

# Hanwha Profile 2023



# Contents

## Introduction

Chairman's Message 3

## Future Vision

Aerospace Solutions  
Green Energy Solutions  
Digital Finance Solutions  
Sustainable Innovative Solutions

## Business Highlights

Aerospace 10  
Energy & Materials 17  
Finance 26  
Retail & Services 32

## Hanwha Overview

Hanwha Today 39  
Hanwha's Spirit & Core Values 40  
Brand Vision 41  
Financial Highlights 42  
Milestones 43

## Hanwha Businesses

Aerospace  
Energy & Materials  
Finance  
Retail & Services

## Sustainability

Sustainability Management 96  
Environmental 100  
Social 108  
Governance 121

### User Guide

Hanwha Profile 2023 is published in an interactive PDF format. You can access all pages by clicking the icons on top.

- Go to the cover page.
- Go to the table of contents.
- Find information through word search.

- Go to the last page viewed.
- Go to the previous page.
- Go to the next page.

## Chairman's Message

# Hanwha is embracing new challenges to secure a sustainable future for people and the planet

Established in 1952, Hanwha shares its history of growth as a global company with the rapid development of the South Korean economy. Driven by our founding philosophy of “fostering social growth and prosperity” and our spirit of upholding “trust and loyalty,” we helped rebuild the nation after the Korean War, playing an integral part in its economic and industrial development. With our expertise in sectors such as aerospace, energy & materials, finance, and retail & services, we have advanced and expanded our business portfolio and invested in innovation and technology to drive sustainable future growth.

Today, our aerospace business represents the leading edge of the experience and innovation we have accumulated over the past seven decades. By participating in the development of engines and key components of Nuri, the KSLV-II (Korea Space Launch Vehicle-II) last year, we demonstrated our unique space transport capabilities to the world. In December 2022, we were appointed the system integrator for the Korea Space Launch Vehicle Program, taking the lead of the technology transfer and overall management of the program. With our relentless commitment to space exploration and bold technological innovation, we aim to establish a comprehensive space value chain, including satellite manufacturing, launch and transportation, and satellite services. Our goal is to become a global leading total solutions provider for the space industry as we secure future space exploration technologies.

In the energy & materials businesses, we continue to work toward creating a sustainable environment through our products and services by accelerating the global energy transition and helping the world achieve carbon neutrality. Building on our solar energy business and its advanced technology and production capacity, we are establishing a green energy value chain, which will

aid in the energy transition with the integration of hydrogen, wind power, and LNG. With the launch of Hanwha Ocean, we will enhance synergy across our clean energy businesses to open up new horizons. We are also investing in R&D into critical essential materials for the energy transition and future high value-added industries that will help sustain a cleaner planet.

Hanwha's financial services are stepping up digital innovation while expanding into global markets by providing customers with novel experiences and solutions that can enrich their lives. Our retail & services businesses are providing customers with the infrastructure and services they need, both on and offline, to help them meet individual needs tailored to their unique lifestyles.

With an unwavering commitment to our customers and communities at our core, Hanwha looks to provide solutions to pressing issues of today through our businesses and technology to help uplift society. Just as we have in the past, we will embrace difficult challenges and continue to overcome them with lasting solutions in order to realize a sustainable future.

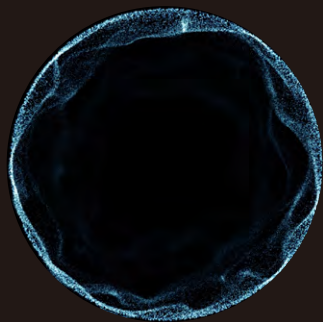
Even at this moment, we continue to take bold steps of transformation forward to build a new future. By upholding the spirit of “trust and loyalty” that has informed our business operations since inception, we will continue to provide transformative solutions that sustain people and the planet. By taking on challenges that transcend today's limits and boundaries, with enduring dedication to our customers, and by leveraging innovative technologies that span activities on the ground and in space, we will forge a shared path toward a prosperous and sustainable future for all.



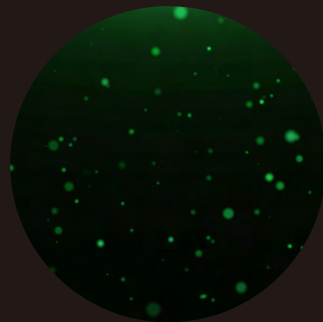
Chairman  
Seung Youn Kim



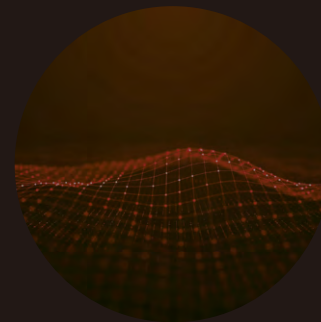
## Future Vision



Aerospace Solutions



Green Energy Solutions



Digital Finance Solutions



Sustainable Innovative Solutions





## Aerospace Solutions

# Keep your eyes open wide Now is the time to explore the space age

Hanwha's thirst for innovative horizons is expanding to space—a promising arena for exciting opportunities. Our efforts in developing technologies and accumulating expertise cover a range of areas, including developing technologies for space-launched vehicles, examining space for natural resources and energy, harnessing satellite-based communications capabilities and advancing Earth orbit observations and establishing urban air mobility (UAM) infrastructures. Hanwha's bold moves in exploring space will yield as-yet-undiscovered keys to resolving Earth's multiplying puzzles and help us to achieve sustainability.

### • Hanwha Aerospace

Liquid-fuel engines, satellite components, solid-fuel rockets and satellite thrusters

### • Hanwha Systems

Communications satellites and services

### • Satrec Initiative

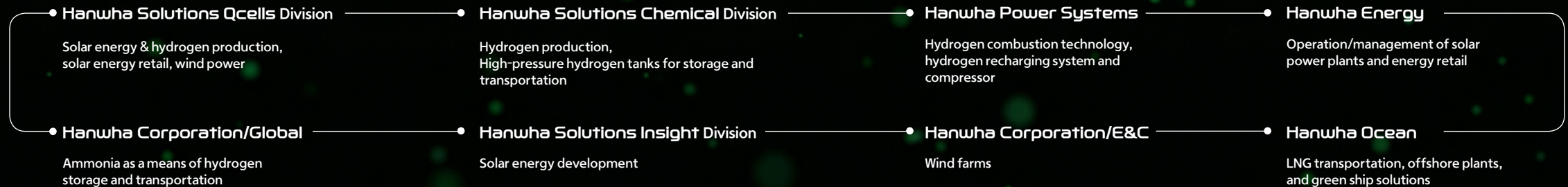
Earth-observation satellites and payloads



## Green Energy Solutions

# Sustain people and the planet Now is the time for fundamental change to lead the transition to clean energy

Hanwha is ramping up its response to the challenges of climate change as green energy becomes a global necessity. With already-established expertise in renewable energy solutions for solar, hydrogen, wind and LNG, Hanwha is advancing as a total solutions provider for green energy to power Earth's sustainable tomorrow. We are also committed to enriching lives and forging the path to a net zero world. Our focus is on eco-friendly production of essential materials for semiconductor and secondary batteries for future high value-added industries and energy conversion. We are also building a viable circular economy with research into eco-friendly plastic materials and recycling solar modules.







## Digital Finance Solutions

# Embrace digital transformation Now is the time to reimagine the future of finance

As a leader in the digital innovation of the financial industry, Hanwha is generating new value. We are providing customers with superior access to custom-tailored digital financial solutions in our comprehensive portfolio of insurance, securities and asset-management, and corporate finance products and services. We are integrating Fintech, including AI, big data and other converging digital technologies into our offerings. Our innovative digital financial services will not only offer ever-more sophisticated, seamless and effortless financial solutions for consumers but also lead the sustainable retooling of the financial industry.

### • Hanwha Life

Automated Claim System, insurance wallet, Onsure channel

### • Hanwha Life Vietnam

LIME Pro, Content-based lifestyle financial solution app

### • Hanwha General Insurance

Smart Insu, Hanwha General Insurance's app, Carrot, South Korea's first fully licensed 100% digital insurance carrier

### • Hanwha Asset Management

PINE fund marketplace app for retail investors

### • Hanwha Investment & Securities

SmartM app for asset management, STEPS app for stock trading

### • Pinetree Securities (Hanwha Investment & Securities subsidiary in Vietnam)

Stock123 and AlphaTrading apps for local investors in Vietnam



Sustainable Innovative  
Solutions

## Invest in future innovation Now is the time to act for a sustainable tomorrow

To leave a sustainable world for future generations, Hanwha is proactively investing in forward-looking technologies and businesses. We believe our breakthrough technologies and businesses will lead future innovation as we focus on convergent technologies such as genetic engineering, biotechnology, biopharmaceuticals and data storage/utilization. We are further researching seed gene editing technologies that can relieve food crises and reduce carbon emissions.

### • Hanwha Impact

#### Convergent technologies

Genetic engineering, biotechnology,  
biopharmaceuticals, data storage and utilization

### • Hanwha Solutions

Plastics-to-Chemical technology

Plastic recycling technology

Eco-friendly energy management technology for data centers



# Business Highlights

For more than 70 years, Hanwha has led economic growth and helped change the world with ceaseless innovation. Now, we are building on our achievements in business areas including aerospace, energy & materials, finance and retail & services. Going forward, we will continue to embrace bold challenges that offer people more prosperous lives, more secure communities and a more sustainable future for the planet.

Aerospace

Energy & Materials

Finance

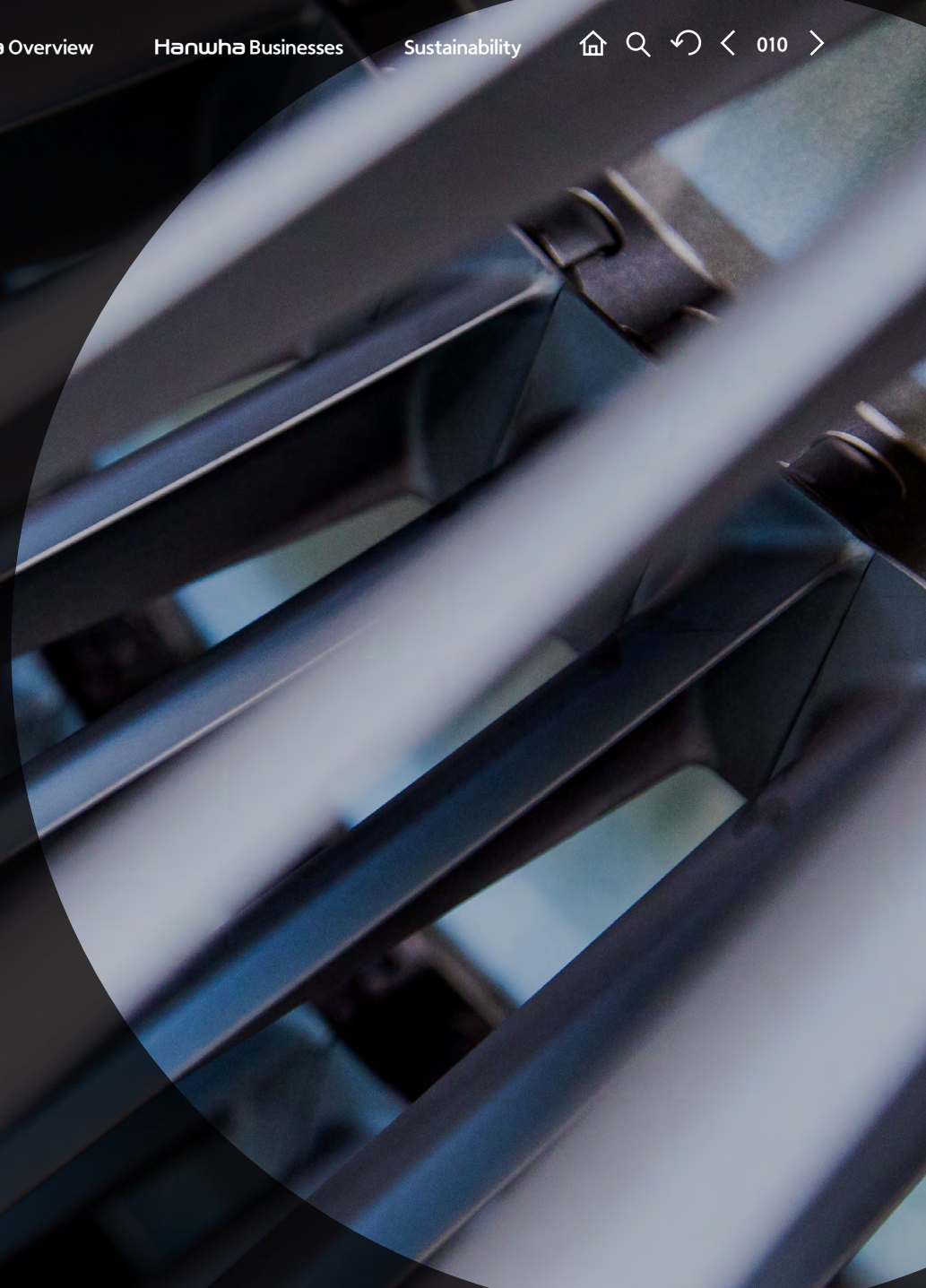
Retail & Services





# Aerospace

At Hanwha, we provide solutions to create sustainable infrastructures on Earth and in space by innovating proprietary technologies in the aerospace arena. We are gaining trust in global markets by developing original technologies for future businesses, such as space-launched vehicles, advanced Earth orbit observations, satellite-based communications capabilities and urban air mobility (UAM). We are also creating an industrial ecosystem that makes daily lives safer and more enriched by offering integrated solutions for the future, including intelligent AI camera and analysis technology, AIoT platform convergent technology and blockchain security.







The successful launch of Nuri, the Korea Space Launch Vehicle-II (photo: Korea Aerospace Research Institute)

## SPACE

### Ready for liftoff in the space age

The Hanwha Space Hub is our cutting-edge task force to explore opportunities in the emerging space industry, overseeing research, development and investments across the aerospace business spectrum. We are actively developing diverse space business models, including space-launch vehicles, satellites and antennas, satellite-based communications and Earth orbit observation. As we focus on vertical integration to propel the industry to new heights, we are vigorously advancing by partnering with key innovators, such as Satrec Initiative, Kymeta and OneWeb.





Engine for KF-21 Boramae, South Korea's next-generation fighter jet

## AIRCRAFT ENGINE

### Trusted partner in the global aircraft industry

Expanding on our proprietary and original application technologies, Hanwha Aerospace, South Korea's only aircraft engine producer, is steadily growing as a recognized aircraft engine component manufacturer in partnership with top global aviation engine companies such as Pratt & Whitney, GE and Rolls-Royce. Recently, at the Rolls-Royce Global Aerospace Supplier Conference 2022 in the UK, we were awarded the Trusted to Deliver Excellence Award for our highest level of reliability and on-time delivery performance.



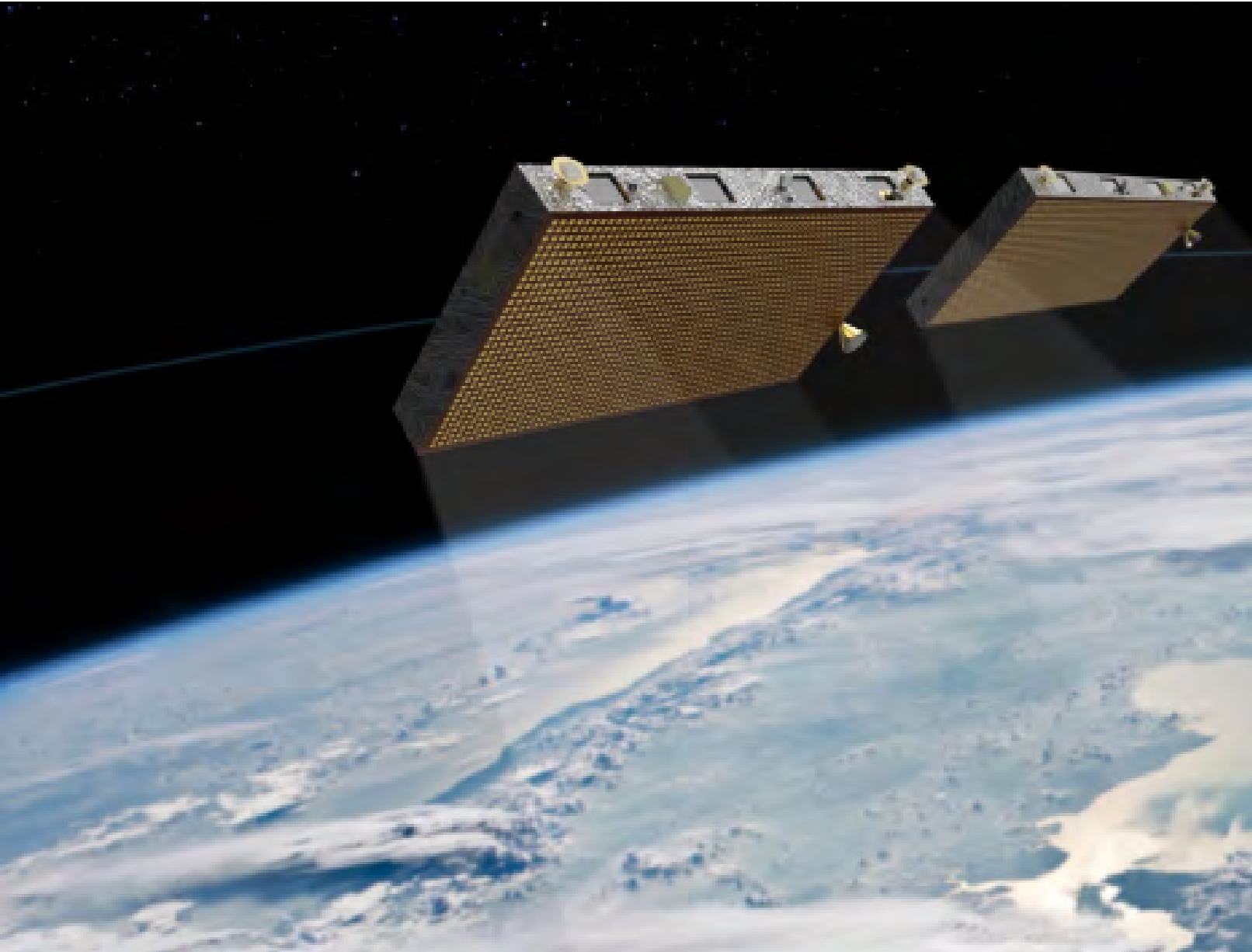


UAM aircraft (Butterfly)

## UAM

### Pioneering sustainable urban air mobility

Taking off with a new generation of aircraft, Hanwha Systems is remapping the flight path of urban air mobility (UAM). Through a strategic partnership with Overair, a US electric vertical takeoff and landing aircraft (eVTOL) startup, we are developing Butterfly, a personal air vehicle, and working on ground tests for an electric propulsion system, a key technology for UAM. Butterfly is an all-electric vehicle with patented low-noise technology, which is expected to be an eco-friendly tool for urban transport in the future. As an influential force in the burgeoning UAM market, we are working toward providing a wide range of UAM solutions for future-friendly air mobility vehicles, services and infrastructure.

