implementation status of their safety and environment management plans. For suppliers that have caused serious occupational accidents or environmental disasters in spite of these efforts, we impose penalties when renegotiating with them. Those whose business relationship has been suspended are allowed to resume business with Hyundai only after obtaining safety/environmental certification.

In addition, we conduct ESG risk assessments for suppliers every year to manage ESG risks that may arise from suppliers in the fields of ethics, environment, labor/human rights, and safety/health. Starting from 2022, we have expanded our evaluation target to all tier-1 suppliers, paving the way for supplier ESG evaluation to play a bigger role in addressing ESG risks involved in supply chain.

Supply Chain Sustainability Goals

Classification	Performance			Goal
	2019	2020	2021	
Acquisition of the certification for environmental management system by tier-1 suppliers	87%	91%	92%	100% by 2024
Expansion of tier1 suppliers ESG risk assessment range	-	20%	20%	100% by 2024
Support safety device installation to prevent suppliers' accident	-	-	New project	100% by 2024

Top 5 priorities in supply chain management strategies

Quality competitiveness
- Delivery defect rate
- Claim reimbursement ratio
- Quality management
- On-site evaluation of manufacturing processes
- Outsourcing management

Technological competitiveness
- Basic competencies
- Performance competencies
- Capabilities for the future
- Reliability testing capabilities
- S/W verification capabilities

Supply stability
- Smooth supply of parts (prevention of production line stoppage)
- A/S parts delivery rate
- KD parts delivery rate

Fair trade
- Payment terms
- Contractual fairness
- Compliance efforts
- Win-win cooperation (support for win-win growth)

Eco-friendly production system
- Eco-friendly production system
- Energy consumption management
- Air pollutant management
- Waste management
- Hazardous chemicals management

Customers

Product Quality Innovation

Hyundai aims to achieve “zero accidents”, protecting drivers, passengers, and pedestrians, based on its quality philosophy of “producing defect-free vehicles that will never break down” backed by cutting-edge safety technologies. To this end, we continue upgrading overall quality and safety systems not only by promoting preemptive quality and safety measures from the vehicle development stage, but also by preventing any significant problems afterward through early detection, early improvement and early after-sales actions. In particular, we will establish a sustainable safety management system designed to maximize customer satisfaction and strengthen trust by developing quality and safety training programs, operating quality and safety reporting centers, analyzing safety information, and establishing safety test sites.

Product Quality Management

Establishing Quality Management System

Hyundai seeks to create “customer safety” values by securing leading quality standards in the global market and strengthening quality management through technical preventive quality activities, among other initiatives. We have established a company-wide integrated quality management system to satisfy customers’ diverse quality and safety requirements, while each of our production sites operates their own quality management system to promote thorough quality control in all processes, including automobile design, parts development, process operation, pre-mass production, and mass production.

Quality Management Standards and Techniques

Hyundai has introduced and applied quality management techniques to strengthen its market competitiveness on the basis of “defect-free quality”. Our quality management techniques, aimed at providing customers with vehicles of the very highest quality in all fields, such as R&D, production, sales, and services, are supported by the best experts in each field (Man); optimal equipment (Machine); the best parts (Material); the best method (Method); thorough verification (Measurement); and commitment to defect-free quality (Moral). Moreover, in order to actively respond to the global shift toward electrification, we have established and applied specialized quality management standards and criteria for each type of vehicle including hybrids, EVs, and hydrogen EVs. We also make continuous efforts to upgrade quality management standards and criteria based on the data collected and analyzed in quality risk management processes, such as quality checks, case studies, and improvements.

Establishment of the Quality Management System (ISO 9001)

No. of business sites subject to acquisition	No. of business sites with 3rd-party certified quality management systems	Percentage of quality management system assurance
14	14	100%

Quality Management Techniques to Produce Vehicles of the Highest Quality

Best experts (Man)	Optimal equipment (Machine)	Best parts (Material)
Best method (Method)	Thorough verification (Measurement)	Commitment to defect-free quality (Moral)

Preemptive Management of Quality Risks

From the early design stage of new vehicle development, Hyundai preemptively inspects and manages parts suppliers as well as its own production process quality. Based on product drawings, we conduct a comprehensive review of parts in terms of functions, structures, reliability, and durability, while carefully analyzing our own processes and those of suppliers before issuing the final approval, thereby eliminating quality risks throughout production processes in advance. In addition to our own verification of test vehicles, Hyundai relies on the test drive opinions of customers and professional quality organizations to identify major issues and carry out improvement activities in parallel. Moreover, Hyundai holds quality inspection meetings on regular basis, and in particular, on the verge of new car models’ mass production, reports the quality risk assessment results and taken measures to the highest level of management.

Quality Risk Assessment – Identification and Improvement

Hyundai has established a control tower devoted to the management of vehicle quality risks in the production process. Whenever a quality risk is detected from information acquired through statistical process control, periodic inspections, and shipment pass rates, the control tower takes the lead in conducting joint investigations and taking the necessary countermeasures. Also, in order to prevent quality risks from occurring in the vehicle production process, we take thorough preventive measures, such as process management by suppliers, assessment of quality prevention activities, validation of quality inspection equipment, and reliability testing of parts.

Quality Mindset Campaign

Hyundai is carrying out the “Quality Mindset Campaign” with the purpose of spreading a quality culture throughout its entire car development, production and sales processes, while its employees internalize the quality-first mindset. The campaign serves as an opportunity for the company to listen directly to voice of customers (VOCs) on quality issues through various initiatives including “Customers’ Quality Diagnosis and Employees’ Input”, “Meetings between Customers and Employees”, and “On-site Meetings between Customers and Production Quality Officers.” Based on the VOC, Hyundai is conducting the New Vehicle Quality Assurance Program, among others, as a way to deliver products of perfect quality to its customers. We will continue to promote various quality improvement activities by promoting close communication with customers and their active participation.

Strengthening Quality Verification Capabilities

Hyundai provides regular training on the roles and major tasks involved in securing its pre-manufacturing quality, manufacturing quality, and market quality as a way to strengthen the verification capability of its overall quality value chain. To maximize the effectiveness of verification through enhanced verification capacity, each course includes not only basic theoretical education but also practical and experience-oriented education if necessary. In addition, we offer expert courses on quality verification in collaboration with external educational institutions to verify new technologies following the transition to electrification and to strengthen the verification of quality issues from the customer’s point of view.

Courses to Strengthen Quality Verification Capabilities

- **Period:** January - December 2021
- **Participants:** 1,086 people
- **Courses:** Controller quality verification expert training course (introduction to and analysis of the controller SW testing and the vehicle communication system, introduction to vehicle control system, etc.), vehicle vibration and noise theory and practice, automotive structures and disassembly and assembly, major ADAS technologies, introduction to EV battery systems, etc.

Quality Mindset Campaign



Training aimed at strengthening quality verification capabilities

Quality Assurance and Management

Hyundai strives to enhance its quality assurance and management for the safety and protection of customers after product sales as well as quality management from vehicle development to production, thereby ensuring safety of customers and happiness of their families. In addition, we take quality improvement measures aimed at boosting customer satisfaction by identifying customers' specific complaints, while continuously reinforcing maintainability by evaluating the consistency of maintenance services and improving diagnosis methods, among others.

Blue Basic Inspection

Hyundai provides a free basic inspection service to Bluemembers customers to keep their vehicles in top condition – 8 times in 8 years for passenger vehicles, 7 times in 3 years for commercial vehicles. The basic inspections cover the engine room, the undercarriage and general inspections essential for customers' safety and convenience.

Warranty Repairs

Hyundai provides warranty repairs for vehicles that are within the warranty period within the scope of warranted mileage. If the cause of the vehicle's failure is technically found to be due to a defect in materials or workmanship, the vehicle may be subject to warranty repairs.

Emergency Road Service

Hyundai operates an emergency road service that offers on-site first aid, simple maintenance, and transportation to a designated repair shop in the event that a vehicle breakdown makes it difficult or impossible to drive. The emergency service is provided free of charge for up to six years after the shipment of vehicles within the warranty period.

Warranty Period for Free Repairs

Hyundai applies the free repair warranty period in consideration of the average life cycle, durability, and sustainability of each type of vehicle, such as passenger cars, SUVs, and commercial vehicles (trucks and buses). Recently, it has introduced a service that allows customers to select the warranty period according to their own driving patterns and habits. In particular, we maximize the sustainability of eco-friendly vehicles by extending the warranty period for the engine and power transmission parts of hybrids, EVs and hydrogen EVs. We are also contributing to minimizing air pollutant emissions with guarantees for catalyst devices, electric control devices, and other exhaust gas parts of older high-emitting models.

Voluntary Recall

Hyundai constantly monitors customer complaints and voluntarily recalls all the relevant vehicles to protect customers as soon as manufacturing defects assessed as highly likely to cause accidents are identified. When a vehicle recall is determined, we inform customers of the defects, corrective actions, and compensation including free service. We are also expanding sales guarantee provisions to proactively manage financial risks caused by recalls and quality assurance.

Warranty for Eco-friendly Car Engines and Power Transmission Parts

Classification	Model name	Warranty period
Hybrid exclusive parts	Grandeur Hybrid, Sonata Hybrid, IONIQ Hybrid, IONIQ Plug-in, AVANTE Hybrid	10 years / 200,000 km
EV exclusive parts	IONIQ Electric	10 years / 160,000 km

Voluntary Recall Status

(Unit: 10,000 units, KRW million)

	2018	2019	2020	2021
No. of recalled vehicles	157	196	623	272
Costs of recalls	170,700	78,000	305,200	1,442,300

Warranty Provisions

(Unit: KRW million)

	2018	2019	2020	2021
Provision warranty balance at the beginning of the period	5,226,297	5,177,128	5,447,307	8,514,173
Warranty costs during the period	1,765,815	2,261,010	1,963,782	2,551,716

* Based on consolidated financial statements

Product Safety Technology

Prevention of Safety Accidents

Advances in mobility, electrification, connectivity, and autonomous driving have expanded the purpose of automobiles from “transportation” to “space”, reflecting the latest changes in contemporary lifestyles, and expanding the scope of safety far beyond what was accepted as sufficient. Hyundai introduces advanced safety technologies that can not only prevent accidents from taking place in the first place but also protect occupants and pedestrians from potential dangers in advance. In addition, to respond to secondary accidents which may occur due to the diverse variables involved in primary accidents, we introduce new technologies in driver and occupant monitoring, response to hazardous environments, boarding and alighting safety, and remote vehicle management.

Multi-Collision Brake

The multi-collision brake reduces multiple collisions, such as secondary accidents, by operating the appropriate braking function on the vehicle when the airbag is activated during an accident involving a head-on or side collision. The system goes beyond the conventional accident avoidance or prevention features, as it conducts a post-accident assessment and protects not only the driver and passengers but also the surroundings of the accident vehicle.

Advanced Driver Assistance System

The advanced driver assistance system recognizes objects and movements with advanced sensors, cameras and radar, and warns the driver or controls the vehicle when a risk of collision is detected. Technically, the current system can maintain the proper distance from the vehicle in front and reduce speed by recognizing traffic cameras and signs.

Key Features of the Advanced Driver Assistance System

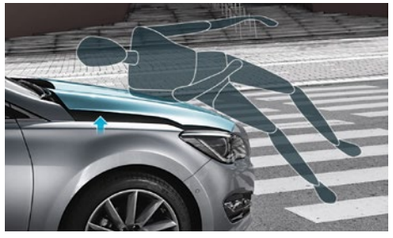
Forward Collision-Avoidance Assist	Give warning the risk of a forward collision or automatically assists with braking if a preceding vehicle rapidly decelerates or a vehicle or pedestrian appears in front
Lane Keeping Assist	Give departure warning or automatically provide steering assistance if a driver leaves the lane without operating the turn signal while driving at a certain speed or more
Blind-Spot Collision-Avoidance Assist	Give alert when there is a risk of collision with a vehicle behind while driving, and automatically assist with braking when there is a risk of collision with a vehicle nearby while reversing out of a parking space

Redundancy System

As driver intervention is being reduced according to the development of autonomous driving technology, it is essential to secure precise safety technology in preparation for emergency situations. Hyundai has developed an autonomous driving redundancy system that ensures the safety of passengers by safely driving and stopping the vehicle when a system failure is detected during autonomous driving. Redundancy refers to a dual configuration of steering, braking, power, and communication. When a function does not work properly, the redundancy system helps the vehicle to run smoothly and safely by replacing it with an assistive device. In addition to the redundancy system, Hyundai plans to develop an autonomous vehicle with high safety and reliability by integrating enhanced vehicle cyber security features and camera and lidar sensor pollution prevention technologies. By 2023, we will introduce a ride-hailing service using autonomous vehicles such as the IONIQ 5 robot, while expanding the autonomous driving ecosystem in cooperation with vehicle sharing platforms.

Multi-collision prevention automatic braking

Multi-collision airbag system



Active hood system

Driver Protection

While it is important to prevent accidents caused by vehicle driving through multi-collision prevention automatic braking, advanced driver assistance, and autonomous driving redundancy systems, devices designed to protect drivers and passengers in the event of an accident also play a crucial role. Hyundai ensures the safety of drivers and passengers by researching and developing devices that strengthen/utilize vehicle platform functions, apply collision prevention/mitigation technology, and reduce the rate of injury in the event of an accident. To help drivers make safe driving a habit, we run various programs such as the “Safe Driving Habit Guide Broadcast”, “School Vehicle Safe Driving Campaign”, and “Connected Car Safe Driving Insurance Discount.”

Multi-collision Airbag System

The multi-collision airbag system developed by Hyundai for the first time in the world precisely calculates a number of conditions such as the occupant's unstable posture and speed when the impact is so weak that the airbag does not deploy in the first collision. Improvements have been made to lower the force of the baseline impact or adjust the timing to activate the airbag more easily and quickly in crashes.

Third-generation Integrated Platform

The vehicle platform is an important factor that determines the basics of a car, such as design, driving performance, safety, and interior space. The third-generation integrated platform developed by Hyundai can secure interior space, enhance safety such as by maximizing the strength of passenger space, improve energy efficiency such as power/fuel efficiency, and realize stable driving performance in the driving environment.

Features of Hyundai’s Third-Generation Platform

Space-Securing Platform	Safety-First Platform	Energy-Efficient Platform	Stable Driving Performance
Engine room, seating, underfloor, luggage space, etc. have all been lowered	Rearranged body structure for dispersing energy during a collision	Reduced air resistance by positioning underbody lower and flattening it	Handling and stability nimbly responding to driver’s intention

Models by Platform Type

Classification	K3 Platform	M3 Platform	N3 Platform
Applied car models	AVANTE	G80, G90, GV70, GV80	STARIA, SONATA, TUCSON

Pedestrian Protection

Hyundai is also taking the lead in developing technologies that can protect pedestrians in the event of a vehicle accident. We have developed and applied various technologies to mitigate the impact in the event of a collision with a pedestrian by improving the shape of the vehicle and the structure of the engine room, or to detect the moment of collision with a pedestrian and absorb the collision energy of the pedestrian by operating the hood, etc. We are also striving to develop technologies to identify pedestrians based on camera and LiDAR sensors and to prevent collisions between pedestrians and vehicles in advance by operating safety systems such as the active brake system.

Active Hood System

Hyundai's active hood system detects a collision with a pedestrian and raises the bonnet to protect the pedestrian. In the event of a collision between a pedestrian and a vehicle, the actuator under the bonnet moves, raising the bonnet by about 6 cm, and creates a shock-absorbing space between the bonnet and the engine room, thereby greatly reducing the degree of injury to pedestrians.

Automotive Safety Assessment

2022 IIHS Safety Assessment

On February 24, 2022, Hyundai won a "Top Safety Pick Plus (TSP+)" rating for nine car models and a "Top Safety Pick (TSP+)" rating for four models in the crash safety evaluation conducted by the Insurance Institute for Highway Safety (IIHS) of the USA. The IIHS conducts a comprehensive evaluation of the collision stability and collision prevention performance of vehicles launched in the US market every year, giving the vehicle with the highest level of safety the TSP+ rating and a vehicle with a good level of safety the TSP rating. The IIHS safety assessment covers collision impacts on the driver-side small overlap front, passenger-side small overlap front, moderate overlap front, and sides, along with an evaluation of roof strength, head restraint, forward collision avoidance system (vehicle-to-vehicle, vehicle-to-pedestrian), and headlamps.

Hyundai's Nexo, Santa Fe, Tucson, Palisade, and Genesis G70, G80, G90, GV70, and GV80 won the TSP+ rating, whereas Venue, Santa Cruz, Sonata, and AVANTE (US local name Elantra) received the TSP rating. Having once again proved the outstanding safety of Hyundai and Genesis through the results of the comprehensive IIHS crash test, Hyundai will uphold its commitment to be a brand that always puts customer safety first.

Winners of 2022 IIHS Safety Assessment

Classification	TSP	TSP+
Hyundai	Venue Santa Cruz Sonata AVANTE (Elantra)	NEXO Santa Fe Tucson Palisade
Genesis	-	G70 G80 G90 GV70 GV80

NEXO

Santa Fe

Tucson

Palisade

G70

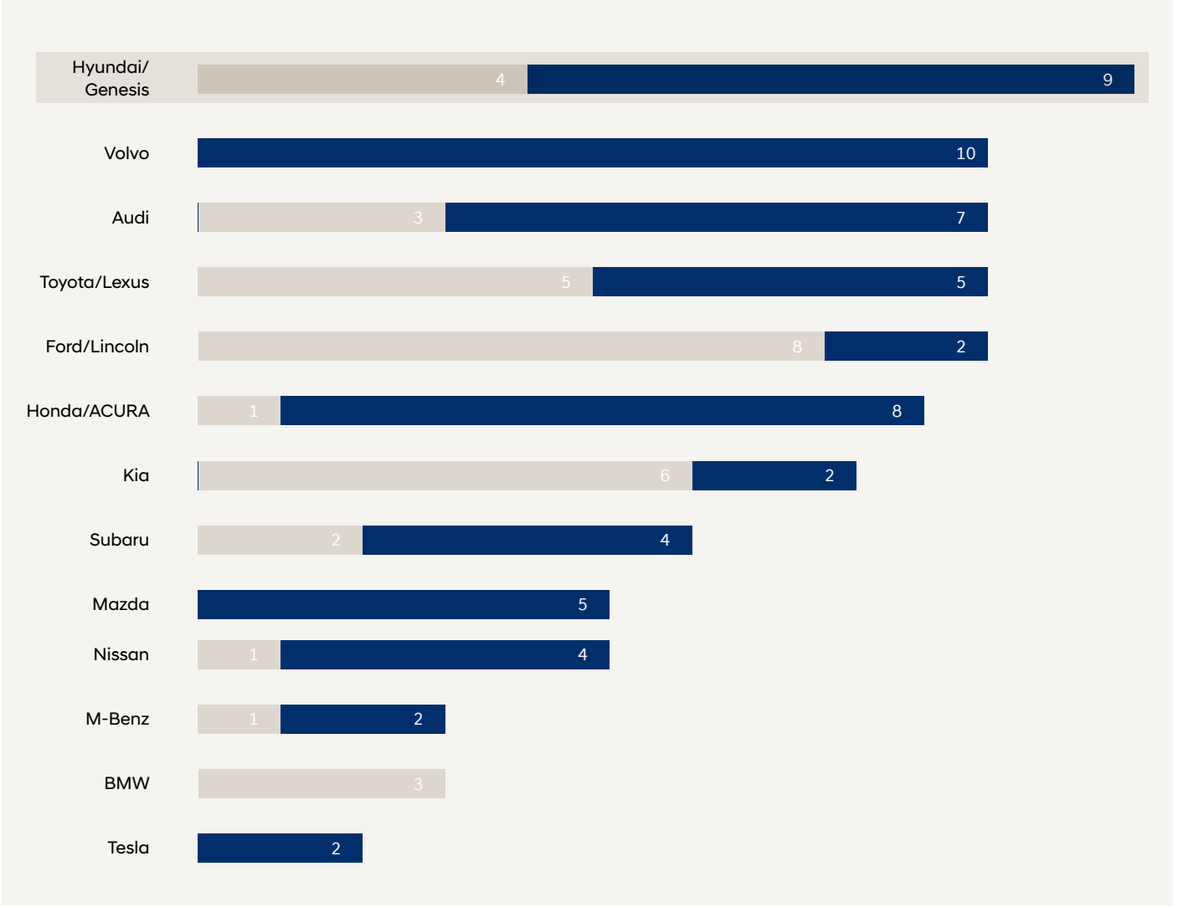
G80

G90

GV70

GV80

2022 IIHS Awards-winning Manufacturers



* Based on the assessment results revealed on February 24, 2022

Customer Experience Innovation

Hyundai aims to become a beloved and trusted company by realizing mankind's dream of "safe and free movement and a peaceful life" and sharing the fruits of its success with all customers around the world. While providing a valuable mobility experience by connecting various technologies and infrastructures and creating synergies, we are strengthening our service mindset of thinking from customer's perspective, upgrading service quality to provide new solutions ahead of customer needs, and fulfilling customers' need for eco-friendly, public interest value consumption in conjunction with its brand vision. We always care about customers and listen to their voices by having more dialogue with them.

Maximizing Customer Satisfaction

Promoting Global Service Strategy

In the mid- to long-term perspective, Hyundai is striving to provide optimized service programs for each segmented customer type, diversify its service bases so that customers can enjoy services anytime, anywhere, and realize a differentiated digital customer experience process throughout its after-sales service. To this end, we help our overseas subsidiaries, sales corporations, and newly established enterprises in particular to establish the direction of their customer service strategies. In line with our mid- to long-term electrification roadmap, we will set up an EV service model and continue to strengthen customer support so that EV users will not experience any inconvenience while driving, by optimizing its EV-devoted vehicle management, vehicle charging, and repairs of high-voltage batteries.

In 2021, we integrated passenger and commercial business divisions as part of function-oriented reforms, and are now striving to strengthen global passenger and commercial customer service, while also creating synergies through the reorganization. During the prolonged COVID-19 pandemic, we offered customer care tailored to the unusual circumstances, including non-face-to-face mobile vehicle repairs and proliferation of communication based on mobile apps and messenger services. Going forward, we will further advance global customer management with customized strategies that fully consider the characteristics of regional markets and the expectations of local customers.

Applying the Customer Service Standard Guide

As part of its efforts to continuously promote activities designed to improve customer satisfaction, Hyundai has launched a company-wide control tower to innovate customer experience and published the "Customer Service Standard Guide" based on the order of the customer service that they receive during the vehicle purchase process. The guide presents clear-cut instructions on customer response actions so that employees working in Hyundai's customer contact channels can focus on key interaction elements and offer a uniform and excellent service at customer contact points.

Convergence Training for the Sales Sector Service

Hyundai has established an ICT-based convergence education system in order to bolster the competency of its employees in customer contact channels such as vehicle sales and product CS, and has also conducted knowledge-enhancing training on vehicles (electric vehicles, luxury vehicles) and customer consultation (CRM, CS) skills improvement training in an effort to nurture experts in vehicle sales, customer interaction, and customer service. As a result of its operation of the convergence education system for customer service in 2021, Hyundai's customer satisfaction score (KCSI) increased by 1.0 point over the year.

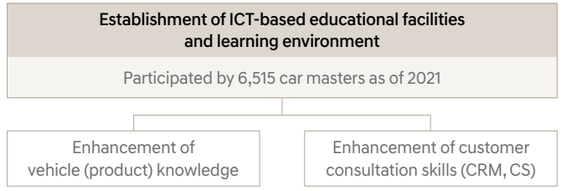
Excessive Maintenance Prevention Program

Hyundai runs the "Excessive Maintenance Prevention Program" to prevent damages caused by the excess-provision or overcharging of services by the company and offer customers effective compensation in the event of damages. The program has further raised customer trust by reinforcing advance guidance on vehicle repair history and providing compensation of up to 1,000% for overcharged repair costs. In addition, we impose penalties on maintenance suppliers that charge excessively for repair costs in a bid to put a stop to their overcharging practices and restore the trust of customers.

Results of External Customer Satisfaction Surveys

National Customer Service Index (NCSI)	Evaluate customer satisfaction level by customer expectation, customer quality perception, customer value perception, customer complaint, and customer loyalty (may compare by nation, industry, and business)	Ranked first in five categories Semi-Medium, Medium, Semi-Large, Large, and RV
Korean Standard-Quality Excellence Index (KS-QEI)	Evaluate quality excellence and satisfaction level by conducting survey to customers and experts	Ranked first in 12 categories Semi-Medium/Large/ Semi-Medium Passenger Vehicles, Compact/Semi-medium/Medium/Large SUVs, EVs, After-sales service, etc.
Korean Customer Satisfaction Index (KCSI)	Comprehensively evaluating overall consumer's satisfaction level on product and service by industry, satisfaction by item, and willingness to reuse (purchase)	Ranked first in passenger vehicle and RV categories
Korean Standard-Service Quality Index (KS-SQI	Comprehensively evaluating the fulfillment of customer expectation, offering of additional services, as well as reliability, attentiveness, activeness, and accessibility in service process	Ranked first in after-sales service category

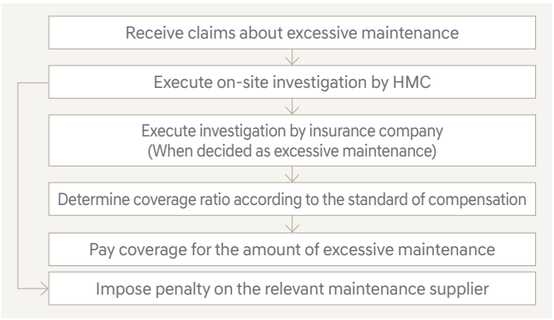
Convergence Education System for the Sales Sector Service



Customer Satisfaction Level in Passenger Vehicle Category (KCSI) (Unit: Points)

	2019	2020	2021
Score	89.9	91.8	92.8

Excessive Maintenance Prevention Program



Building Service Bases

Hyundai has built service bases which customers can easily and conveniently access anytime, anywhere for not only its maintenance services but various other differentiated services as well. As of the end of 2021, we ran approximately 1,400 serv ice bases composed of direct service centers and official service suppliers (Bluehands) nationwide, in addition to some 370 Bluehands dedicated to EVs and some 500 Bluehands dedicated to Genesis.

We will open approximately 120 additional EV-dedicated Bluehands and build an EV maintenance infrastructure for some 500 EVs by the end of 2022, with the aim of making EV maintenance possible at all Bluehands across Korea by 2025, and securing up to 200 Bluehands dedicated to FCEVs.

Service Brands

Bluehands	This network of Hyundai's official service suppliers is dedicated to improving t he environment to enhance customer safety and convenience, as well as providing services at the place closest to the customers.
Bluemembers	This service for Hyundai owners provides customers with a fun and convenient vehicle service.
Blue Link	Hyundai's connected car service provides support to customers in remote vehicle control, safety and security, vehicle maintenance, route guidance, and concierge services.

Service Programs in Korea

Visiting Before Service	Visit a location designated by a customer and provides vehicle maintenance and advice and assistance
Emergency Charging Service	Provide 7 kWh worth of free EV charging for stranded drivers, enough for 22-44 km of driving
Home-to-Home Service	Pick up vehicles where and when designated by customers and deliver them after repairs are made
Car Rental Service	Provide car rental service for customer convenience when repairs are needed during the warranty period

Special Services for Genesis Car Owners

Genesis Butler Service	Exclusive butler service for Genesis customers
Genesis Visiting Auto Care Service	Visit any location that customers desire and provide a replacement service for engine oil and other consumables
Genesis Airport Service	Provide Genesis customers using Gimpo International Airport with free car valet services, consumables replacement services while traveling
Genesis Home-to-Home Service	A home-to-home service, free of charge, as part of Genesis Mobility Care service

Strengthening Technical and Maintenance Capabilities of Service Bases

Hyundai makes continuous efforts to build customer trust in service quality by strengthening technical and maintenance capabilities of its directly-operated service centers and Bluehands. We aim to train the best engineers who can comprehensively deal with minor problems that may occur in vehicles, in addition to training engineers at service bases to enhance their basic competencies. We continue to upgrade maintenance manuals and vehicle manuals used by service bases, while holding regular workshops to share knowledge on technology and maintenance.

Hyundai Master Certification Program

Hyundai operates the Hyundai Master Certification Program (HMCP), a technology certification program, to nurture outstanding Bluehands engineers. For the HMCP expert qualification, Hyundai evaluates its engineers' technical capabilities in nine areas, including vehicle convenience devices, advanced driver assistance systems, audio/video/navigation systems, engines, vehicle communication, hydrogen EVs, EVs, hybrids, and Genesis-specific specifications. According to the outcome of evaluations, we issue four grades of qualifications – Levels 1 and 2 (Technician), Level 3 (Master), and Level 4 (Grand Master). In 2021, we held the "Grand Master Tech Festa" and awarded the HMCP level-4 qualification to 17 engineers.

Hyundai Master Certification Program Electrified

Based on the training and evaluation experience of HMCP, Hyundai has introduced Hyundai Master Certification Program Electrified (HMCPe) in a bid to further improve the quality of EV maintenance services and strengthen customer engagement. Through HMCPe, we secure expertise in EV diagnostics and repair technologies as a way to proactively provide customers with safe and professional maintenance in the most convenient way possible. In March 2022, we awarded the e-Master qualification to 2,032 engineers in recognition of their ability to perform independent electrification diagnosis and repair and conduct high-level work among HMCP grand masters of Bluehands nationwide.

Maintenance Manuals and Vehicle Manuals

Hyundai publishes vehicle maintenance manuals and electronic circuit diagrams, and distributes them to its directly-operated service centers, Bluehands, and individual car owners who can carry out repairs by themselves. After signing up to the domestic technical information website (gsw.hyundai.com), users can check electric circuit diagrams, diagnostic guides for each code, body manuals, maintenance manuals, wiring connectors, disassembly and assembly information, and individual product information. They can also move to the Hyundai MOBIS genuine parts inquiry site to obtain essential information on necessary parts. Hyundai will continue making its maintenance and vehicle manuals easily accessible to customers so that they can receive after-sales services quickly and accurately while reducing their vehicle maintenance costs.

Training Support for Bluehands Maintenance Personnel

Hyundai nurtures outstanding maintenance personnel in collaboration with vehicle maintenance educational institutions such as colleges and technical training institutes. The institutions offer technical education in various fields related to vehicles, such as vehicle maintenance, body repairs, and repair devices, while the company offers them support in the form of maintenance instructors, training vehicles, and textbooks. We also offer opportunities for talented people to be recruited by Bluehands.

Sustainable Brand

Brand Management System

Hyundai has built and operated a comprehensive brand governance system to enhance its corporate and product brand values, thereby managing its brands systematically. It has also established a brand strategy system that enables it to communicate consistently under the same direction, as well as a brand and trademark system for vehicles, technologies, and services called "Brand Architecture". In addition, we have published the "Brand Image Guidelines" to specify visual implementation plans for our brands, which have been shared and observed by all departments.

While operating the Brand Management System (BMS) to raise the effectiveness of the brand strategy system, brand architecture, and brand image guidelines, we created the "Brand Home", an in-house portal website, and established a help desk called "Brand Desk" to improve the quality of the company's brand-related productions across all sectors.

Brand Tracking Study

Hyundai conducts the Brand Tracking Study (BTS) to track brand indicators in 33 major countries (sales markets). To measure (potential) customers' awareness, understanding, and preference for Hyundai brands, we analyze indicators in such categories as the price, performance, quality, and eco-friendliness of each brand. In addition, by promoting global brand monitoring activities consisting of regular inspections of the application of its brands and trademark images, we ensure that company-wide brand/trademark strategies, systems, and guidelines are strictly applied worldwide.

Brand Image Enhancement and Evaluation

In addition to the "brand value enhancement" marketing activities Hyundai carries out in connection with transition to a company specializing in smart mobility solutions, we aim to further enhance our brand image by conducting brand campaigns and communication activities that reflect sustainability efforts in eco-friendliness and public interest; reinforcing sales network efficiency centered on high-quality dealers; conducting online marketing in areas where COVID-19 remains prevalent; and promoting CSV activities to solve the problems currently facing the global community. In addition, after conducting brand image enhancement activities, we evaluate their contributions in the areas of corporate value, sales, and customer satisfaction.

"for Tomorrow" Global Project

Hyundai is running the "for Tomorrow" project in partnership with the United Nations Development Programme (UNDP) for a sustainable future. It is a "crowdsourcing" type of project that finds and implements solutions by gathering the collective intelligence of people from all over the world with the aim of creating a better tomorrow and solving global problems in the areas of transportation, housing, and the environment. Through the "for Tomorrow" project, Hyundai will continue to promote our brand vision, "Progress for Humanity", and contribute to developing solutions that can help create a better tomorrow for humanity. Anyone around the world who wishes to participate in creating a better future can freely propose ideas through the "for Tomorrow" project platform at www.fortomorrow.org.

Hydrogen Campaign

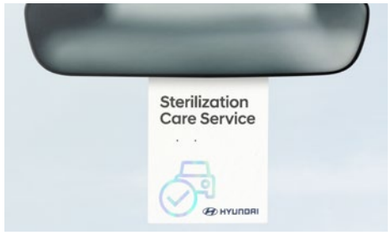
The world is envisioning a future in which all forms of transport and technology are operated in a carbon-free, sustainable way. In order to realize the carbon neutrality agreed upon by the global community, the transition from fossil fuels to renewable energy is inevitable. Hyundai will achieve carbon-free green hydrogen production and conversion in its production processes as a way to compensate for instability in the supply of renewable energy. We are committed to building a hydrogen EV and hydrogen energy brand through internal and external communication, and by encouraging the entire global community to participate in the realization of carbon neutrality based on green hydrogen.

Promoting Brand Image at the Investor Daily Summit 2021

In July 2021, Hyundai participated in the Investor Daily Summit 2021 held in Indonesia and discussed ways to explore new business models and investment opportunities in Indonesia with key figures from the Asia-Pacific region. We gave a presentation on how to revitalize the eco-friendly car business, sharing our brand vision and future plans to lead the global eco-friendly car market. We have built the first automobile production plant in the ASEAN region in Indonesia, which will not only play a role in developing, producing, and selling strategic vehicles for the ASEAN market, but will also serve as a strategic base for emerging markets in Southeast Asia with EVs such as the IONIQ 5.

BTS Indicators

Price	Customer acceptance of Hyundai vehicle prices compared to competitors' (based on a price perception survey)
Performance	Combined score of high-tech competence, design competence, etc. compared to the market average of 100 points
Quality	Combined score of good value, care-free ownership, service quality, etc. compared to the market average of 100 points
Eco-friendliness	Combined score of environmental friendliness, social responsibility, etc. compared to the market average of 100 points. Categorize and analyze green vehicles on aided awareness, brand perception, etc.



COVID-19

for Tomorrow

H_2U(Hydrogen To You) Campaign

H2U (Hydrogen To You) Campaign to accelerate the transition to a hydrogen society

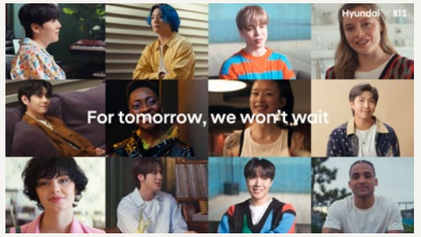
Together with influencers from diverse fields, Hyundai is conducting the "H2U (Hydrogen to You) Campaign" to promote the value of hydrogen EVs and hydrogen energy in Europe. Among the globally active influencers involved in the campaign include DJ and fashion designer Peggy Gou, tech YouTuber Alexibexi, and architectural photographer Konrad Langer, all of whom emphasize the urgency of transitioning to a hydrogen society and the importance of expanding hydrogen EVs and hydrogen energy to create a hydrogen ecosystem.

H2 Economy Campaign to emphasize the importance of the hydrogen society

In partnership with Bloomberg, a global media group, Hyundai is conducting the "H2 Economy Campaign" to promote the importance and accelerate the emergence of the hydrogen society. By communicating with opinion leaders around the world, the campaign aims to generate momentum for the hydrogen ecosystem and find ways to realize the hydrogen society while promoting Hyundai's technological competitiveness in the hydrogen economy. According to a Bloomberg survey of 200 campaign audiences in the United States, about 80% of them positively evaluated hydrogen energy and Hyundai's hydrogen technology, stating that they would be willing to purchase a hydrogen EV, thereby confirming the effectiveness of the H2 Economy Campaign.

"For tomorrow, we won't wait" video by Hyundai x BTS

Since 2020, Hyundai has been conducting the "Global Hydrogen Campaign" with BTS, an internationally-acclaimed Korean boy band, under the slogan "Because of You" in order to spread the eco-friendliness and sustainability of hydrogen as a clean energy source of the future. In 2021, Hyundai and BTS jointly released a special video on the theme of "For tomorrow, we won't wait" featuring activities that anyone can practice in their everyday life, such as picking up trash while exercising, zero waste, fashion recycling, growing plants, and using eco-friendly hydrogen vehicles. Going forward, we will continue engaging in activities in which everyone can participate for a better future while striving to communicate our sustainability vision as a way to exert a positive influence on the global community.



HMG Driving Experience Program

Hyundai is operating the "HMG Driving Experience" program to give customers first-hand experience of various brands of Hyundai Motor Group, including Genesis and Kia. Since launching the program in 2019, Hyundai has provided theoretical and skills training on vehicle driving along with the opportunity to drive various models. In 2022, Hyundai opened the HMG Driving Experience Center, equipped with eight courses including four experience tracks and four experience zones. At the Center, customers can test-drive more diverse models and gain track experience, including emergency braking, handling, and high-speed driving, as well as an obstacle course featuring drifting, emergency situations, and ramps. In particular, the Center runs EV experience sessions designed to promote the potential of EVs and provide practical information necessary for customers' EV purchase plans.

"Longest Run" Contactless Race

Hyundai has been operating the "Longest Run", an on/offline environmental campaign, participated by customers and the general public, since 2016. The 2021 Longest Run campaign was conducted in the form of contactless race, encouraging participants to run the course of their choice at the desired time while participating in eco-friendly missions through a dedicated application.

Those who successfully completed the race received eco-mileage to purchase eco-friendly products, while Hyundai used the participation fee for the "Contactless Race" to recycle wastes from automobile seats and tires. Going forward, we will expand customer participation-based eco-friendly campaigns with a particular focus on environmental issues including fine dust reduction, zero waste, and resource circulation.