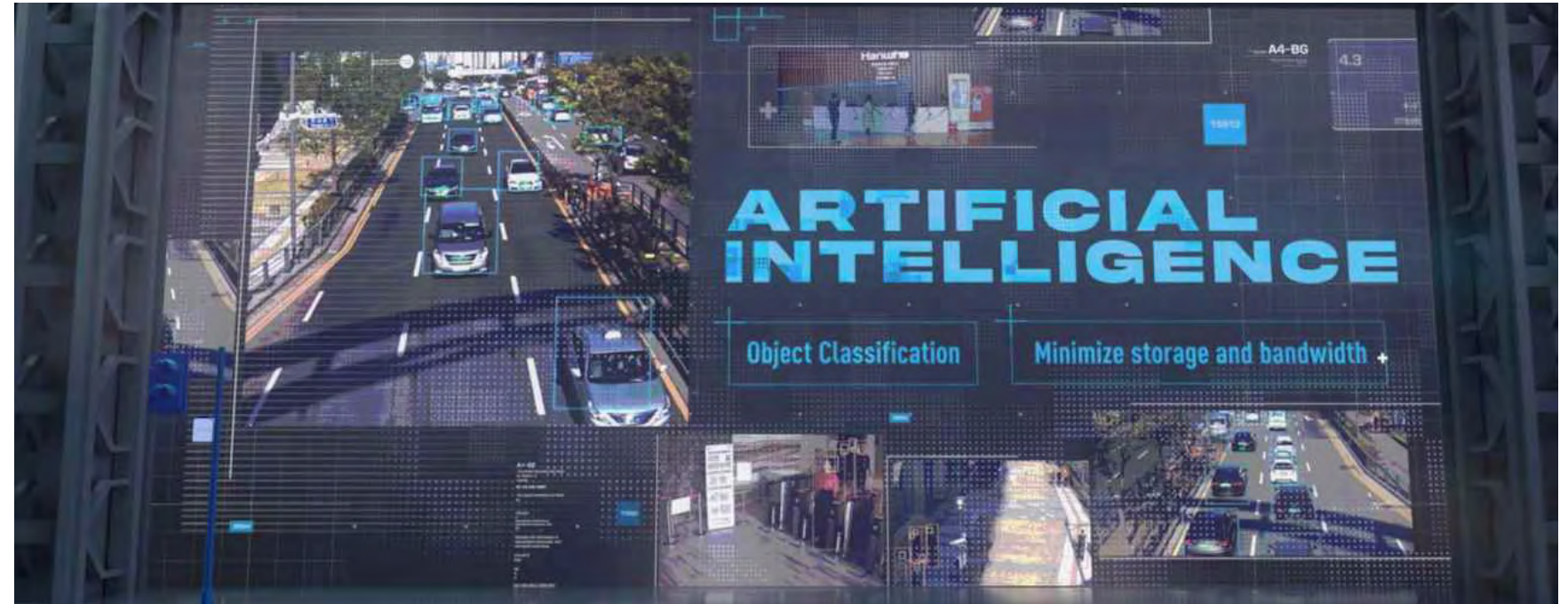


Ultra-small synthetic aperture radar (SAR) satellites

## DEFENSE ELECTRONICS

### Piloting the future of defense electronics

One of South Korea's leading defense electronics manufacturers, Hanwha Systems designs, develops and delivers high-tech systems to worldwide markets. Our differentiated smart technologies tap the synergy of advanced defense electronics and future-ready ICT technologies. We provide tailor-made integrated intelligence and operations solutions using our unique technologies in command, control, communication, computer and cyber and intelligence (C5I). We also offer cutting-edge systems that encompass land, sea and aerospace. Our advanced radar and optronics technologies inform missions of intelligence, surveillance and reconnaissance (ISR).



AI-based solutions

## INNOVATIVE SECURITY SOLUTIONS

## Trailblazing safety and security innovation

Building on world-class technologies and expertise in optics design, image processing and manufacturing, Hanwha Vision is raising the bar in international video surveillance solutions. By leveraging our longtime core technologies in deep learning, AI and business intelligence analytics into next-generation technologies, we are developing sophisticated AI cameras and industry-specific solutions that meet the special needs of multiple industries, such as commerce, public administration, retail, transportation and residence. Looking ahead, with the goal of transforming into a platform-oriented solutions provider, we will secure a cloud-based AIoT platform, using AI and machine learning. We will also leverage our expertise in image processing technology to offer our clients valuable insights through the analysis of collected data. In addition, we are broadening our service portfolio to include customized vision solutions that cater to the distinct requirements of each customer, enabling us to provide optimized solutions tailored to their specific circumstances.

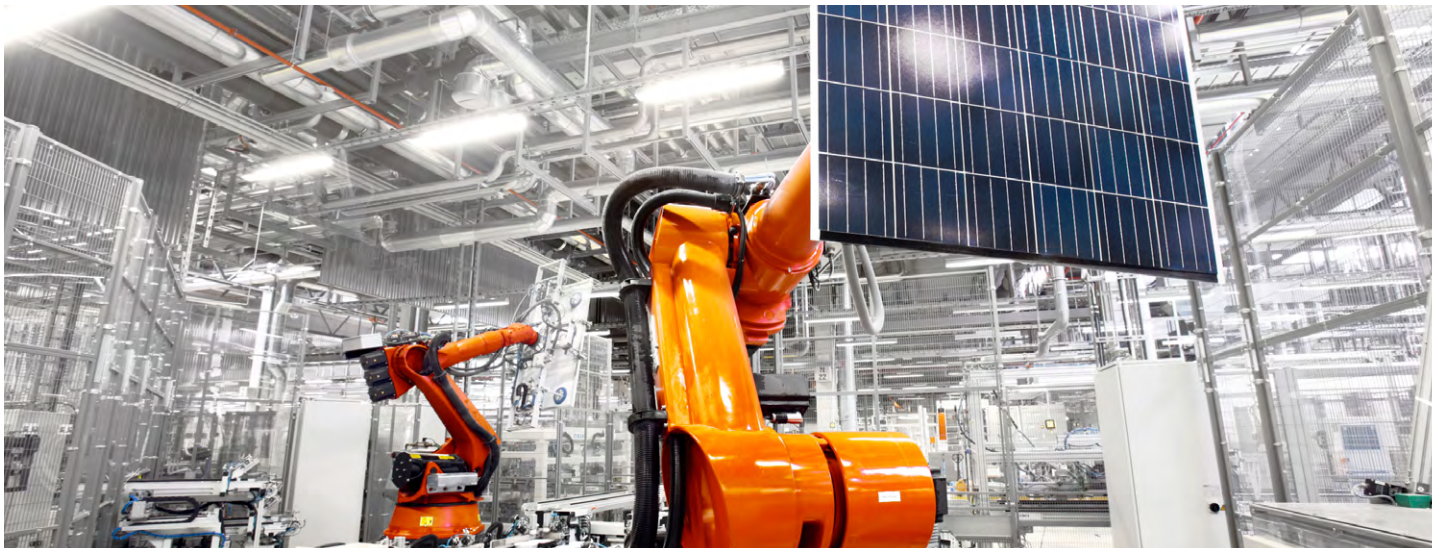


Learn more about Hanwha Vision with this video.





Stacker crane (SC-FSH), key equipment for the secondary battery production process



A solar module production line that maximizes productivity through efficient use of workforces and factory floors

## MECHATRONICS

### High-value solutions for smarter factories and automation engineering

Specialized in automation engineering solutions, Hanwha Corporation/ Momentum leads the machinery equipment industry by focusing on vacuum deposition processing, heat treatment, logistics and software capabilities. We supply worldwide market-proven turnkey solutions for secondary batteries, solar power, displays and automation. Our rechargeable battery equipment particularly demonstrates our outstanding leadership by providing proven solutions from materials to electrodes, assembly, formation and module pack processes based on advanced technologies. By capitalizing on our vacuum deposition processing technology, the core technology of photovoltaic cell manufacturing equipment, we are also well positioned to perform turnkey projects of high-quality and high-efficiency cell and module manufacturing facilities. In precision machinery, Hanwha Precision Machinery offers its flagship product, the Surface Mount Technology (SMT) chip moulder, along with customized solutions for semiconductors and display equipment. In addition, we are accelerating our global market entry by providing customized machine tool solutions, including computer numerical control (CNC) automatic lathes, which already enjoy South Korea's largest market share.

\* Hanwha Precision Machinery will be acquired by Hanwha Corporation in 2023.





## Energy & Materials

To help sustain Earth's resources, Hanwha is seeking the most environmentally friendly ways to produce and use energy and materials. We have a diversified portfolio that includes solar, hydrogen and wind power and with advanced technological solutions, such as virtual power plants (VPPs) and AI-based energy management systems. By capitalizing our offerings, we are expanding eco-friendly energy options while leading the world's transition to more sustainable power. In addition to supplying clean energy through eco-friendly photovoltaic value chains, we will also strengthen energy technologies and product capabilities, such as our Energy Storage System (ESS) and Energy Management System (EMS). As we continue to grow eco-friendly and high value-added chemical businesses, such as waste plastics recycling and eco-friendly bioplastics research, we are expanding development and investment in innovative technologies for agriculture.





## ENERGY SOLUTIONS

### A clean transition for the planet

To help combat the effects of climate change, Hanwha has long pursued the development of clean energy sources that can help power our future. Building on our global technology leadership, we are committed to creating an eco-friendly energy ecosystem, using our robust solar value chain, emerging hydrogen, and wind power, while using LNG to help ensure a secure energy transition.

Our solar power business uses sophisticated information technology to provide high value-added services and expand beyond cell and module production. In the arena of hydrogen energy, we are delving into research on carbon-free hydrogen production by using renewable energies, such as solar and wind power. As a key player in onshore and offshore wind power infrastructure in South Korea, Hanwha has embarked on a path toward global expansion, particularly in the US and Europe. Hanwha Qcells USA and Hanwha Solutions Q ENERGY Division are working together to grow their presence in the US offshore wind market, while Q ENERGY Division is actively pursuing renewable energy projects in Europe that would reach the scale of 12GW. By leveraging our cutting-edge technology in LNG carriers and offshore plants, we are expanding our LNG value chain to provide optimized energy solutions for LNG production, storage, transportation, and power generation.



## SOLAR ENERGY

### Powering a brighter tomorrow with solar solutions

Hanwha Solutions has become a global leader in the solar industry, known for its leading technology and excellence in quality. Our goal is to establish a complete solar value chain, spanning everything from solar cell and module production to ESS, power plant development, and retail energy as we grow our presence in major global markets. Ranked No. 1 in market share in both residential and commercial solar module markets in the US, we are now expanding our footprint worldwide. In January 2023, we made history by investing an unprecedented \$2.5 billion in the US solar energy industry—the largest investment of its kind to date. With this investment, we have established production lines for our core solar value chain in North America. Also in January, we forged a strategic partnership with Microsoft to create a global solar alliance. Working together, we are committed to accelerating the use of green energy and to reducing carbon emissions on a global scale. In South Korea, we are developing the largest floating solar power plants and utility-scale solar power plants in the country by utilizing sea salt farms. We believe such projects will not only revitalize local economies but also help to achieve carbon neutrality. Looking ahead, we plan to reinforce our position as a total energy solutions provider by leveraging our capabilities in solar power plant operations and management.



Residential solar module (North Carolina, US)





Hanwha Energy Innovation virtual showcase

## HYDROGEN ENERGY

### Achieving net-zero carbon footprints

Hanwha is committed to developing green technologies. We are aggressively investing in green hydrogen as a clean energy source that can significantly help realize global carbon neutrality. By innovating comprehensive value chains, we are expanding into the hydrogen economy, from production and storage to delivery and utilization, including water electrolysis technology and more. Our hydrogen energy business is already being recognized around the world. We have supplied hydrogen tanks to Shell, a global energy company, to support the company's efforts in extending its hydrogen refueling network across California. With an optimal energy generation solution designed to support a carbon-neutral society, we are tapping into green hydrogen energy's outstanding potential.



Learn more about the future-ready hydrogen city that Hanwha is creating with this video.





Jeju Sumang Wind Power Complex

## WIND ENERGY

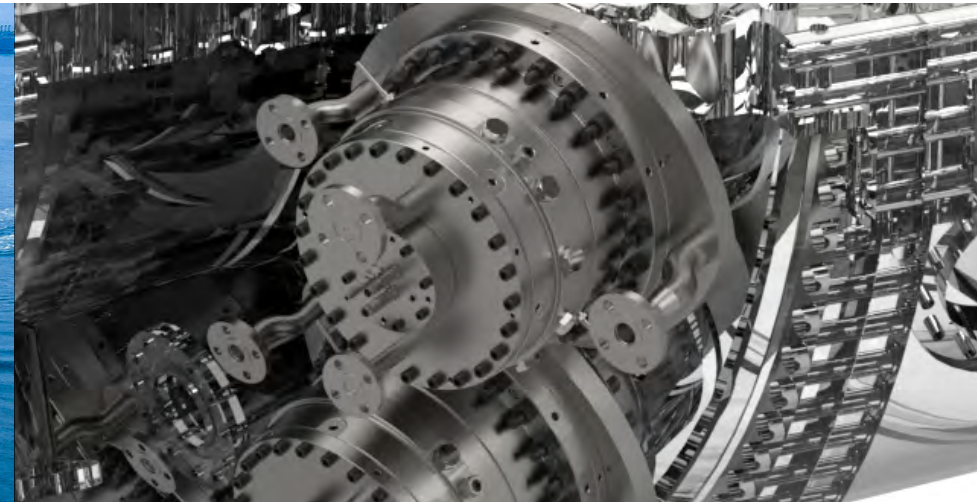
### Expanding green infrastructure to wind energy

Hanwha is strengthening its competitiveness as a green infrastructure developer to spearhead the transition toward carbon neutrality. In 2020, Hanwha Corporation/Engineering & Construction further established its presence in the wind power business with the completion of the 76MW Yeongyang and 25MW Jeju Sumang wind farms in South Korea. In 2022, we effectively scaled our wind power business by securing a contract for the Yangyang Suri wind farm, which will generate 90MW of clean energy. To broaden our portfolio, we are overseeing development of the 400MW Shinan Ui offshore wind power project and conducting research for the development of several new offshore wind farms. Hanwha is committed to expanding our wind power infrastructure as we develop onshore and offshore projects with a total capacity of 2GW by 2030. At present, Hanwha Solutions Q ENERGY Division is constructing a 150MW wind farm in France, which will help accelerate the diversification of our business portfolio in Europe. Adding to this is Hanwha Ocean's active pursuit of building wind turbine installation vessels (WTIV), with the aim of securing dominance in a rapidly growing market.





LNG ship



Gas turbine for hydrogen combustion (501F\_PSM)

## BRIDGE SOLUTIONS

### Building the bridge to a carbon-neutral future

To advance the global energy transition and efforts toward carbon neutrality, Hanwha is helping bridge present-day energy gaps with our LNG and hydrogen co-firing solutions. These bridge technologies are expected to accelerate the transition to clean energy and play a critical role in combating climate change and creating a sustainable future. We are leveraging our advanced LNG-related technologies to build an integrated value chain that covers everything from production to storage, transportation, and power generation. In South Korea, we have formed partnerships in the public sector, with the aim of providing affordable electricity in Yeosu and Tongyeong. Overseas, starting in Vietnam, we will expand our business portfolio through the construction of LNG power plants and storage tank terminals.

In the field of hydrogen co-firing, Hanwha is working to secure global market dominance, using proprietary technology to power gas turbines and produce electricity. This technology will help bridge the gap for producers until carbon-free hydrogen fuel-based turbines are brought to market. By harnessing on our unique technology and commercialization capabilities, we have successfully entered the co-firing hydrogen gas turbine retrofit business in the US and Europe. In South Korea, we are expediting the commercialization of 50% co-firing hydrogen power generation for an 80MW or larger LNG gas turbine. With our commitment to continuous R&D, Hanwha will work to expedite the development of technology for 100% hydrogen-fueled clean power production.





FLNG (Floating Liquefied Natural Gas)



FPSO (Floating Production, Storage, and Offloading)

## MARINE SOLUTIONS

### Pioneering the development of sustainable marine infrastructure and ecosystems

Using our proprietary technology and experience, Hanwha Ocean is developing innovative green and digital technologies to help build a sustainable energy ecosystem that fully realizes the ocean's vast potential. We have unrivaled technology and experience in building LNG carriers, which include fuel gas supply systems (FGSS) and partial regasification systems (PRS). We expect to solidify our global competitiveness in shipbuilding and offshore innovations as we develop eco-friendly vessels fully equipped with green ship solutions, such as high manganese steel tanks and rotor sails. As we successfully delivered the world's first FLNG (Floating Liquefied Natural Gas) platform by capitalizing on our advanced facilities and platform development capabilities, we will continue to expand our horizons and create a new energy ecosystem through areas such as digital smart yards, smart ships, and building WTIVs (Wind Turbine Installation Vessels).





REC Silicon plant

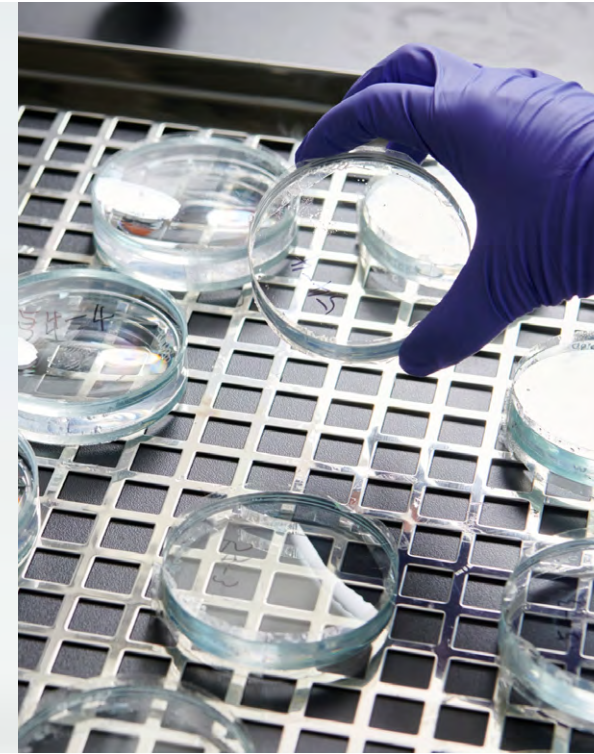
## VALUE-ADDED MATERIALS

### Bolstering eco-friendly energy and core materials

Hanwha is also promoting future business in fine and inorganic chemicals by upgrading its existing model and improving its fundamentals. Hanwha Corporation/Global continues to discover and create high value-added businesses that provide energy sources, including hydrogen and ammonia required to make eco-friendly energy and materials necessary for semiconductor and secondary battery processes. By investing in REC Silicon, with US plants that produce special gas for semiconductor as well as polysilicon, we are expanding our business into high value-added core industrial materials.



ECO-DEHCH , XDI, Eco-DEHCH (from left to right)



## ECO-FRIENDLY MATERIALS

## Solutions for business, people, and the environment

One of the world's most pressing priorities is to create and adopt an eco-friendly global circular economy that facilitates efficient and sustainable use of the Earth's limited resources. Developing eco-friendly technology and high-value products is an important part of this. To address the issue of plastics, Hanwha is breathing new life into the material through our Plastics-to-Chemical (PTC) technology, which enables continuous recycling by extracting naphtha from waste plastics and reproducing them into basic raw materials through core catalysts and process technologies. We will also continue our research into materials such as ECO-DEHCH, an eco-friendly premium plasticizer, as well as with research into biodegradable and bio-based plastics and carbon molecular sieves.





# Finance

Offering digital financial solutions optimized for diverse lifestyles, Hanwha is generating sustainable prosperity and the growth of customers and society. We are focusing capabilities on proactively investing and advancing into tech-based financial services such as AI and big data. We expect to lead in digital financial innovation as we develop and operate a breakthrough digital platform and expand into a variety of new areas. In addition, we are continuing to support startups and young entrepreneurs to establish a healthy industry ecosystem that creates opportunities for mutual growth.





## DIGITAL FUTURE OF FINANCE

## Adding value across digital financial services

As digital technologies such as Fintech accelerate, the financial industry is adjusting to unprecedented change. Hanwha Life is rapidly responding to such transformations by providing diversified financial solutions and innovative lifecare solutions powered by advanced technology. Our financial affiliates are creating a digital financial value chain that offers a wide range of services, from deal sourcing to product sales, so more people have easier and greater access to financial opportunities. We will lead the digital investment ecosystem by finding high-quality global investment assets at home and abroad, developing these into digital-based investment products and then selling them through such platforms as STEPS and PINE.





## INSURANCE SERVICE

### Seamless services for digitally savvy customers

Building on our proud heritage as South Korea's first life insurance company, Hanwha Life is scaling new heights as a leader in insurance services. With more than USD 100.06 billion in total assets in 2022, we continue to maintain a sound financial structure while offering a comprehensive portfolio of insurance products and services. Buttressed by our strong foundation and expertise as a trusted lifecare solutions provider, we are digitally adapting every aspect of our business to increase customer value. We offer select options, competitive products and services and strategic asset management to serve customers as a reliable partner for every life stage. Hanwha General Insurance provides a variety of customer-oriented digital services. We are also focusing on Fintech and innovative platform investments for strategic expansion of healthcare businesses. In addition, we provide live video chat services, the first in the industry, to help digitally vulnerable customers, such as the elderly and residents in remote areas. With our 2019 launch of Carrot, South Korea's first fully licensed 100% digital insurance carrier we are further strengthening our competitiveness by promoting new digital businesses.





## LIFEPLUS & DREAMPLUS

### Enriching finances and services for life's journey

Hanwha created LIFEPLUS, a joint brand of Hanwha financial companies. With the core value of Holistic Wellness, we designed the brand to provide customers with healthier and more balanced lifestyles. By building on the four essentials of an abundant life: financial, physical, mental and inspirational wellness, we are promoting the brand with a series of campaigns. Debuting at life-enhancing festivals and events we host, high-quality LIFEPLUS products and programs are designed to guide customers to an ideal balance of financial security, positive change and growth. Likewise, in 2014, we launched DREAMPLUS, the Hanwha Life open innovation platform and startup accelerator, to create value and hope through collaborative connectivity. We have provided various startup support programs through innovation centers at home and abroad. Moving forward, we plan to create new growth opportunities by cooperating with startups, innovation platforms and entrepreneurs, such as fostering an ecosystem for the Web 3.0 era.

DREAMPLUS Innovation Center







Hanwha Asset Management's PINE app

## FINTECH

### Accelerating growth by fast-tracking digital

Hanwha is strategically applying AI and big data technologies to provide seamless customer experiences and generate sustainable growth. In order to further enhance our digital competitiveness, we are developing and operating innovative digital platforms, such as the LIFEPLUS marketing platform, PINE, general agency solutions and future sales platforms. We are also moving beyond traditional financial services to explore new horizons and expand into new areas, such as fractional share trading, alternative investments and healthcare. Going forward, we will not only enhance investment asset management with more advanced Fintech, but also offer noteworthy new financial experiences for our customers.





## GLOBAL BUSINESS

### Expanding globally, focusing locally

Hanwha's financial business is accelerating across pan-Asian markets, including Vietnam, China, Indonesia and Singapore, and also diversifying from previous locations, including in the US. Hanwha Investment & Securities launched a Singapore subsidiary in 2020 following its Vietnam subsidiary opening in 2019. In addition, Hanwha Asset Management is actively pursuing global strategies by utilizing overseas business bases in Singapore, the US and China. Hanwha will emerge as a financial services leader for the diverse lifestyle needs of local customers by providing a variety of cutting-edge digital solutions. Our top priority is to serve local customers as we rev growth engines in worldwide markets.





## Retail & Services

With robust online and offline platforms in retail & services, Hanwha sustains the lifestyles and dreams of customers. We plan to expand into developing large-scale complexes and change the view of urban living by using our accumulated design and operational capabilities as well as our technology and expertise to provide benefits for the public and achieve business success. We offer customers differentiated experiences in retail & services to enrich leisure and lives, from premium lifestyle department stores, luxury boutique hotels and high-end resorts to commercial complexes that showcase city living and culture. We expect to leap forward as a lifestyle platform company. By developing new and relevant content while strengthening the competitiveness of our existing businesses, we will create innovative experiences and value for daily lives.





Suwon MICE Multi Complex

## COMPLEX DEVELOPMENT

### Creating iconic complexes

After successfully completing the gleaming Suwon MICE Multi Complex and becoming a key player in developing large-scale urban projects, Hanwha Corporation/Engineering & Construction won the bid in 2021 to construct the new sports and convention complex on a 350,000-square-meter-site near Seoul's Jamsil Sports Complex that will become a new hub for Seoul's culture and business. As a striking new landmark in southern Seoul, the complex is expected to become a global venue for MICE (meetings, incentives, conferences and exhibitions) that will attract major international events and visitors. Along with developing the northern area of Seoul Station, we are creating distinctive urban spaces and multifunctional complexes that offer differentiated capabilities and performance and introduce new customer experiences, including a convention center, hotel, offices and a shopping center.





## PREMIUM LIFESTYLE

### Setting lifestyle and fashion trends

Stocked with luxury offerings, style options and up-to-the-minute trends, the Galleria is South Korea's premium department store chain. As we become the No. 1 premium content producer, we are creating exceptional platforms for online and offline stores. We provide differentiated customer experiences by incorporating timely lifestyle trends into our offerings, such as South Korea's first grocerant (grocery-restaurant hybrid) department store. We also launched Maison Galleria, the first-ever exclusive VIP lounge within a department store, while developing our own high-end brands, digitally transformed services, foods and beverages. We are dedicated to leading trends and offering unique customer experiences that no other retailer can provide.

Galleria Gwanggyo



Galleria Luxury Hall







THE PLAZA

Yeosu BELLE MER

## LUXURY BOUTIQUE HOTEL

## Staying in style and comfort

Located in the heart of Seoul, THE PLAZA is South Korea's most luxurious boutique hotel and considered one of the preeminent hotels in Asia. Near historical landmarks, including Deoksugung Palace and Gyeongbokgung Palace, and within walking distance of such major attractions as Gwanghwamun, Seoul Plaza, Myeongdong and Insa-dong, THE PLAZA is a first-class destination for tourists from around the world. THE PLAZA's services and location also draw premier business customers because the surrounding area has a large concentration of domestic and international financial institutions and multinational corporations. The 5-star hotel boasts refined design, impeccable service and top-of-the-line accommodations. It is the first hotel in Korea to join the Autograph Collection, Marriott International's premium portfolio of distinctive hotels. Our premium resort hotel Yeosu BELLE MER, launched in 2020, provides perfect oceanfront relaxation. We also launched the MATIÉ hotel brand in 2022, which is designed for Gen Z and Millennial trendsetters, that has already received rave reviews. To meet growing demands from younger consumers for more leisure activities and comfort, we expect to launch 10 or more MATIÉ franchised properties around the nation by 2030.





## FINE STAYS, SPECIAL DESTINATION

## Relaxing into luxury

South Korea's leading premium leisure services company, Hanwha Hotels & Resorts provides customers with relaxation and comfort at various resorts and leisure facilities at home and abroad. Designed for exceptional convenience and friendly service, our remodeled resort complexes around the country encourage guests to connect with nature and relax in comfort as they enjoy unique, authentic and memorable experiences. Launched in 2018, our Geoje Belvedere is an upscale beachfront resort complex that offers guests a complete holistic experience. The seaside retreat immerses travelers in wellness and wellbeing. Nestled between a lush coastal mountaintop and an idyllic sea, the Belvedere is the ultimate destination where nature and luxury meet.

Yangyang Breathe By MATIÈ



Geoje Belvedere







Connect Place at Seoul Station complex



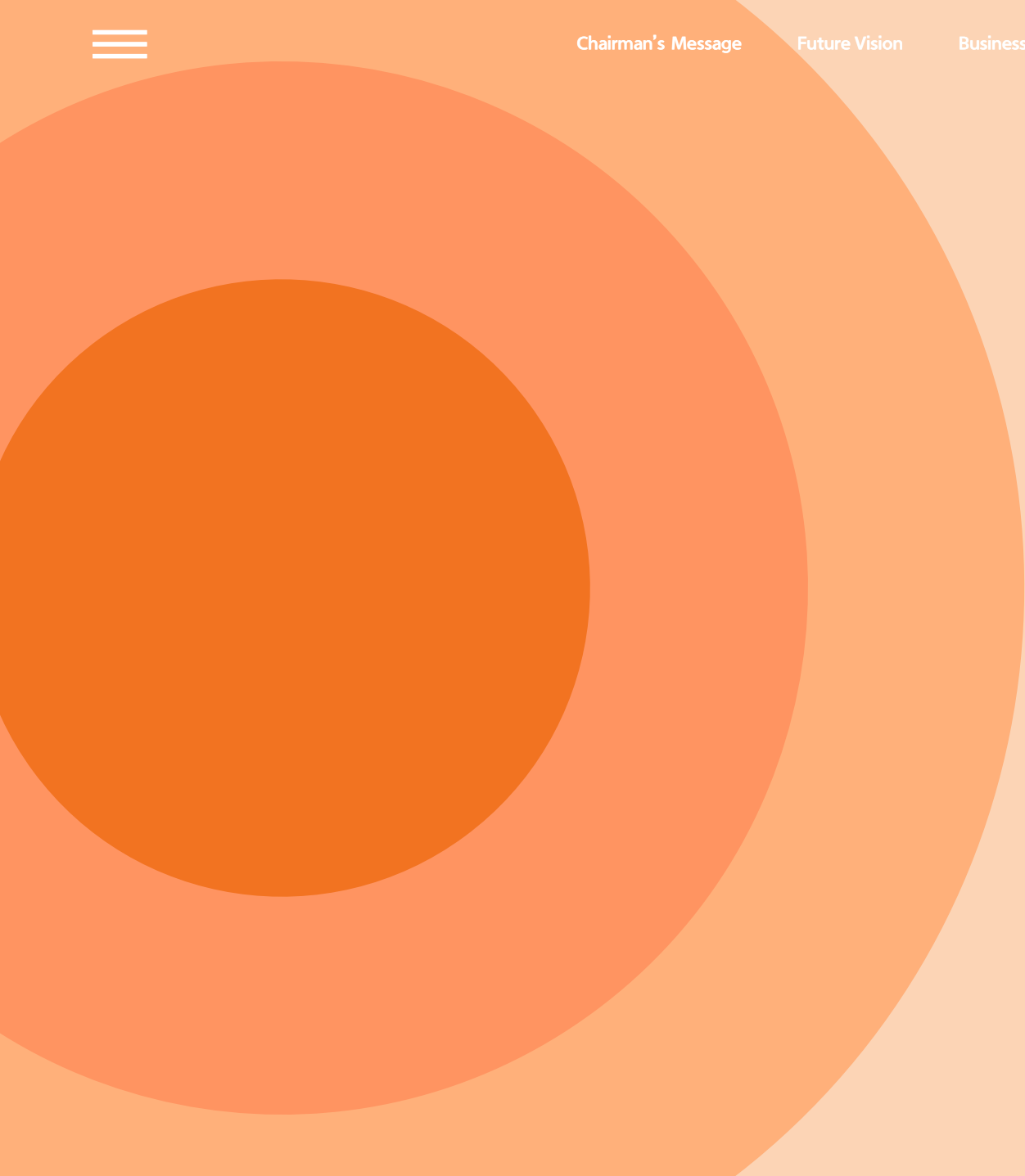
Connect Place at Cheongnyangni Station complex

## LIFESTYLE CENTER

### Connecting life and culture

Experienced in developing and operating advanced railway stations, such as Seoul Station and Cheongnyangni Station, Hanwha Connect is a premier developer and manager of commercial complexes. We strive to realize our vision of providing new experiences and creating central spaces for the urban lifestyle by connecting various cultures and businesses. Part of that goal is enhancing our competitiveness by continuously renewing interiors and merchandising of each branch. In the future, we will expand our business by operating commercial facilities that surround Seoul Station and Daejeon Station, creating a model of growing together with the local community.





# Hanwha Overview

[Hanwha Today](#)

[Hanwha's Spirit & Core Values](#)

[Brand Vision](#)

[Financial Highlights](#)

[Milestones](#)





## Hanwha Today

Hanwha continues to grow by quickly anticipating and responding to rapidly changing business environments with a balanced business portfolio that includes aerospace, energy & materials, finance and retail & services. As of 2022, we are the seventh largest business enterprise in South Korea and a Fortune Global 500 company. Our affiliates are becoming global leaders in their arenas by strengthening core competitiveness and securing future growth engines based on sound financial structures.

### Total Sales

As of 2022

65.3B<sub>USD</sub>

### Business Enterprise in South Korea

Total asset basis, as of end of 2022

Top 7

### Years of History

Founded in 1952

71

### Domestic Affiliates

As of end of 2022

91

### Global Networks

As of end of 2022

710

### Ranking on Fortune Global 500 in 2022

306

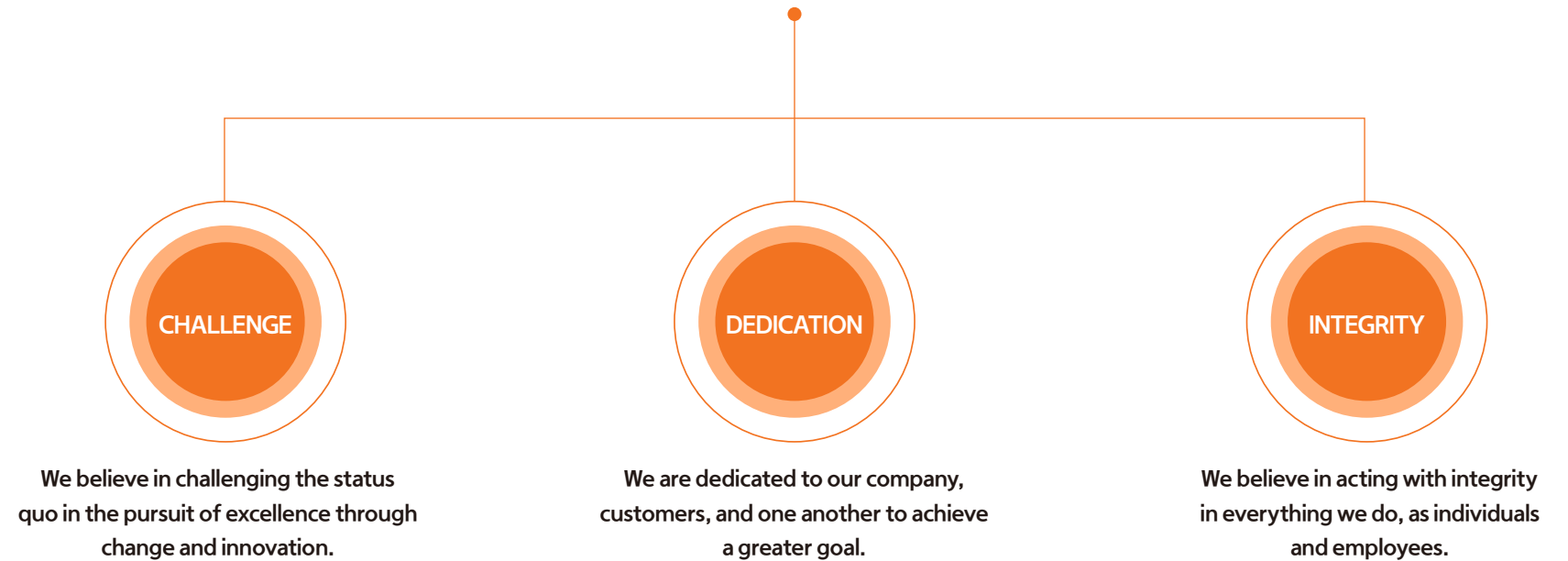




## Hanwha's Spirit & Core Values

At Hanwha, we operate with the spirit of trust and loyalty above all else. That is reflected in our core values and serves to guide us in how we do business and why we innovate.

### Our Core Values



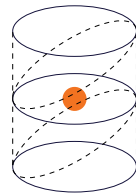


## Brand Vision

### Brand Purpose

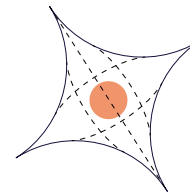
A relentless commitment to sustainability drives our bold innovation, allowing us to create transformative solutions for individuals, society, and the planet.

### Brand Values



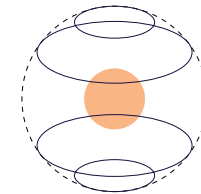
#### Sustainable and Inclusive Growth

We strive for social, economic, and environmental prosperity for all.



#### Technology and Solution-driven Innovation

Through technological innovation, we provide solutions from people to planet.



#### Enhancing Lives

We lay foundation for a fulfilling life through our technologies, products, and services.