Ethical Marketing and Product Labeling

In principle, in the process of marketing and communication, Hyundai aims to provide accurate and correct information; to prohibit false, exaggerated and reduced information on environmental and social impacts of products and services; to convey information considering those who are vulnerable to recognition and acquisition of information; to restrict the delivery of information that deliberately distorts or attacks our competitors or their products and services in the same industry. We comply with relevant laws and regulations related to advertisement review when establishing marketing and public relations strategies for various countries through preliminary reviews and locals' feedback about their unique ethical, social, and cultural norms. In addition, Hyundai labels information on the safety, quality and environmental impact of its products in order to fully satisfy customers' right to know.

Labeling Obligations

Korea	Product	ID labeling (type and model of car, vehicle identification number, vehicle weight, year of production, tire, etc.)
	Environment	Fuel efficiency labeling, exhaust gas warning labeling
	Safety	Airbag warning labeling, etc.
China	Product	ID labeling, vehicle identification number (W/screen), anti-theft warning labeling
	Environment	Fuel efficiency labeling
	Safety	CCC labeling, child restraint system (CRS) warning airbag labeling
Europe	Product	ID labeling, E-marks certifying various items (lights, safety belts, horn, mirrors, window glass, etc.)
	Environment	Diesel engine labeling, battery recycling labeling, fuel labeling, refrigerant labeling
	Safety	Airbag warning labeling, Airbag warning labeling, ISOFIX CRS anchor labeling
North America	Product	Manufacturer's suggested retail price (MSRP) labeling
	Environment	VECI labeling (certified exhaust emissions data), refrigerant labeling
	Safety	Tire pressure information labeling, safety certification labeling, airbag warning labeling

Information Protection

Customer Information Management System (CPO, Technical & Physical Measures)

Hyundai operates the Personal Information Protection Committee, a company-wide consultative body that establishes and oversees its customer privacy protection systems. The Committee is chaired by the head of the Hyundai Information Security Center, who also serves as the company's Chief Privacy Officer (CPO), and is composed of working-level members from the departments in charge of privacy management processes as well as legal and IT experts in privacy protection. The Committee meets officially once a year, and also holds working-level committee meetings to deal with issues related to privacy protection whenever necessary.

Launched in October 2020, the Security Compliance Team (the team dedicated to personal information protection) monitors the performance of IT-related maintenance operators and personal data processing consignees, as well as Hyundai's overall performance, and distributes the company's privacy protection policies and guidelines to privacy officers in each department for regular training and scrutiny. Also, through the operations of the Personal Information System (PIS) and the Security Assurance Management System (SAMS), we safeguard our customers' personal information systematically. The PIS prevents leaks of personal information by restricting access to files to authorized personnel when personal information needs to be extracted from or processed in the company's personal information processing system. The SAMS is designed to ensure that all the company's personal information processing systems undergo a pre- and post-impact assessment by the Security Compliance Team, which evaluates the adequacy of the systems through legally authorized processes.

In 2022, we will further strengthen measures against violators of the privacy regulations. To this end, we will enact and amend the privacy protection regulations, thereby specifying that disciplinary requests can be made in the case of violations of the relevant laws and regulations, list cases of privacy violations, and also establish criteria for the measurement of risks related to privacy protection.

Privacy Policy of Hyundai Motor Company

Response to Data Regulations

In 2020, Hyundai established a direction for improving its data-related company-wide management measures in line with the increasingly strict regulations following the amendment of the three acts related to data protection. In accordance with this improvement direction, we created a dedicated team for data protection, which has implemented plans to figure out the company's data management status and improve the various processes as part of our systematic and proactive response to the stricter regulations.

Cybersecurity Scheme

Hyundai complies with the information protection laws and regulations. We have established a cybersecurity system to protect our trade secrets and the nation's core technologies, launched dedicated security organizations, and appointed the Chief Information Security Officer (CISO), who refrains from holding concurrent positions in accordance with the Act on the Promotion of Information and Communications Network Utilization and Information Protection. To prevent cyber-security incidents, we post security regulations on groupware and review them once a year, while offering various training and education courses and conducting campaigns.

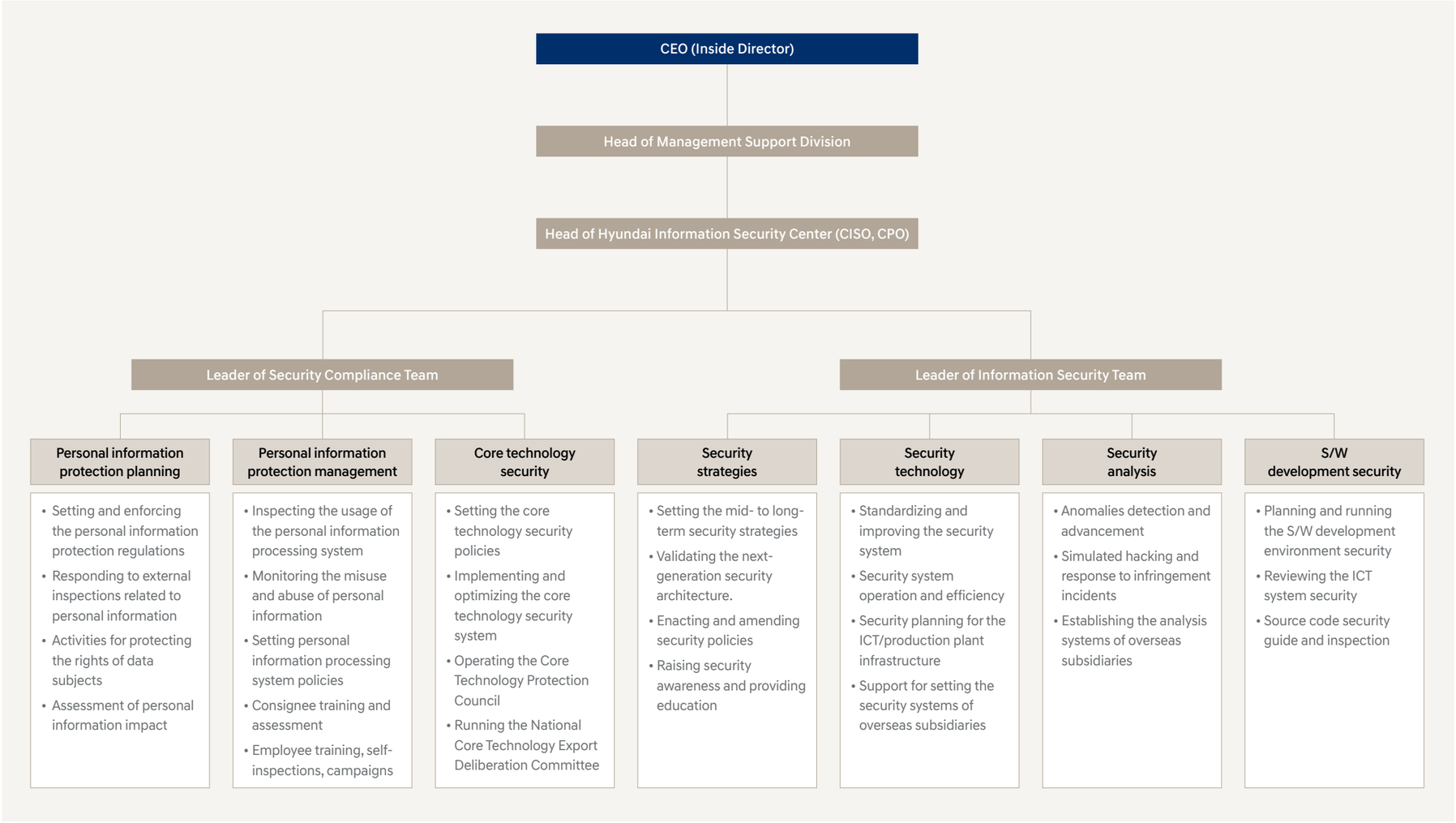
Major Information Security/Cybersecurity Activities in 2021

- Specified incident response procedures according to the business continuity plan (BCP) in the Security Incident Prevention and Response Guidelines and conducted biannual inspections
- Participated in the 2021 cybersecurity simulation training organized by KISA (Korea Internet & Security Agency) in May 2021
- Conducted phishing training for employees on a quarterly basis
- Distributed a monthly security newsletter to all employees and conducted the Code of Conduct campaign
- Conducted annual online security training for employees, as well as ransomware response training whenever necessary

Analysis of Cyber Asset Vulnerability

In order to improve the vulnerability of its cyber assets, Hyundai runs a security review process and checks the infrastructure, sources, mock hacking, etc. prior to system launch, while improving its inspection standards in order to address system vulnerabilities in new and current operating systems as well as DevOps environments, which are constantly being developed. We also regularly inspect personal information and core data handling system and take security measures against any vulnerabilities that are detected, in addition to conducting developer training on upgraded application security guidelines twice per year. Moreover, all domestic business sites have been remaining certified since they first acquired the ISO 27001 certification in 2006. Overseas business sites are seeking certification according to the standards of their respective country.

Organization of Hyundai's Information Security Center



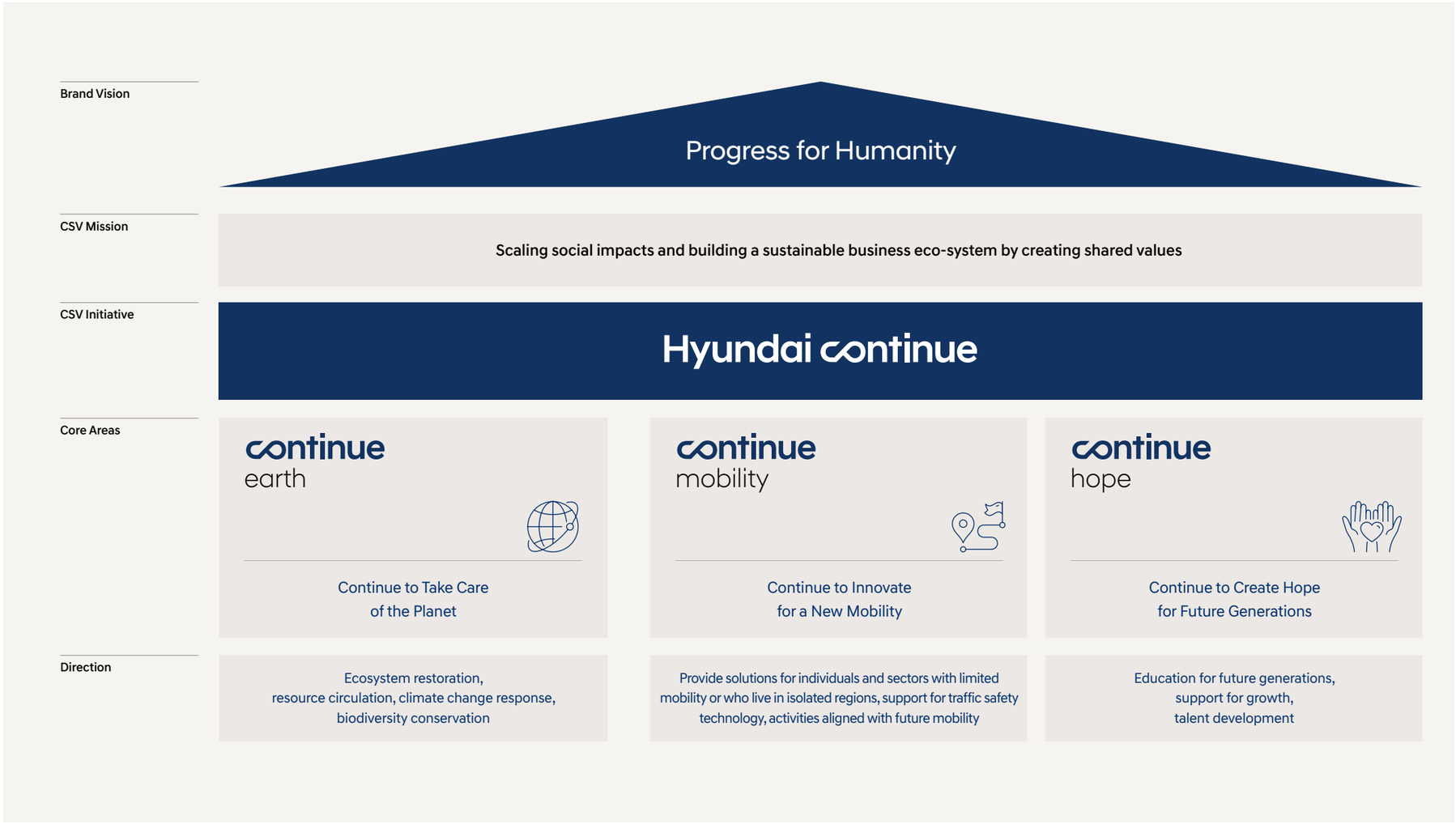
Social Contribution

CSV Initiative

Hyundai aims to expand its positive social impact and build a sustainable corporate ecosystem by creating shared value (CSV). To this end, we launched the “Hyundai Continue” initiative which represents our commitment to the sustainable future. We will grow together with local communities by creating social value and solving social problems in connection with mobility business. We will also continue our efforts to promote harmonious coexistence with the planet, provide freedom in mobility and connections, and deliver hope for future generations.

Moving forward, Hyundai will strive to create a virtuous cycle of connection by thinking and working together with various global partners as well as our employees, customers, and local communities.

CSV Strategy System



CSV Activities

Earth

1 European Marine Ecosystem Restoration and Upcycling
2 Hyundai Green Zone in China
3 Hyundai Green Zone in China

Marine Ecosystem Restoration and Upcycling

Commemorating World Oceans Day, Hyundai Motor Europe carried out marine plastic and waste net collection activities to help restore the marine ecosystem. In Ithaca, Greece, Hyundai worked with its partner Healthy Seas to support marine cleanup and waste net collection, as well as providing the eco-friendly Kona EVs to the European sustainability tour hosted by DAN, a non-profit organization, to help divers move safely.

In partnership with Healthy Seas, we continue working to restore marine ecosystems by collecting the multitude of discarded fishing nets that pollute the world's oceans as part of our efforts to tackle plastic pollution. We launched the project in 2021, and collected 78 tons of waste nets in seven European countries – Germany, UK, France, Italy, Spain, Greece, the Netherlands – together with 72 divers. In addition to collecting waste nets, we produce textile products from recycled marine waste as part of eco-friendly upcycling and resource circulation activities. The waste nets are regenerated into a nylon fiber called ECONYL® by the textile producer Aquafil. ECONYL®, a material that is used in diverse products such as socks, swimwear, sportswear, and carpets, is also used as a floor mat material for IONIQ 5 sold in Europe.

Hyundai x Healthy Seas | The Journey To Ithaca

IONIQ Forest Sinsido

For five years from 2016, Hyundai joined forces with Tree Planet to plant 23,250 trees on landfill site in the Incheon metropolitan area in a bid to reduce fine dust there. The trees in the "IONIQ Forest" are estimated to absorb 225 tons of carbon dioxide and 1,100 kg of fine dust per year. In two years since 2019, we also carried out a project to reduce fine dust in classrooms by creating forests at 924 classrooms in 33 elementary schools in the metropolitan area as a means of environmental education for the next generation.

In 2021, Hyundai launched a project to preserve biodiversity in the National Sinsido Recreation Forest in Gunsan, Jeollabuk-do. As part of the project, we built a forest path designed to preserve native plants in the national recreation forest and provided a number of IONIQ 5 to allow visitors to enjoy a first-hand experience of an eco-friendly vehicle.

In partnership with Tree Planet, Hyundai has planted 3,400 trees including young trees all over the island and camellia trees along the path to the solar observatory in the recreation forest. We have also made it possible for disabled and elderly persons to experience the eco-friendly mobility of IONIQ 5 on a 4.2 km loop along with a special tour guide for them. In addition, we conduct volunteer activities, such as tree planting and beach plogging, together with the local community.

In 2022, while continuing to operate the IONIQ Forest Sinsido project, Hyundai plans to participate in various eco-friendly activities related with forests and trees in collaboration with diverse partners.

IONIQ Forest Sinsido

Restoring the Natural Environment and Building Biogas Facilities in India

Since September 2020, Hyundai Motor India (HMI) has been striving to restore the natural environment around its Chennai Plant and create employment opportunities. In the Hyundai Greenery Belt near the Plant located in the SIPCOT Industrial Park in Irungattukottai, HMI has raised 5,200 indigenous trees and vegetation while planting 5,000 seedlings to preserve biodiversity around the local community. Also, by selling the fruit grown on these fruit trees, the local community benefits from Hyundai's efforts in terms of job creation and income generation.

Furthermore, HMI recycled some of the waste (approximately 40 tons) from its plant and offices to make 1,500 desks and benches and donated them to 25 nearby schools. In 2022, it is building a waste-to-energy recycling facility with Saahas, a local waste treatment NGO, to respond to the local government's eco-friendly CSR policy and share biogas generated from waste with the local community.

Hyundai Green Zone in China

The Hyundai Green Zone is a global ecological project to restore dry alkaline (salt) lakes in Inner Mongolia, the source of China's yellow dust clouds, to grassland. In 2021, Hyundai kicked off the 3rd phase of the Hyundai Green Zone project in cooperation with the China Green Foundation, which aims to restore a desertified lake and 670,000 square meters of degraded grasslands in Caiyojungchi and Uranchapu City, Inner Mongolia. With the 3rd project, Hyundai plans to conduct research aimed at measuring the carbon absorption of grasslands while carrying out a public forest creation project. Together with the China Foundation for Poverty Alleviation, we are also planning to create "zero-carbon lodging villages" to increase the income of nearby low-income villages.

We carried out the first phase (2008-2013) of the Hyundai Green Zone project in the Chakanor and Apakachi regions of Inner Mongolia. In the second phase (2014-2020), we created grasslands in the Zhenglan Qi, Baoshaodainao Nur, and Haginor regions of Inner Mongolia, and transferred the ecological restoration technology required to prevent desertification to the local government.

The Hyundai Green Zone project has involved the participation not only of our employees but also of customers and university student volunteer groups. In recognition of such contributions to Chinese society, Hyundai was ranked first in the automotive industry for the sixth consecutive year in the "2021 CSR Development Index Evaluation" of the CSR Research Center of the Chinese Academy of Social Sciences. In the overall corporate rankings, we ranked third, up one place from last year.

Longest Run

The Longest Run is an on- and offline-linked eco-friendly social contribution campaign launched by Hyundai in 2016 to reduce fine dust. By 2020, some 100,000 eco-runners had participated in the creation of the IONIQ Forest at a landfill site in the Incheon metropolitan area. As interest in climate and environmental change has increased in recent years, the Longest Run has gone one step further from reducing fine dust to "carbon neutral practices." Even amid the COVID-19 crisis, we have continued to provide people with opportunities to participate in environmental protection and improve their personal health through the "contactless run" based on dedicated applications.

In 2021, Hyundai reinforced eco-friendly elements by recycling clothes donated by participants into running T-shirts and making commemorative medals with soap, while the "Eco Mileage Shop" offered the participants various eco-friendly gifts with the mileage they accumulated when running and completing various eco-friendly missions. The Longest Run will continue working for a clean environment together with customers as a genuine eco-friendly movement.

Environmental Preservation Near Business Sites

Hyundai has been carrying out a variety of eco-friendly CSV activities designed to minimize the impact of its production activities on the surrounding environment of its business sites while also strengthening ties with local communities. The Ulsan Plant aims to preserve the surrounding biodiversity by participating in the Ulsan-type migratory bird management platform building project to protect the endangered long-billed plover and the eagle (a natural monument). Meanwhile, the Asan Plant planted 3,300 azaleas in the Yeonginsan Arboretum; the Jeonju Plant provided seedlings and fertilizers to nearby schools so that they could create green curtains on campus, as well as offering them eco-friendly education using plants; and the Namyang R&D Center planted 50 cypress and maple trees in Mado-myeon, Hwaseong-si as part of the Gyeonggi Provincial government's project to reduce fine dust emissions.

Mobility

1

2

3

Virtual Driving Simulators for Driving Rehabilitation Support

Since February 2019, Hyundai has been running a virtual reality driving experience social contribution program designed to help drivers overcome their fear of driving and build their self-confidence. The driving simulators used in the program are designed to enable driving practice in various environments and situations including city centers, highways, national roads, and alleyways. Since 2021, in cooperation with the National Rehabilitation Center, the company has used the simulators in the rehabilitation of traffic accident patients. In the first half of 2022, Hyundai signed agreements with Chungnam National University Hospital and Pusan National University Hospital to include them in the program. We will continue to help drivers who experience fear and difficulty through virtual driving experiences that enable them to drive again and improve their mobility.

Supporting Underprivileged Regions Using Mobility in the Middle East

Hyundai carried out food bank support activities using its mobility to reduce the gap between rich and poor and support marginalized regions in the Middle East. From March to April 2022, in five cities in the UAE and Saudi Arabia (Ajman, Sharjah, Riyadh, Jeddah, Dammam), We joined forces with local food banks and universities to STARIA and supply food materials, including nutrition kits, to people in underprivileged areas with low accessibility.

In particular, during Ramadan, practicing coexistence and sharing, we donated STARIA to NGOs for each city to help them improve the mobility required for their activities, as a way to solve such problems as income inequality and food insecurity. In collaboration with four universities and volunteer organizations in each region, Hyundai carried out a variety of community services including packaging and transporting 2,000 boxes of donated foods and goods, sharing the importance of social responsibility with local communities.

Shucle

In 2021, Hyundai launched the “Shucle” service in Eunpyeong, Seoul and Sejong City to make the short-distance everyday trips of local residents safer and more convenient. As of April 2022, 340,483 residents have used this innovative community mobility service, enabling them to experience the convenience of a new transportation mode and left positive reviews of the service.

In December 2021, we started providing the service in Paju through the Gyeonggi-do Demand Responsive Transit (DRT) pilot project. By providing a service similar to public transportation, rather than the existing form of community mobility, Shucle was able to get closer to the public. Going forward, Shucle’s DRT service will be expanded to the entire Gyeonggi-do province, particularly to people with limited mobility such as the elderly and the disabled, so that more people can move around more conveniently.

Wheel Share

The Wheel Share program provides electric wheelchair conversion kits free of charge for a short period of time to disabled people so that they can travel freely with their families. The kits are available at transportation hubs, mega cities such as Seoul and Busan, and the three largest airports in Gimpo, Gimhae and Jeju.

In 2021, in cooperation with the Gyeongbuk Culture and Tourism Corporation, Hyundai opened a new Wheel Share rental office in Gyeongju, one of the major tourist destinations in Korea, as well as launching a caretaker-operated kit to strengthen its support for the elderly and vulnerable on the road. Under the banner of “breaking down the barriers to travel”, we plan to continue our efforts to revitalize travel for people with disabilities and produce videos to raise awareness of barrier-free travel for all. During the four-year period from 2018 to 2021, a total of 2,983 people with disabilities used the Wheel Share service.

Hyundai Motor Group’s Wheel Share – Breaking Down the Barriers of the Disabled to Travel

H-Special Movement Project

The H-Special Movement project offers eco-friendly school buses to special needs schools. Hyundai selected three special needs schools in Seoul and donated a STARIA van customized for the disabled, thereby ensuring students’ safe commuting to school and providing customized solutions to those with limited mobility. We also provide a vehicle safety inspection service for schools that have applied for the special vehicle care service. Going forward, we will explore various ways to make commuting to school more convenient for a larger number of schoolchildren.

Dental Trailer Sorriso Cidadang in Brazil

Since 2014, Hyundai Motor Brasil has been conducting social contribution activities using a mobile dental treatment trailer named “Sorriso Cidadang” (meaning citizen’s smile) in collaboration with the Piracicaba Metal Workers Union (STMP). In 2021, due to the closure of schools during the COVID-19 crisis, the dental service cared for 1,789 firefighters and police officers in Piracicaba. As of 2021, a total of 59,308 people had benefited from the service.

Drive-in MOVING THEATER

Since 2015, Hyundai, in collaboration with Hyundai Motor Club, has been conducting the “Moving Theater” campaign to visit culturally underprivileged areas, install movable screens, and screen movies. In 2020, we switched the service to a drive-in MOVING THEATER amid the COVID-19 pandemic in order to allow residents to continue enjoying their cultural life during difficult times. We invited local residents as well as the underprivileged to screenings of the latest movies while offering them free snacks prepared and packaged by volunteers. In 2020, we opened a MOVING THEATER in Seongnam in conjunction with a local welfare center. In 2021, in partnership with Jangsu-gun, Yeongyang-gun, and Yeongdeok-gun district offices, we provided local residents in culturally underprivileged areas with an opportunity to experience the MOVING THEATER.

1 Supporting Underprivileged Regions Using Mobility in the Middle East
2 Breaking Down the Barriers of the Disabled to Trave I<Wheel Share>
3 Drive-in MOVING THEATER

Hope

1 Future Mobility School
2 Vision Drive
3 Kid's Auto Park

Hyundai Hope on Wheels in North America

Since 1998, Hyundai Motor America's sales subsidiary has been running the Hope on Wheels campaign together with its dealerships. The campaign, which supports childhood cancer research, was started to create a happy future in which children no longer suffer from cancer. The campaign has expanded across the United States, raising USD 185 million (approximately KRW 226.5 billion) in cumulative donations as of the end of 2021.

Hyundai Help for Kids in Australia

Help for Kids is an activity in which Hyundai Motor Company Australia (HMCA) joins hands with its dealers to help children and their families in Australia with donations made at the time of car sales. HMCA not only donates cash to support their livelihood but also subsidizes their vehicle purchases as well as offering them necessary education along with its support and collaboration with a total of ten charities, including Ronald McDonald House Charities Australia. The donations raised for Help for Kids from 2014 to 2020 exceeded USD 10 million. Hyundai will continue to carry out various "Hope" activities to promote the growth of future generations.

H-Mobility Class

Since 2020 Hyundai has been operating the H-Mobility Class to nurture science and engineering college (graduate) students in Korea into future talents, with the ultimate goal of enhancing national competitiveness. The H-Mobility Class program is designed to promote understanding of future technologies, such as vehicle electrification and autonomous driving, and to foster professional human resources, while providing intensive training and employment benefits (including exemption from candidate screening) to outstanding students.

In 2021, Hyundai offered 1,550 students a series of courses in various fields associated with vehicle electrification, such as fuel cells, batteries, power conversion, and motor technology, as well as those with autonomous driving, such as cognition, judgment, control, communication and network technology. In 2022, we plan to expand the courses to include robotics such as kinematics, control, sensors, estimation, and robot joint angles.

Future Mobility School

Hyundai signed an MOU with the Ministry of Education to launch the Future Mobility School in 2016. It is a free-semester middle school providing specialized career education based on theory, practice and experience, with the aim of allowing young people to understand the automobile industry and explore the related occupations. In 2018, we reorganized the curriculum with the focus on hydrogen energy and eco-friendly future cities, which are essential for a deeper understanding of the future automobile industry. The Future Mobility School prioritizes admissions from students from rural schools, special needs schools, and small schools in order to help resolve inequality in career education opportunities. In 2022, the School included a creative experiential learning course for elementary school students in its curriculum and began to teach technical content on the subject of clean mobility and sustainability in an easy and fun way at children's level.

Vision Drive

Hyundai's Namyang R&D Center runs Vision Drive to support career planning for future generations. Vision Drive consists of vision mentoring by employees, while the Vision Festival is held with the participation of celebrities.

The vision mentoring program provides students with opportunities to explore career paths in the automobile industry while attending lectures on automobile history, technology, and future mobility given by Hyundai employees. In 2021, 2,257 sixth graders from 27 elementary schools took part in the program in western Hwaseong. The Vision Festival features career lectures of celebrities from various fields and an opportunity to meet and speak with the celebrities. In 2021, the festival included a lecture by a renowned YouTuber Dotty and broadcast it live so that many more students could watch.

Hyundai Dream Center

Hyundai has been operating the "Hyundai Dream Center" since 2013 with the goal of helping educated young people in developing countries to achieve economic independence by providing them with professional automobile maintenance education and internships for competency development. Starting with "Hyundai Dream Center No. 1" in Ghana in 2013, Hyundai is now running a total of seven dream centers in Ghana, Indonesia, Cambodia, Vietnam, the Philippines, Peru and Kenya, with the latest center in Kenya launched in 2021. As of 2022, the Hyundai Dream Center has educated 1,975 people, produced 1,309 graduates, among them 726 found jobs, thereby creating social value by nurturing skilled automobile professionals and creating jobs in developing countries.

Safe Road Traffic Project in Russia

Since 2017, Hyundai has been operating the "Safe Road Traffic Project", in which children learn about traffic safety, in collaboration with Russia's Main Directorate for Traffic Safety and the Ministry of Education of the Russian Federation. In 2021, we offered education to 16,700 children, 16,900 parents, 165 daycare centers, and 14,500 teachers. We also launched an online game simulator program to deliver online courses in more intriguing and safer ways.

Kid's Auto Park

In 2009, Hyundai established a Kid's Auto Park in Seoul, followed ten years later by the largest children's traffic experience center in Ulsan. At various educational facilities including a virtual auto experience hall, a license test center, and an auto booth, Hyundai provides programs tailored to children's eye level, such as a mini-motorcar driving experience, pedestrian safety information, and stereoscopic images promoting road safety. In 2021, a total of 8,841 children (cumulative total of 178,976 children) visited the park, which plays a key role in preventing child traffic accidents and raising safety awareness in society.

Traffic Safety Song with Robocar Poli

In 2011, Hyundai produced an educational animation entitled Traffic Safety Story with Poli, which included information on getting on and off vehicles, safety in blind spots, pedestrian safety, bicycle safety, and traffic lights, and has since aired it in 82 countries. In 2021, we produced a traffic safety musical animation entitled "Traffic Safety Song with Poli", thereby introducing new traffic safety issues such as the use of car seats to the existing curriculum, which includes the wearing of seat belts. We will continue to help children to acquire road safety knowledge by watching fun and easy-to-follow musical animations anytime, anywhere.

Traffic Safety Song with Poli

Community

Sponsoring the Korea Archery Association

Since 1985, Hyundai has been sponsoring the Korea Archery Association, sparing no expense in providing financial support for the stable operation of the association, as well as rewarding the national archery team for its outstanding results in international competitions. The company has used the technological capabilities of its research institute to develop a shooting machine that sorts out bad arrows, and applied a precision analysis technology to identify abnormal or defective parts, enabling the national squad to achieve a very high level of skill and continue beating their personal records. We also sponsor a number of leading archery tournaments, including the Archery World Cup and the World Archery Championships. In 2021, we delivered rewards to the national archery team in recognition of its outstanding results at the Tokyo Olympics.

Employee Volunteer Corps

Hyundai boasts 143 employee volunteer groups striving for win-win growth with local communities by serving in various H-affiliated facilities around the country. In 2021, they were unable to conduct many face-to-face volunteer activities due to COVID-19, yet they continued to make meaningful contributions to Hyundai's local communities, such as purchasing agricultural products from the areas concerned and delivering gift vouchers and cash donations to the facilities. For example, volunteers at the Ulsan Plant conducted various volunteer activities such as painting, balloon art, hand and foot massage, and talent donation in partnership with local social welfare facilities. Meanwhile, employees from the Asan Plant shared the difficulties of local residents through continuous communication and helped elderly people living alone or raising grandchildren in rural areas through various programs, including the delivery of goods and donations during national holidays. Hyundai and its employee volunteers will continue sharing with those in need.

H-Local Partner

In 2018, the labor and management of Hyundai's Ulsan Plant signed an MOU with the Buk-gu District Office of Ulsan City to provide customized assistance to people in welfare blind spots in collaboration with members of the city's Buk-gu community. In 2021, they carried out a variety of activities that reflected the needs of each neighborhood, such as holding birthday parties for elderly people living alone and providing gift packages to children from low-income households. In addition, they delivered 2,000 samgyetang (ginseng chicken soup) lunchboxes along with messages of support to senior citizens at local senior centers and people working in COVID-19 vaccination centers. In winter, they donated daily necessities such as rice, electric rice cookers, and hot water mats to 32 low-income families, kimchi refrigerators to 10 local children's centers, and kimchi to 350 low-income seniors.

Volunteer Service HYU(休)

Amid the difficulties with the face-to-face volunteer service caused by the COVID-19 pandemic, Hyundai conducted various non-face-to-face volunteer activities with its employees. One such activity was "eco-friendly plogging", in which approximately 500 employees participated with their families at the company's domestic business sites to reduce 1.2 tons of GHG emissions and donate as many seedlings as the number of participants. In addition, Hyundai employees conducted a "kit production service" in which they could cooperate with their families at home in making upcycled dolls using recycled cotton wool and donate them to local children's centers and facilities for children with disabilities. In 2022, we plan to promote activities that allow our employees to participate more actively in line with the easing of the COVID-19 restrictions.

1 Employee Volunteer Corps
2 H-Local Partner
3 Volunteer Service

Global Partnership for Arts and Culture

Hyundai supports a wide range of exhibitions and programs in partnership with art institutions around the globe to offer a greater number of audiences the opportunity to enjoy and experience art.

National Museum of Modern and Contemporary Art, Korea (MMCA)

In partnership with the National Museum of Modern and Contemporary Art, Korea (MMCA), Hyundai has been holding the "MMCA Hyundai Motor Series" since 2014 to expand the boundaries of Korean art. Every year, Hyundai supports a large-scale solo exhibition of an esteemed Korean artist as well as a related seminar and publication activities. In 2021, the MMCA Hyundai Motor Series 2021: MOON Kyungwon & JEON Joonho – NEWS FROM NOWHERE, FREEDOM VILLAGE exhibition was held. As part of the exhibition, the "Mobile Agora" talk program was also held to discuss contemporary crises, future alternatives and the role of art after disasters with experts in different fields from around the world.

Hyundai has also been supporting "PROJECT #" since 2019 to discover next-generation creators in Korea and support their experimental and creative activities. Two teams are chosen every year to be provided with a grant of KRW 30 million, a studio, and exhibition opportunities. Through the PROJECT HASHTAG 2021, two selected teams exhibited artworks reflecting concerns of Gen Z and millennials regarding online experiences and environments that were heavily influencing and rapidly reshaping human values in the post-pandemic era.

Tate

The Hyundai Commission is a series of site-specific installations by international artists for the Turbine Hall, at the heart of Tate Modern. In 2021, "Hyundai Commission: Anicka Yi" populated the Turbine Hall with machines, transforming the space with the artist's vision of a new kind of ecosystem. Moving through the air, the floating machines prompted audiences to think about new possibilities for machines and our futures.

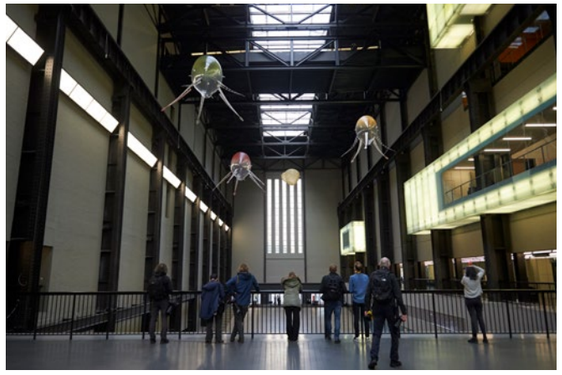
The Hyundai Tate Research Centre: Transnational, established in 2019, continues to encourage new perspectives on global art histories and critical research to highlight global exchanges of artists and ideas. Including an annual symposium, the Hyundai Tate Research Centre: Transnational hosts research events, both offline and online, to facilitate collective research and intellectual exchange.

Los Angeles County Museum of Art (LACMA)

Hyundai began a ten-year partnership with the Los Angeles County Museum of Art (LACMA) in 2015, "The Hyundai Project at LACMA." The most recent project as part of this initiative Barbara Kruger: Thinking of ~~You~~. I Mean ~~Me~~. I Mean You, opened in March 2022. As the artist's most comprehensive exhibition in more than 20 years, it showcases reinterpretations of her most renowned works from the 1980s to 1990s by combining new technologies, and also has significance in that it features a variety of new public art works outside the museum, one of which is Untitled (Car) in collaboration with Hyundai's IONIQ 5.

LACMA's presentation of exhibitions that highlight the convergence of art and technology as well as the Art + Technology Lab are core to the partnership that brings art and technology together. Through the Art + Technology Lab, artists had been given grants for cutting edge projects while melding art and technology in unique ways. Some of these worked on projects that incorporated rapidly-growing technologies such as blockchain, metaverse platforms, and NFTs, including the "Rocket Factory" NFT collection by Tom Sachs. Participating artists are receiving technical advice from Hyundai, Google, SpaceX, and Snapchat, which provides support for realizing their ideas into artworks.

MOON Kyungwon & JEON Joonho, NEWS FROM NOWHERE: FREEDOM VILLAGE, 2021, 2 channel HD film installation, color, sound, 14min 35 sec. Courtesy of the artist. Photograph by LEE JINCHUL, Image provided by MMCA

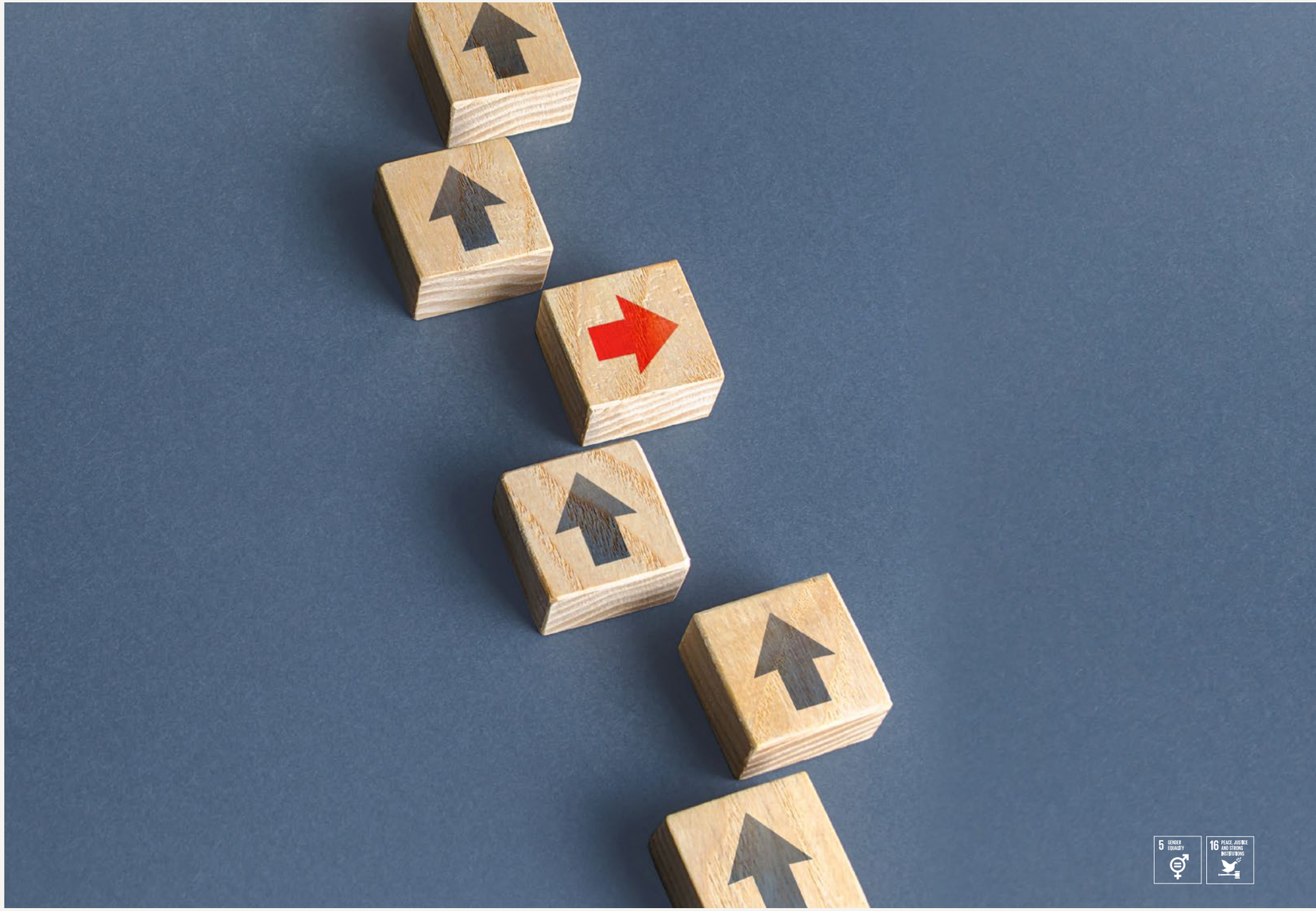


Hyundai Commission: Anicka Yi: In Love With The World Tate Modern 2021. Photo © Tate (Ben Fisher Photography)

Barbara Kruger, *Untitled,* 2020, digital print on vinyl, courtesy of the artist and Hyundai Motor Company, installed as a part of *Barbara Kruger: Thinking of ~~You~~.* I Mean ~~Me~~. I Mean You., Los Angeles County Museum of Art, March 20, 2022–July 17, 2022, photo © Museum Associates/LACMA

Governance

Sound and transparent management based on trust with stakeholders is the foundation and driving force of sustainable growth. Equipped with an advanced governance structure centered on its BOD, Hyundai is striving to increase its corporate value from a long-term perspective. We also do our utmost that our corporate growth can lead to enhance value of our shareholders and other stakeholders. Cherishing ethical values as the essence of our corporate culture and competitive advantage, we are building sound and solid growth momentum by turning risks into opportunities.



Board-centered Management System

Composition of the BOD

Hyundai aims to establish a transparent and sound governance structure. To this end, based on a deep understanding of its diverse stakeholders, including shareholders and customers, Hyundai appoints directors with diversity, expertise and independence, and strives to maximize shareholders' rights and interests as well as corporate value. As Hyundai's highest decision-making body, the BOD pursues the goal of sustainable and balanced growth while faithfully performing the function of checks and balances by supervising the activities of directors and management. We have been building a better governance system by appointing independent directors equipped with independence, diversity, and expertise in their respective fields.

Composition of the BOD

Hyundai's BOD is composed of 11 members in consideration of the need for the efficient operation and decision-making by the BOD, with independent directors making up more than half of members in order to maintain its independence. The BOD has expertise in a wide variety of fields including management, law, accounting, finance, and future technology, and respects diversity without discrimination on the grounds of gender, race, religion etc.

Director Tenure

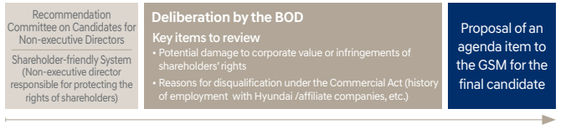
As of the end of March 2022, the average tenure of the 11 board members is three years. In accordance with the Commercial Act, the term of office of independent directors cannot exceed six years. Those appointed in March 2022 include three internal directors (one re-appointed, two newly appointed) and three non-executive directors (all re-appointed).

Appointment of Directors

Individual Item of Agenda for the Appointment of Directors at GSM

All directors of Hyundai are appointed at a general shareholder's meeting (GSM) among the candidates recommended by the Recommendation Committee on Candidates for Non-executive Directors. Candidates recommended by the Committee are selected as final candidates through the deliberation process of the BOD before being presented as an individual item of agenda at a general shareholders' meeting and appointed as non-executive directors.

Process of Director Candidate Selection (Recommendation)



Independent director Chi-Won Yoon was recommended as a preliminary candidate after undergoing an independent evaluation by the shareholder recommendation system. Following a fair evaluation by the external evaluation advisory group, he was recommended by the Recommendation Committee on Candidates for Non-executive Directors for deliberation by the BOD, before being proposed as a final candidate. He was initially appointed at the 51st GSM and was re-appointed at the 54th GSM.

Diversity and Expertise of the BOD

Hyundai respects the principle of diversity of gender, nationality, race, etc. when forming a BOD. To this end, we appoint directors who possess expertise in a variety of fields, such as global business, academia, R&D, finance, and future-based technologies.

As of March 2022, the Board has one foreign director (Eugene M. Ohr) and one female director (Ji Yun Lee). Director Eugene M. Ohr is an expert in global business and helps enhance the company's management transparency, while Director Ji Yun Lee is currently an associate professor at the Department of Aerospace Engineering of KAIST and a director of the Institute of Positioning, Navigation and Timing (2016-present), and has also served as a director of the American Institute of Navigation (2019-2021). She is a world-recognized authority on the safety of intelligent transportation and autonomous driving systems; and plays a central role at Hyundai, where she advises on autonomous driving, a future core technology of the automotive industry, and mid- to long-term business planning for urban air mobility (UAM) which will become a future mobility innovation.

To enhance the overall professionalism of the Board, Hyundai provides training on various topics for independent directors, including training on ESG and climate risks in 2021.

Guidelines on the Diversity of the Board of Directors

BOD Composition

Classification	Name	Title	Career	Date of Appointment	Gender	Nationality
Internal Directors	Euisun Chung	Executive Chair	Currently Executive Chairman of Hyundai Motor Group	March 12, 2010	Male	Korea
	Jae Hoon Chang	President & CEO	Currently President & CEO of HMC, President of Genesis Division	March 24, 2021	Male	Korea
	Dong Seock Lee	Vice President & CEO	Currently Executive Vice President and CSO of Domestic Productions	March 24, 2022	Male	Korea
	Chung Kook Park	Executive President	Currently President and Head of HMC R&D Division	March 24, 2022	Male	Korea
	Gang Hyun Seo	Executive Vice President	Currently Executive Vice President of HMC Planning & Finance Division	March 24, 2022	Male	Korea
Independent Directors	Eun Soo Choi	Independent Director	Currently General Counsel of The Kim Law Firm Former President of Daejeon High Court and Patent Court	March 17, 2017	Male	Korea
	Chi-Won Yoon	Independent Director	Currently Chairman of EQONEX Former Vice Chairman of UBS Wealth Management	March 22, 2019	Male	Korea
	Eugene M. Ohr	Independent Director	Former Partner of Capital International Inc.	March 22, 2019	Male	Korea
	Sang-Seung Yi	Independent Director	Currently Professor of Economics, Seoul National University Former Chairman, Korea Academic Society of Industrial Organization	March 22, 2019	Male	Korea
	Dal Hoon Shim	Independent Director	Currently Representative of Woorin Tax Partners Former Head of NTS Jungbu Regional Office	March 24, 2021	Male	Korea
	Ji Yun Lee	Independent Director	Currently Assistant Professor, Department of Aerospace Engineering of KAIST Former Director of American Society of Navigation	March 24, 2021	Female	Korea

* As of June 1, 2022

Independent Director Training in 2021

Dates	Participating Directors	Major Topics
Apr. 22	Eun Soo Choi, Chi-Won Yoon, Eugene M. Ohr, Sang-Seung Yi, Dal Hoon Shim, Ji Yun Lee	Hyundai Motor Group's CSR activities, future plans, etc.
Sep.16	Eun Soo Choi, Chi-Won Yoon, Eugene M. Ohr, Sang-Seung Yi, Dal Hoon Shim, Ji Yun Lee	ESG, climate change status and related risks, countermeasures, etc.

Independence of Non-executive Directors and Restrictions on Concurrent Positions

Hyundai has put in place strict independence guidelines, meeting the legal standards required by the Korean Commercial Act, based on the international standards. Independent directors must not only comply with them, but also represent the rights and interests of stakeholders with exemplary ethics and professionalism. Hyundai therefore only appoints persons with no significant stake in the company as independent directors, and they maintain independency from top management, monitor the efficient operation of the company, and play a role in enhancing corporate value. In accordance with Hyundai's regulations on the operation of the BOD, its independent directors must devote sufficient time and effort to fulfilling their responsibilities. In addition, according to the Commercial Act, they are prohibited from serving as directors, executive officers, and/or auditors for two or more companies other than the company itself. When concurrently serving as a director of another company, they must report the details of the duties they wish to hold concurrently to the Board in advance and obtain its approval.

Name	Date of Initial Appointment	Date of Term Expiration	Concurrent Positions	Details of Concurrent Positions (institution / position)
Eun Soo Choi	Mar. 17, 2017	Mar. 18, 2023	N/A	-
Chi-Won Yoon	Mar. 22, 2019	Mar. 23, 2025	Yes	EQONEX / Chairman
Eugene M. Ohr	Mar. 22, 2019	Mar. 23, 2025	N/A	-
Sang-Seung Yi	Mar. 22, 2019	Mar. 23, 2025	Yes	Samsung C&T / Independent Director
Dal Hoon Shim	Mar. 24, 2021	Mar. 23, 2024	Yes	Samhwa Paints Industrial / Independent Director
Ji Yun Lee	Mar. 24, 2021	Mar. 23, 2024	N/A	-

Guidelines on the Diversity of the Board of Directors

Operation of the BOD

Hyundai holds BOD and subcommittee meetings every quarter to make decisions on matters stipulated in the relevant laws and the Articles of Association or major matters related to the company management. The meetings are also held whenever matters requiring resolution by the Board or a subcommittee arise. A Board meeting is convened by its chair or another member appointed by the Board. At the time of convening the Board, each director is notified of the meeting time, place, and agenda at least seven days prior to the date of the meeting in accordance with the regulations of the Board. With the exception of cases outlined within the company's rules and regulations, a BOD resolution must be passed by a majority of the members in attendance. The BOD consists of a majority of non-executive directors who fulfill the functions of monitoring and checking. By providing them with opportunities to participate in management, Hyundai enhances the operational efficiency of the BOD. In addition, the BOD supervises critical issues directly related to the company's operations, such as business ethics and compliance as well as risk management.

BOD Operations

According to the principle that BOD meetings are held on a regular basis, Hyundai holds the meetings once per quarter, while extraordinary meetings may be convened as and when required in accordance with the relevant regulations. The Board discloses details of its activities, such as whether individual directors are present and whether they agree or disagree on agenda items, through a regular report. With the exception of cases outlined within the company's rules and regulations, a BOD resolution must be passed by a majority of the members in attendance.

BOD Activities in 2021

Number of meetings	Number of agenda items for resolution	Number of agenda items for report
9	19	14

BOD Participation in 2021

Average participation rate	Participation rate of internal directors	Participation rate of independent directors
94%	86%	100%

BOD Evaluation

Evaluation of BOD Operations and Activities

At Hyundai, independent directors conduct an annual evaluation of BOD operations by reviewing 30 items, including the roles and responsibilities, structure, and operation of the Board. We reflect the opinions of the independent directors on each evaluation item, discuss the results of the evaluation with the BOD, and make continuous efforts to improve the operation of the BOD. Furthermore, we have our executives evaluate independent directors each year based on such criteria as sincerity, fairness, and professionalism to promote their performance, with the results of the evaluation taken into account when re-appointing independent directors.

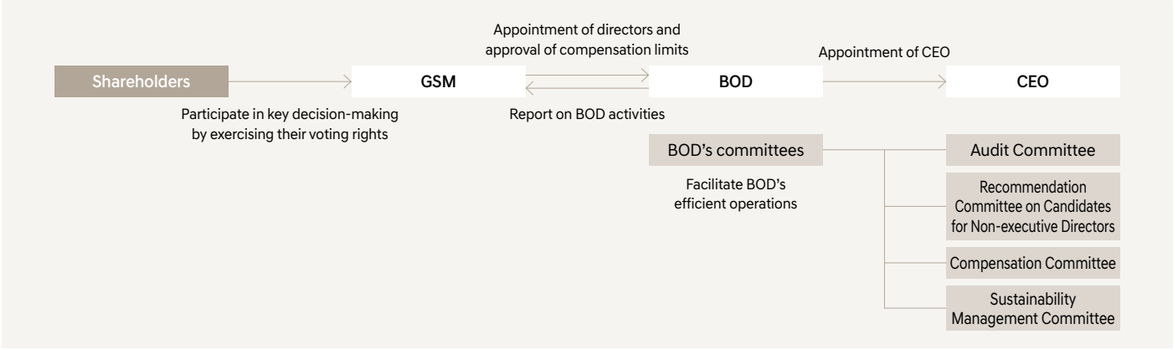
Performance Evaluation and Compensation of Directors and Management

The directors' compensation must not exceed the limit approved at a GSM, and the amount is determined following a review by the Compensation Committee. The compensation amount for management is determined based on the performance evaluation of their leadership, professionalism, and contribution to the company.

CEO Compensation and Calculation Criteria

When evaluating and rewarding the CEO's performance, Hyundai reflects the results of financial evaluations such as sales, profit ratios, net cash liquidity, debt ratios, and market shares, as well as the results of comparative evaluations among peers with regard to stock prices, ESG, and brand power. As of 2021, the CEO's remuneration amounted to KRW 977 million, consisting of a basic salary of KRW 694 million, bonuses of KRW 270 million, and other wage and salary income of KRW 13 million.

Decision-making Process of the BOD



Criteria for BOD Remuneration

Classification	Payment criteria
Internal directors	• Salary: Paid within the limit of directors' remuneration determined by the resolution of a general shareholder's meeting, based on internal criteria such as Hyundai Motor Company's executive salary table and executive wage setting standards, job title, tenure, leadership, professionalism, contribution to the company, and human resource development, etc. • Bonus: Paid based on the executive remuneration criteria (performance incentives) such as quantitative indicators (business performance such as sales and operating profit and degree of achievement of business goals, etc.) and non-metric indicators (performance and contribution as executives, internal and external business environment, etc.) • Other earned income: Paid according to the company regulations on welfare support such as medical expenses, school expenses, and long-term service rewards
Independent directors	• Fixed amounts are paid to ensure their independence and transparency within the limit of remuneration for directors determined by the resolution of a GSM, with no separate performance bonus paid.

BOD Remuneration

(Unit: KRW million)

Classification	CEO[1]	Independent director	Board member	Employee[2]	CEO-to-employee pay ratio
Average compensation per person	977	102	1,339	96	10.22 x

* For further details, please refer to the 2021 business report published on the electronic disclosure system of the Financial Supervisory Service.

[1] CEO: Based on remuneration for Jae Hoon Chang, President & CEO of Hyundai Motor Company

[2] Employees: Excluding registered executives (unregistered executives and employees)

Board Activities in 2021

Classification	Date	Contents	Whether approved	Attendance rate	Approval rate
1st General Meeting	Jan. 26	Approval of financial statements for the 53rd fiscal year	Approved	100%	100%
		Approval of the 53rd annual report	Approved		100%
		Approval of the business plan for 2021	Approved		100%
		Appointment of Compensation Committee member	Approved		100%
		Appointment of fair trade compliance program supervisor	Approved		100%
		Approval of corporate bond issue limit	Approved		100%
		Assessment of 2020 internal accounting management system Activities and plan of compliance management	Reported		-
Extraordinary Meeting	Feb. 23	Approval of convocation and agenda to be submitted to the 53rd GSM	Approved	100%	100%
		Results of 2020 internal accounting management system	Reported		-
	Mar. 04	Re-approval of financial statements of the 53rd fiscal year	Approved	90%	100%
	Mar. 24	Appointment of Chief Executive Officer	Approved	100%	100%
		Amendment of Rule (Rule and Regulation of BOD, Rule and Regulation of Sustainability Management Committee, Corporate Governance Charter)	Approved		100%
		Appointment of Committee member (Sustainability Management Committee, Recommendation Committee on Candidates for Non-executive Directors, Compensation Committee)	Approved		100%
		Approval of dual-directorship (Gang Hyun Seo: Hyundai Capital, Hyundai Card, Hyundai Commercial)	Approved		100%
		Approval of plan for safety and health	Approved		100%
2nd General Meeting	Apr. 22	Guarantee of payment for overseas subsidiaries	Approved	91%	100%
		Appointment of manager	Approved		100%
		Business results of 1st quarter of 2021	Reported		-
3rd General Meeting	Jul. 22	Approval of 54th fiscal year interim dividend payment	Approved	91%	100%
		Business results of 2nd quarter of 2021 Establishing an overseas sales subsidiary Capital Increase for overseas production subsidiary Capital increase for overseas joint venture	Reported		-
Extraordinary Meeting	Sep. 16	Approval of disposal of treasury stock	Approved	91%	100%
		Conclusion of Hyundai Card shareholders' agreement Mid- to long-term sales production operation strategy in North America	Reported		-
4th General Meeting	Oct. 26	Approval of transaction between directors, etc. and the company	Approved	100%	100%
		Business results of 3rd quarter of 2021 CKD plant review in Saudi Arabia	Reported		-
Extraordinary Meeting	Nov. 18	Approval of acquisition of treasury stocks	Approved	82%	100%
		ESG rating result (DJSI) Development status of fuel cell system	Reported		-

Functions of the BOD

Risk Management

Hyundai's BOD is striving to establish a flexible risk response system to meet the rapid changes in the automobile industry and newly emerging trends, such as autonomous driving and electrification. The Planning & Finance Division, under the direct supervision of the company's CEO, analyzes risk and opportunity factors caused by changes in the internal and external environment, diagnoses the company's responsiveness and competitiveness, and establishes mid- to long-term strategies and tasks.

Compliance Management

Hyundai's BOD has established a compliance management system along with various schemes designed to prevent legal risks. We have appointed a compliance officer who is responsible for designating a person to take charge of compliance at each department, and for strengthening the compliance capabilities of its business units by producing and distributing compliance guidelines that cover the relevant laws and the countermeasures necessary for business performance. Furthermore, we conduct regular self-inspections with the aim of embedding a culture of strict compliance throughout the company.

Ethical Management

Based on its Ethics Charter, Employee Code of Conduct, and Guidelines for Ethical Business Conduct enacted in 2001, Hyundai's BOD encourages all of its employees to play a leading role in ethical management and make sound ethical judgments in all business situations. In 2021, we strengthened our ESG management system, including ethical management, by expanding and reorganizing the Corporate Governance & Communication Committee, which previously had the function of the Ethics Committee, into the Sustainability Management Committee.

Internal Accounting Management

Hyundai's BOD has designed and launched an internal accounting control system with the aim of providing reasonable assurance that the company's financial statements are prepared and disclosed in accordance with the generally accepted accounting standards. In December 2018, in accordance with the 2018 amendments to the Act on External Audit of Stock Corporations, we wholly revised our internal accounting control system to reflect changes in the Act regarding the roles and responsibilities of the CEO and the Audit Committee in operating the system and the best practices for the system. Following advances in our internal accounting control system to comply with the amended law, we have been operating relevant control activities since 2019. Our CEO evaluates the effectiveness of the internal accounting control system every business year and reports the results to the Audit Committee, the BOD, and the general shareholders' meeting. Furthermore, the Audit Committee assesses the operating status of the company's internal accounting control system on an annual basis.

Management of Climate Change

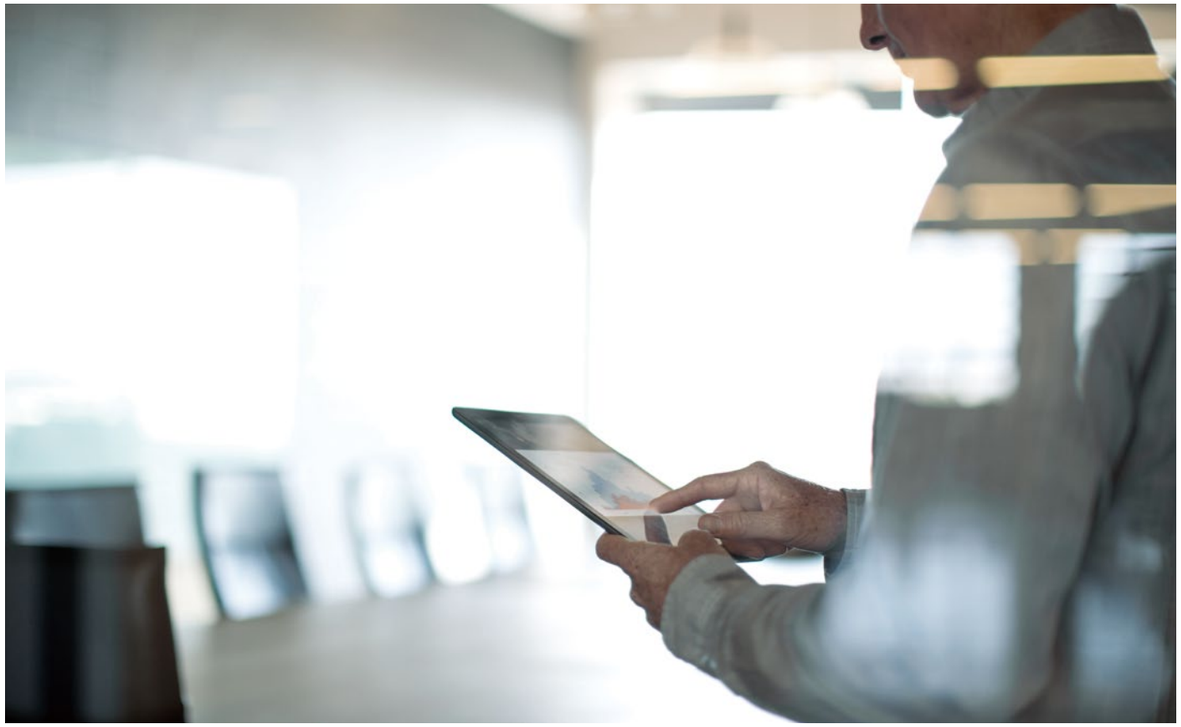
Climate change is not only a task that we must help solve for the benefit of future generations as a member of the global community, but also an important issue that is directly related to our business strategy/performance due to the inherent characteristics of the automobile industry. Hyundai has therefore formed the Sustainability Management Committee to discuss and monitor relevant issues, and the Committee reviews the company's mid- to long-term strategies, including redesigning the "2025 Strategy" and "Carbon Neutral Strategy".

Health and Safety Management

In line with the amendment to the Occupational Health and Safety Act in Korea, the CEO establishes a health and safety management plan, obtains approval from the BOD, and implements responsible safety management according to the plan. Hyundai is steadily increasing its investment in safety devices and new safety technologies for its production facilities while expanding the company-wide safety organization to improve safety compliance and safety management.

BOD Subcommittees

Hyundai has established four BOD subcommittees – the Audit Committee, the Compensation Committee, the Recommendation Committee on Candidates for Non-executive Directors, and the Sustainability Management Committee. Each subcommittee meets the ratio of non-executive directors to maintain independence in accordance with the Commercial Act and our internal board regulations; and includes experts in the relevant fields according to segmented task areas and processes. The four subcommittees under the BOD enhance professionalism and efficiency in the BOD's work according to the purpose of their establishment. The attendance rate and voting records of the committee members are disclosed in the business report.



Audit Committee

Composition of the Audit Committee

The Commercial Act stipulates strict criteria for securing the transparency and independence of the Audit Committee, and thus the Audit Committee must be composed of at least three directors appointed at a GSM, and at least two-thirds of them should be independent directors. It should also contain at least one member who is a specialist in accounting and finance. All five members of Hyundai's Audit Committee are independent directors, with three (Chi-Won Yoon, Sang-Seung Yi, Dal Hoon Shim) of whom are experts in accounting and finance.

In particular, Director Eun Soo Choi, a legal expert who has served as a presiding judge at district and high courts, the chief judge of a court, and the President of the Patent Court, and Director Dal Hoon Shim, who has long served as a tax official, such as the Head of NTS Jungbu Regional Office, contribute greatly to the company's risk management by viewing things from a different perspective to the company's internal audit organization.

Operation of the Audit Committee

Roles and Responsibilities of the Audit Committee

The Audit Committee verifies the legality of the business activities of the directors and management, and reviews the soundness and propriety of Hyundai's corporate financial activities and the accuracy of its financial reporting. The company's internal accounting manager acts as a full-time registered director, and a separate entity is formed to support him in performing his duties. In 2021, all members of the Audit Committee attended education on the topic of "The Impact of COVID-19 on the Internal Accounting Management System and Response Strategies" in order to enhance the professionalism and efficiency of their auditing work.

Approval of Non-audit Services

Hyundai regularly monitors the independence of its external auditors, and only allows their non-audit services to the extent that they do not affect their independence. We report the related details to the Audit Committee on a quarterly basis and disclose them in quarterly reports.

Audit Committee Composition

Name	Eun Soo Choi	Chi-Won Yoon	Sang-Seung Yi	Dal Hoon Shim	Ji Yun Lee
Classification	Independent director	Independent director	Independent director	Independent director	Independent director
Date of initial appointment	Mar. 17, 2017	Mar. 22, 2019	Mar. 22, 2019	Mar. 24, 2021	Mar. 24, 2021

Non-audit Service Contracts with External Auditors

Business year	Date of contract	Serviced offered	Duration	Service fee (KRW million)
54th	Mar. 25, 2020	Support for renewal of the US APA	Mar. 2020 - Mar. 2022	250
	Apr. 28, 2020	Review of the origin determination process for FTAs	May 2020 – Jul. 2021	17
	Mar. 2, 2021	Refund request for the assessed local tax	Mar. 2021 – completion of task	10% of the refund amount
	Apr. 12, 2021	Refund request for the paid local tax	Apr. 2021 – completion of task	10% of the refund amount
	Dec. 17, 2021	Support for renewal of the APA of Czech Republic	Jan. 2022 – completion of task	180
	Dec. 21, 2021	Support for renewal of the APA of Ger many	Jan. 2022 – completion of task	180

Audit Committee Activities in 2021

Classification	Date	Contents	Whether approved	Attendance rate	Approval rate
1st General Meeting	Jan. 26	Approval of financial statements for the 53rd fiscal year	Approved	100%	100%
		Approval of the 53rd annual report	Approved		100%
		Operational status of 2020 internal accounting management system Operational status of 2020 reporting system for violations of internal accounting	Reported		-
Extraordinary Meeting	Feb. 23	Approval of agenda to be submitted to the 53rd GSM	Approved	100%	100%
		Approval of the evaluation results of the operation system for the internal accounting management system in 2020	Approved		100%
		Approval of the audit performance in 2020 and the audit plan for 2021	Approved		100%
		Progress of the external audit in 2020	Reported		-
Extraordinary Meeting	Mar. 04	Re-approval of financial statements of the 53rd fiscal year	Approved	100%	100%
Extraordinary Meeting	Mar. 24	Appointment of the Chairperson of the Audit Committee.	Approved	100%	100%
2nd General Meeting	Apr. 22	Business results of 1st quarter of 2021 2021 evaluation plan for the internal accounting management system Results of checking the compliance requirements related to the appointment of an external auditor in 2020 The external auditor's audit plan for the 2021 financial statements	Reported	100%	-
3rd General Meeting	Jul. 22	Business results of 2nd quarter of 2021 Progress of the external auditor's audit	Reported	100%	-
4th General Meeting	Oct. 26	Establishment of regulations on the appointment of external auditors	Approved	100%	100%
		Business results of 3rd quarter of 2021 Progress of the internal accounting management system in 2021 Progress of the 2021 internal audit Progress of the external audit	Reported		-
Extraordinary Meeting	Nov. 09	Evaluation and selection of external auditor candidates	Approved	100%	100%

Compensation Committee

Composition of the Compensation Committee

Following the amendment to the Articles of Incorporation for the establishment of the Compensation Committee at the GSM in 2019, Hyundai enacted the Compensation Committee regulations at the 4th general BOD meeting. Non-executive directors constitute a majority of the members of the Committee, with two independent directors and one internal director.

Operation of the Compensation Committee

Roles and Responsibilities of the Compensation Committee

Established to secure objectivity and transparency in the remuneration decision process for registered directors, the Compensation Committee deliberates and decides on the remuneration limit for registered directors and other matters related to the remuneration system for internal directors.

Compensation Committee Composition

Name	Chi-Won Yoon	Dal Hoon Shim	Gang Hyun Seo
Classification	Independent director	Independent director	Internal director
Date of initial appointment	Jul. 22, 2020	Mar. 24, 2021	Mar. 24, 2021

Compensation Committee Activities in 2021

Date	Contents	Whether approved	Attendance rate	Approval rate
Feb. 19	Approval of the limit of remuneration for the 54th directors	Approved	100%	100%

Recommendation Committee on Candidates for Non-executive Directors

Composition of the Recommendation Committee on Candidates for Non-executive Directors

In accordance with the relevant laws and regulations, Hyundai proposes non-executive director candidates to a GSM following the recommendations and deliberations of the Committee for Recommendation of Candidates for Non-executive Directors and the BOD, respectively. The Committee is composed of three independent directors and two internal directors, with independent directors making up a majority of the total number of directors, according to the laws and regulations.

Operation of the Recommendation Committee on Candidates for Non-executive Directors

Roles and Responsibilities of the Recommendation Committee on Candidates for Non-executive Directors

The Recommendation Committee on Candidates for Non-executive Directors recommends candidates by comprehensively reviewing their expertise and individual competencies in their respective fields, and ensures that they meet the requirements of the laws related to independent directors. By examining the candidates more closely than required by the law, Hyundai prevents the appointment of independent directors with a history of causing damages to corporate value or infringing shareholders' rights.

Recommendation Committee on Candidates for Non-executive Directors Composition

Name	Eun Soo Choi	Eugene M. Ohr	Sang-Seung Yi	Euisun Chung	JaeHoon Chang
Classification	Independent director	Independent director	Independent director	Internal director	Internal director
Date of initial appointment	Mar. 17, 20017	Mar. 22, 2019	Mar. 22, 2019	Mar. 22, 2019	Mar. 24, 2021

Recommendation Committee on Candidates for Non-executive Directors Activities in 2021

Date	Contents	Whether approved	Attendance rate	Approval rate
Feb. 19	Recommendation on candidates for independent directors.	Approved	75%	100%

Sustainability Management Committee

Composition of the Sustainability Management Committee

In 2021, Hyundai established the Sustainability Management Committee by expanding and reorganizing the Corporate Governance & Communication Committee. The Committee is composed of six independent directors and one internal director, as the functions of the former Corporate Governance & Communication Committee with four members have been expanded.

Operation of the Sustainability Management Committee

Roles and Responsibilities of the Sustainability Management Committee

The Sustainability Management Committee is responsible for strengthening the ESG management system by establishing major ESG-related policies and discussing improvement plans, including the roles of the former Corporate Governance & Communication Committee. In addition, the Committee plays the role of a supervisory authority and checks on ethical issues related with the company's employees while carrying out various activities to improve the company's sustainability internally and externally, such as establishing major health and safety related plans and checking that they are properly implemented.

Sustainability Management Committee Composition

Name	Eun Soo Choi	Chi-Won Yoon	Eugene M. Ohr	Sang-Seung Yi	Dal Hoon Shim	Ji Yun Lee	JaeHoon Chang
Classification	Independent director	Independent director	Independent director	Independent director	Independent director	Independent director	Internal director
Date of initial appointment	Mar. 17, 2017	Mar. 22, 2019	Mar. 24, 2021	Mar. 24, 2021	Mar. 24, 2021	Mar. 24, 2021	Mar. 24, 2021

Sustainability Management Committee Activities in 2021

Classification	Date	Contents	Whether approved	Attendance rate	Approval rate
1st General Meeting	Jan. 26	Approval of transactions of goods and services with an affiliated company including the same person	Approved	100%	100%
		Approval of financial transactions under the terms and conditions agreed with affiliated financial companies	Approved		100%
		Approval of transaction limit with stakeholders	Approved		100%
		Approval of the major social contribution plans for 2021	Approved		100%
		Approval of investment in the ZERO1NE Fund 2	Approved		100%
		Transactions between directors and the company in 4th quarter of 2020 Transactions with stakeholders in 2nd half of 2020 Social contribution activities in 4th quarter of 2020 Results of the inspection of employees' implementation of the Code of Ethics in 2nd half of 2020 Implementation status and plan for the Compliance Program for Fair Trade Governance activities in 2nd half of 2020	Reported		-
Extraordinary Meeting	Feb. 23	Progress of ESG improvements	Reported	100%	-
Extraordinary Meeting	Mar. 24	Appointment of the Chairman of the Sustainability Management Committee	Approved	100%	100%
2nd General Meeting	Apr. 22	Approval of transactions of goods and services with an affiliated company including the same person	Approved	100%	100%
		Approval of financial transactions under the terms and conditions agreed with affiliated financial companies.	Approved		100%
		Approval of transactions with affiliates	Approved		100%
		Deliberation on payment guarantees for overseas subsidiaries	Approved		100%
		Transactions between directors and the company in 1st quarter of 2021 Social contribution activities in 1st quarter of 2021	Reported		-
3rd General Meeting	Jul. 22	Approval of transactions of goods and services with an affiliated company including the same person	Approved	100%	100%
		Approval of financial transactions under the terms and conditions agreed with affiliated financial companies.	Approved		100%
		Transactions between directors and the company in 2nd quarter of 2021 Transactions with stakeholders in 1st half of 2021 Social contribution activities in 2nd quarter of 2021 Results of the inspection of employees' implementation of the Code of Ethics in 1st half of 2021 Implementation status and plan for the Compliance Program for Fair Trade Governance activities in 1st half of 2021	Reported		-
Extraordinary Meeting	Sep. 16	Details of compliance support activities in 3rd quarter of 2021 Hyundai Motor Company's carbon neutral strategy	Reported	100%	-
4th General Meeting	Oct. 26	Approval of transactions of goods and services with affiliated companies including the same person	Approved	100%	100%
		Approval of financial transactions under the terms and conditions agreed with affiliated financial companies	Approved		100%
		Re-approval of transactions with affiliates (brand usage fee)	Approved		100%
		Approval of transactions with an affiliate (lease of the office building in Gye-dong)	Approved		100%
		Approval of transactions with an affiliate (maritime transportation of finished vehicles)	Approved		100%
		Deliberation of transactions between directors, etc. and the company	Approved		100%
		Transactions between directors and the company in 3rd quarter of 2021 Social contribution activities in 3rd quarter of 2021 Progress of the health and safety plan in 2021 Progress of the UAM Project	Reported		-
Extraordinary Meeting	Dec. 9	Approval of the TRS settlement transaction for SPC's stake in Hyundai Capital	Approved	100%	100%
		Approval of transactions with affiliates (brand usage fee)	Approved		100%

Protecting Shareholder Rights

Hyundai carries out a variety of activities to protect shareholder rights. While guaranteeing shareholders' basic rights to participate in profit distribution, attend GSMs and exercise voting rights, and receive information in a regular and timely manner as stipulated in the Commercial Act, Hyundai seeks to establish transparent governance by communicating with its shareholders through various channels. We respect the fair demands and opinions of shareholders, including their exercise of shareholders' rights to vote and make proposals, while laying solid foundations for sound governance through a transparent and rational decision-making process. In addition, we bolster communication by actively operating investor relation activities such as corporate briefings, non-deal roadshows (NDRs), and GSMs.

Convocation of a GSM

Convocation Notice of a General Shareholder's Meeting

The Commercial Act stipulates that a convocation notice must be made at least two weeks in advance in order to give shareholders sufficient time to deliberate on items of agenda. To provide shareholders with more time, Hyundai has improved its business process so that the convocation notice of a GSM containing the date, place, and agenda can be provided four weeks in advance. Accordingly, we have issued a convocation notice four weeks prior to each GSM since 2020.

Kay agenda items in 2021

Exercise of Voting Rights

Hyundai's Corporate Governance Charter stipulates that shareholders must actively exercise their voting rights for the development and profit of the company. We therefore ensure that our shareholders engage in important business issues of the company by exercising their right to vote.

Approval of the Directors' Compensation Limit

The directors' compensation limit is submitted to a GSM after objective and transparent deliberation by the Compensation Committee. The director's compensation limit proposed at the 55th GSM as item No. 4 was approved at the approval rate of 99.4%.

Exercise of Shareholders' Voting Rights

At Hyundai's AGM, voting rights are exercised through shareholders' direct participation or by proxy, or by solicitation of the proxy exercise of voting rights. In principle, one share has one vote. We introduced an electronic voting system at the 52nd GSM held in 2020 to facilitate our shareholders' voting rights. Since the 53rd GSM held in 2021, the meeting has been broadcast live online to further enhance shareholders' convenience, including the prevention of the spread of COVID-19. In addition, shareholders who meet the requirements for shareholders' rights to make proposals under the Commercial Act can express their opinions on the management's compensation, etc. by requesting that a general shareholder's meeting deal with the issue as an agenda item.

Total

213,668,187

Name	Type	Ownership (%)	No. of shares
1 Hyundai MOBIS	Common stock	21.43%	45,782,023
2 National Pension Service	Common stock	8.10%	17,312,294
3 Mong-Koo Chung	Common stock	5.33%	11,395,859
4 Euisun Chung	Common stock	2.62%	5,598,478
5 The Government of Singapore	Common stock	2.04%	4,363,364
6 Others	Common stock	60.48%	129,216,169

* As of December 31, 2021
** There are no golden shares possess by a government institution

Communication with Shareholders

One Share, One Vote

In accordance with the Commercial Act and the Articles of Incorporation, Hyundai grants one voting right per share owned by shareholders according to the type and number of stocks held. As of the end of 2021, the total number of common shares issued is 213,668,187 of which 14,048,242 shares are treasury stocks, so the number of common shares excluding treasury stock is 199,619,945.