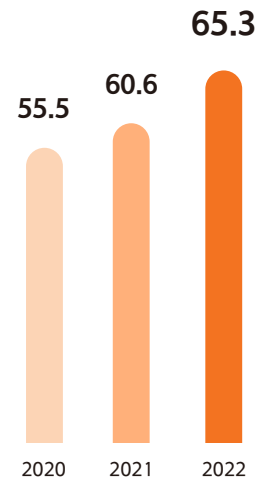




## Financial Highlights

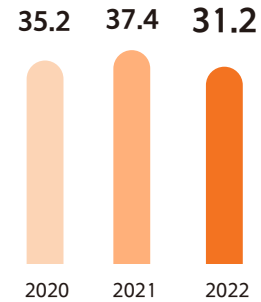
### Total Sales

in USD Billions



### Total Stockholder Equity

in USD Billions



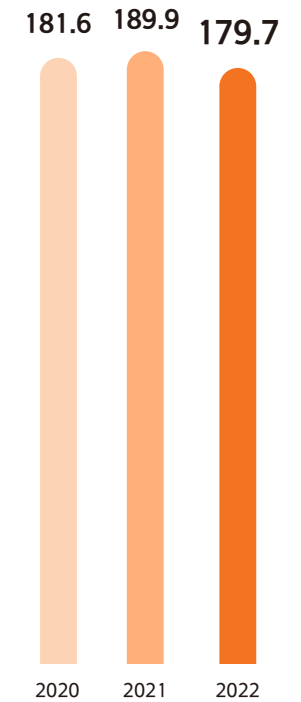
### Total Liabilities

in USD Billions



### Total Assets

in USD Billions



- The financial data in the Financial Highlights show the simple aggregate of sales, total assets, total liabilities and total stockholder equity among Hanwha Group's major affiliates at home and abroad. (Source: Hanwha Group)
- Figures for sales and total assets of individual affiliate companies published on pages under the Hanwha Businesses section of this Profile are data officially announced by the Financial Supervisory Service.
- This outlook data was generated prior to completing the internal financial statements, accounting reviews and an external audit report and are therefore subject to change upon settlement of accounts and accounting audit results. The outlook data also include information on forecasts that may be affected by risks, market conditions,

- uncertainties or changes in circumstances. In addition, the actual results may differ from the published or suggested content herein and may change without prior notice due to shifts in market conditions and changes in strategies.
- This data was generated for reference purposes only. Hanwha Group has no obligation to set or change expectations and forecasts for the future contained herein. The data contained herein should not be used for investment purposes. Hanwha Group does not provide any guarantee for the data and its contents and has no liability or responsibility for the outcome of investments made based on this data.



## Milestones

Driven by our founding philosophy of “fostering social growth and prosperity” and our spirit of upholding “trust and loyalty,” Hanwha has grown into a global company that represents South Korea by contributing to the development of the national economy and the improvement of people’s lives.

Now, we are building on our proud 71 years of history as we unfurl our grand vision for a 100-year-old company. As always, we will innovate without boundaries, create opportunities by challenging without limits and pioneer the future as we establish a new history.



1952- 1963

## Foundation of a Business

After the Korean War, Hanwha played a critical role in reconstructing the devastated nation. In 1952, Korea Explosives Co. (currently, Hanwha Corporation) produced industrial explosives desperately needed for the reconstruction of our country's infrastructure. The company succeeded in producing nitroglycerin in 1959 and became only the second country in Asia to produce industrial explosives. Since then, much has changed and Hanwha today has expanded its business enterprise globally. One thing, however, remains the same: our mission that a business should contribute to its society, which we still adhere to.



- |      |   |      |   |
|------|---|------|---|
| 1952 | Korea Explosives Company (currently Hanwha Corporation) is founded  | 1961 | Signs an annual 400-ton dynamite supply contract with the US Army                   |
| 1953 | Restores the Incheon Gunpowder Plant<br>Earns management rights for Joseon Gunpowder Joint Market Company       | 1962 | Begins supplying industrial gunpowder to national infrastructure construction sites |
| 1955 | Acquires Incheon Gunpowder Plant from Chosun Oil and Fat Company  |      |   |
| 1956 | Starts to produce ammonium nitrate explosive<br>Begins practice of acid-catalyzed nitration of glycerol process |      |   |
| 1957 | Localizes South Korea's first dynamite<br>Succeeds in trial nitroglycerin production                            |      |   |
| 1958 | Begins to produce dynamite  |      |   |
| 1959 | Korea Explosives Company localizes gunpowder and starts to supply products                                      |      |   |

## 1964- 1980

# Business Expansions

As the nation's economy grew, so did Hanwha. Our success came from aggressive and strategic investments in key industries that could accelerate the modernization of our nation. In the mid-1960s, we established the Korea Hwasung Industrial Co. (currently, Hanwha Solutions) and entered the petrochemicals business. After launching Kyung-In Energy in 1969, we established Hankook Precision in 1971 (currently, Hanwha Corporation). We sharpened our competitiveness in the machinery business by acquiring Shinhan Bearing Industrial. And in 1972, we continued to advance South Korea's industrialization by constructing Kyung-In Energy's refinery and power plant.



- |      |  |      |  |      |  |
|------|--|------|--|------|--|
| 1964 | Acquires Shinhan Bearing Industry  | 1972 | Builds Kyung-In Energy refinery and power plant  | 1976 | Opens Cheonan Bugil High School  |
| 1965 | Establishes Korea Hwasung Industrial Co. (currently, Hanwha Solutions)     |      | Establishes Korea Plastic Industry   |      | Acquires Sungdo Securities (currently, Hanwha Investment & Securities) |
| 1966 | Establishes Taepyeong Trading (currently, Hanwha Corporation/Global)       |      | Chairman Chong-Hee Kim awarded the Venus Cross Medal of Honor, the Greek government's highest honorary medal, for advancing relations between Korea and Greece |      | Launches THE PLAZA, Seoul  |
| 1968 | Supplies gunpowder to the Gyeongbu Expressway construction site            | 1973 | Acquires Daeil Dairies (currently, Binggrae)   |      | Establishes Korea System   |
|      | Signs a joint venture agreement with US company, Union Oil Company         |      | Acquires Dongwon Industry  | 1978 | Establishes Taepyeongyang Engineering                                  |
|      | Chong-Hee Kim inaugurated as Chairman of the Korea Explosives Group        |      | Establishes Taepyeong Development (currently, Hanwha Hotels & Resorts)   |      | Builds Yeosu explosives manufacturing plant                            |
|      | Acquires Cheil Fire & Marine Insurance                                     | 1974 | Establishes Gimpo Ceramics   | 1979 | Builds Hanwha Group headquarters (Seosomundong 34)                     |
| 1969 | Holds a groundbreaking ceremony for Incheon-si coastal thermal power plant |      | Establishes Union Polymer (currently, Hanwha Compound)   |      | Establishes Samhee Transportation                                      |
|      | Establishes Kyung-In Energy  | 1975 | Establishes Cheonan Bugil Academy (currently, Bugil Foundation)  | 1980 | Acquires Korean Plastics Industrial Corporation                        |
| 1971 | Establishes Hankook Precision Tools  |      | Establishes Sungwoon Corporation   |      | Reacquires management rights of Korean Plastics Industrial Corporation |
|      | Establishes Third Petroleum Sale   |      |  |      |  |



## 1981-1995

# The Second Foundation

When Seung Youn Kim became Hanwha's second chairman, the company's Second Foundation had effectively begun. And in the aftermath of the global oil shock in the 70s, one of Mr. Kim's key decisions was to diversify into the petrochemical business by acquiring Hanyang Chemicals and Dow Chemicals Korea. He quickly turned the failing businesses into a global powerhouse (currently, Hanwha Solutions) in the global chemical market. Under Mr. Kim's leadership, we've also diversified into finance and services & leisure. In 1985, we acquired the Junga Group (currently, Hanwha Hotels & Resorts) to become South Korea's leading leisure company.



- 1981 Seung Youn Kim becomes the 2nd Chairman of Hanwha  
Begins construction of Daeil Dairies Gimhae Plant
- 1982 Acquires Hanyang Chemical and Dow Chemical Korea  
Holds a sports event for the 30th anniversary of Hanwha Group's foundation
- 1983 Opens Hanwha Comprehensive Training Center  
Ranks 236th on Fortune Global 500  
Domesticates Gyeongin Energy  
Establishes Samhee Communications (currently, Hancomm)
- 1984 Chairman Seung Youn Kim becomes the 2nd Honorary Consul-General of Greece  
Ranks 195th on the Fortune Global 500

- 1985 Acquires Junga Group (currently, Hanwha Hotels & Resorts)
- 1986 Acquires Hanyang Stores (currently, Hanwha Solutions Galleria Division)  
Establishes Bingrae Eagles (currently, Hanwha Eagles)
- 1987 Builds Hyunam Building (Janggyo-dong)
- 1988 Merges Hanyang Chemical with Korea Plastic Industry  
Chairman Seung Youn Kim announces the Seoul Olympics boxing tournament  
Korea Explosives delivers 500 Olympic torches
- 1989 Launches PRO 2000 campaign
- 1990 Hosts the 1st Seoul Women's Open Golf Championship

- 1991 Launches ECO-2000 campaign  
Builds Korea Explosives Boeun Plant
- 1992 Renames Korea Explosives Group as Hanwha Group
- 1994 Chairman Seung Youn Kim announces the 3rd Reformation  
Builds Hanwha R&D Center
- 1995 Chairman Seung Youn Kim awarded Gold Tower Medal, Order of Industrial Service Merit  
Cheil Securities builds Yeouido headquarters  
Acquires Central Pharmaceuticals and establishes medical business unit DreamPharma

1996-2006

## Building Momentum

During the 1997 Asian financial crisis that either crippled or nearly paralyzed most companies in South Korea, Hanwha took bold actions, innovating and restructuring. We secured liquidity by selling profitable affiliates, made employee job security our priority and moved forward with faith in our spirit of trust and loyalty. We sought new opportunities and began acquisitions. One of them was Korea Life Insurance in 2002, a business that we have since grown steadily to make the second largest life insurance carrier in South Korea with assets of USD 100 billion in 2022. We emerged from the financial crisis without a single labor dispute, and Hanwha was heralded as a role model for other South Korean corporations to follow.



<p>1996 Chairman Seung Youn Kim declares revolutionary reformation Acquires Banque Indosuez Hungary</p> <p>1997 Establishes Cheonan Bugil Girls Academy (currently, Bugil Girls Academy) Sells Hanwha-BASF Urethane to BASF, Germany</p> <p>1998 Establishes FAG Hanwha Bearings Hanwha Corporation/Trade honored with the Silver Tower Industrial Medal and the \$1 Billion Export Tower Award</p> <p>1999 Establishes YEOCHUN NCC, a joint venture between Hanwha and Daelim Hanwha Eagles wins the 1999 Korean Series, the championship series of the KBO League Sells Hanwha Energy Oil Refinery Division and Hanwha Energy Plaza to Hyundai Oil Refinery</p>	<p>2000 Acquires Dongyang Department Store (currently, Hanwha Galleria Timeworld) Sponsors the first Seoul Arts Center Symphony Festival Hosts the 1st Seoul International Fireworks Festival</p> <p>2001 Establishes Daedeok Techno Valley Hanwha Corporation acquires Daewoo Electronics Defense Division</p> <p>2002 Acquires Korea Life Insurance (currently, Hanwha Life)</p> <p>2003 Sells shares of FAG Hanwha Bearings to the partner company</p> <p>2004 Hanwha L&amp;C (currently, Hanwha Advanced Materials) builds an automotive materials plant in Beijing, China</p>	<p>2005 Sells shares of Korea Energy Investment to POSCO Hanwha Life establishes a subsidiary in New York City, US</p> <p>2006 Hanwha Engineering &amp; Construction (currently, Hanwha Corporation/Engineering &amp; Construction) establishes a subsidiary in Saudi Arabia Hanwha L&amp;C builds a manufacturing facility in Alabama, US Establishes Asan Techno Valley Terminates production at Incheon Plant Hanwha L&amp;C builds an automotive materials plant in Shanghai, China</p>
---	--	---



2007-2014

## Accelerating Global Business

At the turn of the 21st century, Hanwha began accelerating its global expansion. Hanwha Solutions acquired US-based Azdel Inc. and established a production subsidiary in the Czech Republic in 2007 to increase its standing as a global automotive component maker. In 2011, Hanwha Solutions completed the construction of a PVC plant in Ningbo, China. In 2012, Hanwha Engineering & Construction (currently, Hanwha Corporation) won a USD 10 billion contract to construct an entire city in Iraq. It was the largest overseas contract ever awarded to a Korean company. Solarfun Power Holdings and Q.CELLS were acquired in 2010 and 2012, respectively, paving the way for Hanwha Solutions to join the ranks of the world's top solar cell producers. Hanwha Life's investment in global expansion began with its Vietnam subsidiary in 2008, which led to another acquisition—an Indonesian life insurance company in 2013.



<p>2007 Announces "Tricircle," new CI (corporate identity), Holds Hanwha Global Strategy Conference Establishes Seosan Techno Valley Hanwha Chemical (currently, Hanwha Solutions Chemical Division) builds the Ningbo PVC plant in China</p>	<p>Hanwha L&amp;C builds an automotive materials plant in the Czech Republic Establishes Daedeok Techno Valley Launches the integrated Hanwha General Insurance</p>	<p>Hanwha Chemical's Ningbo PVC plant in China launches commercial operations Establishes Hanwha Solar Energy America (HSEA) Establishes Hanwha Solar Energy</p>	<p>Acquires German-based Q.CELLS (currently, Hanwha Solutions Qcells Division) Launches the integrated Hanwha Energy by merging Yeosu Cogeneration and Gunjang Cogeneration</p>
<p>Hanwha Advanced Materials acquires US-based Azdel 2008 Hanwha Securities establishes Hanwha Investment &amp; Consulting in Shanghai, China Acquires Cheil Fire &amp; Marine Insurance (currently, Hanwha General Insurance) Hosts the 1st Hanwha National Shooting Competition Hanwha Life establishes local subsidiary in Vietnam</p>	<p>2010 Establishes Gyeonggi Hwaseong Bio Valley Launches the integrated Hanwha Hotels &amp; Resorts Daehan Life Insurance lists on stock market Hanwha Securities acquires Prudential Investment Securities and Prudential Asset Management Acquires a 49.99% equity stake in Solarfun Power Holdings of China</p>	<p>Launches Hanwha China Gunjang Cogeneration starts commercial power generation Hosts the KLPGA Hanwha Finance Classic Launches Hanwha Asset Management by merging Hanwha Investment Trust Management and Prudential Asset Management</p>	<p>Begins operation of Sino-Korea Life Insurance, a joint venture of Hanwha Life and Zhejiang International Business Group 2013 Hanwha Solar Energy changes name to Hanwha Qcells Korea Beans &amp; Berries transitions to a social enterprise Hanwha Life acquires an Indonesia life insurer</p>
<p>2009 Opens Hanwha Historical Museum Hanwha Life's Vietnam branch begins local sales Hanwha L&amp;C builds a plant in Canada Establishes Gimhae Techno Valley</p>	<p>2011 Enters solar business (changes Solarfun Power Holdings to Hanwha SolarOne) Proclaims Hanwha Core Values of Challenge, Dedication and Integrity Establishes Hanwha Golf Team (currently, Team Hanwha Qcells)</p>	<p>2012 Hanwha Engineering &amp; Construction (currently, Hanwha Corporation/Engineering &amp; Construction) wins the bid for Bismayah New City Project (USD 8 billion) Launches the integrated Hanwha Investment &amp; Securities by merging Hanwha Securities and Hanwha Investment &amp; Securities Renames Daehan Life Insurance Hanwha Life</p>	<p>2014 Acquires four Samsung companies in defense and petrochemical industries</p>

## 2015 - Present

# Innovating for Sustainable Growth

Hanwha is committed to building a sustainable foundation for growth as we strengthen core capabilities in current businesses, including aerospace, energy & materials, finance, and retail & services. We are also exploring new business portfolios. In 2021, we launched the Space Hub to spearhead space business initiative in the era of privately led space development. In 2022, we were appointed system integrator for the Korea Space Launch Vehicle Program. Our solar business ranks first in market share for major markets including the US, and we are currently expanding our energy businesses into hydrogen, wind power and LNG. In finance, we are driving innovation in financial services by providing digital solutions that harness advanced Fintech and AI. Our retail & services businesses are expanding online and offline platforms that boost competitiveness in each of their business sectors. We are dedicated to developing solutions for a sustainable future for humanity by making bold investments in trailblazing innovations that can combat energy and food crises.