Strengthening Communication with Shareholders

In 2021, Hyundai held a total of 35 corporate briefing sessions including quarterly business result announcements while communicating with shareholders through various channels to establish global-level governance. In particular, we hold an annual NDR in which the independent director in charge of protecting shareholder's rights and interests accompanies the top management to meet with investors in person. In consideration of the COVID-19 situation, we held the NDR virtually in 2020 and 2021.

Hyundai has been holding the CEO Investor Day annually since 2019 to present its mid- to long-term management goals and enhance investors' understanding of the company. The 2022 CEO Investor Day was held in March. In addition, in the same month, we held an online corporate briefing session for individual shareholders for the first time to share information and strengthen communication with them about their main concerns. In 2021, we had more than 800 meetings, including conferences organized by securities firms, NDRs for domestic and foreign investors, and frequent IR interviews for visiting investors. In addition to investor meetings, we provided annual guidance on our annual turnover and shareholder return policy for the first time at the 2021 earnings announcement in January, and have been since doing so as a way to enhance our management transparency and shareholder value.

In March 2021, for the convenience of shareholders who could not attend the GSM, Hyundai broadcast it live. We also conducted a survey on the areas of greatest interest of shareholders who had pre-registered for online attendance and, based on the results, held a briefing session on the "automotive market outlook" to provide them with practical information and promote closer communication with them.

Shareholder Return Policy

To enhance shareholder value, Hyundai has been paying dividends whose size is determined in consideration of the company's investment, business performance, and cash flow. The company announced its "mid- and long-term dividend policy" in 2017 and has maintained the same stance until now. The policy seeks to return 30-50% of the annual free cash flow to shareholders, while aiming for a dividend payout ratio comparable to that of global competitors in the mid- to long-term. In addition, we endeavor to demonstrate our respect for shareholders' rights and boost their confidence by providing them with an explanation of the direction of shareholder return in the annual guidance announcement in January of each year.

In addition, we repurchased treasury stocks equivalent to 1.0% of issued stock three times – from December 2018 to February 2019, from December 2019 to March 2020, and from November 2021 to February 2022 – in our efforts to enhance shareholder value.

Dividend History

Business Ethics & Compliance

Ethical Management

As a corporate citizen, Hyundai is taking the lead in practicing business ethics to fulfill its economic and legal responsibilities to its stakeholders – including customers, shareholders, suppliers, and local communities – through ethical management activities and fair trade compliance. In 2001, we enacted the Ethics Charter, Employee Code of Conduct, and Guidelines for Ethical Business Conduct to establish the basis for our employees' ethical judgments and promote an ethical management culture throughout the company. In March 2021, we reformed the former Corporate Governance & Communication Committee into the Sustainability Management Committee to build trust and pursue win-win growth with our stakeholders.

Ethical Management System

Ethics Charter

Hyundai has established the Hyundai Ethics Charter in order to conduct its business based on the principles of ethics and compliance as a global leading company. The following Five Guiding Principles of the Hyundai Motor Group Ethics Charter serve as the guidelines on ethical management which Hyundai employees must follow to when dealing with various stakeholders such as customers, shareholders, suppliers, and members of local communities.

Five Guiding Principles of Hyundai Motor Group's Ethics Charter

1. We shall perform our duties based on clear and transparent standards and do our utmost to fulfill our responsibilities with integrity.
2. We shall compete fairly in the market and conduct business ethically with all parties that engage in contractual relationships with us.
3. We shall provide safe products, exceptional services and accurate information, and we rigorously protect personal information to increase customer value.
4. We shall respect our members as independent individuals and, to this end, provide fair working conditions and safe working environments.
5. We shall contribute to sustainable development by fulfilling our social & environmental responsibilities as a member of society, so that diverse stakeholders may prosper together in harmony.

Code of Conduct

Hyundai Motor Company Ethics Charter and Code of Conduct is designed to increase ethical awareness among its employees by providing them with specific procedures and measures related to the implementation of ethical management. They specifically cover corruption and bribery, discrimination, information confidentiality, conflicts of interest, antitrust/anti-competitive practices, money laundering and insider trading, environment, health and safety, and whistleblowing.

Hyundai Motor Company Ethics Charter and Code of Conduct

Anti-Corruption/Bribery Policy

In June 2021, Hyundai established an Anti-Corruption/Bribery Policy of Hyundai Motor Company to prevent the risks of corruption and bribery and ensure that employees comply with its ethical standards and moral values. The policy includes such guidelines as the prohibition of all forms of bribery and solicitation, the eradication of facilitation payments, the prohibition of political donations and sponsorships, and rules on charitable donations and sponsorships in accordance with the company's standards and procedures. The policy also contains a clause which stipulates that the company shall establish a reporting system accessible to all employees and stakeholders to monitor corruption and bribery risks at all times and to take the necessary measures immediately in the event of violations.

Anti-Corruption/Bribery Policy of Hyundai Motor Company

Audit/Report on Ethical Risks, etc.

Hyundai operates the Compliance Support Advice Center within its compliance management support system to encourage its employees to comply with the rules and regulations and report any violations thereof. Furthermore, the company operates a number of reporting channels, including the Cyber Audit Office, with the goal of realizing transparent management. Through these channels, we receive reports on acts that violate our ethical management principles, including unfair trade practices, unreasonable requests for or the provision of money, goods or entertainment, and misuses and abuses of authority and solicitation, etc. If an act that violates the Hyundai Motor Company Ethics Charter and Code of Conduct is detected, the employee in question may be subject to disciplinary action up to termination of employment pursuant to Article 64 of the Employment Rules. In addition, Hyundai monitors its employees' application of the Code of Ethics throughout their performance in its semi-annual and ad hoc audits and reports the results to the Sustainability Management Committee under the BOD.

Protection of Whistleblowers

Hyundai stipulates the protection of whistleblowers related to employee's business ethics and compliance through the Ethics Charter, Code of Conduct, and internal rules relating to workplace ethics regulations, while also complying with relevant laws. We have also set measures in place for protection of the confidentiality of whistleblowers and related information as well as strict prohibition of disadvantages or retaliation against them. In the event that protection for a whistleblower is violated, such as cases of retaliation against internal whistleblowers, the company may impose aggravated punishment on the offenders in accordance with Article 9 of Chapter 3 (Handling of violations of the regulations) of the regulations on workplace ethics.

Implementation of Ethical Management

Internalization of Code of Conduct

Hyundai requires its employees to pledge compliance and ethical management on a regular basis in an effort to help them internalize the company's Code of Conduct. In 2021, Hyundai conducted ethics education for about 73,000 employees, including contract workers, through an online platform and in-house broadcasting system, to raise awareness of major ethical issues such as anti-corruption, fair trade, and cyber security. The implementation of the Ethics Charter and Code of Conduct is overseen by the BOD's Sustainability Management Committee, which was reorganized in March 2021. The Committee is authorized to make decisions on major ethical management-related policies and revisions of the Code of Conduct, among other tasks.

Investigation into Violations of the Code of Conduct

In 2021, Hyundai received 104 reports related to the forgery of private documents/violations of concurrent positions, bribery, violations of information security, and workplace harassment; investigated 80 cases, excluding false reports; and took disciplinary action – dismissal, wage cut, suspension, warning, etc. – against 46 cases.

Reporting Channels

Cyber Audit Office Reporting	By Phone +82-2-3464-3500
By Fax +82-2-3464-8813	By Mail Hyundai Motor Group Audit Office

Whistleblower Protections

1. Confidentiality: Personal information of the informant cannot be disclosed to the public without the informant's consent.
2. Guarantee of status: The employer or relevant department is prohibited from imposing any disadvantages or discriminating against the informant because of supplied information, statements and submission of evidence.
3. Reduction or exemption of liabilities: If any mistake or negligence of the informant are discovered during the investigation process, the liabilities of the information for such faults or negligence may be reduced or waived.

Compliance Management

Hyundai practices compliance management effectively through a robust compliance support system. The company helps its employees diagnose and prevent compliance risks on their own through the compliance support officer system, the expanded online compliance support system, compliance education, compliance self-assessment, compliance guidelines, and compliance newsletters.

Building Compliance Management System

Chief Compliance Officer & Compliance Officer

In 2012, Hyundai appointed a Chief Compliance Officer and established compliance control standards and implementation guidelines to serve as the basis of the company's compliance support activities. The Chief Compliance Officer conducts compliance support activities to prevent corporate legal risks and reports the details to the BOD regularly, while having external experts evaluate the effectiveness of the company's compliance control system and reporting the outcomes to the BOD once a year.

In addition, we have been appointing departmental heads as Compliance Officer of their respective departments. By introducing the compliance officer system, Hyundai has made it possible for the company's compliance management message to spread effectively across all departments, thereby instilling its key employees with a keen sense of responsibility for compliance management.

Online Compliance System

Hyundai has been upgrading its online compliance system as a way to support compliance activities more extensively, which enables our employees to gain access to not only existing functions, such as legal advice and contract review, but also to new functions including compliance self-assessment and compliance library services.

Strengthening Compliance Capability and Creating of a Compliance Culture

Compliance Self-assessment & Compliance Guideline

Hyundai conducts compliance self-assessment in various areas of law, including trade secrets, anti-corruption, and personal information, so that employees can diagnose and prevent legal harm on their own in the course of performing their duties (twice a year for each legal area).

Following the compliance self-assessment, the company enables the relevant departments to improve the risks identified during the assessment process on their own.

In addition, we have produced and distributed compliance guidelines containing the main contents of the laws and regulations which employees should know and comply with when performing their duties. We have published some 40 compliance guidelines on the Monopoly Regulation and Fair Trade Act, the Criminal Act, the Unfair Competition Prevention and Trade Secret Protection Act, labor laws, and intellectual property laws etc. at home and abroad, as well as publishing summary guidelines designed to increase employees' usability and reflect revisions of the laws.

In 2021, Hyundai produced and distributed an English-language version of the Compliance Management Handbook, which was revised in 2020, to reiterate the importance of compliance management to foreign employees and promote the practice of compliance management as a way to enhance the overall compliance capacity of our employees.

Compliance Training & Newsletter

Hyundai raises awareness of compliance management by providing regular and ad hoc compliance training for new recruits, newly promoted employees, and overseas employees. In particular, we provide online compliance training on dealing with anti-corruption and preventing collusion for all employees once a year to prevent the various legal risks that may arise in the course of their business performance. We also introduce the latest compliance issues to our employees by regularly publishing a compliance newsletter that introduces legal issues related to the automotive industry and in-house ethical regulations, in addition to a monthly legal report that introduces the latest legal revisions and precedents.

In addition, we put even more effort into raising awareness of compliance among leaders by publishing a leader compliance newsletter that provides them with customized compliance management information and requiring each of them to conduct a compliance self-assessment.

Compliance and Ethics Pledge

Hyundai has its employees make a pledge to practice compliance and ethical management as a way to remind them of principles of compliance and ethics and to help them develop compliance mindset.

Fair Trade

Hyundai competes fairly in the market and conducts fair dealings with its contractual counterparts. In particular, we include the principles of fair trade with competitors and suppliers, such as antitrust, collusion, unfair competition, and money laundering, in our Ethics Charter and Code of Conduct, and do our business accordingly.

Compliance Program

Implementing the Compliance Program

Hyundai promotes fair and transparent management starting with its CEO's commitment to compliance program (CP) in the first and second half of every year. In this way, Hyundai spreads its top management's strong CP commitment to all of its employees in addition to getting its own Guidelines on CP, which are applied to their actual work performance. In addition, Hyundai appoints a CP officer at a BOD meeting to manage and supervise the company's overall performance in terms of fair trade, while fostering a CP culture by offering various fair trade training programs and newsletters company-wide. Hyundai reports the results of its CP implementation efforts and its plan for the next year to the BOD semi-annually as a way to strengthen the responsibilities and obligations of each business site to promote CP.

Fair Trading Education

Hyundai not only conducts fair trade education for its employees every year, but also informs new employees of the importance of complying with the Fair Trade Act from the moment they join the company. We also conduct annual CP training for all new executives and employees working in areas that are subject or closely related to the fair trade laws. We promote fair trade through bi-monthly fair trade newsletters to raise awareness of fair trade throughout the company and ensure that our employees practice precautions related to fair trade. Most notably, Hyundai makes utmost efforts to provide education and video lectures on the protection of its suppliers' technologies which has been gaining importance.

Fair Trading Education Performance

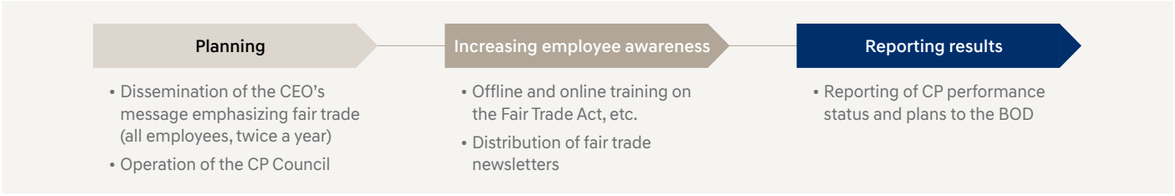
Year	Number of training sessions	Number of participants
2018	13	2,246
2019	8	1,429
2020	3	8,456
2021	4	8,261

* Replaced by online training due to COVID-19 in 2020 and 2021

Fair Trade and Anti-corruption Programs for Suppliers

Hyundai includes contents such as bribes and customary fees including rebates in the Ethics Charter and Code of Conducts, as well as the Guidelines for Ethical Conduct to prevent such incidents from happening and thereby ensuring that its employees and those of its suppliers can continue to conduct transparent and fair transactions. We also conduct anti-corruption risk checks and report the results to the Sustainability Management Committee under the BOD.

CP Implementation Process

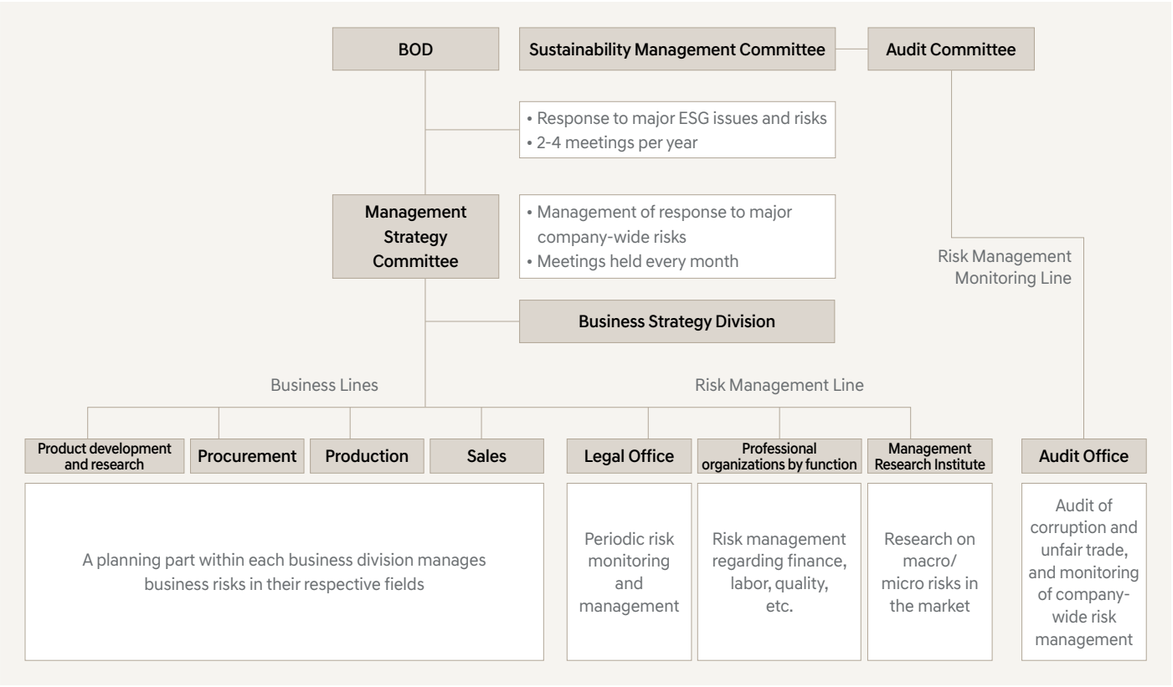


Risk Management

Risk Management

Hyundai is facing a shift to two major paradigms – the internalization of future technologies such as electrification, autonomous driving, and connectivity, and response to ESG issues and risks. These new paradigms will give us an opportunity to leap forward into a global top-tier company while carrying the risks posed by uncertainty. Accordingly, we strive to build proactive risk management culture based on a company-wide risk management and monitoring system, risk-linked employee performance evaluation, and company-wide training on related topics. In the immediate future, Hyundai will conduct a thorough analysis of the core risks and continue to enhance its risk management processes as an organization that can turn each new crisis into an opportunity to leap forward.

Risk Management System



Global Risk Management System

Company-wide Risk Management System

Hyundai is faced with unparalleled risks due to the prolonged COVID-19 crisis and the unstable international situation caused by the Russia-Ukraine war, and the resulting imbalance in the supply and demand of semiconductors, which are key automobile parts. In response, Hyundai has established and begun operating a company-wide risk management system. More specifically, the company has appointed a CFO in charge of the company's overall risk management and launched the Sustainability Management Committee within the BOD to regularly discuss major ESG issues and risk responses. In addition to the BOD, the Management Strategy Committee, composed of key executives (division head level) including the CEO, convenes every month to manage material risks that have a significant impact on the company. Moreover, Hyundai has established a risk reporting line that covers all the way to the CEO and the BOD, so that the risks identified in each division can be shared with key management.

Hyundai strives to enable not only its key management but also all other employees to manage risks based on its 2025 Strategy and seize opportunities to create corporate value. To this end, we produce video clips of the core content of the 2025 Strategy and conduct employee training. Key emerging risks are provided online to employees through the "Weekly B.I. Briefing (Risk Trend Report)". In addition to training, we use non-financial risk factors as performance evaluation indicators for executives. Going forward, we will continue to develop evaluation and training schemes for all our employees.

Risk Management System by Division

Hyundai manages risks through the planning part within each of the various divisions organized by value chain. The Sales Division is divided by region, such as Korea, China, North America, Europe, India, Africa and the Middle East. The planning part within the Division focuses on managing specific risks associated with its respective market. Hyundai's risk management organizations include the Legal Office, which manages legal risks; the Legal Certification Office, which manages vehicle-related regulations and certification-related risks; divisions devoted to particular functions such as finance, labor, and quality; and the HMG Management Research Institute, which prepares preemptive countermeasures by analyzing macro- and micro-economic and industrial trends. The risk management departments operate independently of business divisions divided by value chain, while corruption and unfair trade are managed through continuous monitoring by the Audit Office within the Audit Committee.

In order to boost the efficiency of each department's risk management system, Hyundai has established a risk identification and reporting procedure for employees. Once identified, risks are managed in the order of identification, check/report, and preemptive response through weekly/ monthly/ongoing risk assessment meetings. For key areas that directly affect the company's business operations, Hyundai has established monthly risk assessment meetings for each area, such as sales/production and PM/ product strategy. Hyundai has also enabled product-level risk management, including the establishment of risk criteria within the product development and approval process.

Tax Strategy

Hyundai recognizes that tax compliance significantly contributes to securing customer profits and maximizing both shareholders' returns and government finances, and that tax risk management is a prerequisite for sustainable management. We therefore respect the principle of fair taxation by the tax authorities and faithfully comply with our tax obligations as a taxpayer. Going forward, we will strive to build collaborative mutual trust with tax authorities.

Managing Tax Risks

"Strict compliance with the laws" is the core of Hyundai's tax risk management policy. The company takes the lead in creating a transparent tax culture by faithfully providing all the evidence requested by tax authorities. Hyundai never engages in any tax evasion by using tax havens or tax structures without commercial substance. Furthermore, as a global company, we prevent tax risks in advance by identifying differences in the tax laws of different countries and their intention and by analyzing their respective dispute risks. Good example includes the "arm's length principle" as a way to prevent the risk of double taxation arising from competition for taxation rights between tax authorities in advance.

Major Potential Risks

Potential Vehicle Tax Reform based on Domestic Carbon Emission Levels

Risk Context

In December 2020, the Korean government declared "Carbon Neutrality by 2050" and set the target of reducing GHG emissions in the transportation sector to be 29.3% of the level recorded in 2017 by 2050. To this end, the Korean government is expected to change the current vehicle tax based on vehicle price and engine displacement to an eco-friendly tax based on carbon emissions, while strengthening regulations on CO_2 emissions. Some European countries, such as France, already impose a car tax based on carbon emissions, with the implementation of the policy affecting demand in the car market. Hyundai's Genesis brand and mid-to-large SUVs, both of which have contributed significantly to the company's profitability, are expected to take a big hit in sales when a carbon-emissions-based tax is imposed due to their relatively high CO_2 emissions.

Hyundai's Approach

In response to the risk of changes in market demand caused by the new tax policy, Hyundai is approaching the challenge from two directions. First, in order to reduce the carbon emissions of its SUV models, in 2021 Hyundai launched the Tucson PHEV (CO_2 emissions: 31 g/km) and the Santa Fe PHEV, which have significantly improved CO_2 emissions compared to the existing Tucson model (CO_2 emissions: 148 g/km). Second, we launched the IONIQ 5, the first dedicated EV based on the E-GMP (Electric-Global Modular Platform), an electric vehicle-only platform, in 2021. In addition, we are expanding the EV lineup of the Genesis brand from small to medium/large vehicles by launching the G80 EV, the first EV under the Genesis brand, and the GV60, the first dedicated EV model. Going forward, we will establish an EV lineup consisting of 17 models (11 Hyundai models and 6 Genesis models) by 2030, and for the Genesis brand in particular, we plan to switch 100% of the Genesis lineup to EVs by 2030.

Increased Regulatory Risks Associated with the Establishment of a Plastic Circular Economy in Europe and Korea

Risk Context

In 2018, the European Commission announced a strategy to build the plastic circular economy with the aim of reusing or recycling 100% of all plastic packaging and recycling more than 50% of all waste plastics generated in Europe by 2030. To this end, the EU banned the use of major single-use plastics (SUPs) in 2021, which was followed by the strengthening of its regulations on the use of plastics for vehicles as well as household and disposable plastics. In particular, it is pushing for the enforcement of regulations mandating the use of recycled plastics in new cars. In Korea, the government is presenting the establishment of a plastic circular economy as a major national task, so that it is expected to change the current recommendation on the recycling of scrap cars to a 95% recycling mandate, in addition to introducing the mandatory use of recycled plastics in new cars, as is already the case in Europe. Once Korea has enforced the regulation mandating the use of recycled plastic materials in new cars, it is expected that Hyundai will face multiple risks such as the risk of an interruption of production due to a rise in the price of recycled plastic materials combined with a shortage in supply, as well as regulatory risks stemming from a shortage of high-quality recycled plastics that meet the safety and quality requirements for new cars. Notably, the regulatory risks are most likely to increase when Korea enforces a 95% compulsory regulation on the recycling rate of scrapped cars, like the European ELV (End-of-Life Vehicles) regulation, because, unlike in Europe, if Korea implements the pre-shredder method (the manual dismantling and recycling of the parts of a scrapped car), there will be limits to the disposal and recycling of scrapped cars in large quantities.

Hyundai's Approach

Plastics make up the second largest segment after metals, accounting for 17% of all vehicle materials on average on an internal combustion engine (ICE) basis. However, the recycling rate of plastics used in vehicles is low because they are composites. Therefore, to increase the recycling rate of plastics, Hyundai launched the Resource Circulation Council in 2021, and has improved its recycling rate of waste resources generated from the existing scrapped car network, while overhauling all the relevant work. We are also planning to recover plastics from not only wheel guards, undercovers, battery trays, and fan-shrouds but also from lamps, exterior parts, and closure parts. In addition, we make continuous efforts to discover new sources of waste plastics in order to secure a stable supply chain for recycled plastics, and reviews plastic recycling in various fields such as marine pollutants and rural environmental pollutants. Furthermore, we have established a strategic collaboration system for plastic recycling with leading domestic and foreign chemical companies and hold regular technical exchange meetings with them for a joint response.

Integrated Risk Management

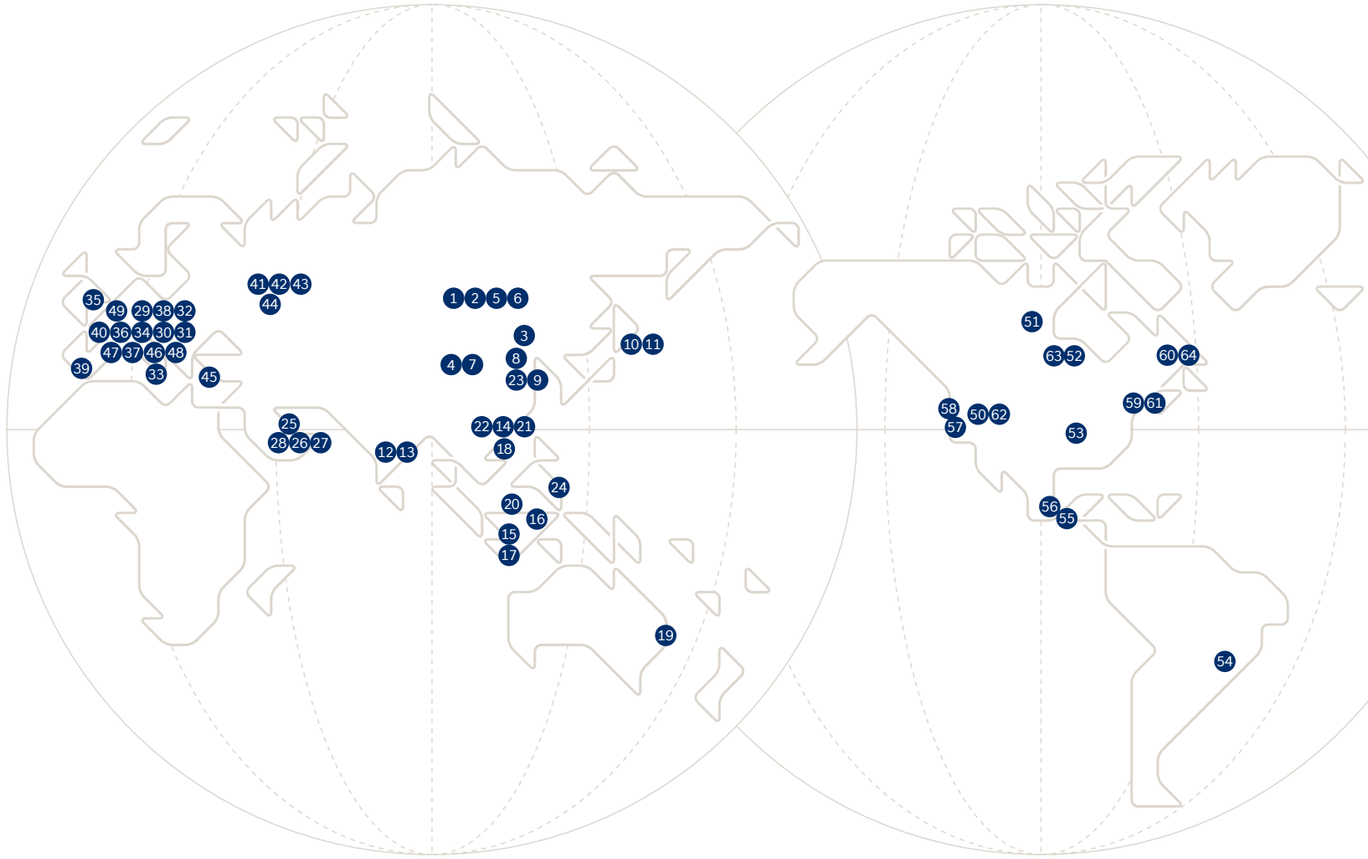
Managing internal controls on risk is important to secure effective financial planning and organizational flexibility. In order to analyze various types of risks in addition to market or price risks, Hyundai has conducted sensitivity tests and stress analysis related to those risks.

Classification	Key Tasks
Currency risk	• Implementing the foreign currency inflow and outflow matching strategy to manage the exchange risk of major foreign currencies such as the USD, EUR, and JPY • Adjusting the foreign currency fund supply and demand settlement date according to exchange rate forecasts, and using foreign exchange derivatives etc. as a hedging instrument
Interest rate risk	• Short-term borrowings: Balancing fixed-rate borrowings and floating-rate borrowings • Long-term borrowings: Adhering to the principle of fixed-rate borrowing, etc.
Credit risk	• Selecting business partners above a certain level by evaluating their financial conditions, transaction experience, and other factors
Liquidity risk	• Establishing and forecasting short-term and mid- to long-term money management plans along with an analysis of actual cash flow • Maturity structure response management, etc. of financial assets and financial liabilities
Climate risk	• Establish a goal to achieve carbon neutrality by 2045 at all stages from the procurement of parts to production and operation • Reorganize the business structure centered on electrified vehicles for carbon reduction and net-zero emissions • Increase the use of renewable energy in business sites through green hydrogen, renewable energy power generation, REC purchase, and renewable energy PPA contracts (Achieve 100% renewable electricity (RE100) by 2045)
Water risk	• Efficient use of water resources and periodic inspections of leaking facilities to prevent the risk of rising operating costs and production costs due to higher water bills
Resource risk	• Design considering the application of recycled materials to major automobile parts as well as scrap car recycling • Activities to recreate value from end-of-life vehicles including "Re:Style", an upcycling project conducted in collaboration with the fashion industry
Hazardous gas risk	• Respond to stricter laws on harmful gases such as Euro 6 and RDE, and preemptive respond to increasingly strict legal standards • Develop new technologies to reduce exhaust gas and air pollutants generated by production facilities, etc.
Hazardous substance risk	• Adopt the International Material Data System (IMDS) to check whether all chemical substances in parts produced by suppliers meet the regulations, while limiting the use of chemical products containing highly hazardous substances in factories and promoting zero-hazardous substances through the use of substitutes, etc. for workers' health and safety

ESG Factbook

Global Network

Hyundai operates production plants, technology research institutes, and design centers in major overseas markets.
We sell vehicles across the globe, with around 6,200 sales networks in approximately 184 countries.



Asia & Pacific

1 Hyundai Motor Group(China) Ltd.
2 Beijing Hyundai Motor Company
3 Hyundai Motor Technology And Engineering Center(China), Ltd.
4 Hyundai Truck & Bus (China)
5 Beijing Zingxianmotor Safeguard Service Co
6 Hyundai Top Selection Used Car Co., Ltd.
7 China Commercial Vehicle R&D Center
8 Hyundai Motor Global Tooling in China CO., Ltd.
9 Genesis Motor China
10 Hyundai Motor Japan R&D Center
11 Hyundai Motor Japan
12 Hyundai Motor India Headquarters
13 Hyundai Motor India Engineering Center
14 Hyundai Thanh Cong Commercial Vehicle Joint Stock Company
15 Hyundai Motor Asia-Pacific Headquarters
16 Hyundai Motor Manufacturing Indonesia
17 Hyundai Motors Indonesia
18 Hyundai Thanh Cong Manufacturing Vietnam
19 Hyundai Motor Company Australia
20 Hyundai Motor Group Innovation Center in Singapore
21 HTWO Guangzhou
22 Hyundai Thanh Cong Vietnam
23 Advanced & Digital R&D Center China
24 Hyundai Motor Philippines, Inc.

Middle East & Africa

25 Hyundai Motor M.East & Africa Headquarters
26 Commercial Vehicle Africa & Middle East Regional Headquarter
27 Africa & Middle East Quality Center
28 Genesis Middle East & Africa

Europe

29 Hyundai Motor Europe Headquarters
30 Hyundai Motor Manufacturing Czech
31 Hyundai Motor Czech
32 Hyundai Motorsport Gmbh
33 Hyundai Motor Company Italy
34 Hyundai Motor Deutschland Gmbh
35 Hyundai Motor United Kingdom
36 Hyundai Motor France
37 Hyundai Motor Europe Technical Center
38 Hyundai Motor Poland
39 Hyundai Motor Espana
40 Hyundai Motor Netherlands B.V.
41 Hyundai Motor Russia & CIS Headquarters
42 Hyundai Motor Commonwealth Of Independent States
43 Hyundai Motor Manufacturing Russia
44 Hyundai Truck & Bus Russia
45 Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S.
46 Genesis Motor Europe
47 Hyundai Hydrogen Mobility
48 Europe Quality Center
49 Hyundai Motor Company Brussels Office

North America, Central & South America

50 Hyundai Motor North America Headquarters
51 Hyundai Auto Canada Corp.
52 Hyundai·Kia America Technical Center, Inc.
53 Hyundai Motor Manufacturing Alabama
54 Hyundai Motor Central & South America Headquarters
55 Hyundai Motor de Mexico
56 Hyundai de Mexico
57 Hyundai Translead
58 Hyundai Motor America
59 Hyundai Motor Company Washington Office
60 Motional
61 Supernal
62 Genesis Motor North America
63 North America Quality Center
64 Boston Dynamics

* As of June, 2021

Business Performance

Performance Overview

In 2021, difficulties continued in the business environment, including a reduction of sales performance as production and sales difficulties were caused by the re-spread of COVID-19, global semiconductor supply shortages, and increased raw material prices and logistics costs.

Notwithstanding, Hyundai made continued efforts to create economic value by continually securing a competitive edge, realize customer value through quality management, and pursue social value through corporate citizenship. We worked on flexible production and sales, profitability improvement, increased cost efficiency, as well as enhanced electrification competitiveness, including the launch of E-GMP, which led to various tangible outcomes.

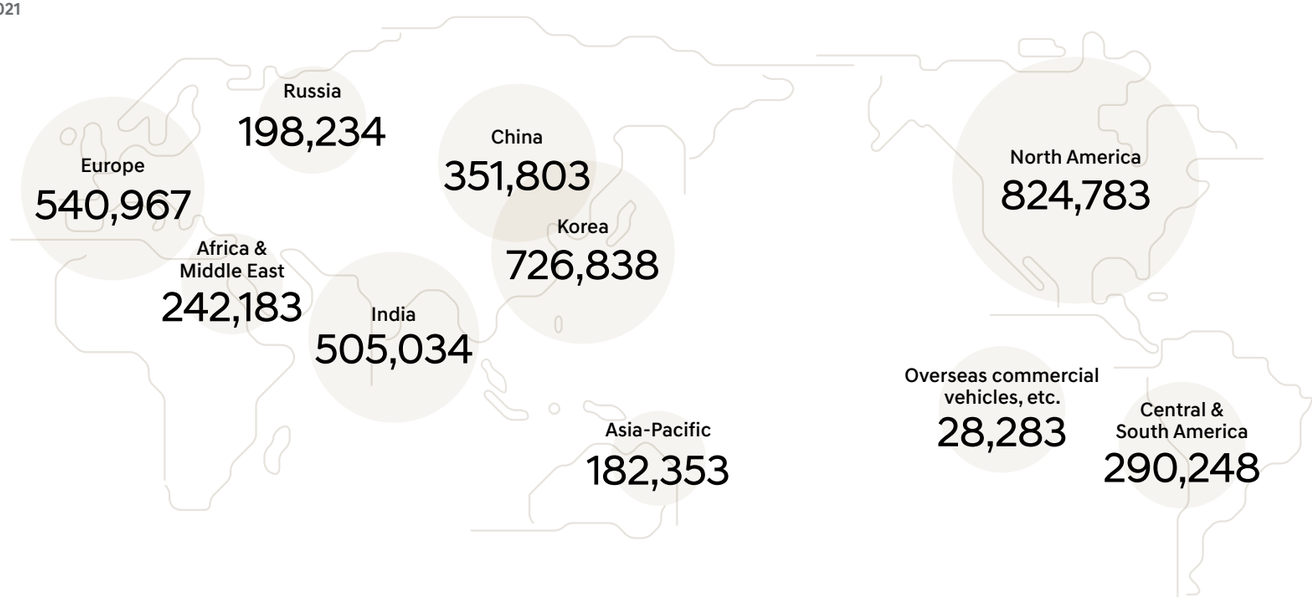
In the 2022 Durability Quality Survey conducted by J.D. Power, a US-based market research firm, Hyundai ranked the top from among global automobile manufacturer groups. In the electrified vehicle sales market, the IONIQ 5 was named “World Car of the Year” at the 2022 World Car Awards and made the achievement of enhancing brand value.

Global Sales in 2021 (Unit: Vehicle)

Domestic	
Passenger vehicles	698,180
Commercial vehicles	28,658
Overseas	
North America (U.S., Canada, Mexico)	824,783
India	505,034
Europe (Western, Eastern, Turkey)	540,967
Russia (Russia, CIS)	198,234
Central & South America (Brazil, Other Latin American countries)	290,248
Africa & Middle East	242,183
Asia-Pacific (Other countries in Asia-Pacific region, Australia)	182,353
China	351,803
Overseas commercial vehicles, etc.	28,283
Total	

3,890,726

Global Sales in 2021
(Unit: Vehicle)



Market Condition and Business Review in Korea

Market Condition

Annual sales in 2021 totaled 1.73 million, a year-on-year decrease of 8.4%, attributable to supply setbacks of major manufacturers in Korea as a result of supply shortages of semiconductors for vehicles. However, demand to purchase vehicles has been on the rise on the back of favorable conditions in the overall automobile market, such as diversification of sales channels, acceleration of the transition to electrification, and launch of new vehicles by major brands.

Sales in Korea

727,000 units

Market Share in Korea (Including imports)

42%

Business Review

Despite difficult conditions with intensifying competition, Hyundai strives for customer satisfaction through product development, price policy, and services. For sustainable management, we are making continued efforts to generate environmental and social value, such as developing eco-friendly vehicles, establishing a low-carbon society, and achieving shared growth with suppliers. We are also endeavoring to contribute to society, including selecting 37 social welfare projects by inviting public participation and providing multilateral support.

In 2021, Hyundai sold 727,000 vehicles (retail basis) in the Korean market to indicate a year-on-year decrease of 7.7%, but recorded a market share of 42% (including imported cars) by strengthening the Genesis brand lineup and achieving strong sales of volume models. In particular, Hyundai is leading the transition to electrification in the Korean market by leading the development and sales of eco-friendly vehicles, such as by launching the IONIQ 5, to which an EV-only platform was applied, and launching Genesis brand electric vehicles, the Electrified G80 and GV60.