- 2015 Hanwha Qcells agrees to supply more than 1.5 GW of solar modules to NextEra Energy Resources, the largest single contract in the solar industry at the time  
  
Launches Hanwha General Chemicals (currently, Hanwha Impact) and Hanwha Total Petrochemical (currently, Hanwha TotalEnergies Petrochemical)  
  
Launches Hanwha Techwin (currently, Hanwha Vision) and Hanwha Thales (currently, Hanwha Systems)
- 2016 Hanwha Life reaches a new milestone with KRW 100 trillion in total assets  
  
Launches Hanwha Defense
- 2017 Launches Hanwha Land Systems, Hanwha Power System, and Hanwha Precision Machinery  
  
Launches Hanwha Group's LIFEPLUS financial brand  
  
Hanwha Defense exports its K9 self-propelled howitzers to Finland, India and Norway
- 2018 Launches Hanwha Systems

- Hanwha Aerospace's subsidiary in Vietnam builds a manufacturing facility  
  
Officially sponsors of PyeongChang 2018 Winter Olympic Games and 2018 Winter Paralympics (fireworks and torches)
- 2019 Completes renovation of the Hanwha Building in Janggyo-dong  
  
Hanwha Qcells builds a manufacturing plant in Georgia, in the US  
  
Hanwha Life opens Life Park training center
- 2020 Launches Hanwha Solutions  
  
Completes Galleria in Gwanggyo  
  
Launches the integrated Hanwha Corporation/Global  
  
Hanwha Systems acquires UK-based Phasor Solutions, a satellite communications antenna developer  
  
Hanwha Solutions acquires US-based Cimarron Composites, a hydrogen storage tank company

- 2021 Hanwha Energy forms a renewable energy joint venture with French energy group Total  
  
Hanwha Aerospace acquires control of Satrec Initiative, a South Korean satellite manufacturer  
  
Hanwha Impact acquires two hydrogen combustion technology companies, PSM (Power Systems Mfg.) in the US and Thomassen Energy in the Netherlands  
  
Hanwha Solutions acquires RES France, a French renewable energy developer  
  
Launches Hanwha ESG Committee  
  
Launches Space Hub  
  
Hanwha Galleria merges with Hanwha Solutions  
  
Hanwha Solutions City Development Division spins off its asset development business and merges with Hanwha Solutions
- 2022 Helps to successfully launch Nuri successfully  
  
Hanwha Corporation and Hanwha Solutions acquires stakes in REC Silicon, a Norway-based polysilicon manufacturer in the US

- Hanwha Impact acquires Hanwha Power Systems  
  
Hanwha Corporation merges with Hanwha Engineering & Construction (currently, Hanwha Corporation/Engineering & Construction)  
  
Hanwha Aerospace merges with Hanwha Defense  
  
Hanwha Solutions splits off Advanced Materials Division to establish Hanwha Advanced Materials  
  
Is appointed system integrator for the Korea Space Launch Vehicle Program
- 2023 Hanwha Aerospace acquires Hanwha Corporation/Defense  
  
Hanwha Solutions spins off Galleria Division to establish Hanwha Galleria  
  
Hanwha Techwin changes its name to Hanwha Vision  
  
Launches Hanwha Ocean  
  
Hanwha Corporation plans to acquire Hanwha Precision Machinery





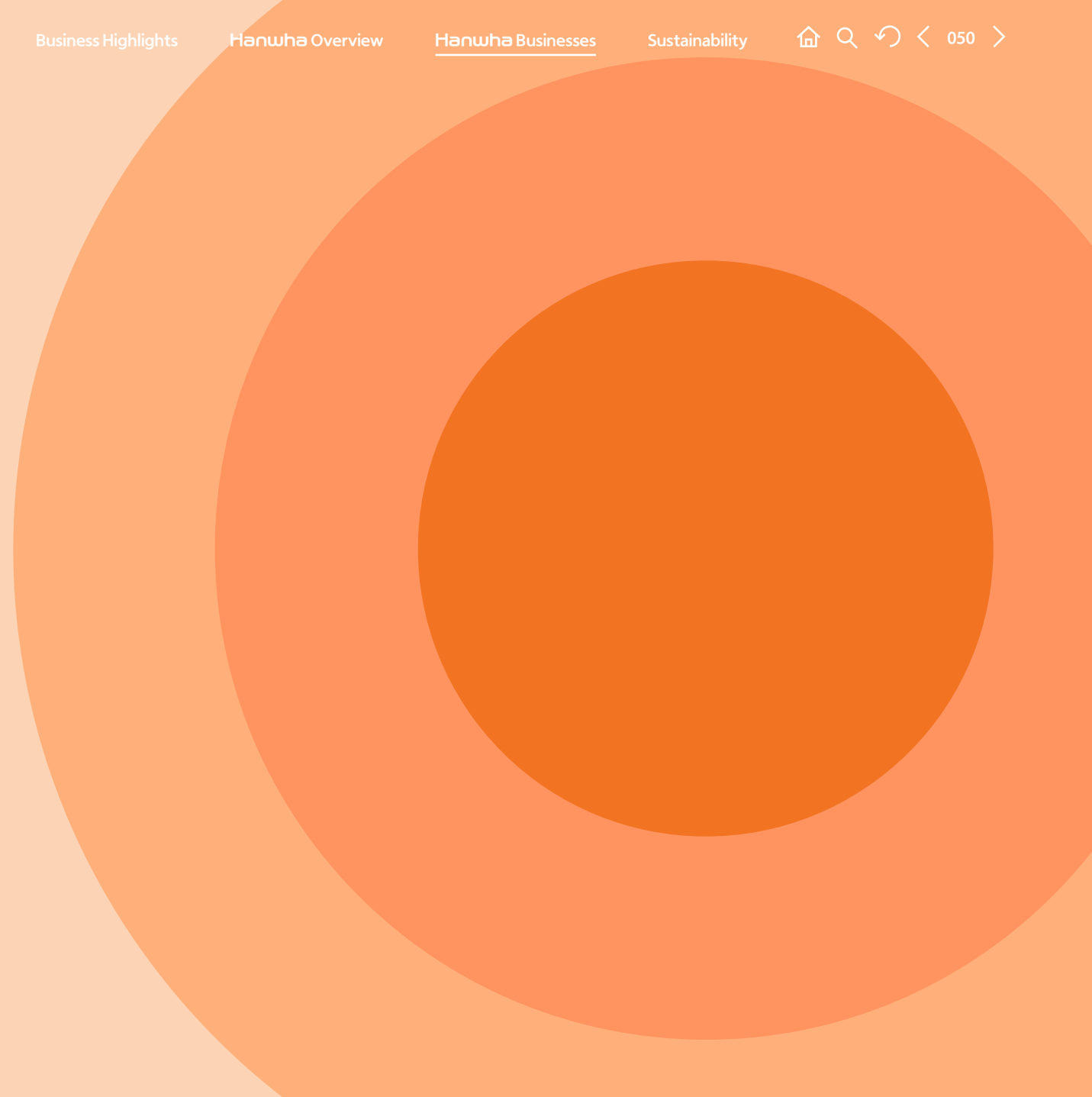
# Hanwha Businesses

[Aerospace](#)

[Energy & Materials](#)

[Finance](#)

[Retail & Services](#)





# Aerospace

Hanwha Corporation  
Hanwha Aerospace  
Hanwha Ocean  
Hanwha Systems  
Hanwha Vision  
Hanwha Precision Machinery



## Aerospace

# Hanwha Corporation

[www.hanwhacorp.co.kr](http://www.hanwhacorp.co.kr)

2022 Total Sales

3,005 In USD millions

2022 Total Assets

8,469 In USD millions

### EXPERTISE

#### Global:

Industrial explosives products, fireworks, domestic and overseas mining services, petrochemicals, inorganic compounds, eco-friendly energy

#### Momentum:

Secondary battery production equipment, solar cell and module manufacturing equipment, display manufacturing and logistics equipment, collaborative robots, factory automation (autonomous guided vehicles, automated warehouses, logistics centers)

#### Engineering & Construction:

General construction (complex development, renewable energy, including wind power and hydrogen), civil engineering, commercial and residential building, infrastructure, environmental facilities, industrial and power plants



Hanwha Corporation/Global

Since Korea Explosives was established in 1952, Hanwha Corporation has been leading the domestic explosives and related industries for more than 70 years, fortifying the foundation for Hanwha Group's growth. In November 2022, we merged with our subsidiary Hanwha Engineering & Construction and reorganized the business into three divisions: Hanwha Corporation/Global, Hanwha Corporation/Momentum and Hanwha Corporation/Engineering & Construction. Each division will strengthen growth engines and raise its profile at home and abroad by developing high value-added technologies, entering new businesses and expanding overseas businesses. In March 2022, we acquired stakes in REC Silicon, a Norway-based U.S. polysilicon manufacturer, as we expand our business into core materials for semiconductors and secondary batteries as well as polysilicon, which is used for solar power.

By leveraging our extensive operating synergies, business networks and more than seven decades of experience in explosives, Hanwha Corporation/Global has transitioned into chemical technology-based solutions, effectively meeting the challenges of energy and the environment.

Our industrial explosives products are essential for a range of construction and resources development. Our experience, knowledge and technology are leading domestic and overseas explosives markets with competitive and quality products supported by stable distribution networks. We also provide electronic detonators and unique blasting systems that provide customers with safe, economical and efficient blasting solutions. In addition, we operate a fireworks business that lights up the night sky at major national and regional events.

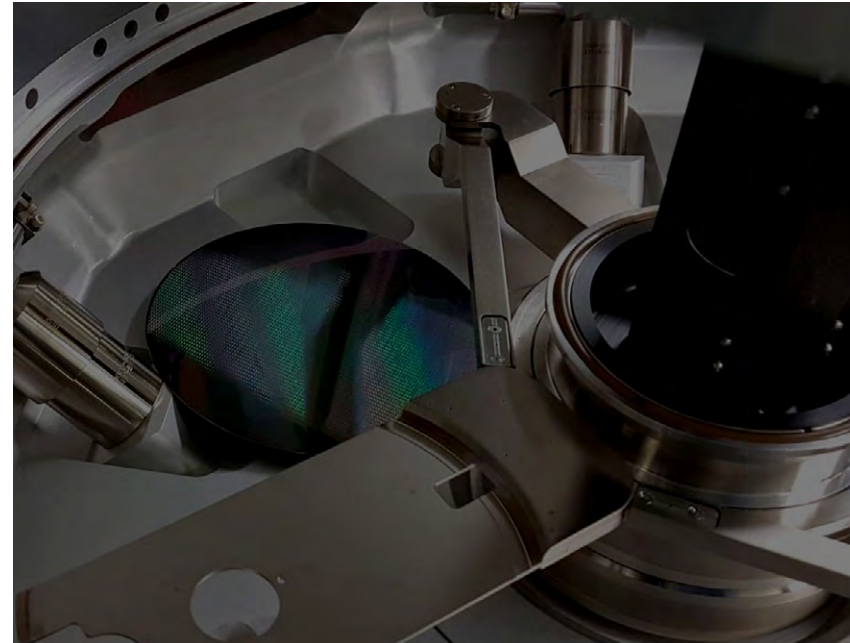


We are achieving steady revenue in trading by focusing on polymers, monomers and defense products that showcase our sales rights and expertise. Going forward, we will expand our business model into eco-friendly energy sources, such as ammonia and hydrogen.

We expect to continue efforts to localize next-generation materials, such as silicon gas, a material used for semiconductors and secondary batteries, as well as eco-friendly derivatives that help reduce global warming. By commercializing inorganic compounds, we will secure new growth engines, such as high value-added derivatives using nitric acid and a hydrogen infrastructure.

Hanwha Corporation/Momentum was established in 1953, and, today, its deep experience and cutting-edge technology leads the global machinery &

Hanwha Corporation/Momentum



equipment industry. We produce high value-added machinery & equipment while exploring new business opportunities that focus on heat treatment, vacuum deposition processing, logistics, ICT and robotics.

Both domestically and internationally, we provide market-proven turnkey solutions for battery companies that include the materials, electrodes, assembly and formation processes. We are further manufacturing specialized facilities for photovoltaic cells and modules using our vacuum deposition technology, a core technology of photovoltaic cell process equipment. Our infrared heating oven for LCD/OLED, a display manufacturing equipment, maintains the world's No. 1 market share with differentiated technology. In addition, we provide total solutions for the semiconductor industry with clean type automated logistics optimized for customer requirements.

We also lead the logistics automation industry with advanced factory and warehouse automation technology that we've been developing for the past 46 years. Our automation business is stronger than ever. We successfully completed the world's first system to automate the entire tire production process. We ensure higher productivity and automated innovation by developing collaborative robots and autonomous guided vehicles for logistics centers and automated warehouses. In the renewable energy business, we are leading domestic renewable energy plant construction with differentiated construction and operational services capabilities.

With rigorous R&D and innovation, as well as development of our high value-added product portfolios and market entries overseas, Hanwha Corporation/Momentum is on track to be a global leader in machinery & equipment as well as a total engineering solutions provider.





Premium residential brand FORENA

Originally Taeyeongyang Construction, Hanwha Engineering & Construction was founded in 1967. In 2022, the company became Hanwha Corporation/Engineering & Construction, a division of Hanwha Corporation. From the start, we quickly became a global player by leveraging extensive experience in construction projects and applying new technologies and subject matter expertise across a wide range of projects, from industrial, chemical and power plants to civil engineering works, commercial buildings and more. With the goal of becoming a Green Infrastructure Developer, we are growing into a leader in building eco-friendly energy and environmental facilities as well as large-scale complex developments.

We have moved beyond constructing simple buildings to focus on complex development projects that combine residential, cultural, business, leisure, commercial and social infrastructures. The Suwon MICE Multi Complex for example,

is a flagship urban development project with multifunctional buildings, including a convention center, an aquarium, a department store, a hotel and one of our FORENA residential complexes. In addition, we are creating distinctive urban spaces and multifunctional complexes, such as the northern area of Seoul Station, the eastern part of Daejeon Station, the Suseo Station Transit Center Complex and Seoul's Jamsil Sports Complex.

In the short time since its launch in 2019, our residential brand FORENA has been established as a premium brand in the housing market. We are building landmark residential complexes in the nation's major cities with the distinctive FORENA exterior design while applying differentiated designs and products in the interior. We believe the FORENA brand value is further burnishing our competencies in complex development projects.



Learn more about Hanwha Corporation/Engineering & Construction with this video.

Bismayah New City is a USD 10.1 billion project, the largest urban development in Iraq's modern history, and the first overseas project of its kind developed by a South Korean company. The city will be the world's largest urban construction with infrastructure facilities that support 100,000 households, schools, government offices and roads as well as social infrastructure, such as water and sewage facilities. In 2014, we demonstrated our technological prowess by successfully building the world's largest domed arena in the Philippines. We also have built power and petrochemical plants in the Middle East and North Africa.

We're nurturing the wind power business as a future growth engine. After building a 76MW wind farm in Yeongyang and a 25MW farm in Jeju Sumang, we are expanding to offshore business. We are leading development of the nation's largest 400 MW offshore farm in Sinan.

Sharpening our competitive edge in hydrogen energy, we built the world's largest industrial hydrogen fuel cell power plant and were the first to exclusively use hydrogen recycled from petrochemical manufacturing in the Daesan Industrial Complex. In addition, we are preparing for net zero by developing hydrogen production technology that uses biogas.

In environmental facilities, we rely on our core technologies, such as our self-developed PRO-MBR (Phosphate Removal Optimized Membrane BioReactor) advanced sewage treatment technology and patented technologies. By harnessing eco-friendly advanced technology, we are raising the bar for water treatment facilities from development to construction and operation, such as the modernization project of the Daejeon sewage treatment plant, the largest private investment for a sewage treatment plant in South Korea.

The eastern part of Daejeon Station development



Yeongyang wind power complex





## Aerospace

# Hanwha Aerospace

[www.hanwhaaerospace.co.kr](http://www.hanwhaaerospace.co.kr)

2022 Total Sales

5,066 In USD millions

2022 Total Assets

11,963 In USD millions

### EXPERTISE

**Space:**

Space launch vehicle engines and system integration, satellite services (communications, observation)

**Aerospace:**

Gas turbine engines and components, aircraft components

**Defense:**

Artillery systems, armored vehicles, air defense systems, unmanned ground systems, advanced ammunition, precision-guided munitions, navigation systems, lasers

**Marine:**

Lithium-ion battery systems for submarines and ships, ship engines/generators



Aircraft engine manufacturing site

Founded in 1977, Hanwha Aerospace has become a leading company in the aerospace industry in South Korea. Today, our products serve not only aerospace but also the defense and marine sectors. With an unwavering focus on customer-centric quality management, technological innovation, and product competitiveness reinforced by advanced technologies, we are surging forward as a global leader in the burgeoning space and aerospace business as well as in the land, sea, and air defense industries.

Our Space Division boasts unparalleled expertise in space launch vehicle engines. We have successfully produced six liquid propellant engines for Nuri, the Korea Space Launch Vehicle-II (KSLV-II), in addition to producing key components such as turbo pumps and valves, attitude control systems, and thruster test facilities. Our state-of-the-art technologies are helping advance South Korea's space and aerospace industry. In June 2022, South Korea achieved a remarkable milestone by launching a 1-ton satellite into space using only domestic technology, the seventh country in the world to do so. The Space Division played a critical role in developing the 75-ton liquid rocket engine for Nuri, taking the country's space technology to the next level.

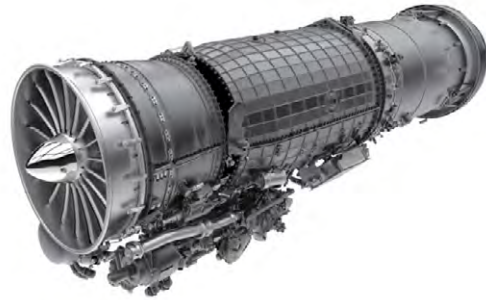
In December 2022, Hanwha Aerospace was appointed system integrator for the Korea Space Launch Vehicle Program in recognition of our proven capabilities in business execution and technological expertise. Starting with Nuri's third launch for the first half of 2023, and through a total of four additional launches by 2027, we will achieve our goal of having system integration and launch operation technologies transferred from the Korea Aerospace Research Institute. In doing so, we will be able to upgrade existing launch vehicle technology and lead efforts to create a robust space industry ecosystem. We are also committed to progressively improving our core capabilities in developing successor projects to Nuri for the next generation of launch vehicles, including localizing core components, introducing lighter-weight materials, and enhancing engine performance.

In addition to developing launch vehicles, the Space Division is focusing on building a value chain for the space industry. In 2021, we acquired a 30% stake in Satrec Initiative, a South Korean developer of core satellite technologies that support Space Eye-T, a constellation of the world's highest-resolution Earth observation imaging satellites. We are also partnering to develop future businesses that will utilize satellite data. As a key supporting affiliate of Space Hub, Hanwha's oversight venture into the space industry, we are actively exploring a variety of future business opportunities that bring together our existing strengths and capabilities in the space industry.

Our Electric Propulsion System Division is growing as an eco-friendly powertrain supplier in urban air mobility (UAM), a promising area of growth in future mobility. We are developing a highly reliable electromechanical actuator for next-generation transportation as well as hydrogen fuel cell systems for UAM. By 2025, we aim to take the lead in creating an ecosystem for the domestic UAM market by securing core technologies for hydrogen fuel cells for aviation. Leveraging our lithium-ion battery systems for submarines, we are also developing a next-generation energy storage system (ESS) optimized for general ships, which will allow us to lead in the eco-friendly ship market.

Since the launch of our gas turbine engine business in 1979, our Aerospace Division

\* Note: Performance does not include sales and assets of Hanwha Defense and Hanwha Corporation/Defense.



Advanced jet trainer/light fighter engine (F404-102)



The 75-ton liquid propellant engine for Nuri, the Korea Space Launch Vehicle-II

has produced more than 9,000 engines over the past four decades. The engines have powered a range of fighter jets, such as the F-15K and T-50 advanced jet trainer, localized engines for South Korea's domestic multipurpose helicopter Surion, and provided engines for naval flagship vessels. We also provide airframe and gas turbine engine solutions to domestic and international markets. In technological collaboration with GE, the Division is taking the lead in developing an integrated engine for the KF-21, a next-generation South Korean fighter jet, while localizing its key components. As the nation's major supplier of aviation parts, we have provided core components such as flight control actuators and hydraulic/fuel control systems for the KT-1, T-50, and Surion. In the KF-21 project, we are further enhancing our technical expertise by exploring new areas, such as landing gear.

Building on our extensive expertise in aircraft engine technology, the Engine Parts Division has become a key partner of global aviation engine companies such as GE, Rolls-Royce, and Pratt & Whitney, which has strengthened our competitive stance around the globe. We continue to expand our global network, including in overseas production subsidiaries. In 2016, we entered into a joint venture with Pratt & Whitney to operate a Singaporean manufacturing company as well as a Risk and Revenue Sharing Partnership (RSP) designed to co-build the next-generation aircraft engine. In 2017, we established a production base in Vietnam to improve our cost competitiveness and increase production capacity. In 2019, we acquired EDAC Technologies, a US aircraft engine component manufacturer, and launched Hanwha Aerospace USA to expand our product portfolio and leverage high-end processing technology.