Market Condition and Business Review by Region

U.S. Market

Market Condition

Automobile sales in the US market increased 3.4% over the previous year to record 15.079 million vehicles (retail basis). Sales continued to increase in the first half of the year as the market overcame the COVID-19 shock compared to the previous year, but sales in the second half of the year dropped to the lowest level in the past decade as impact from semiconductor supply shortages went into full effect.

Business Review

In 2021, Genesis recorded a more than three-fold increase in sales over the previous year in the US market on the back of strong sales of the SUV models, the GV70 and GV80. Hyundai sold 788,000 units (retail basis), indicating year-on-year growth of 23.3%, and a market share of 5.2%.

The GV80 was chosen for "10 Best Cars and Trucks for 2021" by the Car and Driver magazine, while the G80 and Accent ranked No. 1 in the upper-mid premium category and small car category, respectively, in J.D. Power's Initial Quality Study (IQS). The Elantra was chosen as the NACTOY Car of the Year in 2021 following its selection in 2012. There are only two vehicles that won the North American Car of the Year award more than once after the award was created in 1994 which are the Chevrolet Corvette and Honda Civic. The Elantra has become one of the most recognized semi-medium vehicles in the world. In the electric vehicle sector, the Kona and IONIQ were chosen as the top ten electric vehicles by AutoTrader.

Asian Market

Market Condition

In China, sales in the first quarter substantially rose owing to base effects from a regional lockdown measure that was taken against the spread of COVID-19 the previous year, but semiconductor supply shortages began to worsen in the second quarter and somewhat restricted overall sales growth, resulting in a year-on-year increase of 2.3% in sales to record 19.888 million units. New energy vehicles are continuing rapid growth (175% increase over the previous year), an outcome of a rise in private consumers resulting from extension of subsidy payments and increased high-performance BEV launch by different companies. In the area of SUVs, luxury brands continued to remain strong in accordance with the consumption upgrade trend, but some joint companies' volume model sales were sluggish owing to parts supply shortages to result in a year-on-year decrease of 0.3%. However, markets exclusive of SUVs grew 4.5%.

The Indian market recorded a year-on-year increase of 27.3% in sales to 3.105 million vehicles. Standby demand from COVID-19 resulted in strong sales in the first quarter, but the spread of the Delta variant in May resulted in a lockdown of some areas, leading to a temporary decrease in demand. However, demand steadily recovered through August. Afterwards, reduced production of each manufacturer due to the global semiconductor supply shortage continued from September to the end of the year. Despite the lockdown of some regions and semiconductor supply issues, sales in 2021 totaled 3.1 million units as a result of base effects from the sluggish automobile market that was caused by the economic downturn and the spread of COVID-19 over the last two years as well as improvements in overall conditions.

Business Review

In 2021, Hyundai's sales volume in China fell by 20.4% year-on-year to 350,000 vehicles (wholesale basis), recording a market share of 1.8%. Sales of Lafesta and ix25 were sluggish, but strong sales of AVANTE and new car effects of Tucson/Custo resulted in a lower level of decrease compared to the previous year (32.3% decrease in 2020).

In India, strong sales of major models, including Creta, Venue, and i20, continued on the back of increased demand, leading to a year-on-year increase of 19.2% in sales volume to reach 505,000 vehicles in 2021.

European Market

Market Condition

Total sales in Europe in 2021 were 11.775 million vehicles, a year-on-year decrease of 1.5%. Recovery from decreased sales caused by COVID-19 the previous year is being delayed by supply setbacks triggered by semiconductor supply shortages and the spread of COVID-19 variants.

Business Review

In 2021, Hyundai's sales volume in Europe increased by 36.7% year-on-year to 505,000 units (retail basis), recording a market share of 4.3% in the overall market. On the back of the launch of the IONIQ 5 and Tucson PHEV, BEV and PHEV sales indicated year-on-year growth of 26.5% and 352.5%, respectively. The IONIQ 5 won the German Car of the Year in the new energy category.

Sales in the U.S.	Market Share in the U.S.	Sales in China (Wholesale basis)	Sales in India	Sales in Europe (Retail basis)	Market Share in Europe
788,000 units	5.2%	350,000 units	505,000 units	505,000 units	4.3%

Facts & Figures

SALES AND FINANCIAL INFORMATION

Classification		Unit	2019	2020	2021	Note
General Information	Assets	KRW billion	194,512.2	209,344.2	233,946.4	Consolidated figures basis
	Sales	KRW billion	105,746.4	103,997.6	117,610.6	Consolidated figures basis
	Production	Vehicle	448,480.5	373,342.2	386,977.5	
Global Production	Domestic	Vehicle	1,783,617	1,618,411	1,620,231	
	India[1]	Vehicle	682,100	521,300	636,000	
	China	Vehicle	668,105	465,388	334,700	
	U.S.	Vehicle	336,000	268,700	291,500	
	Czech Republic	Vehicle	309,500	238,750	275,000	
	Russia[1]	Vehicle	245,702	219,491	234,150	
	Brazil	Vehicle	206,038	150,610	187,300	
	Turkey	Vehicle	175,000	137,100	162,140	
	Vietnam[1]	Vehicle	74,973	71,140	71,443	
	Others[2]	Vehicle	3,770	42,532	57,311	
	Total	**Vehicle**	**4,484,805**	**3,733,422**	**3,869,775**	
Global Sales	Domestic	Vehicle	741,842	787,854	726,838	
	Overseas	Vehicle	3,734,309	2,956,883	3,163,888	
	Total	**Vehicle**	**4,476,151**	**3,744,737**	**3,890,726**	
Global Best-selling Models	Tucson	Vehicle	492,165	429,241	505,967	
	Elantra (AVANTE)	Vehicle	458,881	439,194	391,899	
	Santa Fe	Vehicle	211,902	221,597	227,536	
	Accent	Vehicle	304,748	293,560	190,833	
	Sonata	Vehicle	256,433	217,289	168,878	

[1] Including production performances derived from the joint venture (JV) subsidiary, in addition to those disclosed in Hyundai Motor Company's Business Report
[2] Performance of CKD and consigned commercial vehicle production

2021 Audited Financial Statements of Hyundai Motor Company

Classification			Unit	2019	2020	2021	Note
Financial Highlights	Statements of financial position (Consolidated)	Total assets	KRW billion	19,451.2	20,934.4	23,394.6	
		Total liabilities	KRW billion	11,814.6	13,300.3	15,133.1	
		Total equity	KRW billion	7,636.6	7,634.1	8,261.6	
	Statements of financial position (Separate)	Total assets	KRW billion	7,375.9	7,865.1	7,975.8	
		Total liabilities	KRW billion	2,023.8	2,506.4	2,708.3	
		Total equity	KRW billion	5,352.1	5,318.9	5,267.5	
	Statements of income (Consolidated)	Sales	KRW billion	10,574.6	10,399.8	11,761.1	
		Operating profit	KRW billion	360.6	239.5	667.9	
		Selling and administrative expenses	KRW billion	1, 405.0	1,608.7	1,525.2	
		Net profit	KRW billion	318.6	192.5	569.3	Including non-controlling interests
		EBITDA	KRW billion	743.7	658.0	1,123.5	Based on Bloomberg (sum of operating profit, depreciation of tangible assets, depreciation of real estate held for investment, and depreciation of intangible assets)
	Statements of income (Separate)	Sales	KRW billion	4,915.6	5,066.1	5,560.5	
		Operating profit	KRW billion	158.0	76.9	66.2	
		Selling and administrative expenses	KRW billion	725.1	888.5	840.4	
		Net profit	KRW billion	283.2	52.7	64.6	
		EBITDA	KRW billion	406.1	355.0	376.6	Based on Bloomberg (sum of operating profit, depreciation of tangible assets, depreciation of real estate held for investment, and depreciation of intangible assets)
	Profitability ratio (Consolidated)	Operating profit margin	%	3.4%	2.3%	5.7%	
		Net profit margin	%	3.0%	1.9%	4.8%	
	Profitability ratio (Separate)	Operating profit margin	%	3.2%	1.5%	1.2%	
		Net profit margin	%	5.8%	1.0%	1.2%	

Classification			Unit	2019	2020	2021	Note
Financial Highlights	Distribution of Economic Value (Consolidated)	Dividends (Shareholders and investors)	KRW billion	105.4	78.6	130.1	
		Interest expenses (Shareholders and investors)	KRW billion	317	36.2	30.5	Refer to "financial income and financial expense" in the notes to the consolidated financial statement
		Salaries (Employees)	KRW billion	939.7	909.9	961.4	Refer to "classification of expenses by nature" in the notes to the consolidated financial statement
		Raw materials costs (Suppliers)	KRW billion	6,225.9	5,908.5	6,757.9	Refer to "classification of expenses by nature (raw material and product usage amount)" in the notes to the consolidated financial statement
		Income tax (Government)	KRW billion	978	16.9	226.6	Refer to "income tax" in the notes to the consolidated financial statement
		Donation (Local communities)	KRW billion	66	7.4	6.6	Refer to "other income/expense" in the notes to the consolidated financial statement
		Total	**KRW billion**	**7,407.1**	**6,975.4**	**8,113.1**	
	Distribution of Economic Value (Separate)	Dividends (Shareholders and investors)	KRW billion	105.4	78.6	130.1	
		Interest expenses (Shareholders and investors)	KRW billion	11.1	12.4	8.7	Refer to "financial income and financial expense" in the notes to the financial statement
		Salaries (Employees)	KRW billion	652.7	619.0	639.2	Refer to "classification of expenses by nature" in the notes to the financial statement
		Raw materials costs (Suppliers)	KRW billion	3,233.3	3,280.3	3,701.1	Refer to "classification of expenses by nature (raw material and product usage amount)" in the notes to the financial statement
		Income tax (Government)	KRW billion	42.2	(0.01)	34.4	Refer to "income tax" in the notes to the financial statement
		Donation (Local communities)	KRW billion	4.8	5.2	3.8	Refer to "other income/expense" in the notes to the financial statement
		Total	**KRW billion**	**4,049.5**	**3,995.5**	**4,517.3**	
	R&D \ Investment	Total R&D expense	KRW million	3,038,920	3,108,591	3,100,111	
		Government subsidy	KRW million	(17,237)	(11,530)	(2,214)	
		R&D expense to sales ratio	%	2.9%	3.0%	2.6%	Total R&D expenses/sales of the year X 100
	Distribution of Investment (Consolidated)	CAPEX	KRW billion	390.3	455.3	376.7	Based on head office and overseas business sites
		Depreciation	KRW billion	383.2	418.5	455.6	Refer to "classification of expenses by nature" in the notes to the consolidated financial statements
		Difference (CAPEX – depreciation)	KRW billion	7.1	36.8	(78.9)	
		Treasury stock buyback	KRW billion	45.8	30.3	30.5	
		Total (dividend + treasury stock)	**KRW billion**	**151.2**	**108.9**	**160.6**	

ENVIRONMENTAL

Classification				Unit	2019	2020	2021	Note
Environmental	Energy Consumption	Non-renewable energy		MWh	7,623,321	6,721,292	6,049,568	
		Renewable energy		MWh	57,170	70,376	120,171	
		Total		**MWh**	**7,680,491**	**6,791,668**	**6,169,739**	
	Energy Intensity	Energy consumption in producing one vehicle		MWh/ vehicle	1.71	1.82	1.59	
	Greenhouse Gas (GHG) Emissions	Scope 1		tCO_2-eq	807,498	716,237	723,966	
		Scope 2		tCO_2-eq	1,897,885	1,680,079	1,660,238	
		Scope 1 + 2		tCO_2-eq	2,705,383	2,396, 316	2,384,204	
		Scope 3[1)]		tCO_2-eq	120,382,017	100,536,484	101,790,794	
	GHG Emissions Intensity	GHG emissions in producing one vehicle (Scope 1+2)		tCO_2-eq/ vehicle	0.603	0.642	0.616	
	Raw Materials	Steel (amounts used)		Ton	968,630	940,277	1,041,124	
		Steel (scrap)		Ton	430,389	357,494	375,924	
		Aluminum (amounts used)		Ton	101,966	90,836	97,805	
		Aluminum (scrap)		Ton	27,661	25,471	24,495	
Environmental Responsibility	Water Consumption	Withdrawal		Ton	21,420,816	19,040,715	17,540,453	
		Consumption		Ton	11,770,200	10,307,878	9,275,209	
		Discharge		Ton	9,650,616	8,732,837	8,265,244	
	VOC Emissions	Emissions		Ton	10,944	11,047	10,756	
	Air Pollutant	**Total**		**Ton**	**1,405**	**936**	**1,211**	
		By type	CO	Ton	538	358	489	
			SOx	Ton	14	14	97	
			NOx	Ton	492	333	351	
			PM	Ton	361	214	249	
			Others	Ton	-	16	26	

[1)] The calculation criteria were partially changed to result in changes to emissions of previous years (Refer to page 14)

Classification				Unit	2019	2020	2021	Note
Environmental Responsibility	Water Pollutants	**Total**		**kg**	**435,473**	**289,487**	**296,321**	
		By type	COD	kg	236,217	134,930	126,462	
			BOD	kg	14,835	13,451	9,637	
			SS	kg	39,783	24,751	29,320	
			n-H	kg	959	690	525	
			Others	kg	143,679	115,665	130,377	
	Weight of Waste	**Total**		**Ton**	**633,300**	**498,318**	**538,772**	
		By type	General waste	Ton	593,453	462,422	504,182	
			Designated waste	Ton	39,847	35,895	34,590	
	Weight of Waste by Disposal Method	**Total**		**Ton**	**633,300**	**498,318**	**538,772**	
		- Landfill		Ton	14,574	6,297	5,900	
		- Incineration		Ton	35,708	32,229	33,147	
		By type	Incinerated amount collected as thermal energy	Ton	3,626	2,532	3,754	
			Incinerated amount not collected as thermal energy	Ton	32,082	29,699	29,392	
		- Recycling		Ton	576,766	455,211	492,787	
		- Biodegradation		Ton	1,747	962	1,729	
		- Others		Ton	4,505	3,617	5,210	Neutralization, physicochemical treatment, emulsion destruction, solidification, etc.
	Weight of Harmful Chemical Substances			Ton	3,170	2,781	2,333	
	Costs and investments for environmental protection			KRW billion	3,370	5,633	7,225	Including development expense for vehicle electrification and facility investment costs for improving business environment (facility investment costs include the investments on domestic business sites only)

SOCIAL

Classification			Unit	2019	2020	2021	Note
Employees	Number of Employees by Region	Korea	Person	70,421	72,020	72,496	As of the last business day; and based on the number of directly employed staff
		Overseas	Person	50,716	49,383	50,325	
		- North America	Person	11,191	10,304	15,953	
		- Europe	Person	9,951	10,014	9,480	
		- China	Person	14,638	13,159	10,741	
		- India	Person	9,353	10,106	9,725	
		- Others	Person	5,583	5,800	4,426	
		Total	**Person**	**121,137**	**121,403**	**122,821**	
	Number of Employees by Duty (Korea)	Management	Person	450	470	476	
		Research fellow	Person	24	23	22	
		Research	Person	11,232	11,716	12,502	
		Office work	Person	12,559	12,716	12,903	
		Technical/Production/ Maintenance	Person	36,295	36,385	34,754	
		Sales	Person	5,968	5,798	5,562	
		Others	Person	3,893	4,912	6,277	Advisor, specially appointed staff for special duties, temporary staff, etc.
		Total	**Person**	**70,421**	**72,020**	**72,496**	
	Number of Employees by Nationality (Korea)	ROK	Person	-	71,922	71,191	16,714 managers (99.61% of total managers)
		US	Person	-	37	42	33 managers (0.2% of total managers)
		Germany	Person	-	17	12	12 managers (0.07% of total managers)
		China	Person	-	11	9	5 managers (0.03% of total managers)
		Canada	Person	-	8	12	8 managers (0.05% of total managers)
	Number of Employees by Gender/ Region	Korea	Person	70,421	72,020	72,496	
		-Male	Person	66,668	68,014	68,215	
		-Female	Person	3,753	4,006	4,281	
		Overseas	Person	50,716	49,383	50,325	
		-Male	Person	44,593	42,977	43,504	
		-Female	Person	6,123	6,406	6,821	

Classification				Unit	2019	2020	2021	Note
Employees	Number of Female Employees by Region	Female staff	Korea	Person	3,753	4,006	4,281	
			North America	Person	1,698	1,811	2,740	
			Europe	Person	1,436	1,479	1,476	
			China	Person	2,025	2,040	1,761	
			India	Person	200	214	242	
			Others	Person	764	862	602	
			Total number of female staff	Person	9,876	10,412	11,102	
		Female executives	Korea	Person	5	14	15	
			North America	Person	9	11	12	
			Europe	Person	1	2	3	
			China	Person	7	8	7	
			India	Person	0	0	0	
			Others	Person	0	2	2	
			Total number of female executives	Person	22	37	39	
		Percentage of female employees		%	8.2%	8.6%	9.0%	Total number of female employees / Total number of employees
		Total number of female employees		Person	9,898	10,449	11,102	
	Number of Female Employees by Position/ Duty	Number of managers in Korea		Person	14,736	15,534	16,779	The scope of managers includes managerial level and higher office, research, and special staff, and executives except for advisors
		Number of female managers in Korea		Person	558	710	1,042	
		Number of managers overseas		Person	3,491	7,013	7,303	
		Number of female managers overseas		Person	552	822	947	
		Total number of managers		Person	18,227	22,547	24,082	
		Total number of female managers		Person	1,110	1,532	1,989	
		Percentage of female managers		%	6.1%	6.8%	8.3%	Total number of female managers / Total number of managers
		Number of female low level managers		Person		1,084	1,504	Low level manager: Defined as G2 level * Began to collect and report data on low level managers in 2020
		Percentage of female low level managers		%	-	6.6%	8.3%	
		Number of female top level managers		Person	-	37	42	
		Percentage of female top level managers		%	-	5.4%	5.8%	

Classification			Unit	2019	2020	2021	Note
Employees	Number of Female Employees by Position/ Duty	Number of female employees in revenue-generating departments/ positions	Person	-	8,500	9,182	Revenue generating departments: Product/R&D/Purchasing/Quality Division, Pilot Center, Manufacturing Area, Ulsan/Asan/Jeonju Plant, Global Business Management Division, Domestic Business/Customer Experience/Commercial/ICT Division, Innovation Division, AIRS Company, AAM Division, CDO, EV Division, Genesis Division * Began to collect and report employee data on revenue generating department in 2020
		Percentage of female employees in revenue-generating departments/ positions	%	-	7.4%	7.9%	
		Number of female employees in STEM positions * STEM: Science, Technology, Engineering and Mathematics	Person	-	509	1,577	STEM employees: R&D Division, Innovation Division, AAM Division, TaaS Division, Ulsan/Asan/Jeonju Pant, Advanced Technology Institute, Manufacturing /Quality/Purchasing/ India Regional Headquarters, CDO, EV Division, Pilot Center, ICT Division * Began to collect and report employee data on STEM position in 2020
		Percentage of female employees in STEM positions	%	-	4.0%	9.0%	
	Employees with Disabilities (Korea)	Number of employees with disabilities	Person	2,076	2,108	2,101	
		Percentage of employees with disabilities	%	2.95%	3.12%	3.13%	Number of employees with disabilities / Total number of employees * 100 Based on the reported number in December (Korea Employment Agency for Persons with Disabilities)
	Number of Employees by Age (Korea)	Under 30 years old	Person	6,638	7,147	7,516	
		30-50 years old	Person	32,260	32,114	32,948	
		Over 50 years old	Person	31,523	32,759	32,032	
		Total	**Person**	**70,421**	**72,020**	**72,496**	
	Labor Union Membership (Korea)	Number of people with labor union membership	Person	49,641	48,933	47,538	
		Labor union membership percentage	%	70.7%	68.2%	66.3%	
	Total Number of Strikes		Case	0	0	0	
	Number of Days of Work Loss Due to Strikes		Day	0	0	0	

Classification				Unit	2019	2020	2021	Note
Employees	Employee Training (Korea)	Total training expenses		KRW billion	26.3	29.0	41.7	
		Training expenses per employee		KRW 10,000	37	43.3	60.3	Total training expense / Total number of employees
		Training expense per employee (by position)	Super administrator	KRW 10,000	-	293.8	161.8	Total training expense by position / Number of employees by position * Began to collect and report training expense by position in 2020
			Middle manager	KRW 10,000	49.7	98.3		
			New employees and non-managers	KRW 10,000	-	41.0	56.7	
		Training expense per employee (by gender)	Male	KRW 10,000	-	-	59.5	
			Female	KRW 10,000	-	-	72.9	
		Training expense per employee (by age)	Under 30 years old	KRW 10,000	-	-	134.0	
			30-50 years old	KRW 10,000	-	-	72.5	
			Over 50 years old	KRW 10,000	-	-	41.5	
		Training hours per employee		Hour	33	19.8	27.9	Total training hours provided to employees / Total number of employees
		Training hours per employee (by position)	Super administrator	Hour	-	108.5	29.2	Total training hours by position / Number of employees by position * Began to collect and report training hours by position in 2020
			Middle manager	Hour	-	42.5	35.9	
			New employees and non-managers	Hour	-	17.4	27.3	
		Training hours per employee (by gender)	Male	Hour	-	-	27.5	
			Female	Hour	-	-	34.4	
		Training hours per employee (by age)	Under 30 years old	Hour	-	-	75.6	
			30-50 years old	Hour	-	-	30.7	
			Over 50 years old	Hour	-	-	20.5	
	Parental Leave (Korea)	Number of employees on parental leave (Male)		Person	138	171	188	
		Number of employees on parental leave (Female)		Person	142	162	162	
		Return-to-work rate after parental leave (Male)		%	91.2%	92.4%	89.5%	
		Return-to-work rate after parental leave (Female)		%	92.2%	98.6%	92.6%	
		Retention rate after parental leave (Male)		%	88.3%	97.3%	97.6%	
		Retention rate after parental leave (Female)		%	93.1%	91.7%	98.6%	

Classification				Unit	2019	2020	2021	Note
Employees	New Employee Hires (Korea)	Number of people hired		Person	4,805	7,096	7,530	
		Gender	Male	Person	-	6,529	6,765	(Position) Excluding RPA * Began to collect and report data on the status of new hires (gender, age, nationality) in 2020
			Female	Person	-	567	765	
		Age	Under 30 years old	Person	-	3,820	4,466	
			30-50 years old	Person	-	1,983	1,350	
			Over 50 years old	Person	-	1,293	1,714	
		Nationality	Korea	Person	-	7,076	7,490	
			France	Person	-	2	2	
			Canada	Person	-	2	-	
			China	Person	-	4	3	
			Austria	Person	-	1	-	
			U.K.	Person	-	1	-	
			Belgium	Person	-	1	-	
			U.S.	Person	-	4	9	
			Germany	Person	-	4	1	
			Republic of South Africa	Person	-	1	-	
	Internal Recruitment Ratio			%	99.9%	99.3%	99.0%	Placement-to-vacancy ratio that reflects internal recruit and transfer
	Youth Interns Hired	Total number of hired people		Person	-	132	213	Basis of employment: Intern / Research intern / Recruitment-type intern / Experience-based intern * Began to collect and report data on youth internship employment data in 2020
		Full-time conversion rate		%	-	30.3%	53.1%	Number of personnel converted to regular employment: 113

Classification				Unit	2019	2020	2021	Note
Employees	Employee Turnover	Gender	Male	%	-	4.20%	9.48%	Began to collect and report turnover rate (gender, age, position) data in 2020 Include overseas employee turnover rate (gender, age, position) data since 2021 Turnover by nationality in 2021 (Korea): Korea 4,037 / U.S. 3 / China 4 / Canada 1 / Taiwan 2
			Female	%	-	0.20%	1.16%	
		Age	Under 30 years old	%	-	0.60%	3.85%	
			30-50 years old	%	-	0.40%	3.81%	
			Over 50 years old	%	-	3.50%	2.97%	
		Position	Super administrator	%	-	0.00%	0.04%	
			Middle manager	%	-	0.01%	0.17%	
			Non-manager	%	-	3.83%	9.62%	
		Turnover rate		%	3.85%	4.42%	10.6%	12,672 persons / 119,068 persons at the beginning of the year * Began to include overseas employee turnover rate data in 2021, which led to a year-on-year increase of turnover rate and voluntary turnover rate
		Voluntary turnover rate		%	0.66%	0.43%	4.95%	5,897 persons / 119,068 persons at the beginning of the year * Voluntary turnover refers to the case when employees voluntarily leave their positions for reasons other than retirement, dismissal, etc.
	Organizational Culture Survey	Employee engagement rate		%	64.0%	66.6%	68.5%	
	Welfare Program	Whether family-friendly certification was obtained			Yes	Yes	Yes	* Family-friendly certification: A company that sets an example in operating a family-friendly system that received certification from the Minister of Gender Equality and Family. Hyundai was first designated in December 2014.

Classification			Unit	2019	2020	2021	Note
Social Contributions	Social Contributions Expenditur by Type	Cash donations	KRW million	47,508	50,639	39,015	
		In-kind contributions	KRW million	1,399	2,739	2,123	
		Employee volunteer	KRW million	4,408	451	696	Monetary value conversion of employees' volunteer hours
		Management overhead	KRW million	14,571	9,008	6,124	
	Expenditure by Social Contribution Area	Local community investment	KRW million	47,754	44,880	37,054	
		Simple donation	KRW million	2,983	8,498	3,658	
		For commercial use	KRW million	12,740	9,007	6,549	
	Employees Volunteering (Korea)	Number of volunteer activities	Case	2,815	859	375	Reduced face-to-face volunteer activities due to COVID-19
		Number of participants	Person	26,933	3,107	6,330	
		Number of hours participated	Hour	93,798	10,420	14,034	
	Social Contribution Expenditure	Domestic	KRW	63,477,846,204	62,386,444,546	47,262,047,830	
		Overseas	USD	27,263,537	34,111,984	16,288,622	
	Expenditure by Donation/ Contribution Type	Associations and tax-free groups (think tank, etc.)	KRW million	7,081	6,208	6,251	
		Lobbyist and interest groups	KRW million	0	0	0	
		Political donations	KRW million	0	0	0	
		Others	KRW million	0	0	0	
		Total donations/ contributions	**KRW million**	**7,081**	**6,208**	**6,251**	
	Expenditure by Major Contributed Association	Foundation of Korea Automotive Parts Industry Promotion	KRW million	3,300	3,300	3,300	
		Korea Automobile Manufacturers Association	KRW million	1,948	2,146	2,243	
		Korea Automotive Technology Institute	KRW million	314	328	322	
		H2Korea	KRW million	200	237	200	
		Korea Traffic Disabled Association	KRW million	110	110	100	

Classification			Unit	2019	2020	2021	Note
Quality and Safety	Quality Index (based on the survey conducted by J.D. Power and Associates)	U.S. Vehicle Dependability Study (Hyundai)	Ranking (Score)	Non-premium 5th (124)	Non-premium 7th (132)	Non-premium 4th (101)	Based on non-premium brand
		U.S. Initial Quality Study (Hyundai)	Ranking (Score)	Non-premium 2nd (71)	Non-premium 9th (153)	Non-premium 6th (149)	
		U.S. Vehicle Dependability Study (Genesis)	Ranking (Score)	-	Premium 1st (89)	Premium 4th (102)	Based on premium brand
		U.S. Initial Quality Study (Genesis)	Ranking (Score)	Premium 1st (63)	Premium 1st (89)	Premium 2nd (148)	
	Quality Management System	Quality Management System Certification	%	100%	100%	100%	All business sites in Korea and overseas are ISO 9001 certified
	Customer Satisfaction Survey	Customer Satisfaction Score Hyundai Customer Experience Index (HCXI)	Score	78.8	71.6	71.2	
		Domestic Maintenance Service Satisfaction (HCXI)	Score (Rank)	81.4 (3rd place)	69.7 (1st place)	70.1 (1st place)	Changed survey method in 2020 (face-to-face → online non-face-to-face)
		Overseas Sales Customer Satisfaction	Score (Country of Implementation)	89.7 (22 countries)	90.3 (26 countries)	86.3 based on sales NPS (31 countries)	Changed management index in 2021 (SSi → Sales NPS)
		Overseas Maintenance Service Satisfaction	Score (Country of Implementation)	90.1 (23 countries)	90.3 (29 countries)	75.9 based on service NPS (31 countries)	Changed management index in 2021 (HCXI → Service NPS)
		External evaluation – National Customer Satisfaction Index (NCSI)	Ranking	1st place at all segments	1st place at all segments	1st place at all segments	Semi-medium, medium, semi-large, large, RV
		External evaluation – Korean Standard-Quality Excellence Index (KS-QEI)	Ranking	1st place at all segments	1st place at all segments	1st place at all segments	Semi-medium/large/medium passenger, small/semi-medium/ medium/large SUV, electric vehicle, automobile AS, large luxury SUV/ luxury sedan D-segment/luxury E-segment
		External evaluation – Korean Customer Satisfaction Index (KCSI)	Ranking	1st place at all segments	1st place at all segments	1st place at all segments	Passenger vehicle, RV
Safety and Health	Number of employees involved in occupational accidents (Korea)		Person	377	351	424	
	Accident rate (Korea)		%	0.93%	0.85%	0.73%	
	Number of employees involved in occupational accidents (Overseas)		Person	18	17	11	
	Accident rate (Overseas)		%	0.08%	0.05%	0.04%	
	Number of employees involved in occupational accidents (Total)		Person	395	368	435	108 cases of work-related illness, and zero work-related death
	Accident rate (Total)		%	0.64%	0.50%	0.49%	

Classification		Unit	2019	2020	2021	Note
Safety and Health	Lost Time Injuries Frequency Rate (LTIFR) of Employees (Korea)		3.18	3.07	2.55	LTIFR: Number of lost-time injuries per million hours worked during an accounting period (Based on figures of the Ulsan, Asan and Jeonju plants and research center in Korea, and overseas manufacturing plants) Number of injuries that prevent workers from recovering to the same state before the accident within six months: 89 cases
	LTIFR of Employees (Overseas)		0.33	0.17	0.21	
	LTIFR of Employees (Total)		2.09	1.72	1.76	
	LTIFR of Suppliers (Korea)		5.16	8.43	1.36	
	LTIFR of Suppliers (Overseas)		0.22	0.11	0.00	
	LTIFR of Suppliers (Total)		0.92	0.93	0.89	

GOVERNANCE

Classification			Unit	2019	2020	2021	Note
Compliance/ Ethical Training	Number of training sessions (Korea)		Case	41	8	11	
	Number of participants (Korea)		Person	22,362	22,928	21,567	
	Number of training sessions (Overseas)		Case	2	1	9	
	Number of participants (Overseas)		Person	842	816	80	
Non-compliance with Regulations and Voluntary Codes	Number of personal information leakage incidents	Number of incident reports received directly by Hyundai	Case	0	0	0	
		Number of incident reports received from regulatory authorities	Case	0	1	0	
		Number of incident reports received from other third-party organizations	Case	0	0	0	
	Number of cyber asset damage incidents		Case	0	0	0	
	Number of labeling/advertising violations		Case	0	0	0	
	Penalty and fine for non-compliance with environmental regulations		KRW billion	0	0	0	0 cases in 2018Based on a major environment-related fine of at least $ 10,000
	Penalty and fine in relation to anti-trust/ unfair competition		KRW billion	0	0	0	
	Number of anti-corruption/bribery violations		Case	0	0	0	

ESG Certifications

Certification Status by Business Site

Classification		Term of validity	Note
ISO 14001 (Environmental Management)	Domestic sites	2020-2023	Integrated certification in 2014
	Hyundai Motor Manufacturing Alabama (HMMA)	2021-2024	
	Beijing Hyundai Motor Company (BHMC)	2021-2024	
	Hyundai Motor India (HMI)	2020-2023	
	Hyundai Motor Manufacturing Russia (HMMR)	2019-2022	
	Hyundai Motor Brasil (HMB)	2021-2024	
	Hyundai Motor Manufacturing Czech (HMMC)	2021-2024	
	Hyundai Assan Otomotiv Sanayi (HAOS)	2021-2024	
	Hyundai Truck & Bus (China) (HTBC)	2020-2023	
ISO 45001 (Health and Safety Management)	Business site in Korea (Headquarters, Asan/Jeonju Plant, Research Center, etc.)	2018-2021	Evaluation for the year is in progress
	Business site in Korea (Ulsan Plant)	2022-2025	
ISO 27001 (Information Security Management)	Business site in Korea	2021-2024	
ISO 9001 (Quality Management)	Business site in Korea and abroad	2021-2024	
ISO 50001 (Energy Management)	Beijing Hyundai Motor Company (BHMC)	2022-2025 (Renhe/Yangzhen Plants) 2021-2024 (Changzhou Plant)	
	Hyundai Motor India (HMI)	2021-2024	
	Hyundai Assan Otomotiv Sanayi (HAOS)	2021-2024	

GRI Index

Universal Standards

GRI Standards			Page	Note
No.	Core	Title		
102-01	Core	Name of the organization	103	
102-02	Core	Activities, brands, products, and services	4	
102-03	Core	Location of headquarters	103	
102-04	Core	Location of operations	103	
102-05	Core	Ownership and legal form	64-70	Business report
102-06	Core	Markets served	77-78	
102-07	Core	Scale of the organization	77-78	
102-08	Core	Information on employees and other workers	81-83	
102-09	Core	Supply chain	45	
102-10	Core	Significant changes to the organization and its supply chain	-	No significant changes
102-11	Core	Precautionary Principle or approach	73-74	
102-12	Core	External initiatives	103	Participating in UN Global Compact
102-13	Core	Membership of associations	84	
102-14	Core	Statement from senior decision-maker	3	
102-15		Key impacts, risks, and opportunities	95-96	
102-16	Core	Values, principles, standards, and norms of behavior	Corporate principle	Website
102-17		Mechanisms for advice and concerns about ethics	71-72	
102-18	Core	Governance structure	64-70	
102-21		Consulting stakeholders on economic, environmental, and social topics	94	
102-22		Composition of the highest governance body and its committees	67-69	
102-23		Chair of the highest governance body	64	
102-29		Identifying and managing economic, environmental, and social impacts	65-66	
102-35		Remuneration policies	65	
102-38		Annual total compensation ratio	65	
102-40	Core	List of stakeholder groups	94	
102-41	Core	Collective bargaining agreements	82	
102-42	Core	Identifying and selecting stakeholders	94	
102-43	Core	Approach to stakeholder engagement	94	

GRI Standards			Page	Note
No.	Core	Title		
102-44	Core	Key topics and concerns raised	94	
102-45	Core	Entities included in the consolidated financial statements	-	Business report
102-46	Core	Defining report content and topic Boundaries	95-96	
102-47	Core	List of material topics	95	
102-48	Core	Restatements of information	-	
102-49	Core	Changes in reporting	-	No significant changes
102-50	Core	Reporting period	103	
102-51	Core	Date of most recent report	103	
102-52	Core	Reporting cycle	103	
102-53	Core	Contact point for questions regarding the report	103	
102-54	Core	Claims of reporting in accordance with the GRI Standards	103	
102-55	Core	GRI content index	87-88	
102-56	Core	External assurance	97-102	

Topic Specific Standards _ Material Topics

GRI Standards			Page	Note
No.	Core	Title		
Carbon Neutrality & Expansion of Renewable Energy	103-1	Explanation of the material topic and its Boundary	14-25, 94-96, 4-14 (ESG Magazine)	
	103-2	The management approach and its components		
	103-3	Evaluation of the management approach		
Technological Innovation	103-1	Explanation of the material topic and its Boundary	17-20, 94-96, 15-18 (ESG Magazine)	
	103-2	The management approach and its components		
	103-3	Evaluation of the management approach		
Supply Chain ESG	103-1	Explanation of the material topic and its Boundary	45-47, 94-96	
	103-2	The management approach and its components		
	103-3	Evaluation of the management approach		
	414-2	Negative social impacts in the supply chain and actions taken	46-47	

Topic Specific Standards _ Non Material Topics

GRI Standards		Page	Note
Indicator No.	Title		
201-1	Direct economic value generated and distributed	80	
205-2	Communication and training about anti-corruption policies and procedures	71-72	
205-3	Confirmed incidents of corruption and actions taken	71	
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	71-72	
301-1	Materials used by weight or volume	28,80	
302-1	Energy consumption within the organization	28,80	
302-3	Energy intensity	28,80	
302-4	Reduction of energy consumption	28,80	
303-3	Water withdrawal by source	28,80	
303-4	Water discharge	80	
303-5	Water consumption	28,80	
305-1	Direct (Scope 1) GHG emissions	14,28,80	
305-2	Energy indirect (Scope 2) GHG emissions	14,28,80	
305-3	Other indirect (Scope 3) GHG emissions	14,80	
305-4	GHG emissions intensity	14,80	
305-5	Reduction of GHG emissions	14-25	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	28,80	
307-2	Non-compliance with environmental laws and regulations	86,91	No cases of violation of laws
308-1	New suppliers that were screened using environmental criteria	45	
401-1	New employee hires and employee turnover	83-84	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	35-37	
401-3	Parental leave	37,83	
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	85	
403-3	Workers with high incidence or high risk of diseases related to their occupation	83,92	Overviewed on-site risk factors by operating Hyundai-Safety Assessment Tool (H-SAT)
404-1	Average hours of training per year per employee	93	
404-2	Programs for upgrading employee skills and transition assistance programs	33-34	
406-1	Incidents of discrimination and corrective actions taken	40	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	36	No business sites and suppliers at significant risk identified
408-1	Operations and suppliers at significant risk for incidents of child labor	41,92	No business sites and suppliers at significant risk identified
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	41,92	No business sites and suppliers at significant risk identified
411-1	Incidents of violations involving rights of indigenous peoples	-	No incidents of violations occurred
412-2	Employee training on human rights policies or procedures	34,41	
413-1	Operations with local community engagement, impact assessments, and development programs	86	
415-1	Political contributions	84	No political contributions made
416-1	Assessment of the health and safety impacts of product and service categories	51	Vehicle collision safety evaluated by Insurance Institute for Highway Safety in 2022
417-1	Requirements for product and service information and labeling	55	
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	85	Received one complaint from regulatory authorities (was finalized by agreement between the parties before proceeding mediation), no other complaints from outside institution
419-1	Non-compliance with laws and regulations in the social and economic area	85,91	

TCFD Index

Disclosure Focus Area	Title	Page	Note
Governance	Describe the board's oversight of climate-related risks and opportunities.	6, 11	Report to Sustainability Management Committee of the BOD and review thereof (once/semi-annually) CDP 2022 questions: C1.1b
	Describe management's role in assessing and managing climate-related risks and opportunities.	6, 11	Operation of the ESG Committee, a subcommittee under the Hyundai Business Strategy Meeting (hosted by the CEO) CDP 2022 questions: C1.2, C1.2a
questions	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	11-13	CDP 2022 questions: C2.1a, C2.2a, C2.3, C2.3a, C2.4, C2.4a
	Describe the impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning.	12-13	CDP 2022 questions: C2.3a, C2.4a, C3.1, C3.3, C3.4, C3.5, C3.5a
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	11, 13	CDP 2022 questions: C3.2, C3.2a, C3.2b
Risk Management	Describe the organization's processes for identifying and assessing climate-related risks.	11, 13	CDP 2022 questions: C2.1, C2.1a, C2.1b, C2.2, C2.2a
	Describe the organization's processes for managing climate-related risks.	11	CDP 2022 questions: C2.1, C2.1a, C2.1b, C2.2
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	6, 11	CDP 2022 questions: C2.1, C2.2, C3.3, C3.4
Metrics and Targets	Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.	14, 17, 19, 79, 80	Energy consumption, vehicle production and sales status, vehicle CO_2 emissions, sales, etc. CDP 2022 questions: C8.2, C8.2a, C8.2b, C8.2c, C8.2d, C11.3a
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	14, 80	CDP 2022 questions: C6.1, C6.2, C6.3, C6.5, C7.1a, C7.2, C7.3b, C7.5, C7.6b
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	15, 17, 22	CDP 2022 questions: C4.1, C4.1a, C4.2, C4.2a, C4.2c

SASB Index

<table>
<tr><th colspan="2"></th><th>Accounting Metric</th><th>Page</th><th>Note</th></tr>
<tr><td rowspan="3">Product Safety</td><td>TR-AU-250a.1</td><td>Percentage of vehicle models rated by NCAP programs with an overall 5-star safety rating, by region</td><td>-</td><td>Korea: 100%, U.S.: 90.5%
<table><tr><th>Classification</th><th>Percentage</th><th>Vehicle models rated 5-star</th></tr><tr><td>Korea</td><td>100%</td><td>STARIA, IONIQ 5, Tucson</td></tr><tr><td>U.S.</td><td>90.50%</td><td>Tucson, Elantra, Palisade, Kona, Santa Fe, Sonata (N-Line, Hybrid, FWD, AWD), G80, GV80 (RWD, AWD)</td></tr></table></td></tr>
<tr><td>TR-AU-250a.2</td><td>Number of safety-related defect complaints, percentage investigated</td><td>49</td><td>Constant monitoring of customer complaints and 100% voluntary recall immediately when potential issues are recognized to customers of Ministry of Land, Infrastructure and Transport (Korea), NHTSA (U.S. Department of Transportation's National Highway Traffic Safety Administration)</td></tr>
<tr><td>TR-AU-250a.3</td><td>Number of vehicles recalled</td><td>49</td><td>2021: 2.72 million vehicles (voluntary recall)</td></tr>
<tr><td rowspan="2">Labor Practices</td><td>TR-AU-310a.1</td><td>Percentage of active workforce covered under collective bargaining agreements</td><td>82</td><td>2021: 66.3% (domestic basis)</td></tr>
<tr><td>TR-AU-310a.2</td><td>(1) Number of work stoppages,
(2) Total days idle</td><td>82</td><td>2021: No strike history of more than 1,000 people taking a break from work (domestic and overseas)</td></tr>
<tr><td rowspan="3">Fuel Economy & Use-phase Emissions</td><td>TR-AU-410a.1</td><td>Sales-weighted average passenger fleet fuel economy, by region</td><td>19</td><td>EU average passenger fleet carbon emissions, China/U.S. average fleet fuel economy
<table><tr><th colspan="2"></th><th>2018</th><th>2019</th><th>2020</th><th>2021</th></tr><tr><td colspan="2">Average fleet carbon emissions in EU (g/km)</td><td>124.3</td><td>123.5</td><td>94.7</td><td>109.7</td></tr><tr><td colspan="2">Average fleet fuel economy in China (L/100km)</td><td>6.28</td><td>6.00</td><td>5.61</td><td>6.15</td></tr><tr><td rowspan="2">Average fleet fuel economy in U.S. (mpg)</td><td>Passenger car</td><td>38.5</td><td>38.5</td><td>40.0</td><td>42.8</td></tr><tr><td>Light truck</td><td>27.2</td><td>27.1</td><td>29.4</td><td>30.9</td></tr></table></td></tr>
<tr><td>TR-AU-410a.2</td><td>Number of
(1) zero emission vehicles (ZEV),
(2) hybrid vehicles, and
(3) plug-in hybrid vehicles sold</td><td>20</td><td>Number of electrified vehicles sold in 2021 and percentage thereof (Unit: 1,000) (Unit: 1,000)
<table><tr><th>Classification</th><th>HEV/PHEV</th><th>EV</th><th>FCEV</th><th>Total</th></tr><tr><td>Global</td><td>272(7%)</td><td>141(3.6%)</td><td>9(0.2%)</td><td>422(10.8%)</td></tr></table></td></tr>
<tr><td>TR-AU-410a.3</td><td>Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities</td><td>20-21</td><td>Increase sales of electrified vehicles and promote fuel efficiency improvement of internal combustion engines</td></tr>
<tr><td>Materials Sourcing</td><td>TR-AU-440a.1</td><td>Management of risks related to use of main materials</td><td>27, 46</td><td>The materials for electric vehicle batteries including rare metals such as nickel, cobalt and lithium have limited reserves in several developing countries, such as Southeast Asia, Africa, and South America, which may trigger risky issues of human rights and environmental violations, not to mention the unstable supply/demand and high risk of price fluctuations. Hyundai asks its suppliers to act with responsibility when sourcing minerals. Furthermore, Hyundai had established the second life EV battery circulation process as part of its risk management of rare metals and is trying to recycle the valuable metals such as cobalt, nickel and lithium through this process.</td></tr>
<tr><td rowspan="3">Materials Efficiency & Recycling</td><td>TR-AU-440b.1</td><td>Total amount of waste from manufacturing, percentage recycled</td><td>28, 81</td><td>Weigh of waste discharged at Hyundai business sites in 2021 was 538,772 tons, 91.5% of which was recycled.</td></tr>
<tr><td>TR-AU-440b.2</td><td>Weight (ton) of end-of-life material recovered, percentage recycled</td><td>27</td><td>Weight of materials reused/used after end-of-life in 2021 was around 195,000 tons.
End-of-life recycling rate in 2021 was 82.6% excluding heat recovery, 92% including heat recovery.</td></tr>
<tr><td>TR-AU-440b.3</td><td>Average recyclability of vehicles sold</td><td>27</td><td>Recyclability: 82.6% (92%, when including waste energy recovery)</td></tr>
<tr><td rowspan="2">Activity Metrics</td><td>TR-AU-000.A</td><td>Number of vehicles manufactured</td><td>79</td><td></td></tr>
<tr><td>TR-AU-000.B</td><td>Number of vehicles sold</td><td>79</td><td></td></tr>
</table>

WEF IBC Stakeholder Capitalism Metrics

Theme	Metrics	Page	Note
Governing Purpose	Setting purpose	3, 5	We are continuously making sincere efforts to pursue the creation of economic value by continually securing a competitive edge, realization of customer value through quality management, and creation of social value through corporate citizenship.
Quality of Governing Body	Governance body composition	64-66	The BOD consists of 5 directors and 6 independent directors (including 1 female director). Among the members of the BOD, the independent director in charge of protecting shareholder rights (Independent Director Chi-won Yoon) participates in meetings with domestic investors and corporate briefings for overseas investors in aim of strengthening communications between the BOD and shareholders, and strives to improve our shareholder values. In order to faithfully perform the duties of the independent director, taking concurrent positions as a director, executive officer, or auditor of two or more other companies is prohibited. In order to prevent conflicts of interest, it is not allowed to engage in transactions in nature of the company's business activities without obtaining a prior approval from the BOD, or to become a general partner or director of other companies in the same industry.
Stakeholder Engagement	Material issues impacting stakeholders	95-96	In order to identify material sustainability management issues that impact Hyundai's stakeholders, we performed a materiality analysis in target of Hyundai employees and outside sustainability management experts.
Ethical Behavior	Anti-corruption	71-72, 85	Reports on unfair and corrupted acts are submitted and processed through the Cyber Audit Office. Additionally, we provide compliance management and ethics trainings to raise our members' compliance awareness and to build an ethical compliance culture.
	Protected ethics advice and reporting mechanisms	40-41, 71-72	Through a regular half-yearly audit and frequent audits every year, we examine the status of employees' practice of the Code of Ethics, and report the results to the BOD's Sustainability Management Committee.

Composition of the BOD

Classification	Name	Title	Career	Date of Appointment	Gender	Nationality
Internal Directors	Euisun Chung	Executive Chair	Currently Executive Chairman of Hyundai Motor Group	March 12, 2010	Male	Korea
	JaeHoon Chang	President & CEO	Currently President & CEO of HMC, President of Genesis Division	March 24, 2021	Male	Korea
	Dong Seock Lee	Vice President & CEO	Currently Executive Vice President and CSO of Domestic Productions	March 24, 2022	Male	Korea
	Chung Kook Park	Executive President	Currently President and Head of HMC R&D Division	March 24, 2022	Male	Korea
	Gang Hyun Seo	Executive Vice President	Currently Executive Vice President of HMC Planning & Finance Division	March 24, 2022	Male	Korea
Independent Directors	Eun Soo Choi	Indepen-dent Director	Currently General Counsel of The Kim Law Firm Former President of Daejeon High Court and Patent Court	March 17, 2017	Male	Korea
	Chi-Won Yoon	Indepen-dent Director	Currently Chairman of EQONEX Former Vice Chairman of UBS Wealth Management	March 22, 2019	Male	Korea
	Eugene M. Ohr	Indepen-dent Director	Former Partner of Capital International Inc.	March 22, 2019	Male	Korea
	Sang-Seung Yi	Indepen-dent Director	Currently Professor of Economics, Seoul National University Former Chairman, Korea Academic Society of Industrial Organization	March 22, 2019	Male	Korea
	Dal Hoon Shim	Indepen-dent Director	Currently Representative of Woorin Tax Partners Former Head of NTS Jungbu Regional Office	March 24, 2021	Male	Korea
	Ji Yun Lee	Indepen-dent Director	Currently Assistant Professor, Department of Aerospace Engineering of KAIST Former Director of American Society of Navigation	March 24, 2021	Female	Korea

* As of June 1, 2022

Ethics Standard Training

Number of training sessions (Case)		Number of participants (Person)	
Domestic	Overseas	Domestic	Overseas
11	9	21,567	80

Non-compliance with Regulations and Voluntary Codes

Legal sanction against the violation of fair trade	Penalty and fine for non-compliance with environmental regulations	Violation of advertising regulations	Number of personal information breaches
0	0	0	0

<table>
<tr><th>Theme</th><th>Metrics</th><th>Page</th><th>Note</th></tr>
<tr><td>Risk and Opportunity Oversight</td><td>Integrating risk and opportunity into business process</td><td>12-13, 73-74, 95-96</td><td>By identifying regional/organizational issues on climate change issues, we evaluated the impacts of each factor affecting the company in aim of establishing a decent, company-wide response strategy. In addition, we carried out a materiality analysis to disclose the directions for management directions for each major issue, key performance and mid- to long-term plans.</td></tr>
<tr><td rowspan="2">Climate Change</td><td>Greenhouse gas (GHG) emissions</td><td>14-15, 28, 80, 99-102</td><td>We disclose the total greenhouse gas emissions occurring from all domestic business sites and 8 overseas subsidiaries.
Greenhouse gas emissions (Scope 1+2, tCO_2-eq): 2,384,204
Emissions for a total of 11 categories (6 upstream and 5 downstream) are disclosed.
Greenhouse gas emissions (Scope 3, tCO_2-eq): 101,790,794</td></tr>
<tr><td>TCFD implementation</td><td>89</td><td>Details of all recommendations in the TCFD Index can be found in the Sustainability Report and the Carbon Disclosure Project (CDP).</td></tr>
<tr><td>Nature Loss</td><td>Land use and ecological sensitivity</td><td>-</td><td>There is no business site located adjacent to the Biodiversity Area (KBA).</td></tr>
<tr><td>Freshwater Availability</td><td>Water consumption and withdrawal in water-stressed areas</td><td>28, 80</td><td>Hyundai Motor India and Hyundai Assan Otomotive Sanayi (Turkey plant) locate in areas of extreme water stress in the WRI Aqueduct water risk atlas tool.
HMI & HAOS
<table>
<tr><th>Volume of water withdrawal (Ton)</th><th>Volume of water consumption (Ton)</th><th>Rate of water withdrawal</th><th>Rate of water consumption</th></tr>
<tr><td>1,472,853</td><td>1,198,053</td><td>8.4%</td><td>12.9%</td></tr>
</table></td></tr>
<tr><td rowspan="4">Dignity and Equality</td><td>Diversity and Inclusion</td><td>81-83</td><td>Data on employees by age, female employees, employment status of the disabled is disclosed in the Sustainability Report.</td></tr>
<tr><td>Pay equality</td><td>65</td><td>The average remuneration per person is disclosed in the Sustainability Report.</td></tr>
<tr><td>Wage level</td><td>65</td><td>BOD Compensation (Unit: KRW million)
<table>
<tr><th>Classification</th><th>CEO*</th><th>Non-executive Director</th><th>Board member</th><th>Employee**</th><th>Ratio of CEO's compensation to an employee's</th></tr>
<tr><td>Average compensation per person</td><td>977</td><td>102</td><td>1,339</td><td>96</td><td>10.17 times</td></tr>
</table>
* CEO : Based on President and CEO Jaehoon Chang
** Employee: All employees excluding registered executives (non-registered executives and employees)
*** Detailed information is available in our 2021 Business Report. It can be accessed on the Data Analysis, Retrieval and Transfer System of the Financial Supervisory Service</td></tr>
<tr><td>Risk for incidents of child, forced or compulsory labor</td><td>88</td><td>There are no business sites or suppliers with a high risk of child/forced labor.</td></tr>
<tr><td>Health and Well-being</td><td>Health and safety</td><td>85</td><td>The number of industrial accident victim, industrial accident rate, work loss rate and occupational disease rate are disclosed in the sustainability report.
Occupational Accidents
<table>
<tr><th>Classification</th><th>Number of occupational accidents (Person)</th><th>Accident rate (%)</th></tr>
<tr><td>Korea</td><td>424</td><td>0.73%</td></tr>
<tr><td>Overseas</td><td>11</td><td>0.04%</td></tr>
<tr><td>Total</td><td>435</td><td>0.49%</td></tr>
</table>
LTIFR & OIFR
<table>
<tr><th>Classification</th><th>LTIFR</th><th>OIFR</th></tr>
<tr><td>Employees (Domestic)</td><td>2.55</td><td>0.87</td></tr>
<tr><td>Employees (Overseas)</td><td>0.21</td><td>0.0</td></tr>
<tr><td>Employees (Total)</td><td>1.76</td><td>0.58</td></tr>
<tr><td>Suppliers (Domestic)</td><td>1.36</td><td>-</td></tr>
<tr><td>Suppliers (Overseas)</td><td>0.0</td><td>-</td></tr>
<tr><td>Suppliers (Total)</td><td>0.89</td><td>-</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Theme</th><th>Metrics</th><th>Page</th><th>Note</th></tr>
<tr><td>Skills for the Future</td><td>Training Provided</td><td>83</td><td>The status of employee training (training hours by position, training expense) is disclosed in the Sustainability Report.

Employee Training
<table>
<tr><td>Total training expenses</td><td></td><td>KRW billion</td><td>41.7</td></tr>
<tr><td>Training expenses per employee</td><td></td><td>KRW 10,000</td><td>60.3</td></tr>
<tr><td rowspan="3">Training expense per employee (by position)</td><td>Super administrator</td><td>KRW 10,000</td><td>161.8</td></tr>
<tr><td>Middle manager</td><td>KRW 10,000</td><td>98.3</td></tr>
<tr><td>New employees and non-managers</td><td>KRW 10,000</td><td>56.7</td></tr>
<tr><td>Training hours per employee</td><td></td><td>Hour</td><td>27.9</td></tr>
<tr><td rowspan="3">Training hours per employee (by position)</td><td>Super administrator</td><td>Hour</td><td>29.3</td></tr>
<tr><td>Middle manager</td><td>Hour</td><td>35.9</td></tr>
<tr><td>New employees and non-managers</td><td>Hour</td><td>27.3</td></tr>
</table></td></tr>
<tr><td rowspan="3">Employment and Wealth Generation</td><td>Absolute number and rate of employment</td><td>83-84</td><td>The number of new domestic employees and the turnover rate are disclosed in the Sustainability Report.</td></tr>
<tr><td>Economic contribution</td><td>79-80</td><td>Sales and financial information, R&D expenses (details of the company’s investments and government subsidies), information on economic values distributed are disclosed in the Sustainability Report and the Business Report.</td></tr>
<tr><td>Financial investment contribution</td><td>80</td><td>Hyundai Motor Company is committed to improving the organization’s successful investment and profitability.
Total Capital Expenditure - Depreciation expense: KRW (789) billion
Buyback of treasury stock + dividend payment: KRW 1,606 billion</td></tr>
<tr><td>Innovation of Better Products and Services</td><td>Total R&D expenses</td><td>80</td><td>Total R&D expense spent is as follows.
- Total R&D expenses in 2021: KRW 3.1 trillion
- 2021 government subsidy: KRW (2,214) million</td></tr>
<tr><td>Community and Social Vitality</td><td>Total tax paid</td><td>80</td><td>Details of corporate income tax are disclosed in the Sustainability Report and business reports.</td></tr>
</table>

Stakeholder Engagement

Stakeholder Communication

Hyundai makes all efforts to strengthen its communication function across entire areas of business activities. We have categorized our stakeholders into six major groups – customers and dealers, employees, suppliers, local communities, government, shareholders and investors – and continue to identify and reflect their requirements, and provides a detailed, transparent information regarding our sustainability performance which we have achieved and relevant activities carried out.

Classification	Customers and Dealers	Employees	Suppliers	Local Communities	Government	Shareholders and Investors
Definition of key stakeholder groups	• Dealers deliver Hyundai's products and services to customers, while customers decide on making a purchase based on the delivered product and service.	• Employees handle product development, production, sales as well as all activities that support the above. Their competencies mean the company's competencies.	• Suppliers provide parts or materials to Hyundai, enabling the company to produce quality products. Their quality competitiveness directly impacts Hyundai's quality.	• Local communities refer to residents in areas located close to our business sites and global citizens who are influenced by our activities. Hyundai strives for their sustainable development.	• The government enacts laws and regulations that are related to the automobile industry or decides on regulation levels on corporations' business operation, so that it can influence our business activities.	• Shareholders and investors provide finance and capital to the company, so that Hyundai can maintain growth engines while implementing diverse strategies or running our business.
Communication channels by key stakeholder groups	• Motor show and new car launching ceremony • Test driving • Before Service • Customer satisfaction survey • Car club • On-line (social media) • Website • Sports sponsorship • Dealer events	• Labor-Management Council • Employee satisfaction surveys • Meetings and events • Grievance handling system • Occupational Safety and Health Committee • Work-related education and trainin	• Win-win growth portal site • HMG Partner System • Transparent Purchase Practice Center website • Global Win-Win Cooperation Center (GPC Portal) • Seminars and training	• Social contribution programs • Communication with local communities nearby the company's business sites • Recruitment • Family inviting events	• Public hearings • Policy-making discussions and briefings	• Annual Shareholders Meeting • Company briefing • IR meetings • Sustainability Management Committee • Website
Issues of interest by key stakeholder groups	• Expanding the EV lineup • Investing in and developing technologies related to improving the fuel efficiency of ICEVs • Strengthening product safety and quality management • Customer satisfaction • Brand image	• Employee competency building • Employee human rights and diversity • Organizational culture and evaluation and compensation • Labor-management relations • Health and safety in the workplace	• Supply chain ESG risk management • Carbon neutrality & Expansion of renewable energy • Application of eco-friendly materials and technologies to products	• Job creation and retention • Strategic social contributions • Upgrading the system for collecting and recycling end-of-life vehicles/second life EV batteries • Enhancing business site environment efficiency • Assessing and protecting biodiversity related to business activities	• Business ethics • Building infrastructure • Responding to fuel efficiency regulations • Environmental investments, such as electrified vehicles and renewable energy power generation facilities	• Strengthening ESG governance roles • Improving economic performance • Innovation • Protecting shareholder rights • BOD operation

Materiality Analysis

Materiality Analysis Process

Hyundai conducted a 5-step sustainability management materiality analysis to identify major reportable issues and to organize the content of each issue.

STEP 01.

Forming a pool of topics

To identify material issues that are material in business/financial aspects and also have a high level of influence on stakeholders, we analyzed sustainability management trends by analyzing global economic, social, and environmental issues as well as international standards, and benchmarked sustainability reports in the same industry. We also carried out media research and internal status reviews to form a pool of 34 material sustainability topics that influence our stakeholders.

STEP 02.

Analyzing issues

We analyzed documented materials and quantified the results of analysis for each category, in order to determine the priority of the issues in the major sustainability management issue pool.

Analysis of impact on business

- **Expert evaluation**
  Evaluation of the pool of topics' business influence by sustainability management experts
- **Benchmarking of other companies in the same industry**
  Analyze material issues of recent sustainability reports published by competitors
- **Past sustainability report (2017-2021)**
  Analyze reported issues and the content of reports that were published in the last five years

Analysis of importance to stakeholders

- **Analysis of international standards**
  Analyze major sustainability initiatives in Korea and overseas, including GRI, DJSI, and SASB, as well as ESG evaluations
- **Media research**
  Analyze 9,729 articles from major media outlets in Korea that were published in 2021

STEP 03.

Stakeholder survey (Double-Materiality)

We conducted a double-materiality-based stakeholder survey to simultaneously identify sustainability management issues that we should manage for business operation and issues with a high level of business/financial influence from the stakeholder perspective. By doing so, we identified sustainability issues of high interest.

Overview of stakeholder survey

Period	• February 21-25, 2022
Method	• Online survey
Target	• Outside stakeholders • Hyundai employees
Details	• Evaluate ESG issues that have a high level of business/financial influence on Hyundai • Evaluate ESG issues that have a high level of business/financial influence on stakeholders

STEP 04.

Selecting material issues

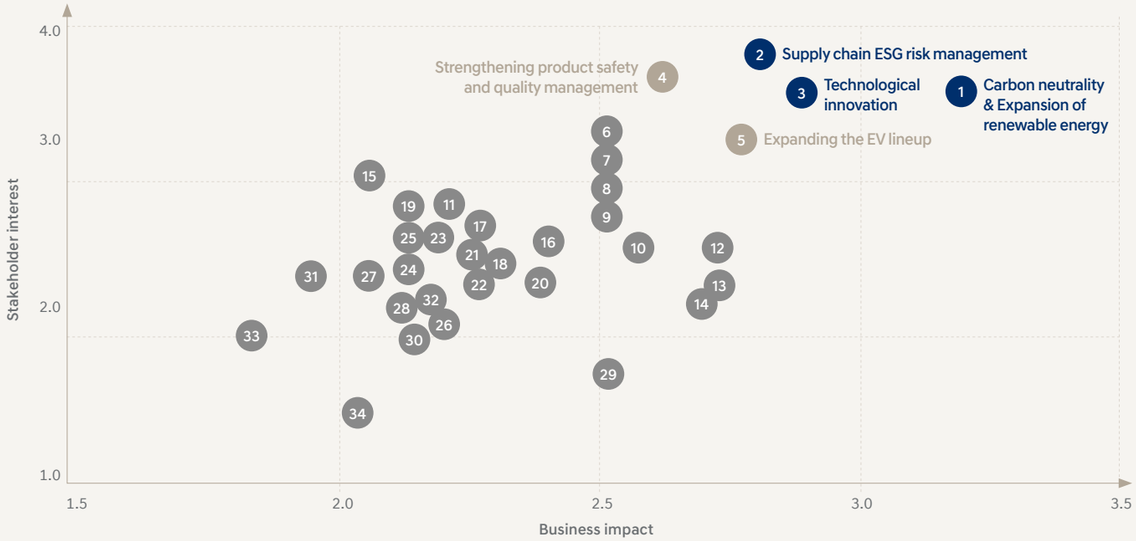
Priority level of each issue was determined by impact on business (financial, strategic, operational impacts) and importance to stakeholders (reputational impacts).

STEP 05.

Materiality analysis results

In relation to the major issues that were identified through the materiality analysis, direction of issue management, key outcome and mid-to-long term plans are reported and disclosed.

Materiality Analysis Results



NO	Issues
1	**Carbon neutrality & Expansion of renewable energy**
2	**Supply chain ESG risk management**
3	**Technological innovation**
4	Strengthening product safety and quality management
5	Expanding the EV lineup
6	Improving global corporate value
7	Innovation
8	Workplace safety and health
9	Labor-management relations
10	Employee human rights and diversity
11	Advancement of the system of collecting and recycling end-of-life vehicles/second life EV batteries
12	Economic performance improvement

NO	Issues
13	Strengthening ESG governance roles
14	Customer satisfaction
15	Brand image
16	Organizational culture and evaluation reward
17	Technology investment and development in relation to improving fuel efficiency of ICEVs
18	Strategic social contribution
19	Job creation and retention
20	Operational eco-efficiency
21	Risk management
22	Employee competency building
23	Analysis of climate change physical/transition risk
24	Business ethics

NO	Issues
25	Application of eco-friendly materials and technologies to products
26	Expanding the scope of product life cycle assessment (LCA)
27	Protecting shareholder rights
28	Building infrastructure
29	Environmental investments, including electrified vehicles and renewable energy power generation facilities
30	Participating in global ESG initiatives
31	Assessing and protecting biodiversity related to business activities
32	BOD operation
33	Responding to fuel economy regulations
34	Personal information protection

Management of Material Issues

Material Issues	Direction for Issue Management	Major Outcomes	Mid- to Long-term Plan	Target Year
Carbon neutrality & Expansion of renewable energy	• Set detailed plans to achieve carbon neutrality and transition to renewable energy, and implement them • Inevitable to transit from ICEVs to EVs due to the reinforced vehicle CO_2 regulations and the spread of ban on sales of the ICEVs among the major countries	• Established and announced our goal to achieve carbon neutrality by 2045 • Joined the RE100 initiative and set the roadmap • Launched IONIQ 5 based on "E-GMP", a platform dedicated to electric vehicles, and the first EV model of the Genesis brand	• Achieve carbon neutrality across the entire value chain by 2045 • Convert all electricity consumed at all Hyundai business sites around the world to renewable energy by 2045 • Achieve 100% electrification in European market by 2035 and other major markets by 2040	2045
Supply Chain ESG Management	• Set goal for preventing supply chain risk • Establish supply chain ESG management policies and process • Manage risks associated in areas of ethics, environment, labor/human rights, safety/health and management system	• Achieved 100% safety and health system certification of tier-1 suppliers • Advanced supplier ESG assessment (assessment indicators and due diligence) • Helped high-risk suppliers make improvements (distribute safety and health guidelines and provide online safety training)	• Complete the support for establishment of safety devices to prevent supplier accidents by 2024 • Conduct supply chain ESG assessment to all suppliers (2019-2023, conduct to 20% of tier-1 suppliers each year) • Reduce supply chain carbon by at least 10% through energy conversion of tier-1 parts suppliers and raw materials suppliers by 2030	2030
Technological Innovation	• Develop smart mobility device and service based on AI, autonomous driving, big data/, connectivity, etc. • Innovate technologies to improve fuel efficiency and reduce CO_2 emissions	• Received the Prime Minister's Award at the Korea Technology Awards (for connected car computing system technology) • Improved fuel efficiency by more than 20% through engine downsizing, aerodynamic improvement, driving resistance improvement, vehicle weight reduction, etc. (3rd generation G80) • Developed an unmanned autonomous driving vehicle (IONIQ 5 robotaxi)	• Build electric vehicle maintenance function technologies and infrastructure at all Bluehands across the nation by 2025 • Apply hydrogen fuel cells to all commercial vehicles by 2028 • Enhance software competitiveness, including electric vehicle autonomous driving and connected technology, by investing KRW 12 trillion in the software area by 2030 • Comply with fuel efficiency/CO2 emission regulations by each country	2030

Independent Assurance Statement

Hyundai Motor Company (“the Company” or “HMC”) commissioned DNV Business Assurance Korea, Ltd. (“DNV”, “we” or “us”), part of DNV Group, to undertake independent assurance of its Sustainability Report 2022 (the “Report”).

Our Opinion

On the basis of the work undertaken, nothing came to our attention to suggest that the Report does not properly describe HMC’s adherence to the Assurance Principles described below. In terms of reliability of the performance data, nothing came to our attention to suggest that these data have not been properly collated from information reported at operational level, nor that the assumptions used were inappropriate. We believe that the Report adopts the ‘Core’ option of the GRI Standards.

Based on non-financial data, sustainability activities and performance data of 2021 generated from HMC, we have evaluated the adherence to AA1000 AccountAbility Principles (AA1000AP) 2018 and assessed the quality of sustainability performance information. We have reviewed that the Topic-specific disclosures of GRI Sustainability Reporting Standards 2020 which are identified in the process for defining report content;

No.	Material Topic	Topic Standard
1	Carbon neutrality & Expansion of renewable energy	Non-GRI
2	Supply Chain ESG Management	414-2
3	Technological Innovation	Non-GRI

Without affecting our assurance opinion, we also provide the following observations:

The Principle of Inclusivity

HMC defined customers and dealers, employees, suppliers, local communities, government, and shareholders and investors as their major stakeholder groups. The definition of each stakeholder and the approaches to engage with selected stakeholders are introduced in the report, and stakeholder interests are reflected in the materiality assessment process. During the materiality assessment process, HMC conducted an online survey targeting internal and external stakeholders, and DNV confirmed that the results of the survey were reflected in the process of composing reporting content and improving management activities.

The Principle of Materiality

HMC has conducted the materiality assessment to prepare the Report. Based on the derived pool of 84 issues, a total of 34 reporting topics were selected through business impact and stakeholder interest analysis. Among the reporting topics, the top three topics are selected as material issues in consideration of financial impact, strategic impact, operational impact, and reputational impact and are reported in more detail. HMC identified the importance of each issue from various sources, and newly added issues reflecting the latest ESG trends were reviewed and reflected in the report. We have reviewed the materiality assessment process and noted relevant material topics prioritized from the process are addressed in the report.

The Principle of Responsiveness

Hyundai Motor Group established an ESG management framework titled 'The Right Move for the Right Future' in March 2022, and presented three major mid- to long-term directions and 15 key management areas. HMC reports in detail the company's performance, future direction, and detailed activities in connection with the group strategy. In addition, HMC has established an ESG governance system to effectively achieve the strategy. The Sustainability Management Committee within the BOD and the ESG Committee, a small meeting group within the Hyundai Business Strategy Meeting, are formed to make decisions on major issues. Information related to these are disclosed through the report.

The Principle of Impact

HMC discloses in detail the background of issue selection and progress on material topics that reflect stakeholders' interests and expectations. At the end of the report, an ESG magazine was prepared to reinforce reporting on topics such as carbon neutrality and robotics innovation. It is recommended to clearly set strategic KPIs to manage the impact of each material issue, and to present performance and future plans in more detail. The assurance team confirm that the material topics selected through the materiality assessment were fully reflected to the report, based on the physical and periodic reporting boundaries.

Reliability of Specific sustainability performance information

DNV conducted a review of compliance with the principles of AA1000AP(2018) of the Report as described above (Type 1 verification). In addition, we have reviewed the reliability of the disclosure data (Type 2 verification) – ‘Industrial accident rate’, ‘waste generated in operations’, ‘water consumption’. The assurance team has sampled data and tested accuracy and reliability of the sustainability performance data of the Company and interviewed the responsible for the subject data handling and reviewed the data gathering process with the supporting documents and records. Based on the test, the intentional error or misstatement is not noted. Data owners were able to demonstrate to trace the origin of the data and to interpret the processed data in a reliable manner. The data was identifiable and traceable. The Company reports the sustainability performance of the last three years and can be compared over time. Any errors or unclear expressions found during the verification process were corrected prior to the publication of the Report.

Scope and Approach

We performed our work using AA1000AS v3, Assurance Standard set by AccountAbility, and DNV's assurance methodology VeriSustain™ (Ver. 5.0) which is based on our professional experience, international assurance best practices including the International Standard on Assurance Engagements 3000 ("ISAE 3000"), and the Global Reporting Initiative Sustainability Reporting Standards ("GRI Standards"). DNV provides Type 1 and the moderate assurance. But some part of performance data has been verified by Type 2 as described above.

The engagement excludes the sustainability management, performance and reporting practices of HMC's subsidiaries, associated companies, suppliers, contractors and any third-parties mentioned in the Report. We did not interview external stakeholders as part of this assurance engagement. Economic performance based on the financial data is cross-checked with internal documents, the audited consolidated financial statements and the announcement disclosed at the website of Korea Financial Supervisory Service (dart.fss.or.kr) as well as HMC's website (www.hyundai.com). The review of financial data taken from these sources is not within the scope of our work.

We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance opinion. We are providing a 'limited level' of assurance. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the company were applied. The baseline data for environmental and social performance are not verified, while the aggregated data at the corporate level are used for the verification.

Basis of our opinion

The assurance was carried out from May to June 2022. We undertook the following activities as part of the assurance process:

- Challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls;
- Conducted online interviews with representatives from the various departments of the HQ and major plants;
- Conducted document reviews, data sampling and interrogation of supporting databases and associated reporting system as they relate to selected content and performance data;
- Reviewed the process and the result of materiality assessment.

For and on behalf of DNV Business Assurance Korea Ltd.
Seoul, Korea
June 30, 2022

DNV

AA1000
Licensed Report
000-10/V3-WRZ4Z

Responsibilities of the Directors of HMC and DNV
The Directors of HMC have sole responsibility for the preparation of the Report. Our statement represents our independent opinion and is intended to inform all stakeholders. DNV was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Independent Assurance Statement.

Competence and Independence
DNV's established policies and procedures are designed to ensure that DNV, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV) and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. This engagement work was carried out by an independent team of sustainability assurance professionals.

DNV – Business Assurance
DNV Business Assurance Korea Ltd. is part of DNV Group, a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance.
www.dnv.co.kr/assurance

Assurance Statement

Relating to Hyundai Motor Company's Scope 1 & 2 GHG emissions in Korea for the 2021 calendar year

This Assurance Statement has been prepared for Hyundai Motor Company.

Terms of Engagement

LRQA was commissioned by Hyundai Motor Company (HMC) to provide independent assurance on its Greenhouse Gas (GHG) Inventory Report for the calendar year 2021 (the report) against "the guidelines on emission reporting and certification under the GHG emissions trading system" and the monitoring plan for the calendar year 2021 using "the verification guidelines for GHG emissions trading system".

The report relates to direct GHG emissions and energy indirect GHG emissions.

Management Responsibility

LRQA's responsibility is only to HMC. LRQA disclaims any liability or responsibility to others as explained in the end footnote. The management of HMC is responsible for preparing the report and for maintaining effective internal controls over all the data and information within the report. Ultimately, the report has been approved by, and remains the responsibility of HMC.

LRQA's Approach

LRQA's assurance engagement has been carried out in accordance with our verification procedure using "the verification guidelines for GHG emissions trading system" to reasonable level of assurance.

The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- Visiting sites and auditing management system to control the data and records regarding GHG emissions and energy uses
- Interviewing the relevant persons responsible for managing and maintaining data and associated records
- Reviewing the historical data and in formation back to source for the calendar year 2021.

Level of Assurance & Materiality

The opinion expressed in this Assurance Statement has been formed on the basis of a reasonable level of assurance, and at the materiality of the professional judgement of the verifier and at the materiality level of 2.5%.

LRQA's Opinion

Based on LRQA's approach, we believe that the report is prepared in accordance with "the guidelines on emission reporting and certification under the GHG emissions trading system" and the monitoring plan for the calendar year 2021 using "the verification guidelines for GHG emissions trading system" and the GHG emissions data in Table 1 is materially correct.

Dated: 24 March 2022

Il-Hyoung Lee

LRQA

17th Floor, Singsong Building, 67 Yeouinaru-ro, Yeongdeungpo-gu, Seoul, 07327, Korea

LRQA Reference: SEO6012382

Table1. Summary of GHG emissions (Unit: tCO_2eq)

Scope of GHG emissions	Year 2021
Direct GHG Emissions	474,331
Energy Indirect GHG Emissions	1,034,670
Total GHG Emissions	1,509,001

Relating to Hyundai Motor Company's Scope 1 & 2 GHG emissions overseas factories for the 2021 calendar year

This Assurance Statement has been prepared for Hyundai Motor Company.

Terms of Engagement

LRQA was commissioned by Hyundai Motor Company (HMC) to provide independent assurance on its greenhouse gas (GHG) emissions of its overseas factories for the calendar year of 2021 ("the report") against "the guidelines on emission reporting and certification under the GHG emissions trading system" of the Ministry of Environment using "the verification guidelines for GHG emissions trading system".

Management Responsibility

LRQA's responsibility is only to HMC. LRQA disclaims any liability or responsibility to others as explained in the end footnote. The management of HMC is responsible for preparing the report and for maintaining effective internal controls over all the data and information within the report. Ultimately, the report has been approved by, and remains the responsibility of HMC.

LRQA's Approach

LRQA's assurance engagement has been carried out in accordance with our verification procedure using "the verification guidelines for GHG emissions trading system" to a limited level of assurance.

The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- Visiting HMC's headquarters located in Seoul and auditing management system to control the data and records regarding GHG emissions
- Interviewing the relevant persons responsible for managing and maintaining data and associated records
- Reviewing the historical data and information through sampling at an aggregated level.
- Checking whether the scope 1 GHG emissions from HMMC fabrication plant were transposed correctly from the G HG inventories which were verified by the third-party assurance providers other than LRQA.

Level of Assurance & Materiality

The opinion expressed in this Assurance Statement has been formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.

LRQA's Opinion

Based on LRQA's approach, nothing has come to our attention that would cause us to believe that the direct GHG emissions and energy indirect GHG emissions summarized in Table 1 below are not materially correct.