At our LS (Land Systems) Division, we develop state-of-the-art weapons systems designed to produce sustained growth in all arenas of the defense industry, including artillery, armored vehicles, air defense, amphibious systems, and manned-unmanned teaming systems.

In artillery systems, we developed the K9 self-propelled howitzer (SPH) based on our experience of producing K55 SPHs. Our world-class K9 Thunder SPH artillery system is recognized for excellent firepower, maneuverability, and survivability.

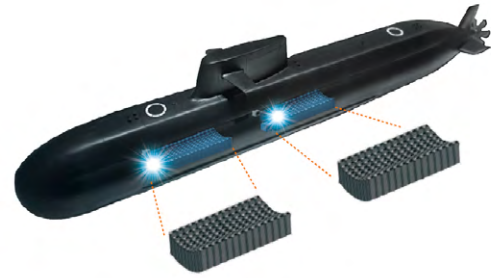


K10 Ammunition Resupply Vehicle and K9 Thunder SPH artillery system

Known for high-quality standards, the K9 is exported to eight countries worldwide and holds the largest market share in the global SPH market. Our continuous improvements in performance have expanded its entry into advanced defense markets, such as the UK and the US. The K10 Ammunition Resupply Vehicle, the world's first fully operational automated ammunition support system, works in conjunction with the K9, further ramping up the speed of ammunition delivery. In addition to these systems, the Division also manufactures a variety of land-based launcher systems and naval launchers.

We are proud to offer a diverse portfolio of armored vehicles that are highly effective in Multi-Domain Operations (MDO). Key products include the 120mm self-propelled automatic mortar system, which offers superior combat distance and firepower compared to conventional mortars; seven types of specialized armored vehicle models that rely on technologies from the K200 Armored Personnel Carrier, such as the NBCRV (Nuclear Biological Chemical Reconnaissance Vehicle); and the K21, a world-class infantry fighting vehicle. We are also promoting the REDBACK, a future-ready armored vehicle, for overseas markets. In air defense systems, we are





Lithium-ion battery systems for submarines

incorporating advanced technologies to develop best-in-class systems optimized to respond to and defend against various aerial attacks, bolstering the ROK military's air defense capabilities. The Hybrid BIHO self-propelled air defense system, recognized as highly effective, leverages artillery and missile system strengths to intercept low-altitude infiltration targets. Our Anti-Aircraft Gun Wheeled Vehicle System (AAGW) includes low-cost highly efficient 30mm twin air defense guns and has been in use by the South Korean military since 2021.

In amphibious systems, we are currently engaged in cooperative production of the KM3, a South Korean type of amphibious bridging vehicle, which is key in providing rapid mobility support for the military. We are also developing our own improved ribbon bridge equipment. In addition, we are engaged in active R&D to upgrade the primary armored personnel carrier for the ROK Marine Corps, the Korean Amphibious Assault Vehicle (KAAV-II), which will replace the current KAAV model with significant advances in mobility, protection, and firepower. In manned-unmanned teaming systems, we are integrating manned and unmanned systems that will optimize mission effectiveness and reduce human casualties in future battlefield scenarios. Our emphasis on core technologies, such as artificial intelligence, remote control, and autonomous driving, has put us at the forefront of technological innovation in the military sphere. Current initiatives include developing remote unmanned K9 SPH, unmanned search vehicles, and multipurpose unmanned vehicles.

Since entering the defense industry in 1974, the PGM (Precision Guided Munition) Division has focused on global competitiveness and expanding business related to guided weapons, advanced ammunition, and lasers. In guided weapons systems, we are developing projects across land, sea, and air as we advance weapons systems from propulsion engines to integrated guidance and control systems. Our flagship product, the CHUNMOO, was the first company-led system development project in South Korea, which became fully operational in 2015, and significantly enhanced the power of the ROK Army. By maintaining advanced global quality, technology, and price competitiveness, we provide customized solutions to overseas customers. We will expand our global footprint by securing a variety of range-specific solutions.



CHUNGUM

In addition, we are prioritizing L-SAM, long-range surface-to-air missiles, and CHUNGUM, an air-launched anti-tank guided missile, carried on a LAH (Light Armored Helicopter). These are crucial pillars that support the South Korean missile defense system. Given the growing demand overseas for anti-tank guided weapons and increased need in domestic operating platforms, we are developing CHUNGUM to be compatible with ground platforms that will target international markets.

Our advanced ammunition systems offer unrivaled technology in ammunition core components, including detonators and propellants. We will participate in precision-guided ammunition projects to continue to sharpen our technology in ammunition systems precision and guidance. As the nation's leader in laser technology, we are developing a future weapons system that applies high-energy laser technology while promoting localization of original technology.

At our Navigation Systems Division, we specialize in developing and manufacturing advanced navigation systems that play a critical role in advanced weapons systems. The navigation system's advanced equipment controls a platform's movement by providing essential information on speed, position, and attitude. With high-level expertise in gyro sensors, the core technology of navigation systems, we boast unparalleled technology in this field. Navigation systems were once primarily used only in the military, such as for guided missiles and aircraft, but applications have since expanded into commercial arenas, including in drones, robots, and autonomous vehicles, highlighting the potential for this field to become a mid- to long-term growth engine.

Hanwha Aerospace acquired Hanwha Defense and Hanwha Corporation/Defense in November 2022 and April 2023, respectively. We are leveraging the expertise of each affiliate in the arenas of land, sea, air, and space technologies in order to create maximum synergy and seek sustainable growth by improving our global competitiveness. We remain dedicated to securing next-generation core technologies and strengthening quality competitiveness to become a global leader in future technology.

## Aerospace

# Hanwha Ocean

[www.hanwhaocean.com](http://www.hanwhaocean.com)

2022 Total Sales

3,732 In USD millions

2022 Total Assets

9,508 In USD millions

### EXPERTISE

#### Commercial Ships

LNG carriers, tankers, container ships, LPG carriers

#### Offshore Plants:

Drilling rigs (drillships, jack-ups, etc.), production facilities (FLNG, FPSO, fixed platforms, etc.), offshore wind turbine installation vessels

#### Specialty Ships:

Destroyers, frigates, submarines



Geoje Shipyard, South Korea

Over the past half-century, Hanwha Ocean has emerged as a leading global company with extensive expertise and experience in the shipbuilding and offshore industry. Since its inception in October 1973, our shipyard near the Port of Okpo in South Korea's Geoje, Gyeongsangnam-do has played a crucial role in our growth as a world-class shipbuilder. With a focus on advanced technology and innovation, we have continuously pioneered new businesses and now produce a vast range of vessels, including commercial ships, drillships, floating oil production facilities, and specialty ships, such as submarines and destroyers. We are also committed to securing new growth engines by anticipating market trends and enhancing our competitive strengths.

Newly launched as part of Hanwha Group in 2023, Hanwha Ocean will be

at the forefront of building a green energy value chain, combining our existing strengths as a global leader in energy production facilities and transportation, with Hanwha's expertise in energy and materials, such as hydrogen, wind power, LNG, and ammonia. We will also leverage Hanwha's cutting-edge green technology, such as advanced marine systems and eco-friendly energy storage system (ESS) technology, and integrate that with our ship, offshore plant, and specialty ship businesses to create new synergies and expand our markets.

Equipped with top-notch facilities that span roughly 4.9 million square meters in Geoje, including the world's largest 1-million-ton dock and 900-ton Goliath crane, Hanwha Ocean produces high-quality ships and offshore plants. We are also developing green solutions, such as energy-saving devices (ESD) and propulsion



Learn more about Hanwha Ocean with this video.



technologies that use environmentally friendly fuels, and, by automating and mechanizing the shipyard, we have improved working conditions and achieved cost savings. In addition, we are working to produce technologies that provide the latest marine and energy infrastructure solutions to our customers from cutting-edge R&D infrastructure, including a maritime defense industry research institute—the only such facility across all South Korean shipyards. With our IT-based systematized shipbuilding technology, advanced offshore plant construction capabilities, large-scale plant management capabilities, and expertise in submarine and destroyer construction technology, we offer leading services in the shipbuilding and offshore sectors as a total solutions provider.

While continually expanding our field of business globally since 2000, we have achieved numerous world-firsts: delivering the world's first and only LNG

regasification vessel (LNG RV) that supplied natural gas to disaster areas in the aftermath of Hurricane Katrina in the U.S. in 2005; constructing the world's first floating LNG (FLNG) facility in 2016; delivering the world's first LNG carrier with a full regasification system (FRS) in 2018; and delivering 15 icebreaking LNG carriers for Arctic operations in November 2019. Hanwha Ocean also delivered the world's largest 23,000 TEU container ship in 2020, among other accomplishments. These achievements were produced by strong integration and cooperation among our two plants in Korea, a global office, and nine overseas branches, as well as by our expansion in exports to global markets, and improved customer service. Building on this success, as of January 2023, we hold the third-largest backlog of ship orders in the world, measured by Compensated Gross Tonnage (CGT)[Clarksons Research].

Hanwha Ocean's flagship commercial ship business leads the global market with unrivaled technology. Our LNG carriers are the world's most competitive, thanks to our expertise in LNG-related technology, including a self-developed fuel gas supply system (FGSS) and partial regasification system (PRS). Our LPG carriers, built with eco-friendly and highly efficient technology, have set the industry's global standards for accurate delivery and first-rate technological prowess. With about a 20% share, Hanwha Ocean ranks No. 1 in the world for VLCCs (Very Large Crude Oil Carriers) in operation. We have also built special tankers, such as shuttle tankers and oil carriers with differentiated technology. All of our tankers are next-generation eco-friendly vessels, featuring high-efficiency engines and the latest fuel-saving technology, which meet environmental regulations set by the International Maritime Organization (IMO). Since winning an order from Maersk in 2011 for 20 Triple-E class container ships with a capacity of 18,000 TEU, our ongoing technological advancements have given us the competitive edge to lead in the eco-friendly mega-container ship market.

In the field of offshore plants, we specialize in developing and producing advanced facilities and platforms optimized for harsh marine environments by using the best available production systems and facilities. Combining our expertise in LNG production, refining, and transportation, we built and delivered the world's first FLNG facility for Petronas. We provide one-stop solutions for top and bottom

Hanwha Ocean icebreaking LNG carrier





Transocean drillship

structures, including Floating Production, Storage, and Offloading (FPSO) and fixed platforms as well as produce cutting-edge drilling equipment for offshore and deep-sea oil exploration, such as drillships and rigs, which open up new possibilities in related industries.

To ensure a dominant position in the fast-growing offshore wind power market, we are actively pursuing the ultra-large wind turbine installation vessel (WTIV) business. In 2022, we secured a WTIV order from Monaco-based Eneti and installed our cutting-edge eco-friendly technologies, such as the self-developed smart ship system (DS4). The vessel has received positive customer feedback and continues to generate interest from those within the industry.

Specialty ships in advanced defense technology represent another major business area in which Hanwha Ocean holds unrivaled experience. Our history of submarine construction goes hand in hand with that of South Korea's navy. After first building KSS-I (Korea Submarine-I) class submarines in the late 1980s, we

subsequently participated in the KSS-II (Korea Submarine-II) project. In August 2021, Hanwha Ocean became the first company in South Korea to fully design, build, and deliver a submarine: the KSS-III (Korea Submarine-III) Dosan Ahn Chang-ho, which solidified our position in the field. With the ability to develop core submarine technologies, we were able to advance into the global market. In 2004, we successfully completed an Indonesian submarine overhaul project, and, in 2021, won the bid to deliver three new Indonesian navy submarines, making South Korea the world's fifth largest submarine exporter. We have also played a pivotal role in upgrading the South Korean navy's combat vessels by delivering two next-generation vessels with advanced technologies, FFX (Future Frigate eXperimental) Batch II frigates. Capitalizing on this experience, we have expanded internationally, delivering frigates to the Bangladesh navy and the Royal Thai navy, and provided logistics support ships to the United Kingdom and Norway. With the strongest track record as a shipbuilder in South Korea's defense sector, and by leveraging its know-how and technological capabilities, Hanwha Ocean is on course to become a dominant player in the global maritime defense industry.

Moving forward, Hanwha Ocean is committed to utilizing advanced technology to provide solutions that will drive change and help the world fight climate change. We will work to usher in a new era for the industry by extending the reach of digital transformation into our shipyards, bringing to life smart yards, and delivering low- and zero-carbon solutions that can power the energy transition. In addition to improving our competitive edge in the LNG carrier business, we will pioneer future markets and help realize carbon neutrality by developing eco-friendly vessels equipped with green ship solutions, such as high manganese steel tanks and rotor sails; creating new types of ships to carry LCO2 (liquified CO2), LH2 (liquified H2), and LNH3 (liquified NH3); developing zero-emission ships; and leading the market for next-generation offshore wind turbine installation vessels. We will also continue to strengthen our core competitiveness by creating autonomous cargo ships that run on smart ship platforms with autonomous navigation, among other innovations. By focusing on eco-friendly and smart digital technology, Hanwha Ocean will deliver new value to its customers and be at the forefront of transforming the ocean and marine energy ecosystem to one that is sustainable for future generations.



## Aerospace

# Hanwha Systems

[www.hanwhasystems.com](http://www.hanwhasystems.com)

2022 Total Sales

1,694 In USD millions

2022 Total Assets

2,423 In USD millions

### EXPERTISE

#### Defense:

ISR (Intelligence, Surveillance, Reconnaissance), C5I (Command, Control, Communication, Computer, Cyber and Intelligence), land and naval systems, aerospace, ILS (Integrated Logistics Support)

#### ICT:

System integration, application management, infrastructure management, cloud management, system management, IT solutions, blockchain, AI (Artificial Intelligence), cloud computing, smart factory

#### New Business:

UAM (Urban Air Mobility), electronically steerable antenna



KF-21 AESA radar

As a global total solutions company, Hanwha Systems provides differentiated smart technologies by leveraging synergies with advanced defense electronics and future-ready ICT technologies. In addition to our world-class expertise in defense electronics, we also provide state-of-the-art IT services, such as AI, big data, blockchain, cloud services and more, to lead digital innovation across a range of industries.

Our Defense Division, recognized for significantly advancing South Korea's military defense capabilities, has been exporting defense technologies, such as ISR, C5I, land and naval systems, aerospace and ILS. In 2022, highlighting our global expansion, we signed an agreement with the United Arab Emirates to export USD 1.03 billion worth of multifunctional radars (MFRs) to be mounted on the Cheongung-II MSAM (Medium-Range Surface-to-Air Missile) Systems.

In surveillance and reconnaissance systems, we provide electro-optical systems, such as infrared detection and tracking devices, while also participating in defense programs to develop advanced radars such as KF-21 AESA (Active Electronically Scanned Array) radar and L-SAM MFR (Long-Range Surface-to-Air Missile Multi-Function Radar). We're also developing new multifunction radars to complement our next-generation combat systems, such as FFX Batch-III.

Our C5I (Command, Control, Communication, Computer, Cyber and Intelligence) business has successfully developed and delivered the next-generation TICN (Tactical Information Communication Network) as well as the next-generation MILSATCOM (Military Satellite Communication) Systems. As a dominant player in this field, we intend to further develop C5I and tactical information communications systems that provide hyperconnected, intelligent solutions.

In the naval arena, our main product is CMS (Combat Management System), which combines various sensors, weapons and communications systems to act as the "brain" for naval vessels. We utilized our in-house technologies to locally develop and manufacture these systems. Currently, we are the sole supplier of CMS for the ROK (Republic of Korea) Navy. Our CMS is used for a full range of ROK Navy vessels, including surface and underwater vessels, fast battleships, large amphibious assault ships, training ships, destroyers, frigates and submarines.

In aerospace, Hanwha Systems provides electro-optics and infrared payloads for mid-to-large-sized satellites as well as synthetic aperture radar (SAR) payloads for military reconnaissance satellites. That gives the military forces near real-time surveillance and high-resolution images of the Korean Peninsula and surrounding areas. These cutting-edge technologies define us as a true leader in the new space era. We're also developing core equipment for the KF-21 Boramae fighter jet by leveraging our technologies in developing mission sensors, mission computers, displays and survival systems.

In land systems, Hanwha Systems provides the integrated electronics platform system (IEPS), which is called a "brain" that can maneuver and fire air defense



ICT big data center

Butterfly, a UAM vehicle

weapons systems while maximizing capabilities in ground battlefields. We are developing a platform that enhances each combatant's mission performance by applying advanced technologies to individual gears as well as to remote control solutions, a key to operating unmanned ground systems. To help the Army maximize fighting strengths, we will offer hyperconnected, automated, intelligent and unmanned land systems solutions.

Our ICT Division is delivering customized solutions to meet specific customer needs in various industries by utilizing core technologies of the Fourth Industrial Revolution. Hanwha Systems is demonstrating differentiated capabilities not only for cloud-based data analysis but also for smart factories and financial IT systems, powered by big data, the cloud, ITO/IDC and business-specific solutions. We will lead the digital transformation of the industry by diversifying our business into blockchain and metaverse technologies using our advanced ICT services tailored for different sectors.

In addition, we are securing future growth engines by investing in overseas companies with advanced technology. For example, in partnership with Overair, a US company, we are developing Butterfly, a UAM vehicle, while extensively exploring opportunities to offer total solutions for future mobility.

Through our collaboration with OneWeb, a UK company, we secured Low Earth Orbit (LEO) satellite communications technology. We also established Hanwha Phasor, which designs enterprise-grade antenna for on-the-move satellite communications, whether in flight, on land or at sea. We are expanding our business with the goal of building multilayered, hyperconnected communications systems.

By connecting all platforms on land, sea, air, space and cyber space using super-intelligence as well as hyperconnected and super-convergence technologies, Hanwha Systems will continue to grow into a global provider of defense electronics and ICT smart solutions that bring humanity a more prosperous and safer world.





## Aerospace

# Hanwha Vision

[www.hanwhavision.com](http://www.hanwhavision.com)

2022 Total Sales

776 In USD millions

2022 Total Assets

549 In USD millions

### EXPERTISE

Video surveillance solutions



NVR (Network Video Recorder) products for real-time monitoring

Established in 1990, Hanwha Vision's advanced video and analysis technology has propelled it into a global leader in video surveillance. By applying our experience and subject matter expertise to product development, we have created a complete line of security solutions that provide safety and comfort to our customers, from cameras and recorders to storage devices, integrated management software and accessories. Our products are designed to meet every application across a range of areas, including residential, urban and commercial facilities.

Along with our proprietary optical technology, we are ready to lead global markets with world-class optical design, manufacturing and image-processing technology, such as superior SoC (System on Chip) chipset technology, intelligent image analysis AI camera technology and cyber security platform technology. We strive to enhance customer-tailored AI solutions capabilities. We are also focusing on developing new technologies and solutions that can spearhead changes in residential and industrial paradigms while meeting customer needs, such as convergence technology for AIoT platforms and edge device technology for open platforms.