Dated: 28 April 2022

Il-Hyoung Lee
LRQA
17th Floor, Singsong Building, 67 Yeouinaru-ro, Yeongdeungpo-gu, Seoul, 07327, Korea

LRQA Reference: SEO6012382

Table 1. Summary of GHG Emissions from HMC's overseas factories in 2021

(Unit: tCO_2eq)

Plant	HMMA	BHMC 2~3 Fab.	BHMC 4~5 Fab.	HMI	HAOS	HMMC	HMMR	HMB	HTBC	Total
Scope 1	31,688	53,776	27,064	27,519	27,697	34,287	37,843	8,135	1,626	**249,635**
Scope 2	162,856	106,721	57,921	169,619	24,310	43,150	44,804	7,913	8,274	**625,568**
Total	194,544	160,497	84,985	197,138	52,007	77,437	82,647	16,048	9,900	**875,203**

Relating to Hyundai Motor Company's Scope 3 GHG emissions in Korea for the 2021 calendar year

This Assurance Statement has been prepared for Hyundai Motor Company.

Terms of Engagement

LRQA was commissioned by Hyundai Motor Company to assure its GHG Emissions Inventory for the calendar year 2021 (hereafter referred to as "the Report").

The Report relates to other indirect GHG emissions (Scope 3) that includes the following categories:

- Purchased goods & services
- Capital goods
- Fuel- and energy-related activities
- Waste generated in operations
- Business travel
- Employee commuting
- Downstream transportation and distribution
- Use of sold products
- End-of-life treatment of sold products
- Downstream Leased Assets; and
- Investment

This engagement excludes verification of Scope 1 and 2 emissions in accordance with our contract with Hyundai Motor Company.

Hyundai Motor Company's geographical boundary includes operations in all domestic and overseas sites. The main activities of the organization include manufacturing of vehicles and the GHG emissions have been consolidated using operational control approach.

Management Responsibility

Hyundai Motor Company's management was responsible for preparing the Report and for maintaining effective internal controls over the data and information disclosed. LRQA's responsibility was to carry out an assurance engagement on the Report in accordance with our contract with Hyundai Motor Company.

Ultimately, the Report has been approved by, and remains the responsibility of Hyundai Motor Company.

LRQA's Approach

Our verification has been conducted in accordance with ISO 14064–3:2006, '*Specification with guidance for validation and verification of greenhouse gas assertions*' to provide limited assurance that GHG data as presented in the Report have been prepared in conformance with ISO 14064–1:2006, '*Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals*'.

To form our conclusions the assurance engagement was undertaken as a sampling exercise and covered the following activities:

- visited the headquarters in Seoul and reviewed processes related to the control of GHG emissions data and records
- interviewed relevant staff of the organization responsible for managing GHG emissions data and records
- verified historical GHG emissions data and records relating to operations in domestic and overseas sites at an aggregated level for the calendar year 2021; and
- verified the emission factors used with the source reference and confirmed its appropriateness

Level of Assurance & Materiality

In accordance with our contract agreement, the assurance was conducted at a limited level of assurance at a materiality of the professional judgment of the Verifier. The opinion expressed in this Assurance Statement has been accordingly formed.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that other indirect GHG emissions disclosed in the Report as summarized in Table 1 below are not materially correct and that the Report has not been prepared in conformance with ISO 14064–1:2006.

Dated: 22 June 2022

Tae-Kyoung Kim
LRQA Lead Verifier
On behalf of LRQA
17th Floor, Sinsong Building, 67 Yeouinaru-ro, Yeongdeungpo-gu, Seoul, Korea

LRQA reference number: SEO00001059

UKAS VERIFICATION
001

Table 1. Summary of Hyundai Motor Company, GHG Emissions Inventory 2021

Scope of GHG emissions	Tonnes CO_2e
Other indirect GHG emissions (Scope 3)	
Purchased goods & services – raw materials of parts for all vehicles manufactured in domestic and overseas	18,359,619
Capital goods – computers & monitors purchased in domestic	139
Fuel- and energy-related activities – upstream emissions of fuels consumed in domestic and overseas (excluding electricity and steam purchased) (Overseas sites include HMMA, BHMC 2 ~5 Fabs, HMI, HAOS, HMMC, HMMR, HMB and HTBC)	149,556
Waste generated in operations – treatment of waste generated from operations in domestic (included research centres, Ulsan/Jeonju/Asan plants, and service centres)	1,911
Business travel – emissions of personal cars, buses, trains and domestic & international flights by employees working in domestic	7,069
Employee commuting – commuting buses in domestic	5,911
Downstream transportation and distribution – vehicles manufactured in domestic (Included shipping and land transportation by Hyundai Glovis)	838,575
Use of sold products - internal combustion engine vehicles sold in domestic and overseas (mileage of 150,000 km for 10 years) (electric vehicles and hydrogen vehicles are excluded)	80,887,513
End-of-life treatment of sold products – vehicles sold in domestic and overseas	810,794
Downstream leased assets – lessee companies in the headquarters building	804
Investments – scope 1 and 2 emissions of six investee companies where Hyundai Motor Company owns 20% or more shares, and which are listed on the stock market of Korea.	728,902

Notes:
1. This engagement excludes verification of Scope 1 and 2 emissions in accordance with our contract with Hyundai Motor Company.
2. Scope 1 and 2 emissions for Hyundai Motor Company using an operational control approach have been verified for the same reporting period by LRQA in accordance with the guidelines on emission reporting and certification under the GHG emissions trading system.
3. EF for calculation of air travel emissions don't consider radiative force.

About This Report

Hyundai Motor Company has been publishing a sustainability report every year since 2003 in order to disclose both financial and non-financial performance, including its efforts to promote sustainable management, in an integrated manner and to communicate with stakeholders. This 2022 Sustainability Report elaborates on its key performances achieved in the areas of ESG management strategy, environment, society and governance, and the issues associated therewith. Through this, we will actively communicate with stakeholders to realize social value as a global leading company.

Reporting Principles and Standards

This report applies the "Core Option" of the Global Reporting Initiative (GRI) Standards with appropriate modifications. In addition, this report satisfies the four principles – Inclusivity, Materiality, Responsiveness, and Impact – of the AA1000APS (Accountability Principles Standard) that includes the obligation to explain sustainability management.

In addition, this report was prepared to align with the information disclosure guidelines of the Task Force on Climate-related Financial Disclosures (TCFD), Sustainability Accounting Standards Board (SASB) and WEF IBC Stakeholder Capitalism Metrics.

Publisher	Hyundai Motor Company Headquarters: 12, Heolleung-ro, Seocho-gu, Seoul, 06797, Korea
Publication Date	June 2022
Production (Contact Information)	Sustainability Management Team, Hyundai Motor Company Tel: +82-2-3464-8886 E-mail: ESG@hyundai.com
Reporting Principle	GRI Standard (Core option), TCFD, SASB, WEF IBC Stakeholder Capitalism Metrics
Reporting Boundary	Hyundai Motor Company (also include some data and information of Hyundai Motor Group)
Reporting Scope	Economic (based on Korean International Financial Reporting Standards), social and environmental performance
Reporting Period	January 1st, 2021 - December 31st, 2021 (also include some data and information from the first half of 2022)
Reporting Cycle	Annual (last report was published in June 2021)

Reporting Period

This report covers activities undertaken from January 1st, 2021 to December 31st, 2021, including some key activities conducted until the first half of 2022. As for quantitative performance, if the results need to be tracked continuously, we have used data for the past three years. The reporting cycle for this report is one year. The previous report was published in June 2021.

Scope and Boundary of Report

This report covers the activities of the headquarters as well as manufacturing plants, R&D centers, design centers, and sales corporations operated by Hyundai Motor Company in Korea and overseas.

Financial information is based on the consolidated financial statements in accordance with the Korean International Financial Reporting Standards (K-IFRS). Nonfinancial data regarding environmental and social performance is based on the separate figures of Hyundai Motor Company, and some performances include those of Hyundai Motor Group. In case the reporting scope differs, the reporting scope of the information is indicated separately in the annotation.

Third Party Assurance

This report has been assured by an independent assurance corporation (DNV) to ensure the accuracy, objectivity and credibility of the report preparation process and all the information created, and the verification was completed in accordance with international verification standards. The financial information provided in this report has been audited by an independent auditor, and assurance on greenhouse gas emissions and energy usage was carried out in accordance with the verification principles of the guidelines such as "Administrative Guidelines for Operation of Emission Trade System".

UN Global Compact

The UN Global Compact (UNGC) is an international agreement that former UN Secretary-General Kofi Annan suggested in 2000 to emphasize corporate execution of social responsibilities, and consists of ten major principles in the four areas of human rights, labor, environment, and anti-corruption. Hyundai supports the ten principles of the UNGC and strives to observe them in overall management.

COMMUNICATION ON PROGRESS

UN GLOBAL COMPACT

This is our **Communication on Progress** in implementing the Ten Principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Contribution (In alphabetical order)

A Mi Wu
An Na Jo
Ba Mi Kim
Bit Na Yoo
Bo Gon Go
Bo Hyun Yun
Bo Kyung Choi
Byung Mun Choi
Byung Il Jo
Chang Hee Kang
Chang Ho Yoo
Chang Je Kim
Chan Hee Lee
Cwang Il Lee
Da Hee Kim
Dal Su Park
Dong Gi Son
Dong Shin Kim
Dong Sung Kim
Don Soon Lee
Eu Gene Chang
Eui Hyun Seo
Eun Yeong Park
Gil Hoon Kim
Gun Hee Cho
Gwang Hyun Hahn
Gyeol Han
Hae Sung Jung
Han Ju Yun
Hee Jeong Park
Ho Deuk Song
Ho Seok Shin
Hoon Ha Seo
Hwan Hee Lee
Hwi Kyu Choi
Hye Je Lim
Hye Ju Jung
Hye Jung Noh
Hyeon Gu Kim
Hye Won Kim
Hyo Jun Kim
Hyun Ho Seo
Hyun Soo Kim
Hyun Wook Jeong
Hyun Joon Lee
Hyun Kyu Kim
Hyung Chul Jun
Im Pal Choi
Ja Young Song
Jae Cheol Choi
Jae Gon Lee
Jae Hyun Yoon
Jae Hyung Kim
Jae Sik Shim
Jae Won Lee
Jae Yun Shin
Jang Ho Kuk
Jang Hee Sim
Je Yeon Kim
Jee In Kim
Jeong Hyeon Jo
Jeong Wook Hur
Ji Hye Jang
Ji Hye Nam
Ji Hye Ok
Ji Hoon Gwak
Ji Man Lee
Jin Won Bae
Jin Wook Song
Jin Young Hwang
Jin Hyung Lee
Jin Kyung Kim
Jin Kyung Noh
Jin Soo Shin
Jin Woo Park
Ji Yeon Jeon
Jong Ok Kim
Jong Ryul Park
Jong Won Lee
Joon Seop Choi
Joong Hyuk Park
Jung Ho Park
Jung Woo Lee
Jun Dong Lee
Jun Ho Kim
Jun Seok Kim
Jung Won Kim
Kook Jin Hwang
Kyo Young Lee
Kyu Sang Choi
Kyung Moon Lee
Kyun Ghee Kang
Mi Dol Yu
Min Ho Choi
Min Chang Cha
Min Oh Park
Min Ok Park
Min Seok Kim
Min Seong Yoo
Min Young Kim
Mi Yeon Lee
Moon Sang Yoon
Moon Sue Park
Nae Hwan Hyun
Na Eun Yoo
Nam Su Han
Sang Bum Kim
Sang Jin Kim
Sang Woo Hwang
Se Jun Kim
Seok Ju Cha
Seok Beom Han
Seok Ho Kim
Seong Jae Lee
Seong Yeong Oh
Seong Yeop Kang
Se Ri Kim
Seung Il Kim
Seung Tae Kim
Seung Hoon Lee
Seung Kyum Ra
Seung Woo Cho
Si Cheol Roh
So Yeon Lee
Soo Hyeon Bae
Soon Bok Kim
Suk San Yoon
Sug Nam Hwang
Sung Joo Lee
Tae Hwan Kang
Tae Jung Lee
Tae Kyoo Lee
Won Yeop Lim
Woo Yong Choi
Wu Jin Park
Yeon Kee Min
Yeon Ju Ryu
Yong Tae Song
Yong Beom Jo
Yong Hee Park
Yoon Jae Lee
You Jin Jeong
Young Su Kim
Young Doo Choi
Young Jin Song
Young Pyoe Hong
Young Seung Jin
Yu Jeong Lee
Yun Ryeong Song
Yun Tae Kim

Planning & Design	Hyundai Motor Company Sustainability Management Team	Dong Woon Jung
		Jae Kyoung An
		Mi Jin Na
		Min Kyung Kim
		Won Jun Choi
		Yoo Seong Choi
		Yun Jae Lee
	Hyundai Motor Company Brand Design Team	Seo Hee Park
		Suk Gyu Choi
	Korea Productivity Center	Hyung Yun Jeong
		Jun Young Lee
		Kwang Ho Jeong
		Sang Woo Han
	Talantone Creative Group	Ah Reum Min
		Youn H. Park

Progress through Vision.

ESG Magazine

HYUNDAI

Contents

COVER STORY

CONTRIBUTION

INNOVATION

Envision the future mobility enabled by carbon neutrality.

Global warming is progressing rapidly so that “climate crisis” is more commonly used than “climate change”. Sea ice extent around the North Pole shrank from 6.9 million km^2 in 1979 to 4.72 million km^2 in 2021[1], about 21.8 times the landmass of South Korea. In California, large wildfires, caused by rising temperatures, in 2021 scorched areas totaling around 1,980 km^2, three times the size of Seoul. Korea is no exception. In March 2022, a wildfire in the eastern coast burned for 213 hours, the longest in the nation’s history. Though the historic fire eventually was extinguished to a great relief of many concerned citizens, it was clear to all that forest fires were burning bigger and longer, posing a greater threat to forests the world over. According to a UNEP report, climate change will cause more wildfires, and if left unaddressed, will trigger 14% more large wildfires by 2030 and 50% more by the end of the 21st century[2].

As the climate crisis threatens the survival of humanity, net zero is emerging as humanity’s common goal. According to the 2021 IPCC Sixth Assessment Report, the global community as a whole is rather accelerating than slowing climate change, and for Earth’s temperatures to stabilize, we should achieve net zero. Net zero refers to the balance between the amount of greenhouse gas (GHG) produced and the amount removed from the atmosphere, through absorption by forests and offsetting. Easier said than done, but done it must be as it is the only path humanity can take that ensures its common prosperity, and this path Hyundai pursues.

Under our brand vision of “Progress for Humanity”, we have been searching for ways to realize mobility of humanity – a fundamental value – without burdening the Earth. Leveraging our technologies, we have been formulating mobility solutions for a sustainable Earth. Our belief and sense of responsibility that the auto industry should more proactively respond to climate change than any other industries resulted in “2045 Net-Zero Roadmap” in September 2021.

The automotive industry, long classified as manufacturing, used to be associated solely with CO_2-heavy fossil fuels. Hyundai in 2019 commenced its transition to a “Smart Mobility Solution Provider”, going beyond being an auto maker, and in 2021, announced a net-zero goal, thereby accelerating the transition. Our net-zero goal is unique in that it is a response to climate change based on eco-friendly technologies we have accumulated. We have integrated solutions that expand beyond the traditional areas of mobility to cover entire energy and other urban infrastructures. Based on such solutions, we will go net zero across all our mobility value chains, and by going a step further and developing new eco-friendly mobility means, we will take the lead in the transition to a low-carbon economy.

The 2022 Hyundai Motor Company ESG Magazine illustrates Hyundai’s “Progress for Humanity”. For the irreplaceable Earth environment, for the humanity of today, and for a sustainable future for which futures generations will be grateful, the progress continues.

In Progress with Positive Energy.

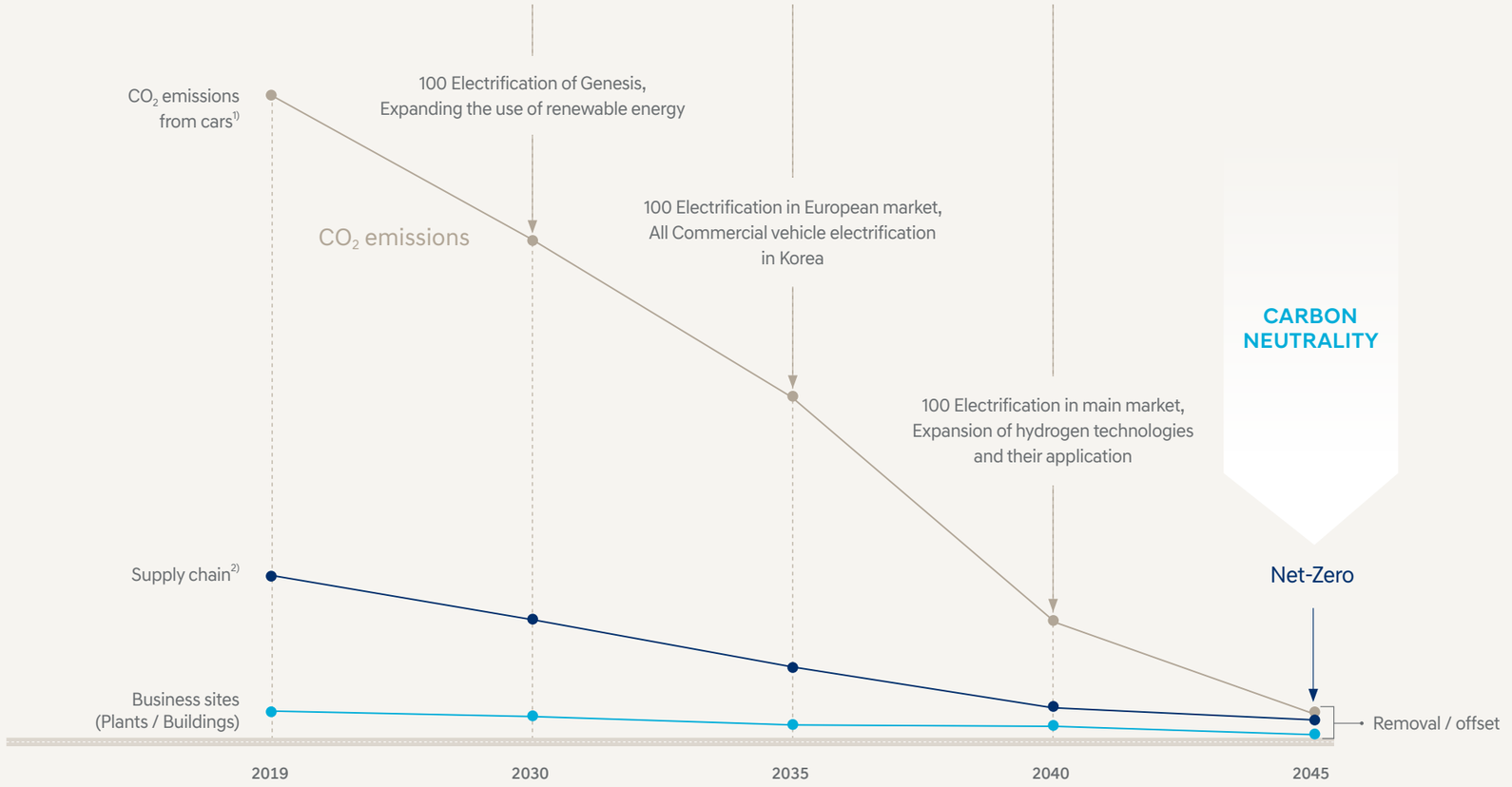
[1] Source: 6th Intergovernmental Panel on Climate Change (IPCC) Report
[2] Source: Spreading like Wildfire: The Rising Threat of Extraordinary Landscape Fires (UNEP, 2022)

Road to carbon neutrality

Today, we live in an era called “Great Shift”. Having gone through three industrial revolutions represented by the steam engine, electricity, information communication technologies, respectively, we are entering the era of the Fourth Industrial Revolution marked by AI and robots. Amidst technologies that can replace fossil fuels with clean and unlimited energy, Hyundai is focusing its strengths and wisdom on innovating the environment with an eye toward reaching net zero by 2045.

Our net-zero goal covers all phases of vehicle life cycle, from procurement of automotive parts to production and operations. In addition to electrification and thus eliminating vehicle emissions, we will reduce the carbon footprints of auto parts manufacturing through close cooperation with suppliers and achieve net zero in a true sense of the word by having all business sites 100% run on carbon-free energy. To this end, we have established a detailed roadmap and will fully implement it using advanced technologies and with a firm conviction.

2045 Net-Zero Roadmap



[1)] Tank-to-wheel (TTW) that refers to the use of fuel in the vehicle and emissions during driving
[2)] Suppliers’ carbon emission that we aim to reduce and achieve net zero through collaboration with partners

3 PILLARS OF CARBON NEUTRALITY

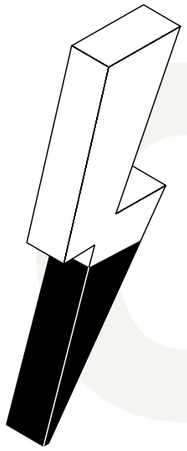
Hyundai's 2045 net-zero plan is an integrated climate change solution that consists of three pillars – clean mobility, next-generation platform, and green energy. In another word, net zero will be achieved through expansion of vehicle electrification, development of innovative mobility platforms, and complete transition to eco-friendly energy sources. Following is the future of sustainable mobility Hyundai environs amid a global climate crisis.

MOBILITY SOLUTION

Evolving Sustainability

Vehicle emissions account for around 20% of the GHG being emitted around the world, of which over 70% comes from road traffic[1]. Considering that both gasoline and diesel are leading fossil fuels that power internal combustion engine vehicles, global net zero is possible only when vehicles running on fossil fuels are replaced by those that run on carbon-free energy. As a way not only to nimbly respond, but also take the lead the vehicle electrification, Hyundai seeks to completely change the mobility ecosystem by using vehicle-to-grid (V2G) technology, thereby reducing the global dependence on fossil fuels.

[1] Source: International Energy Agency (IEA)

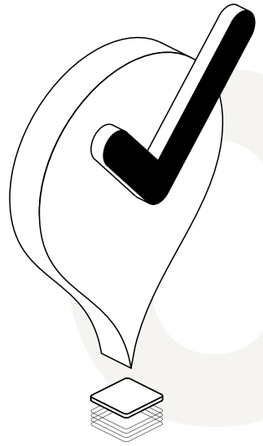


PLATFORM SOLUTION

Setting the Course

If urbanization continues at its present pace, it is said that some 1.6 billion people around the world will be living their summers at temperatures of 35℃ and higher by 2050[2]. Traffic congestion, another serious issue, causes city life to be more unbearable and road accidents to increase. Resolving these and other related issues requires unconventional mobility solutions. Hyundai is therefore accelerating the development of eco-friendly power-based new concept mobility systems such as advanced air mobility (AAM) and purpose built vehicle (PBV), and proposing new lifestyles of a future smart city free of carbon emissions as well as of physical restrictions on mobility.

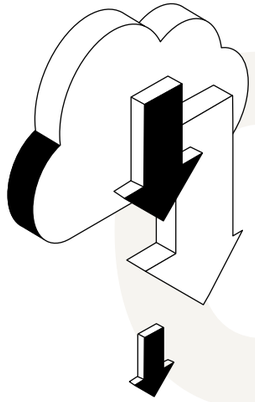
[2] Source: UN Environment Programme (UNEP)



ENERGY SOLUTION

Empowering the Future

In reaching net zero, reducing the carbon footprints of auto production operations is as important as manufacturing zero-emissions vehicles. Which is why Hyundai is focusing on increasing the use of renewable energy, such as solar energy. Aiming to meet 100% energy demand at all business sites with renewable energy by 2045, we are rapidly moving forward with the transition to green energy while providing suppliers with net-zero guidelines and urging them to act on their social responsibility. As such, Hyundai is changing itself first so that the overall automotive industry can achieve sustainable growth using eco-friendly energy as a main source of power.



Evolving Sustainability

Extreme weather events have become more common across the world, such as heat waves, snowstorms and typhoons, all related to global warming. To preempt a full-scale climate crisis, we must act now. In particular, if we fail to substantially reduce our dependence on fossil fuels, we will be able to neither protect our livelihoods nor ensure a future for generations to come.

Electrification is a key driver of Hyundai's climate actions. Setting new standards for eco-friendly vehicles and developing them over the years, we are reorganizing our production and business structures into a carbon-free mobility ecosystem and drawing a right path to carbon neutrality. Moreover, as carbon neutrality cannot be achieved by some select countries or companies acting alone, we are realizing carbon neutrality for all by encouraging and supporting stakeholders to take climate action as part of their daily lives. To enable parts supplier, vehicle assemblers, and auto drivers to contribute to resolve the climate crisis, we expand our space and invest our time in the future.

On the Road to Electrification

From Vehicle to Experience

Hyundai's efforts for vehicle electrification began long ago. We started with the SONATA EV (electric vehicle), our first EV model, in 1991; followed it with the development of three versions of IONIQ – mild hybrid, plug-in hybrid electric vehicle (PHEV), and battery electric vehicle (BEV) – in 2016; launched the KONA EV in 2018; and then introduced the IONIQ 5 in 2021, opening a new chapter in the history of electric vehicles.

Vehicle Electrification Milestone and Roadmap

MILESTONES

1991	2016	2018	2021
Launched the Sonata EV	Launched the IONIQ EV	Launched the KONA EV	Launched the IONIQ 5

ROADMAP

2030	2035	2040	2045
100% electrification of the Genesis (total electrification rate of 36%)	100% electrification in the European market	100% electrification in major markets (total electrification rate of 80%)	Achieve net zero

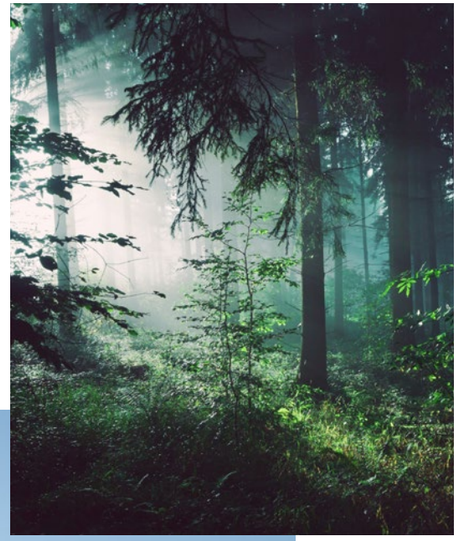
On the back of our technological prowess proven by EV-exclusive brand IONIQ, we seek to achieve carbon neutrality of vehicles we sell by transitioning our product and operation structures to be electric vehicle-centered. We plan to electrify the Genesis brand 100% by 2030, thereby confirming the feasibility of our goal, and electrify all our vehicles for the European market by 2035 and for the major markets by 2040.

The reason why we have established a detailed roadmap by region, brand, and model is to make sure that our goals do not end up a hollow declaration. Also, as for electrification goals, we have ensured their practicality by including production capacity, product competitiveness, software technology and other key factors in the development of the roadmap. Going forward, we will take measured steps towards the goal at an increasing speed by monitoring market changes in detail and nimbly responding to changes.

In 2021, Hyundai sold 141 thousand EVs globally, an year-on-year increase of 44%, reaffirming that the decision to hasten the transition to electrification was a right one. Aiming to sell 1.87 million units in 2030, we will go along with rising global consumption trends gravitating toward eco-friendly values and set a standard for new automobile experience in a new era.

IONIQ
breaking new ground.

In 2020, IONIQ was reborn as Hyundai's EV-exclusive brand. Succeeding the heritage of the IONIQ model whose nameplate is a portmanteau of "ion" and "unique", IONIQ has taken a new challenge of taking the EV experience to the next level, excitement of which lies in the "E-GMP (Electric-Global Modular Platform)", a dedicated platform for Hyundai EVs. In 2021, we launched the E-GMP-based IONIQ 5, redefining directions for sustainable future mobility to follow and signaling a full-fledged arrival of an EV era.



Each IONIQ 5 Contains

32
Up to 32 recycled PET bottles

730g
Sugar cane and mixed corn

294g / 200g
Wool — Flaxseed oil

0.08
0.08 square meters of recyclable paperette

IONIQ 5 – Global Award Winner

2022 World Car Awards
- World Car of the Year
- World Electric Vehicle of the Year
- World Car Design of the Year

2022 Car Buyer Best Car Awards
- Best Company Car
- Best Family Electric Car

Auto Express New Car Awards 2021
- Car of the Year 2021
- Mid-size Company Car
- Premium Electric Car

Top Gear Electric Awards 2021
- Best Design

2021 Car Design Review
- Production Car of the Year

2021 IDEA Design Awards
- Gold Prize

In addition to offering customers a distinctive EV experience, IONIQ has communicated to all stakeholders a special message asking them to come together and build a sustainable future. IONIQ has a value that goes beyond transportation thanks to the E-GMP, an integrated platform modularized and standardized to enable the formation of EVs varying in size and shape through expansion of the wheelbase. The platform allows for extending driving range, reducing charging time, and expanding the interior space. In short, the innovative platform provides clear answers to all questions consumers might have about choosing EVs.

Equipped with the vehicle-to-load (V2L) technology, the IONIQ 5 offers value more than a means of transportation. V2L is a bidirectional power feature that enables people to use the battery in their EV as a mobile battery bank to charge or use various home appliances, making a vehicle an office on the road or movie theater on wheels. The next step, the V2G technology, is expected to be available soon. Using the V2G technology, customers can recharge their cars when residential electricity is relatively affordable and sell electricity from their car batteries back to the grid during peak hours. Such flexibility constitutes wise consumption from a customer perspective, contributes to the stability of the power grid, and helps reduce fossil fuel demands, thus benefiting all.

Another element that makes the IONIQ 5 special is materials from nature. The eco-friendly materials used for the IONIQ 5, including recycled PET bottles, sugar cane, and flaxseed oil, are informing many people of the strengths and possibilities of sustainable materials, and such experience serves as an opportunity to reflect upon the importance of environmental protection for future generations. What is more encouraging is that the IONIQ 5 is only the beginning. The soon-to-be-introduced IONIQ 6 will be made of materials made solely for people and the IONIQ 7 will be showcasing materials focused solely on nature.

In addition, the IONIQ 5 wears colors of nature. As no colors are more beautiful than those found in nature, it showcases such colors inspired by nature as the dove grey of pebbles in the Seom-jin River on the southern coast of South Korea, the dark teal green of the verdant forest of Jeju Island, and the mud grey of the mudflats of the west coast, which have been fully restored of their natural beauty. As the IONIQ, launched with sustainable values in mind, continues to expand its lineup, the selection for sound value consumption will likely widen further, use of eco-friendly materials and protection of the environmental will more than likely improve the quality of people's lives, and these factors will combine to further enhance progress for humanity.

Hyundai IONIQ 5 | Answering the Call for Sustainability

XCIENT Fuel Cell
setting new standards.

Hydrogen is garnering attention as an energy source for a clean environment, and is the pivotal axis of current industrial change. At the “Hydrogen Wave” held in September 2021, Hyundai Motor Group declared its vision of building a hydrogen society by 2040 so that hydrogen energy can be easily and conveniently used by everyone for everything everywhere, based on which it is accelerating the pace of commercial vehicle electrification.

In a hydrogen society, fuel cell electric vehicles (FCEVs) are more than an eco-friendly means of transportation. Hydrogen fuel cells applied to FCEVs require a stable performance, strong durability, and high output, and thus become a criterion for judging new technologies. Hydrogen energy for FCEVs is also infinite and its production process is eco-friendly, which enables it to perform significant roles in facilitating joint growth of relevant industries, including energy, steel, chemicals, and new materials that are needed for its infrastructure.

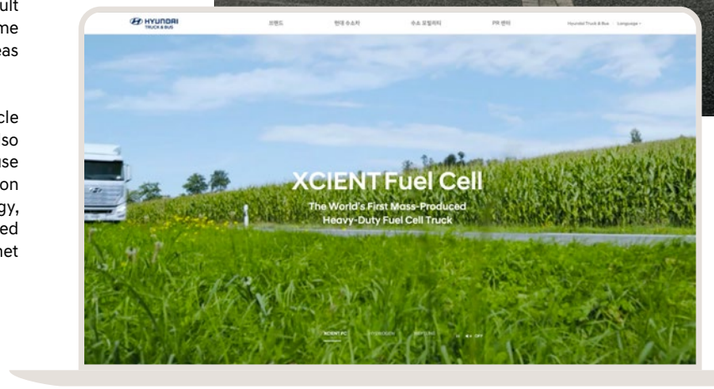
Hyundai Motor Group became the world’s first in 2013 to mass produce FCEVs and has been continually developing relevant technologies, unveiling new FCEV concepts. In cooperation with the central and local governments, the Group developed and supplied hydrogen-powered electric buses, and became the world’s first to mass produce a large hydrogen-powered electric truck and exported it to Europe. In addition, we are carrying out R&D on hydrogen fuel cell-based advanced air mobility (AAM), large vessels, and rail cars, and making efforts towards the establishment of a hydrogen charging infrastructure.

The area that Hyundai Motor Company especially focuses on in relation to hydrogen mobility is commercial vehicles. Hydrogen-electric mobility solutions’ fuel is hydrogen, which has the highest energy density based on weight, and the solutions provide a high loading capacity and long driving distance compared to pure electric mobility solutions, making them suitable for commercial vehicles that require long-distance driving and heavyweight transport.

46 XCIENT Fuel Cell trucks were exported to Switzerland in 2020 and recorded a cumulative driving distance of 3.8 million km as of May this year. Based on eco-friendliness as well as the truck’s driving performance of stably operating on mountainous areas in Switzerland, XCIENT Fuel Cell is receiving a good response from local customers.

In case of hydrogen-powered electric buses, 193 units of the ELEC CITY was adopted across the nation, beginning with Changwon City in 2019. It successfully entered overseas markets by being exported to Saudi Arabia in 2020, and was adopted for a regular route of an intra-city bus in Vienna, Austria in 2022, thus proving its marketability. Ensuring fast charging and a long driving range, the ELEC CITY was recognized as being able to operate stably even in difficult road conditions in Vienna, where there is high traffic volume and many traffic signals, and is expected to expand areas where it is driven to include Graz and Salzburg.

Hyundai plans to unveil an extensive commercial vehicle lineup to which hydrogen fuel cells are applied. We will also widen the use of hydrogen energy to cover ships that use hydrogen cells, trams, hydrogen forklifts, and construction vehicles. Powered by hydrogen, an infinite clean energy, hydrogen-powered electric trucks and buses are expected to perform significant roles in our achievement of the net zero goal and air environment improvements.

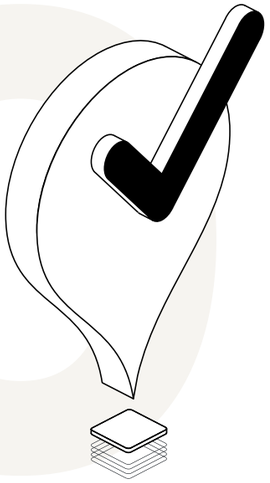


Hyundai Fuel Cell Electric Truck & Bus website

Setting the Course

Whenever roads are jammed with traffic, many drivers wish they could fly and move freely. The heat and fumes from vehicles congesting cities are a burden to the Earth and humanity. Hyundai looks for solutions to inconveniences and issues caused by urban traffic congestions in future mobilities that can reduce environmental impact and enhance mobility.

The IONIQ 5 robotaxi, a next-generation mobility platform to be launched in 2023, is a new concept fleet based on humanism, electrification and autonomous driving technology combined. Mobility will become safer and more pleasant for all as the new mobility solution, like the human mind, pursues the maximum comfort of passengers and respects Earth's environment. Once the eco-friendly mobility platform becomes available, carbon footprints will decrease and urban populations will breathe easier. Moreover, the philosophy and technology of the IONIQ 5 robotaxi will be expanded to future core projects of Hyundai, such as AAM and PBV. The road to carbon neutrality goes through the next-generation mobility platform.



IONIQ 5 Robotaxi

meet tomorrow's technology, today.

Hyundai is pursuing new concept of mobility that enhances mobility yet minimizes environmental impacts. Although it is a road no one knows where or how long it would take, we take on challenges and reap rewards, ceaselessly. In 2021, we chose a robotaxis that self-drives on electric power as our next-generation mobility platform that will sustain our net zero vision, thus accelerating the innovation of the platform with a 2023 launch in mind.

An autonomous driving e-mobility vehicle taking passengers to their destinations effortlessly, without a driver or discharging CO_2, is a reality closer than ever before. In 2021, Hyundai announced that a fully autonomous IONIQ 5-based robotaxi would be roaming the streets of major countries in 2023 and unveiled an actual one. The IONIQ 5 robotaxi is a new concept mobility platform created in close cooperation between Hyundai and Motional[1], each leading electrification and autonomous driving, respectively, the two most innovative technologies in the area of mobility.

There are considerable benefits that a single IONIQ platform-based, self-driving vehicle can generate. The most important benefit is safety. The autonomous system to be applied to the IONIQ 5 robotaxi is the product of decades of innovation. We currently operate public robotaxi fleet in Las Vegas, the US, where we've conducted over 100,000 public rides, proving the safety of our autonomous driving technologies. Motional also has been perfecting its autonomous systems through thousands of rigorous tests. Such autonomous driving technologies whose safety has been proven will make mobility into a more efficient, trusting experience.

The second significant benefit is a greater freedom of mobility for more people. Robotaxis will offer excellent accessibility, affordability, and reliability to professionals wanting to make the most of their commutes, to parents in a hurry to take their children somewhere, and to the elderly and disabled suffering from a lack of accessible transportation options.

The third is that the electrification of fleet vehicles[2], such as the robotaxi, enables cities to consume less energy and to solve traffic congestion, which in turn will reduce GHG emissions more and faster than individuals purchase and drive EVs. The more robotaxis are on the road, the more they can absorb urban demands for mobility, thereby accelerating the progress toward net zero. Once the IONIQ 5 robotaxi starts in 2023 to roam cities and platforms around the world, the cities will be relieved of their suffering from traffic congestions, and the realization of our net zero goal will become more prominent.