Wisenet P Series products

By banking on our years-long core experience and competencies, we maintain the largest share of the South Korean video surveillance market. Our plants are located in South Korea and Vietnam. With these existing sites as footholds for global sales and marketing, we rank the fifth in worldwide market share (excluding China).

Moving forward, we will further expand our global market share by focusing on ten strategic markets. We will continue to build a sustainable, high-profit business structure by advancing differentiated edge AI performance. In addition, we are focused on securing our capabilities as a solutions provider by preparing integrated solutions to industry-specific demands, such as from smart retail, smart factory and smart city, while we expand our business to cloud platform-based subscription services. Our continuous technology development and product innovation optimized for customer needs will guide us to become the world's best vision solutions company.

## Aerospace

# Hanwha Precision Machinery

[www.hanwha-pm.com](http://www.hanwha-pm.com)

2022 Total Sales

**401** In USD millions

2022 Total Assets

**284** In USD millions

### EXPERTISE

Precision machinery, automation equipment, software consultation/development

\* Hanwha Precision Machinery will be merged with Hanwha Corporation in 2023.



Learn more about Hanwha Precision Machinery's HM520W with this video.

A global machinery company, Hanwha Precision Machinery produced South Korea's first chip mounter, an automated PCB assembly machine. We are leveraging our deep subject matter expertise and continuous innovation to provide a comprehensive portfolio of ultra-precision manufacturing machinery, from industrial robots, semiconductor equipment and optical equipment to integrated software solutions. A dominant leader in the domestic market, we also operate five international branches to provide worldwide sales and technical support for customers, including in China, Vietnam, India, the US and Germany.

In industrial equipment, we produce Surface Mount Technology (SMT) equipment, such as chip mounters and screen printers, as well as semiconductor post-processing equipment and display manufacturing equipment with cutting-edge precision mechatronics. We're the top leader in SMT chip mounters and our mid-speed mounter is No. 1 in global market share and recognized for best-in-class technology and performance. We are increasing growth by providing differentiated manufacturing solutions to large-scale customers by expanding our product lineup from mid-speed to high-speed machines.

Our R&D focuses on operational solutions, such as automated control of smart factory equipment and prevention of machine failures. Our consistent efforts have developed differentiated technologies for production planning, automated model changes, remote control, predictive prevention and predictive maintenance. We will secure solutions for intelligent equipment and highly multifunctional future-ready manufacturing equipment solutions by enhancing software solutions.

In semiconductor equipment, we developed die bonders and flip chip bonders, key equipment for the packaging process, which we provide to leading semiconductor companies at home and abroad. To meet the industry's need to overcome the limitations of the front-end process with packaging technology for the back-end process, we continue to develop next-generation semiconductor assembly solutions. Our display manufacturing equipment is speeding entry into the next-

generation Mini/Micro LED display market by leveraging our high-productivity SMT equipment technology and high-precision semiconductor post-processing equipment technology.

Building on our expertise and improved technology over 50 years, our machine tools business commands a market technical advantage because we produced South Korea's first multitasking automated lathes and turret-type lathes. Our machine tools are custom-built to meet customer feature requirements and production lines. That has led us to capture the largest market share in CNC automated lathes in South Korea and to enter new markets worldwide.

As a leading global precision machinery company, we will continue to provide customers with a variety of advanced manufacturing equipment and solutions. In the mid- to long-term, we will transform into a manufacturing solutions specialist that provides optimal solutions for the manufacturing industry.



HM520 NEO, high-speed SMT chip mounter for a smart solution





# Energy & Materials

Hanwha Solutions  
Hanwha Energy  
Hanwha Impact  
Hanwha Power Systems  
Hanwha TotalEnergies Petrochemical  
Hanwha Advanced Materials  
YEOCHUN NCC

## Energy & Materials

# Hanwha Solutions

[www.hanwhasolutions.com](http://www.hanwhasolutions.com)

2022 Total Sales

10,576 In USD millions

2022 Total Assets

18,810 In USD millions

### EXPERTISE

#### Chemicals:

PE, PVC, CA, TDI, hydrogen tanks

#### Qcells:

Solar cells & modules, energy systems solutions, downstream activities, retail energy

#### Insight:

Renewable energy, city and smart industrial complex development (RE100, logistics, data center, etc.) premium real estate and content development

#### Q ENERGY:

Green-field and project development, construction and operation of green power plants - photovoltaics and on- and offshore wind power, energy storage and green hydrogen

\* Hanwha Solutions total sales and total assets are based on consolidated financial statements.



Chemical Division's R&D Center

Hanwha Solutions provides a range of solutions in several fields through differentiated technology and innovation. We are growing as a global leader by responding to climate change with smart eco-friendly energy solutions and customer-focused materials. We are committed to enriching the future with sustainable solutions for all.

Established in 1965, Chemical Division is a total solutions chemical company with streamlined production systems that offer Polyolefin (PO), Polyvinyl Chloride (PVC), Chlor-Alkali (CA) and Toluene Diisocyanate (TDI). As South Korea's leading petrochemical company, we dominate the nation's industry with high-quality PVC, CA and linear low-density polyethylene (LLDPE) that we offer at competitive prices. We are growing into a global green company by increasing product value, enhancing cost competitiveness and developing eco-friendly products.

In the PO business, we succeeded in producing LPDE for the first time in South Korea in 1972, and once again, in 1985, we were the nation's first to start producing high-

density ethylene vinyl acetate (EVA) and developed the nation's first wire and cable resin for power transmissions and distribution cables. We now produce adhesives for hygiene products and hydrogenated hydrocarbon resins.

Beginning with South Korea's first successful PVC production in 1966, our PVC business localized production of chlorinated polyvinyl chloride (CPVC) in 2016, improving the quality of our PVC. In 2014, we developed ECO-DEHCH, a premium eco-friendly plasticizer, another first in the nation. We are moving to expand our CA business in the global market while holding South Korea's No. 1 market share in producing chlorine and caustic soda. In the TDI business, we are increasing global competitiveness in the polyurethane business by localizing high-purity XDI, a raw material used for high-refractive lenses, as we were the second to develop the technology. We obtained three New Technology Certifications from the Korean Agency for Technology Standards for CPVC, ECO-DEHCH and XDI.

We continue to improve production efficiency and cost competitiveness while meeting growing demand for our products around the world with production bases in China, Thailand and Saudi Arabia. Our PVC plant, completed in 2011 in Ningbo city in China's Zhejiang province, is producing 360,000 tons of PVC each year with continuous improvements in the production process. In Bang Phli, Thailand, we built an alkali soluble resin plant with an annual production capacity of 17,000 tons. This facility serves as an important operational base as we expand into other Southeast Asia markets. In 2009, we signed a joint venture contract with International Polymers Company (IPC) a private petrochemical company in Saudi Arabia. In 2015, we achieved cost reductions and economies of scale as our joint venture with International Polymers Company (IPC) began to produce EVA and LDPE.

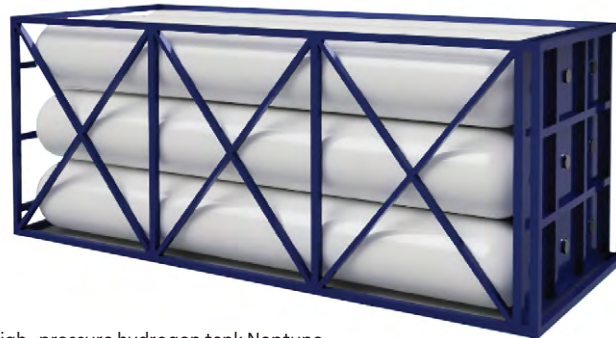
At the same time, our R&D Center is focusing on strengthening the competitiveness of existing businesses and advancing into new technologies. We partnered with three universities to set up research centers, including the Institute of Chemical Processes at Seoul National University, Yonsei-Hanwha Chemical Innovation Technology Center and the KAIST-Hanwha Chemical Future Technology Research Center. This significantly supported our commitment to top quality while



accelerating the pace of innovation in developing high value-added and eco-friendly products.

In addition, we are building a plant to produce high-purity cresol using our proprietary eco-friendly process and adsorption technology for gas separation. The plant is slated to begin operating in 2023. We plan to increase value in the industry by developing high-performance super engineering plastics such as PEKK (polyetherketoneketone) and specialty phthalic anhydride, which are used in carbon fiber composites for the aerospace industry, implants for the human body and high-performance small electronics components.

We are moving toward a circular economy system so decomposed plastic wastes can be recycled into naphtha, the raw material for petrochemical products, through carbon dioxide conversion. Our rPE material, made from recycled polyethylene sourced from waste plastic, has earned GRS certification, demonstrating our commitment to eco-friendly materials. This is part of our commitment to building a better environment for a better future. We established the Hydrogen Technology R&D Center to secure core technologies to respond to climate change and advance the net zero initiative. Through collaborative efforts with research institutes at home and abroad, we are focused on developing commercial-hydrogen production via water electrolysis. We are now poised to become a leading global company in the hydrogen energy market.



Type IV high-pressure hydrogen tank Neptune



Recognized as EUPD Research Top Brand PV in 2022

We've also helped to commercialize our hydrogen fuel cell technology by developing a hydrogen tank that uses an ultra-light composite material made of carbon fiber wrapped in high-strength plastic liner. Our specialized lightweight composite material technology offers manufacturing advantages, from small hydrogen tanks for drones to extra-large ones for hydrogen transportation and storage. In addition, we are accelerating expansion of our green hydrogen business through the acquisition of Cimarron, a US startup that possesses the world's best high-pressure tank technology.

Chemical Division is strategically providing materials and solutions to help solve the issues we face today. We aim to build a diversified and sustainable business structure to work toward this goal. While sharpening competitiveness by advancing the petrochemical business, we will actively respond to paradigm shifts, such as the move toward carbon neutrality, as we develop next-generation new businesses for energy storage and efficiency as well as electrical, electronics and functional materials.

Qcells Division is a complete energy solutions provider worldwide. With cutting-edge technology and excellent quality, we are leading the global solar industry

by providing the midstream of cells and modules to downstream solar solutions through ESS (Energy Storage System), power plants and energy retail. We operate manufacturing facilities in China, Malaysia, South Korea and the US. Our R&D headquarters is located in Thalheim, Germany and our R&D networks across China, Malaysia and South Korea collaborate to lead solar technology worldwide.

We are expanding cell and module plants at home and abroad. As of 2022, our annual cell production capacity is 10 GW and module production capacity is 12.4 GW. In the US, our large-scale expansion investments will result in a total module capacity of 8.4 GW by the end of 2023, giving us the largest capacity for silicon cell-based modules in North America. Electricity generated by that capacity will be able to power about 1.3 million homes for a year.

Our US solar production line will utilize polysilicon sourced from REC Silicon, a Norway-based US clean polysilicon manufacturer acquired by Hanwha Solutions. Beginning in 2024, our new plant will be fully operational, making us the only company in North America with a complete five-stage value chain production line that spans polysilicon to finished modules.

An experienced partner to clients across the value chain of renewable energy downstream projects, Q ENERGY Division provides holistic green energy solutions for renewable power plants in Europe. Headquartered in Berlin, Germany, Q ENERGY Division is comprised of the holding company Q ENERGY Solutions SE and two subsidiaries, Q ENERGY Europe GmbH (Berlin) and Q ENERGY France SAS (Avignon).

We offer more than 20 years of experience and more than 2 GW of successfully completed renewable energy assets. We operate an active development pipeline of approximately 14 GW of green energy projects in Spain, Portugal, France, Germany, the Netherlands, Italy, and the UK. Our portfolio covers photovoltaic and onshore and offshore wind power as well as large-scale energy storage projects. We are also planning green hydrogen projects. We provide expertise along the entire value chain of green energy projects: from green-field development, engineering,

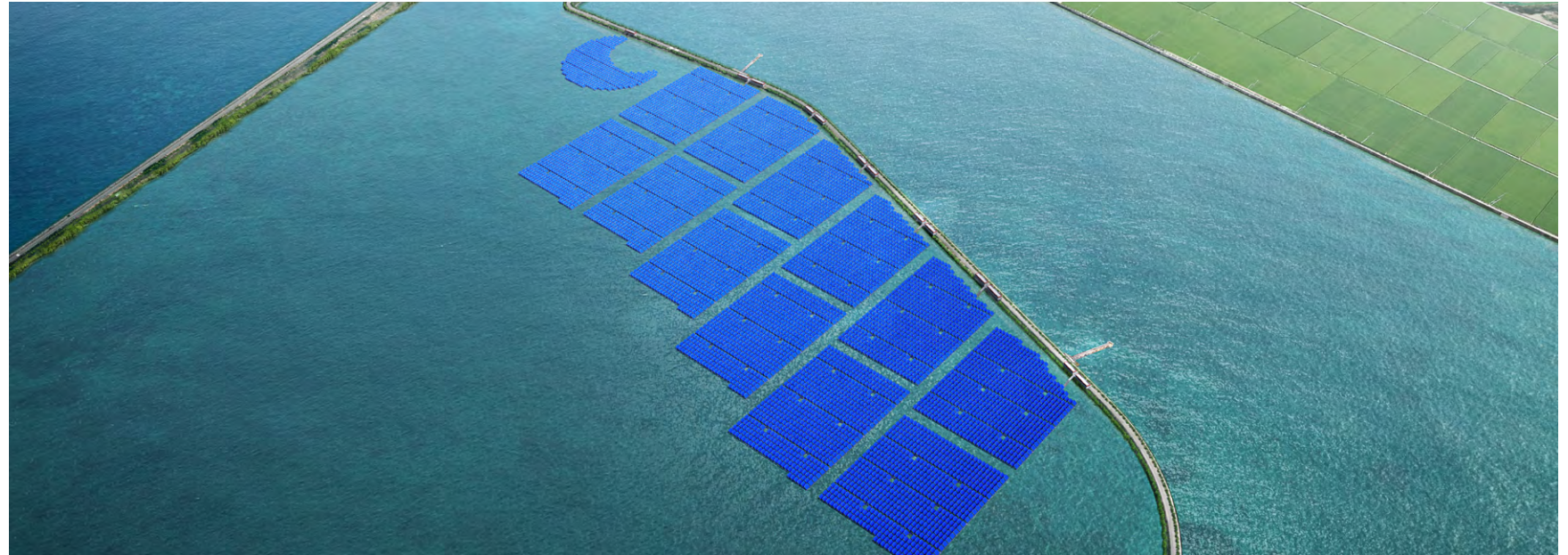


Finsterwalde Solar Park, Brandenburg, Germany

procurement, and construction (EPC) to operations and maintenance (O&M) and creating value for green energy investors to operating as an independent power producer (IPP).

To help propel Hanwha's growth, we combine the strength of a global player with the reliability of a trusted local partner. We aim to create value for communities and landowners, project developers and green energy professionals, investors and off-takers as well as for our employees and society.





Goheung floating solar power plant

Since it was established in 2001, Hanwha Solutions Insight Division has been recognized as the leading private developer of high-tech industrial complexes. By merging into Hanwha Solutions in 2021, we set a new foundation for enhancing business competencies and maximizing management efficiency. In January 2022, we renamed our division Insight Division from the City Development Division, while integrating Qcells Division's Korea Green Energy Solution business and Hanwha Galleria's premium lifestyle business. After reorganization, we are currently providing differentiated solutions through comprehensive development and financing for projects such as cities, smart green industrial complexes, renewable energy, premium real estate and premium content.

By leveraging the experience and knowledge gained from developing high-tech industrial complexes, the City Development Business offers regional development

models that provide forward-looking convergence and helps to revitalize local economies. With our success in Daedeok Techno Valley, additional projects followed, such as the Asan Techno Valley project, the Seosan Techno Valley project, the Gimhae Techno Valley project, the Gyeonggi Hwaseong Bio Valley project and Yongin Techno Valley. We are now following up with projects such as Anseong Techno Valley, Seoochang Techno Valley, a 2nd Yongin Techno Valley as well as Hwaseong H-Techno Valley, Ulsan KTX Station Area Complex, Changwon Pungho-Jangcheon Urban Development and Anseong Smart Logistics Center Development. We will continue to develop large-scale complexes that contribute to local economies by improving the industrial environment, attracting companies and creating jobs.





Gimhae Techno Valley

Jade Garden

With the nation's highest EPC (Engineering · Procurement · Construction) capabilities, our Energy Solution business presents an eco-friendly total energy solution that develops, invests in and constructs solar power while helping to achieve the goals of RE100, a nonprofit global renewable energy initiative. We are growing into South Korea's No. 1 energy supplier with utility-level EPC business, such as the nation's largest scale Hapcheon floating solar power plant, Goheung floating solar power plants, Tae'an Anmyeon Clean Energy as well as domestic salt farm parallel solar power system development. We will contribute to achieving RE100 and revitalizing local economies by developing business models that include local residents.

In the Premium Lifestyle business, we are an integrated developer that plans, develops and operates a luxury lifestyle platform focused on premium residential

and recreational facilities. After acquiring the transfer of business rights from Hanwha Hotels & Resorts in 2022, we have begun the process of renewing Jade Palace, the prestigious membership golf clubs in Chuncheon and Jade Garden. We are also developing a nearby private villa complex. In addition, we are promoting various kinds of premium development projects, such as vacation homes, private villas and residences in downtown areas and resorts at home and abroad, including luxury condos in Niseko, Japan's well-known ski resort, scheduled to open in 2023.

Moving forward, the Insight Division will focus capabilities on ongoing projects for urban development, the Energy Solution salt farm parallel solar power development and Niseko condos and Jade Villas. We plan to continually discover new businesses to secure mid- to long-term growth engines.





## Energy & Materials

# Hanwha Energy

hec.hanwha.co.kr

2022 Total Sales

3,042 In USD millions

2022 Total Assets

8,934 In USD millions

### EXPERTISE

Cogeneration, renewable energy development, energy solutions development



Oberon 1A solar power plant in Texas, US

Beginning with a cogeneration business in 2007, Hanwha Energy has diversified its business portfolio—including with solar power, ESS and LNG—to evolve into a retail energy business that offers a comprehensive set of energy solutions. Our advanced technology is at the core of who we are and how we can develop eco-friendly, highly efficient global energy markets with a forward-looking global energy model.

We operate cogeneration plants to provide a stable supply of high-quality electricity and ultra-high-pressure steam to companies in national industrial complexes across South Korea. By providing readily available power, our plants improve the competitive advantage of our off-takers. Our energy solutions consistently comply with South Korean government requirements for energy efficiency and the reduction of greenhouse gas emissions. Our relentless pursuit of advances in technology continually improves our existing solutions while we also seek new ones.

To build sustainable growth, we are diversifying and building businesses overseas in solar power generation, retail energy and more. We also operate solar power plants in the US, Mexico, Japan, Vietnam, Malaysia and India, and are building additional solar power plants in Spain and Italy. In the US, we are the first South Korean company to successfully implement a business model that links solar power generation with a retail energy business. In Spain, we are operating retail solar energy and distributed energy solutions businesses for business and consumer customers. We are also developing solar projects in Australia. Since our entry into the solar power generation and retail energy markets, we are expanding into distributed energy solutions services.