Say Hello to the IONIQ 5 Robotaxi

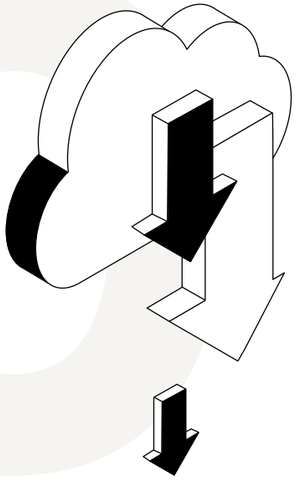
[1] A joint venture of Hyundai and Aptiv headquartered in Boston, US, and one of the world's leading developers of autonomous vehicles

[2] Vehicle that is supplied in large numbers to the government, car-sharing companies, rental car companies, and other corporations

Empowering the Future

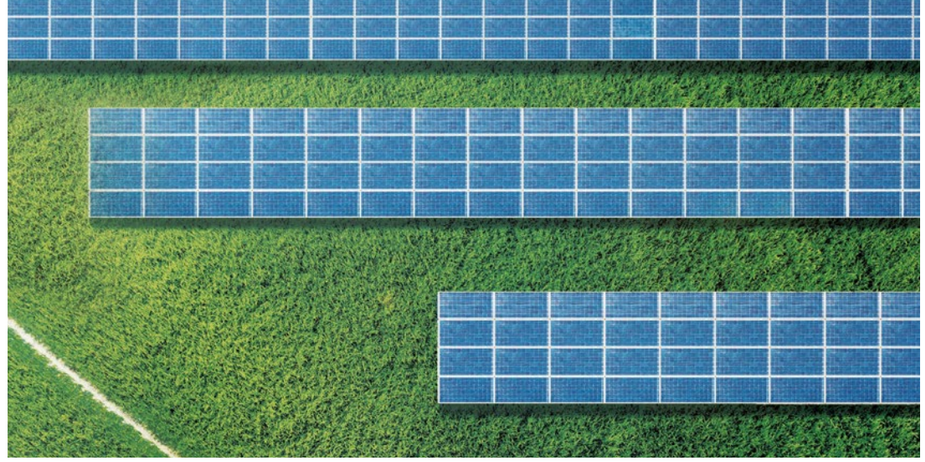
As addressing the climate crisis is a common task for humanity, we need to act rather than talk and go beyond making plans and execute them. In particular, as leading corporations are expected to take on daring challenges, Hyundai takes on new challenges – RE100 aimed at achieving 100% renewable electricity.

As RE100 encourages corporations to go carbon free 100%, Hyundai joined the global initiative in 2022, submitting a plan to fully adopt renewable energy by 2045. Although it is neither familiar nor easy, we will complete the transition by working in unison with all stakeholders. Such voluntary actions will result in more than financial gains, and communities that will have experienced such a manifestation of trust and solidarity can move together towards the bigger goal of a sustainable development of humanity. On this path, Hyundai will fill all space with an energy healthy for the Earth and humanity.



RE100
supporting the global initiative as a global corporate citizen.

As Korea's leading company and global corporate citizen, Hyundai supports the national effort to achieve net zero by 2050. We also take part in the global effort to limit the increase of Earth's surface temperatures to 1.5°C above pre-industrial levels. Accordingly, we strive to reduce the carbon footprints of our automobile production operations by accelerating the adoption of renewable sources of energy. Also, by building state-of-the-art facilities that help improve energy efficiencies in production, adopting the latest in carbon reduction technology, and exploring other means, we seek to achieve net zero by 2045.



Together with major Hyundai affiliates – Kia, Hyundai Mobis, and Hyundai Wia –we plan to make concerted efforts to reduce carbon emissions through 100% adoption of renewable sources of energy. To make our resolve public and thereby official, we applied for membership of RE100[1] in July 2021, and in the following April, became a member of the global initiative committed to 100% renewable electricity.

Even before its declaration to join RE100, Hyundai has been expanding the adoption of energy-saving technologies across production operations. A rooftop photovoltaic power generation facility was installed at the Asan Plant in 2013, producing around 13,000 MWh of electricity per year. In 2020, a photovoltaic power generation facility was set up at the Ulsan Plant in collaboration with Korea Hydro & Nuclear Power, generating around 12,500 MWh of electricity annually. Hyundai's joining RE100 is expected to further accelerate its transition to renewable energy in a more systematic manner.

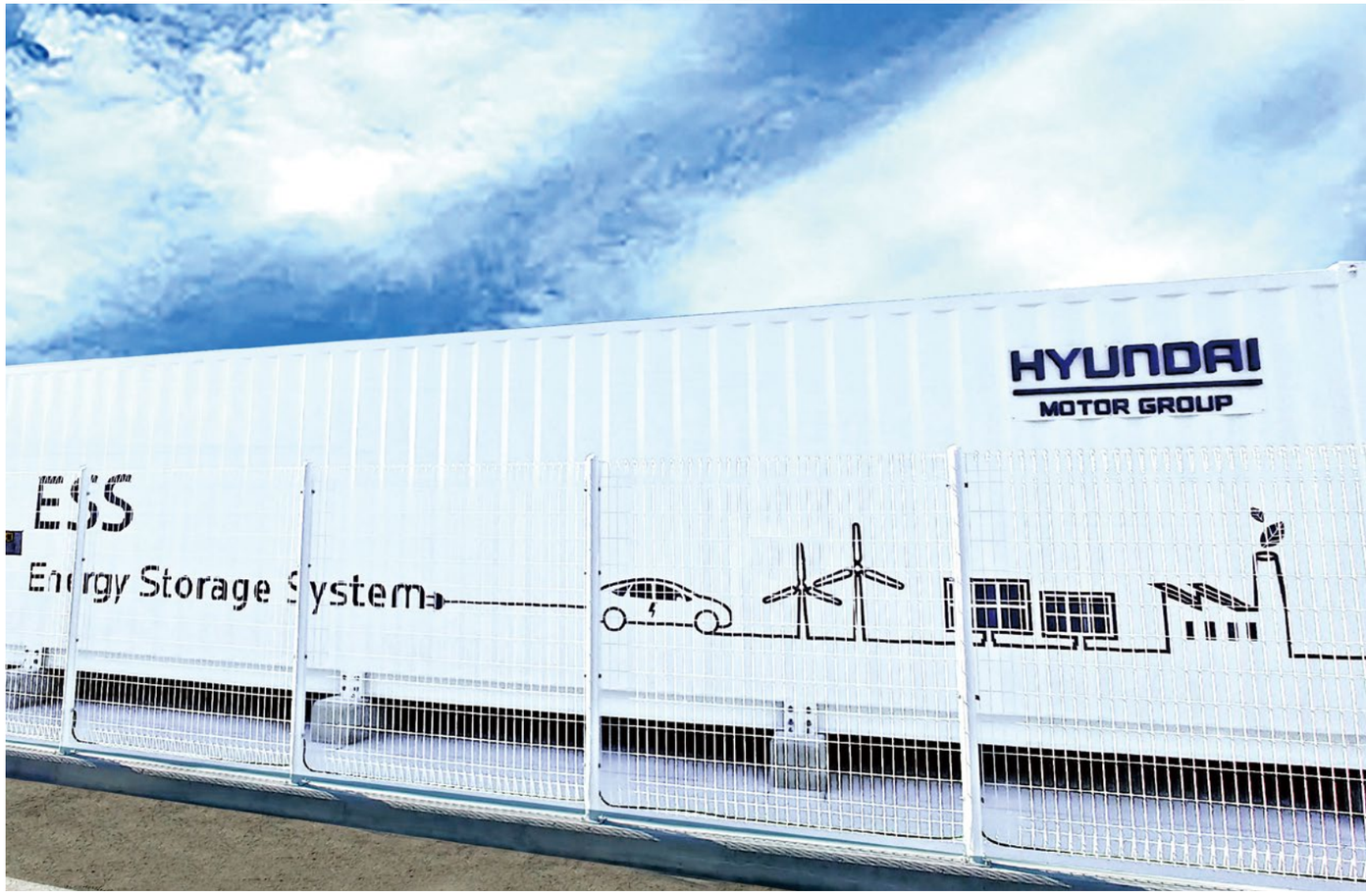
Planning to complete our renewable energy transition by 2045, we have chosen our factory in the Czech Republic, as a first site to go renewable energy 100%, for its easy access to renewable energy supplies. Other sites in India and the US are to follow suit soon. In accordance with each target country's renewable energy supply as well as regulatory environments, we will push forward our 100% renewable energy transition ambition one site at a time, freeing all our overseas plants of carbon footprints by 2045.

In addition to renewable energy power generation facilities, we will purchase renewable energy certificates, sign power purchase agreements (PPAs) with renewable energy power suppliers, and take other measures deemed optimal to the characteristics of each site. Also, by drawing up detailed execution plans by year, we will fulfill our promises to the nation and the global community.

Eco-friendly vehicles produced at clean energy-powered plants roaming all around the world without emitting carbon – this is the future mobility we seek to realize with our net zero goal. Our efforts to achieve net zero will continue until a world of truly sustainable and enjoyable for all is realized.

RE100
CLIMATE GROUP | CDP

[1] "Renewable Energy 100%" initiative bringing together the world's most influential businesses committed to 100% renewable electricity. Launched in 2014 by The Climate Group, a global non-profit group, and Carbon Disclosure Project (CDP), a global environmental management certification organization.

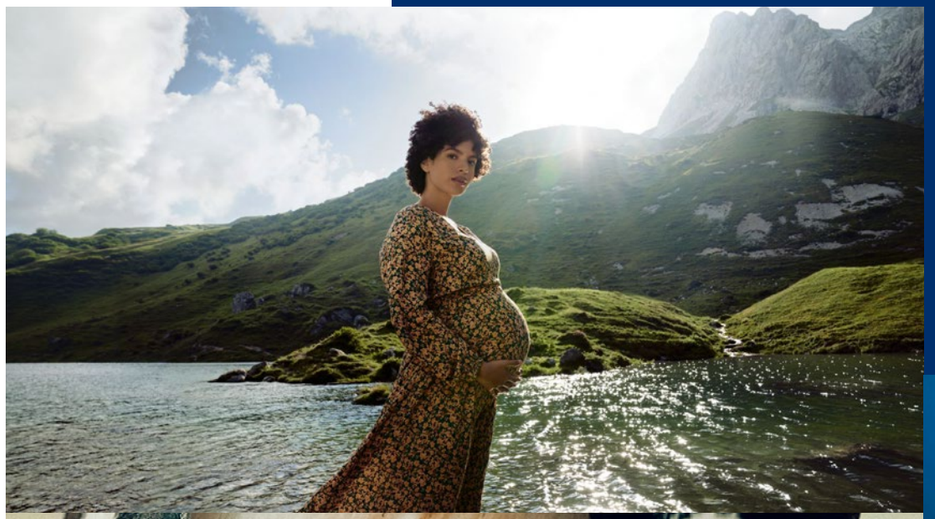


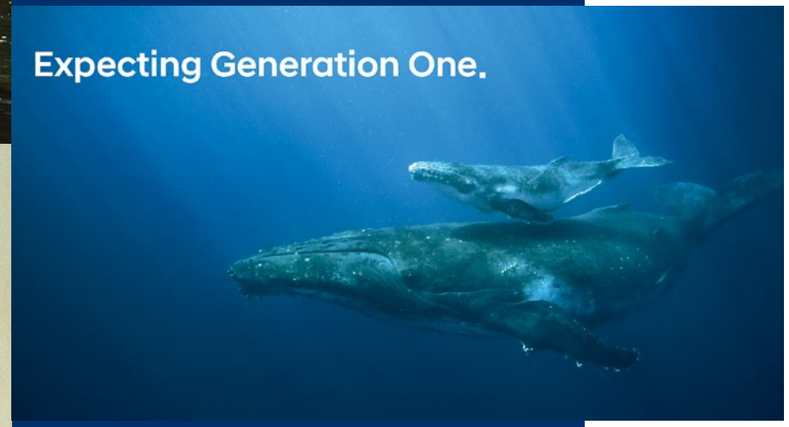
Generation One
our raison d'être.

The climate crisis, unfolding wider and faster, can be stopped only through action. Hyundai, seeking to achieve net zero across all of its value chains by 2045 and thus enable the next generation to live in a carbon-zero society, is acting upon its goal. We are pursuing the goal with positive energy until a world comes that is truly sustainable and enjoyable for all. And our vision of sustainable future will become a reality sooner when more people join our pursuit of the goal.

We held an “Expecting Generation One” campaign in 2021, asking all to join Hyundai’s efforts toward net zero for “Generation One”, a first generation to live in a carbon zero society. To spread our message even further, we joined hands with the BBC, a global media platform, and exclusively sponsored “2045: Memories of the Future”, a documentary series produced by BBC Studios. The six documentaries broadcasted on BBC World News tell stories about diverse subjects, ranging from the future of energy to housing, food, aviation, cities, and fashion, through the word of global sustainability leaders. Complementing the docuseries is a 30 second brand film created by BBC Storyworks and narrated by BTS member RM. Through this film, we wanted to communicate to a greater number of people that we all have the responsibility to act against the climate crisis. As explained in the film, nature teaches us much more when people live with nature. Humanity can progress when we take a good care of the Earth. When we all make concerted efforts, our next generation will be living carbon free.

We are living in times when heroes are needed to protect the Earth for future generations, and each one of us can become a hero. Picking up litter while jogging, using tumblers instead of disposable cups, buying shoes made of upcycled plastic waste, or any other small yet responsible consumption can help change the world. Together with numerous heroes among all us, Hyundai will open wider the door to a sustainable future Generation One hope for.





Carbon Neutrality 2045 | Expecting Generation One

All innovation efforts Hyundai undertakes are directed towards progress for humanity. With an ardent sense of humanitarianism, we closely examine what people need and invest in what has value. Which is why Hyundai's acquisition of Boston Dynamics in June 2021 is more than another business development.

Robots now have become a familiar sight in daily life – they weld and assemble cars, serve beverages at cafes, and keep our homes clean, to mention a few examples. Robots are becoming ever useful, freeing humans from repetitive work and saving lives from disasters, exploring deep ocean trenches and conducting other highly dangerous missions, all to the benefit of humans. Robotics engineering has great potential to change human lives beyond the imagination of many. Hyundai therefore acquired Boston Dynamics, thereby securing a leadership position in the field of robotics, creating new value chains, and opening a new chapter in the progress of humanity.

Through the acquisition of Boston Dynamics, Hyundai is integrating and expanding its concepts of future mobility, including autonomous driving, logistics, and AAM. The robots in the films celebrating the acquisition are already a part of our daily lives. Boston Dynamics' 4-legged walking robot "Spot" has been helping with the non-face-to-face treatment of COVID-19 patients at hospitals, and Spot had also been sent to Chernobyl which has proved that robots can be a reliable partner to humans in dangerous environments.

Spot does more than handle dangerous work. In a different film, Spot is having fun dancing with BTS members. At CES 2022, it appeared on stage together with Hyundai Motor Group's Executive Chair Euisun Chung and then left leisurely upon hearing "Thank you Spot. You are a good friend", which shows that it can be a pet friend who knows how to share precious moments of life. The wearable robot H-MEX that has helped a Korean National Team para-archer Jun-beom Park stand on his own feet has been applied for a medical device certification of the Korean Ministry of Food and Drug Safety and the US Food and Drug Administration. The H-MEX can enable paraparesis patients and other mobility-restricted people to do things and go to places they could only dream about.

Upon the arrival of an era in which robots are fun, capable companions of humans, current mobility services will be upgraded to a next level. As a mobility company, Hyundai has always strived to enhance people's mobility. We take on new challenges believing that humanity can reach new heights with the help of robots. As such, we challenge our limits and there are no limits to challenges we take on for people.

Progress for Humanity.

Innovation

Empowering future progress centered around humanity.

Expanding Human Reach, new realities with Metamobility.

What Hyundai prepared for CES[1] 2022 held in Las Vegas, the US, were not cars. At this much-anticipated event held after two years of a COVID-19 induced hiatus, we did not unveil any new products. Instead, Hyundai Motor Group's Executive Chair Euisun Chung stepped on the platform together with robot dog Spot and announced Hyundai's robotics vision based on the theme, "Expanding Human Reach", presenting how robotics will fundamentally change the way we live, work and move in the future.

Hyundai x CES 2022 |
Expanding to New Realities with Metamobility

Hyundai's robotics vision comprises "Metamobility" combined concept of robotics and metaverse, "Mobility of Things (MoT)" ecosystems wherein objects are given mobility, and "intelligent robots" for humans. The core of Metamobility is robotics redefined anew as a medium that breaks down boundaries between the virtual and real worlds as well as a new concept mobility. In a Metamobility world, automobiles, AAMs, and other diverse mobilities serve as smart devices connecting the real world with the virtual world. Depending on user needs, a car can be transformed into an entertainment or office space. On the other hand, users can access the virtual world through a digital twin[2]. For example, when users access their virtual home in a metaverse, they can have a physical robot feed and walk their real pet and can enjoy the experience of the actions taking place in the virtual world through synchronization with the real world.

As such, Metamobility seeks to expand mobility experiences to virtual reality by connecting mobility and a metaverse platform using robotics as a medium. In other worlds, mobility ultimately enables people to overcome the physical limitations of time and space – a world in which human limitations are overcome as the real and virtual worlds come together. At the celebration of the advance of consumer electronics, we showed a Hyundai in a relentless pursuit of innovation and progress to further expand the human reach in the forefront of a new universe propelled by robotics and the metaverse.

[1] Consumer Electronics Show: Consumer electronics show where major technology trends around the world can be identified

[2] Digital Twin: Virtual representation that serves as the real-time digital counterpart of a physical object or process

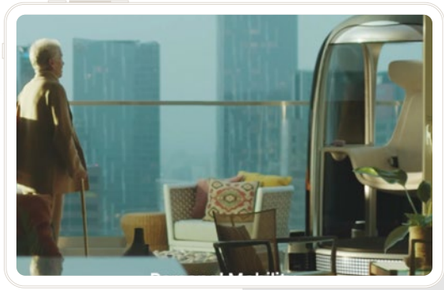
Moving humans beyond limitation.

As a mobility company, Hyundai's ultimate goal is to build MoT ecosystems[1] wherein all objects can move without physical limitations. To clarify this vision is not a distant dream, at CES 2022 Hyundai unveiled a robot that will move the world in a new direction. This special robot, named Plug & Drive (PnD) module, is a holonomic platform that can move in all directions. The PnD module can be described as a new concept platform designed to enable coupling with any object, as implied in the name 'Plug & Drive', by combining driving, steering, braking, and suspension.

This module spins freely and moves flexibly, and attached LiDAR and camera sensors recognize the surrounding environment in real time. It can provide mobility to any object, from a small table to a large container that it is attached to. Users can customize the placement and the number of PnD modules attached to the object and reconfigure a specific space according to their needs. Also possible is a situation in which a space itself comes to people, thus obviating the need for people to visit the space in question. Expecting such various cases for the use of PnD module as a personal mobility in the form of PBV and as a logistics transport solution, we created a video of a future based on PnD-enabled mobility, and presented it at CES 2022. Imagining a future MoT ecosystem, in which objects come to humans rather than vice versa and spaces are connected with one another and move for the convenience of humans, we have reaffirmed the infinite possibility of robotics.

Our robotics vision is more than a blueprint about future robots. It is about such realities surrounding our lives as wearable robots enabling people to exert more power and robot dogs exploring places beyond our reach. Going forward, Hyundai will continue to develop various new robotics technologies, with which we will break down all conventions and prejudices and set a new standard for mobility.

Hyundai's robotics is based on the philosophy of "Progress for Humanity". We focus on people-centric robotics technologies that help people by freeing them from mundane work, supporting their work, and producing goods and services. Through robotics, we will completely transform the way we work, live and move and thus reconstitute spaces.



Hyundai x CES 2022 |
Move Things Beyond Imagination

[1] Mobility of things ecosystems based on robotics technology in which users designate space and time desired and assign mobility to objects to create a cyclical mobility of the objects within a preconfigured city.

Exceeding Human Limits, enriching people's lives.

As robots are increasingly viewed as capable of helping humans overcome their limits they have become more ubiquitous. Hyundai is closely collaborating with various partners to discover even more everyday applications for robots.

Welcome to the Family with BTS

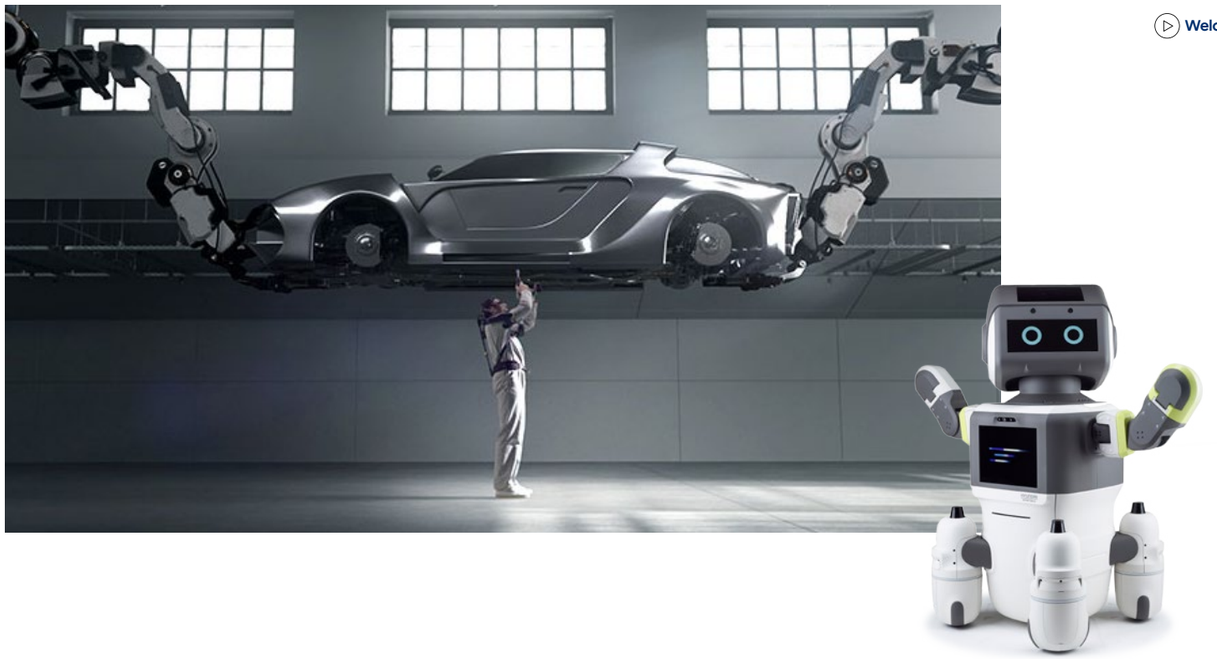
A leading example is "DAL-e", a customer service robot employed at the Hyundai Songpa Daero Branch after its introduction in January 2021. DAL-e is Equipped with facial, voice, and action recognition, natural speech, and autonomous driving technologies. It can turn 360° and move freely while detecting and avoiding obstacles. We are also developing an EV automatic-charging robot that quickly locates an electric vehicle's charging port to automatically insert the charger and removes it after charging is completed. The automatic charging robot is expected to free EV drivers of the inconvenience of handling the heavy charging cable and charging gun as well as of the anxiety of high voltage associated with charging EVs.

In addition, we have developed a "Factory Safety Service Robot" by combining Boston Dynamics' quadruped robot Spot and Hyundai Robotics Lab's AI-based Processing Service Unit. The robot was in a pilot operation at Kia's AutoLand Gwangmyeong factory. Equipped with 3D LiDAR, thermal camera, front camera, and other various sensors and deep learning-based real-time data processing technologies, the robot performs tasks such as detecting whether doors are open or not, high-temperature risks and trespassing.

Meanwhile, Hyundai is working together with Kia to build a smart factory ecosystem that connects people, nature, and technology under the brand name of "E-FOREST". The letter "E" refers to our resolve to advance the mobility industry Environment in a manner more Efficient and Economical than ever before. It also refers to our commitment to achieving innovation for Everyone in a bid to deliver foremost Excellence. FOREST stands for an ecosystem embracing all these factors. To realize all the objectives suggested in the brand name, Hyundai is pursuing flexible, innovative vehicles (Auto-Flex), AI and big data-based intelligent control (Intelligence), human-friendly smart technology (Humanity), and carbon neutrality through eco-friendly workplace (Green).

The agricultural sector is no exception to automation. Agricultural robots deployed to increase agricultural productivity and crop yields are embedded with cutting-edge technologies, such as AI, sensors, and data analysis, and help resolve agriculture-related issues, such as food and labor shortages. In addition to UAVs, automatic harvesting systems, and unmanned ground vehicles that help managing extensive farmlands, wearable robots have recently been gaining attention for they are appropriate for small to mid-sized farms in general and orchards in particular, as workers mainly perform manual work. Our Robotics Lab has been working on wearable robot development in collaboration with Hyundai Rotem. In October 2021, we unveiled three types of wearable robots – vest type (VEX), chair type (CEX), and A-frame carrier type (H-Frame) – at the International Agriculture Exhibition, and will soon become a first in Korea to commercialize wearable robots for agricultural use.

Wearable robotics technology is directly applied to the human body. Once wearable robots become a part of daily life, work efficiency and productivity will increase at industrial sites, as the case of worker injuries and worker fatigue will go down. They will enable people to easily pick up heavy objects in daily activities. In order for robots' ESG values to garner more attention and disseminate farther, Hyundai will share its philosophy and technologies with partners in Korea and abroad and expand the scope of cooperation.



Contribution

**Empowering better progress,
driving our actions forward sustainably.**

"Progress for Humanity" is a key value that all Hyundai employees uphold as well as a goal everyone should pursue in unison for the sake of the environment, society and co-existence. We therefore place people at the center of creating shared value (CSV) and continue our efforts towards change for a sustainable future.

Manifesting this commitment toward sustainable future, in January 2022 we launched "Hyundai Continue" an initiative that encompasses all our global CSV activities. Unfolding under the manifesto, "Connected as one, we start to connect", the initiative pursues three objectives – harmonious co-existence of humanity and Earth, freedom in mobility and connection, and hopes for future generations.

First, for co-existence of humanity and Earth, we are increasing efforts for reducing carbon footprints and addressing climate change from the perspective of resource circulation and ecosystem restoration. Specifically, we have been supporting the restoration of marine ecosystems in Europe and tropical rain forests in Brazil. In particular, some of the plastic wastes collected through the marine restoration operations are upcycled and used as auto interior materials. "The Journey of PET", a video unveiled together with the project, is not about imaginary subject matter. The story of how plastic bottles, after years of floating in the ocean, are "rescued" and upcycled into materials for the interior of eco-friendly vehicles is a record of Hyundai's journey towards a sustainable future exploring resources and technology to preserve the connection between Earth and people.

Second, Hyundai strives for sustainable methods that would enable anyone to move freely. We help physically impaired victims of auto accidents drive again using a virtual driving simulator and support children's safe commute to/from school. Lest physical disabilities cause mobility difficulties, we develop new mobility services for the people with limited mobility and continue other efforts to realize freedom in mobility and connection.

Lastly, with the aim of creating an environment that would encourage future generations to have hope, dream big and take on challenges accordingly, we carry out various activities for children, teenagers, and youths in local communities of the world around our business sites. Leading examples include "Hope on Wheels", which has since 1998 been supporting pediatric cancer research in the US, and "H-Mobility Class", a core technology talent-nurturing program launched in 2020 for undergraduates and graduates studying natural sciences or engineering.

Based on our key value, "Progress for Humanity", we have been contributing to the resolution of social issues by leveraging our eco-friendly mobility capabilities and technologies, and carrying out diverse CSV activities for local communities and future generations. We will continue to connect people with the Earth, offer freedom in mobility, and ensure a better future for future generations; and such resolves are implied in the infinite symbol of the Hyundai Continue logo. However, we cannot do this alone. The future we dream of will become a reality when employees, global partners, customers, local community members and many more people are connected; when many more efforts come together; and when we move forward encouraging one another toward common goals. Hyundai will carry on this virtuous cycle of connection.

Hyundai continue

The Journey of PET

Inspired by Nature, Caring for the Earth

Harmonious co-existence of humanity and Earth

The name “NEXO”, which has led the popularity of hydrogen-powered EVs, refers to “water spirit”. The “IONIQ 5”, the first model of the EV-exclusive brand IONIQ, wears colors of nature. Hyundai’s “Solar Roof”, ushering in an era of self-charging EVs, offers the unlimited clean energy as an energy source. Our EV designs are in sync with nature, and eco-friendly technologies are either inspired by nature or based on nature’s principles.

Nature is a foundation of life, essential for humanity’s survival and prosperity, as well as a driver that enables sustainable development. To protect and cherish the Earth, we continue our efforts to coexist with the Earth.

Hyundai x Healthy Seas

keeping our ocean clean, together.

© Cor Kuyvenhoven

Hyundai x Healthy Seas | The Journey to Ithaca

CO-EXISTING WITH THE OCEAN FOR THE NEXT GENERATION

Future generations have every right to enjoy a pristine marine environment. In order to protect their rights to beautiful ocean, Hyundai continues to expand collaborations with local communities and NGOs, aimed at preserving Earth's ecosystems. On the occasion of June 8, 2021, World Oceans Day, we signed a partnership with two organizations dedicated to marine environment preservation and sustainability, and accordingly, we supported the large-scale cleanup by Healthy Seas of waters around Ithaca, Greece. We also provided non-profit Divers Alert Network (DAN) with Kona Electric vehicles for its safe DAN Europe Sustainable Tour.

HYUNDAI X HEALTHY SEAS

Ithaca is a small island in Greece blessed with an awe-inspiring natural landscape dotted with relics of an ancient civilization. In 2012, a nearby fish farm went out of business, leaving behind fishing nets and other equipment strewn in the surrounding sea, then in 2020, a major storm hit the island, sweeping thousands of tons of industrial materials into the sea, including plastic pipes, concrete blocks, and rusty industrial wastes. To help restore the Mediterranean jewel's natural beauty, in 2021 Healthy Seas launched a large-scale marine ecosystem clean-up supported by Hyundai.

Afterwards, we enabled clean-up activities on 11 occasions in seven countries in Europe, including the UK, France, Germany, Spain, Italy, Greece, and the Netherlands. We provided vehicles for transport and brought in cranes and other heavy machinery for picking up large pieces of trash, leading to the collection of a total of 78 tons of waste. The retrieved fishing nets were all transformed by Aquafil, a textile manufacturer, into ECONYL®, a nylon textile used to make socks, swimwear, sportswear, carpets, and IONIQ 5 floormats, to the delight of eco-conscious consumers.

Performance of Hyundai x Healthy Seas in 2021

78 Tons
waste collected

72 Person
divers involved

7 Countries / **11** Activities
(UK, France, Germany, Spain, Italy, Greece, the Netherlands)

Our first activity as partners was large-scale marine ecosystem restoration and the clean-up in Ithaca, Greece. This was followed by 11 clean-up dives in seven European countries. 72 divers from across Europe worked together and collected more than 78 tons of waste. Of these wastes, nets were changed into textile by another partner, Aquafil. A significant part of that marine litter was recycled, while the nylon fishing nets were handed to our partner Aquafil to be transformed, together with other nylon waste, into ECONYL® yarn, the material IONIQ 5 floormats are made of.

We will return to Ithaca in 2022 and restore more beaches and marine ecosystems with the aim of finishing the job we started in 2021. We feel reassured to have Hyundai as a partner that we can gather our strengths with for a common goal. We hope to engage in closer cooperation to generate a positive effect, both for the environment and for society.

Veronika Mikos
Director of Healthy Seas

IONIQ Forest
keeping our green race, together.

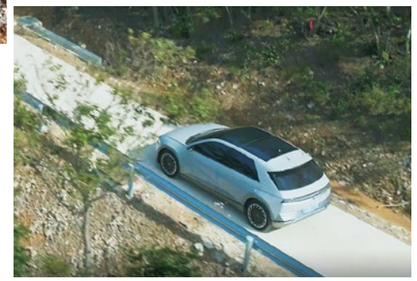
PLANTING TREES FOR THE NEXT GENERATION

Clean air is essential for building a better world for the next generation. Hyundai acts for “Generation One”, a first generation to live in the coming net zero era. In 2016, we joined hands with Tree Planet to create an IONIQ forest in a closed landfill of Incheon city by planting 23,250 trees. Over the five years, the trees have grown over the height of average adults, absorbing 225 tons of carbon dioxide and 1,100 kg of fine dust per year, and growing into a forest. For two years in 2019 and 2020, we brought a forest into the classroom. We donated around 9,000 plants to 33 elementary schools in Seoul and Incheon to be used as air purifiers for 924 classrooms. Distributed to each classroom in batch of 10 plants, the natural air purifiers absorbed 30% of fine dust and 20% of ultra-fine dust in the classroom, helping the young students breathe cleaner air.

IONIQ FOREST SINSIDO

In 2021, Hyundai began a new attempt’ through the IONIQ Forest project. We visited a beautiful Sinsido island, located some 50 km southwest of Gunsan City, North Jeolla Province, and in cooperation with Sinsido National Recreation Forest, began an “IONIQ Forest Sinsido” project restoring forest trails and preserving the island’s biodiversity. Together with Tree Planet, we planted 3,400 trees on the island, including 300 camellias, visualizing a Sindido looking more beautiful and pristine in a few years.

Thanks to the IONIQ Forest Sinsido Project, the island has become a tourist destination to enjoy and protect nature at the same time. Visitors to Sinsido experience eco-friendly life during their brief stay on the island without leaving a trace. As more people visit Sinsido and take part in zero-carbon activities, the air will become cleaner. Acting on this belief, we will continue to plant trees for the benefit of future generations together with people who love forests and treasure the Earth.



IONIQ Forest Sinsido

> Environmental issues are getting more serious. If we forget that humans are also part of nature, we will be able to neither resolve environmental issues nor ensure a sustainable tomorrow.
>
> Hyundai and Tree Planet have been cooperating for social innovation years before environmental issues gave rise to global movements headed by ESG. I believe social innovation is based mainly on a market-business-partnership. Market can be defined as an area where social issues arise and increase, while business defined as innovative, sustainable solution creation, and partnership as people sharing a clear philosophy and strong ability to define and resolve issue. We have been building a partnership with Hyundai since 2016, creating meaningful changes in consideration of these three factors.
>
> Tree Planet has learned how to get citizens involved while interacting with them over the past ten years or so, and also become aware of the value of partners’ ability to execute their commitments. The IONIQ Forest project, in which we had some 1.5 million people participate together with Hyundai, has shown that an innovative and sustainable solution can be discovered when people’s participation meets partners’ cooperation. In line with ESG trends, we will continue our partnership with Hyundai from a long-term perspective and create more ESG trends.
>
> **Hyung-soo Kim**
> CEO of Tree Planet

IONIQ Forest Milestones

2021
- Planted 3,400 trees, including camellias

2019-2020
- Donated 9,000 air-purifying plants (elementary school classrooms)
- Absorb 30% of fine dust and 20% of ultra-fine dust

2016-2020
- Planted 23,250 trees, including pine trees and zelkova trees
- Absorb 225 tons of carbon dioxide and 1,100 kg of fine dust per year

Embracing Responsibility, Toward Universal Mobility

Freedom in mobility and connection

Vitalize, Enable, Care. These are the new values of future cities Hyundai unveiled at CES 2020 along with its human-centered mobility vision. Accordingly, we have since been focusing on developing mobility solutions that help people significantly reduce travel time and overcome urban boundaries, use their commuting time more meaningfully and achieve more goals, and form new communities and connect with one another.

In promoting the core value of caring cities in particular, we are focusing on “Universal Mobility” research. Pondering sustainable ways for the mobility-impaired and all others to move freely whenever needed, we continue our efforts to make unrestricted mobility and connection into a reality.

EnableLA
enabling all to move, forward.

UNIVERSAL MOBILITY BEGINS WITH ENABLELA

Freedom of movement should be enjoyed by all. This natural right should not be infringed on the account of a physical disability, age, financial insufficiency, or any other conditions. Which is why Hyundai has started developing new mobility services for the mobility-challenged.

In 2021, Hyundai in cooperation with Kia launched “EnableLA”, a ride-hailing service for wheelchair users and people with accessibility challenges in Los Angeles, US. As implied in the name, the service embodies Hyundai’s hope and resolve to realize caring cities that enable everyone to move free of their physical limitation, starting in LA.

When a customer requests for awheelchair-accessible ride service using the dedicated mobile app or calling a designated number, a professional driver trained in the field of assisting the mobility-impaired picks up the intended passenger(s) and drives them to their destinations in comfort and security. The ride-hailing app was developed by ButterFLi, an LA-based mobility platform provider for people with accessibility challenges. The Hyundai Palisade models used in the service are modified to comply with the US Americans with Disabilities Act (ADA) and to provide the mobility-impaired with all the convenience and safety features possible. The height of the vehicle’s interior space is increased and safety devices are added, in addition to the installation of a floor and a wheelchair ramp in the vehicle’s rear which enables passengers to get on the service vehicles without getting out of their wheelchair. The inside is equipped with UV-free antimicrobial lights as well as disposable masks, hand sanitizers, and disinfecting wipes, thus enabling the passengers to use the service without a concern even during the COVID-19 pandemic.

FUTURE CARING CITIES CONFIRMED BY ENABLELA

EnableLA is the first pilot program implemented as a part of the “Universal Mobility” research project Hyundai has been conducting to realize future caring cities. The pilot program was run for six months to February 2022 and given a high level of passenger satisfaction. After the pilot service, all service vehicles were transferred to ButterFLi so that the local program partner could continue to offer the EnableLA service in LA. Beginning with EnableLA, we will identify service and vehicle issues to be improved by communicating with mobility-impaired individuals, and will thus set directions for Universal Mobility to advance going forward. We will particularly focus on technology improvements to be made inside the vehicles with an eye toward applying better solutions to future vehicles and services and thus serving mobility-impaired individuals better.

As such, in the future cities that are completed with our technologies, we envision freedom of movement available to all people, including the mobility-impaired. Hyundai will create new mobility means so that all people can experience a complete freedom of movement and truly enjoy the moment of doing it.

Envision the future mobility enabled by Hyundai’s innovation and contribution, centered around humanity.

Hyundai is here to do the right thing for humanity.
By choosing carbon neutrality, a more pressing value for the future,
by readily investing in things of value and expanding the scope of cooperation,
by connecting the world with mobility and adding value to time and space,
we create a mobility ecosystem that is beneficial to all.

We have always faced the future ahead of others.
Delivering on freedom of movement through technology and
innovation and thus realizing “Progress for Humanity”,
Hyundai promises a sustainable encounter with future generations.

In Progress with an Eye to the Future.


HYUNDAI