At the same time, we are actively promoting an energy solutions business that suits each value chain of the electric power industry based on ESS. We are conducting solar energy-connected ESS businesses in the US and Mexico, and we plan to steadily expand solar businesses, beginning with ESS operation for frequency regulation (FR) in Ireland.

We are also pursuing the clean energy source of LNG as we look to future growth engines and new opportunities. In South Korea, we are building a plant in Tongyeong city—a 1GW LNG power plant. Once complete, we will supply the LNG needed to power the plant and launch LNG terminal rental businesses. Overseas, we're entering the gas-to-power market in Vietnam. To this end, we've formed a

consortium with Korea Gas Corporation and Korea Southern Power Company to build LNG plants and LNG terminal businesses in Vietnam.

We aim to become the world's leading renewable energy developer as we strengthen profitability in our cogeneration business, expand LNG business and sharpen competitiveness of solar and ESS businesses. In retail energy, we will provide differentiated services based on distributed energy solutions for each region. In addition, we will develop energy conversion technology, upgrade ESS and solar power technologies and secure digital and AI-based platform capabilities. Our diversified efforts will lead us to become the No. 1 global energy solutions provider.

Hydrogen fuel cell power plant



Yeosu cogeneration plant







## Energy & Materials

# Hanwha Impact

[www.hanwhaimpact.com](http://www.hanwhaimpact.com)

2022 Total Sales

1,594 In USD millions

2022 Total Assets

4,226 In USD millions

### EXPERTISE

Investments in eco-friendly energy, digital and data technology, biotechnology, PTA

Our company name—Hanwha Impact—encapsulates our vision of "creating a positive impact on people and the planet through technological innovation that leads to a sustainable future." As an investment company, we are embarking on a new journey focused on developing eco-friendly energy solutions and fostering future innovative technologies that will help us achieve our goal of creating a sustainable planet.

Hanwha Impact seeks to create a future in which humans and nature, reality and the virtual world all coexist, supported by innovative convergent technologies in several sectors, such as eco-friendly energy, digital and data technology as well as biotechnology. Along with eco-friendly energy and purified terephthalic acid (PTA) businesses, we secure sustainable technologies with business development and open innovation based on active M&A and strategic investments.

We are strengthening competitiveness by preemptively investing in technologies and companies. Our eco-friendly energy business continues to discover technologies and to perform demonstration projects that can be applied across the value chains of the hydrogen industry. In convergent technology, the combination of biotechnology—such as genetic engineering—with data utilization technology clearly shows breakthrough progress. By harnessing such technologies, we expect to enter or grow into promising businesses that create disruptive innovations in various industries. Our key investments currently include Inari Agriculture, a plant breeding technology company with gene editing technology; Catalog Technology, a DNA-based data storage solutions provider; and Tessera Therapeutics, a genome engineering technology company.

In the meantime, Hanwha's PTA business is a continuous profit center for the company. PTA was developed as a base material for polyester to replace natural cotton. It is now used as the primary component in many types of polyester owing to its superior resistance to heat, mechanical strength, water resistance, wear resistance and insulation compared to other products. The applications for PTA are expanding into uses other than clothing, such as PET resin, film, paint and industrial fibers. We will further strengthen our competitiveness by improving our PTA-related technologies and continuing to develop related businesses in the value chain.

Supported by our professional investment system and talent, we will expand investments in innovative technologies, businesses and companies that have a positive impact on humanity and the planet. We will create a sustainable future by developing technologies that accelerate the transition to a carbon neutral and eco-friendly energy society as we invest in forward-looking convergence technologies, such as biotechnology, AI and next-generation computing.



## Energy & Materials

# Hanwha Power Systems

[www.hanwhapowersystems.co.kr](http://www.hanwhapowersystems.co.kr)

2022 Total Sales

228 In USD millions

2022 Total Assets

302 In USD millions

### EXPERTISE

Industrial compressors, power generation solutions

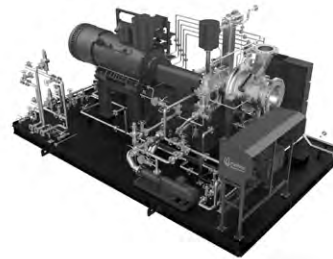
Established in 1977, Hanwha Power Systems launched an energy equipment business in 1997 by building on its reliable technology and deep experience in gas turbine engines. Since then, we've become a global powerhouse and have delivered more than 6,500 units of air and gas compressors worldwide. In 2017, we relaunched as an independent company and have achieved an operating surplus for four consecutive years through 2021, setting the foundation for stable growth. In October 2022, we were acquired as a subsidiary of Hanwha Impact.

In the compressor business, we utilized our proprietary design, production and testing capabilities to develop technology-intensive products, including industrial air compressors for various manufacturing processes; fuel gas compressors for power plants; and boil-off gas compressors and expanders for LNG carriers, terminals and plants.

We won the contract to supply the world's first marine Vapor Recovery Unit (VRU) steam recovery turbo compressor. We also won the contract to provide compressors for Floating Storage Regasification Units (FSRU) and LNG carriers. These machines allowed us to demonstrate our outstanding technology in the global market. Our compressors and expanders use core components developed in-house that permit them to operate with shorter lead times and better performance. Their high efficiency is a competitive advantage for our customers. In 2021, we were awarded a Nitrogen Refrigerant System (NRS) project for a Liquefied Natural Gas Floating Storage Unit (LNG-FSU) from Daewoo Shipbuilding & Marine Engineering, which led to being selected as the standard for NRS specifications and listed on the maker list.



Gas turbine for hydrogen combustion (501F\_PSM)



Turbo compressor for VRU (Vapor Recovery Unit)

We continue to grow in the power generation solutions market by developing eco-friendly and high-efficiency power generation systems, such as TEG (Turbo Expander Generator) and sCO2 Power Systems (Supercritical CO2). In 2021, we successfully completed the sCO2 Power Systems development project for the US Department of Energy (DOE) and passed tests for commercialization, preemptively securing solutions that can replace existing steam turbines in the distributed power generation.

With the goal of accelerating the transition to clean energy across our society and industry, we acquired hydrogen combustion technology companies. We now provide customers in the US and the Netherlands with solutions that retrofit the gas turbines of LNG-fired power plants so they run on up to 65 percent hydrogen fuel. Following the 2021 project for the Linden Cogeneration Plant in New Jersey, in the US, we won the order in 2022 from Uniper, one of the world's largest power producers, to retrofit their LNG gas turbines in Rotterdam, in the Netherlands. This transformational approach will help us move to a carbon neutral society. Recently, we teamed with Korea Western Power to develop technology that ramps up hydrogen content in gas turbines. We are working closely together to win the government's demonstration project for F-class gas turbine hydrogen combustion.

We are intent on building long-term partnerships as we rapidly expand sales, customer service and R&D networks around the world. We're strengthening our partnerships so we can provide better local customer service for our expanded product line. For example, we are working on securing vendor approvals from Saudi Aramco and other major clients in the Middle East and Asia. At the same time, our Houston R&D Center in the US is accelerating co-development efforts for innovative projects on a global scale. One of these joint development projects is to build a sCO2 Power Systems with the Southwest Research Institute (SwRI), an independent R&D nonprofit group based in Texas, in the US.

Looking ahead, we plan to further strengthen the competitiveness of our existing businesses and expand into new areas, such as developing a product lineup for eco-friendly ships and successfully implementing the sCO2 projects. In addition, we will become a global leader in power and energy solutions by using future engineering technology that helps the green environment.





## Energy & Materials

# Hanwha TotalEnergies Petrochemical

[www.htpchem.com](http://www.htpchem.com)

2022 Total Sales

10,837 In USD millions

2022 Total Assets

5,942 In USD millions

### EXPERTISE

Ethylene, propylene, butadiene, EO, EG, SM, PX,  
PE, EVA, PP, gasoline, diesel, jet fuel, LPG, solvents



Daesan plant

**Hanwha TotalEnergies Petrochemical** is a comprehensive material and energy company that produces high value-added chemical and energy products. Since it was founded in 1988, we have led the growth of the petrochemical business in South Korea through technological innovations and by successfully executing a market expansion strategy. In 2003, we began building the foundation to become a global multi-material and energy company. We executed that plan by forming a joint venture with the **TotalEnergies Group**, a major French company in the energy and chemical industry. Since then, we have continued to lead South Korea's petrochemical market and grow as South Korea's leading company through product innovations, strategic diversified investments and economies of scale.

Our product portfolio includes monomers, such as ethylene, propylene and butadiene. We also produce base chemicals like styrene monomer, paraxylene and ethylene glycol. With 20 plant units in the Daesan Petrochemical Complex, we can produce a wide range of products needed for energy, from gasoline, diesel, jet fuel and liquefied petroleum gas to polymers such as polyethylene, propylene and EVA.

We are the first company in South Korea to operate a naphtha-cracking center (a core facility in our petrochemical plant), a condensate fractionation unit (a refining facility) and an aromatics plant, all in a single complex. This complex represents a successfully organized vertical integration system—from sourcing to producing to distributing final products. The efficiency we've achieved with this system allows us to diversify our business portfolio and pursue stable growth.

Annually, we now produce 1.53 million tons of ethylene, 2 million tons of paraxylene, 1.04 million tons of styrene monomer and 1.12 million tons of polypropylene. In 2020, as part of expanding our high value-added products, we built an additional plant for ultra-high molecular weight polyethylene used as a secondary battery separator, which secured an annual production capacity of 140,000 tons.

Our market dominance is built on a solid foundation, Globally, we hold the No. 1 market share in numerous markets, including solar grade EVA; HDPE used in bottle caps; EVA used in extrusion coating; flow mark free polypropylene (FMF PP) used in automotive composite materials; high isotactic polypropylene (HIPP) used in electronic applications; and protective polypropylene films for display products.

These products have been recognized as World Class Products by South Korea's Ministry of Trade, Industry and Energy.

To grow into a global leader in the material and energy industries, we plan to optimize operations by diversifying our raw materials. We will also strengthen high value-added products as we focus on expanding markets in the energy business. We expect to realize our vision by increasing sales of high value-added products and diversifying in the polymer business while boosting eco-friendly businesses by developing eco-friendly materials and technologies. Moving forward, in order to enhance our global competitiveness, we remain committed to leveraging synergies between our company and Hanwha Group's chemical and energy affiliates.

Daesan plant





## Energy & Materials

# Hanwha Advanced Materials

[www.hwam.co.kr](http://www.hwam.co.kr)

2022 Total Sales

409 In USD millions

2022 Total Assets

473 In USD millions

### EXPERTISE

Automotive materials, solar materials

\* The total sales mentioned above represent the combined sales of Hanwha Solutions' Advanced Materials Division from January to November 2022, and the sales of Hanwha Advanced Materials in December of the same year. These sales figures exclude any sales related to electronics, hydrogen, or other products.

Founded in 1965, Hanwha Advanced Materials has developed an innovative line of environmentally conscious products and technologies that meet the needs of our customers around the world. We developed local production plants and R&D centers in South Korea, the US, Europe and China. In December 2022, we were spun off from Hanwha Solutions to enhance our business expertise and operational efficiency. With our lightweight composite materials and solar materials, we are recognized as a global advanced materials specialist.

Since entering the automotive materials business in 1986, we have launched a diverse portfolio of products for automobile structures and interiors. We now utilize original technologies to build high-strength, super-lightweight materials and parts. Our product line includes: StrongLite (Glass fiber Mat reinforced Thermoplastics), SuperLite (Lightweight Reinforced Thermoplastics), Expanded Polypropylene (EPP), Sheet Molding Compound (SMC), Long Fiber Reinforced Thermoplastics (LFT) and Continuous Fiber Reinforced Thermoplastics (CFRTPC). As the only company in the industry that produces multiple types of materials and molded products, we are well prepared to provide various components and solutions.



Lightweight composite materials for automotives

Being a global supplier, we have manufacturing factories in Alabama and Virginia in the US; in Beijing, Shanghai and Chongqing in China; in the Czech Republic in Europe; and in Mexico in North America. We are a major supplier to global automakers, including Hyundai, Kia, BMW, Daimler, Volkswagen, GM, Ford and Toyota. With superior technology and quality, our StrongLite and SuperLite materials claim to have the highest market shares worldwide in their respective categories.

To lead the changing industry as the automotive market emphasizes the lightweight trend, Hanwha Advanced Materials is continuously strengthening our R&D system. We are focused on researching thermoplastic and thermosetting composite materials, as well as designing and developing new applications. We are also developing new materials and manufacturing methods to offer improved functionality and innovative plastic hybrids that represent the latest technologies in the market. Currently, we are tracking the transition in the automotive market as smart cars and electric vehicles take larger roles. With specialized technology capable of designing various physical properties, such as high strength, ultralight weight and eco-friendliness, we are in strong position to expand into new businesses.

In solar materials, we have secured a stable market chain in the supply of raw materials sales with our vertical integration and Hanwha's solar value chain. With production knowhow gained from three decades of experience, we have developed independent technology to produce EVA sheets and backsheets for modules as we expand our market into Europe, America and Southeast Asia. Being the only company capable of producing large-scale products using the Calender and T-Die method, we are demonstrating outstanding performance in the global market.

Hanwha Advanced Materials will expand businesses by growing in the North American market and becoming an inimitable global No. 1 company in the high-performance lightweight composite materials business.

## Energy & Materials

### YEOCHUN NCC

[www.yncc.co.kr](http://www.yncc.co.kr)

2022 Total Sales

5,311 In USD millions

2022 Total Assets

2,640 In USD millions

#### EXPERTISE

Petrochemical feedstock production



Aerial view of the plants

Plant 1

**YEOCHUN NCC** operates the world's leading naphtha-cracking facility in the Yeosu National Industrial Complex. Built in 1999, the facility is located on the southern tip of the Korean Peninsula. We are a fifty-fifty joint venture of Hanwha and DL, the two South Korean conglomerates that own naphtha-cracking facilities. Supported by a steady flow of investments, product specializations, facility expansions and intense business focus, we are one of the top Naphtha Cracking Center (NCC) companies in the world.

Our technologically advanced facility has large-scale production capacities that annually produce 2.29 million tons of ethylene, 1.29 million tons of propylene and 6.20 million tons of various base chemicals, including benzene, toluene, xylene,

styrene monomer and butadiene. With fully automated and optimized processes producing high-purity feedstocks, this state-of-the-art facility gives Hanwha affiliates a competitive edge in producing high-quality downstream petrochemical products.

We attribute our improvements and growth each year to loyal customers, a sophisticated management system and a sound financial structure. Additionally, our professional and highly skilled employees effectively combine industry expertise with cutting-edge technology, truly making our workforce a key differentiator. We are extremely focused. As we continue to improve our capabilities, expansion will propel us around the globe.





# Finance

- Hanwha Life
- Hanwha General Insurance
- Hanwha Asset Management
- Hanwha Investment & Securities
- Hanwha Savings Bank
- Hanwha Life Financial Services
- Carrot General Insurance

## Finance

# Hanwha Life

[www.hanwhalife.com](http://www.hanwhalife.com)

2022 Total Sales

16,406 In USD millions

2022 Total Assets

100,063 In USD millions

### EXPERTISE

Life insurance, mortgage and personal loans, trust, fund, retirement pension



Hanwha Life

Established in 1946, Hanwha Life is not only a leading South Korean life insurance company but also the first and oldest in the nation. For the past 76 years, we have played a critical role in developing the industry and the country's economic growth. In 2022, we ensured our sound structure, reporting total assets of USD 100.06 billion as we are committed to adding innovative products and services that meet a wide range of customer needs.

In the insurance business, we introduced a business model that separated products and services, which led to a subsidiary, Hanwha Life Financial Services, in 2021. Our bold challenges and innovations in launching South Korea's first subscription insurance products for daily benefits and variable insurance fund digital management services, which rely on an AI robo-advisor, are leading the industry. We plan to further maximize our sales competency and efficiency by strengthening product development and digital business support capabilities.

New business is contributing to digital innovation and the growth in value as we achieve the No. 1 digital experience in sales channels and marketing platforms while identifying new opportunities. In addition, we are exploring a range of life care solutions to make customer lives enriched and more comfortable.

In investments, we seek to increase the return on investments by continually discovering high-yield investment targets centered on alternative investments. We are also implementing management innovation while thoroughly responding to any risks. In preparing for a new business performance disclosure system, we are increasing the contractual service margin for new insurance, securing a stable risk-based capital (RBC) ratio under the new Korean Insurance Capital Standard and strengthening ESG management.

Upgrades to our customer, product and channel (CPC) strategy are customizing products and services that solidify our LIFEPLUS brand. We are also innovating offerings that align with customer life stages. Using big data to analyze customer



Learn more about Hanwha Life brand with this video





LIFEPLUS, the co-brand of several Hanwha financial affiliates that helps customers find ideal life balance

A Founders Lounge of DREAMPLUS, the startup accelerator launched by Hanwha Life

needs, behavior and interests, we systematically apply deeper knowledge to better satisfy customers. In addition, we are promoting a consumer-oriented organizational culture and continuously improving consumer-centered systems and processes. Our efforts have been rewarded with Certifications for Excellence in Consumer-Centered Management (CCM) in 2021. Since our first certification in 2007, the Korea Fair Trade Commission has awarded eight consecutive certifications to Hanwha Life.

We're committed to helping our subsidiaries in their local markets around the world. We provide all the support necessary for subsidiaries to improve competitiveness and succeed. In our Vietnam subsidiary, for example, we implemented an effective localization strategy and strengthened its nationwide sales network. As a result, the Vietnam subsidiary became a success story, achieving profitability—a first for a

South Korean insurer in Vietnam. In China, our subsidiary Sino-Korea Life Insurance is planning more thorough localization and digital-based growth. In Indonesia, our subsidiary is building a balanced profit structure that is adding value to growth and an increase in market share. Moving forward, we are setting the foundation to establish us as a comprehensive financial solutions provider across major Asian hubs. We will promote digital financial products as we pursue future growth engines.

Hanwha Life will continue to strengthen responsible management as we also secure competitiveness. We will set the foundation for sustainable growth by expanding global business and upgrading digital capabilities that fuel future growth engines.



## Finance

# Hanwha General Insurance

[www.hwgeneralins.com](http://www.hwgeneralins.com)

2022 Total Sales

6,214 In USD millions

2022 Total Assets

15,933 In USD millions

### EXPERTISE

Long-term insurance, automobile insurance, general insurance, mortgage and personal loans

Established in 1946, Hanwha General Insurance is the first South Korean insurance company entirely funded by domestic capital. Through the decades, we've played a pivotal role in developing South Korea's general insurance industry. Today, we're a major insurer with total assets of USD 15.93 billion (as of the end of 2022). We emphasize advanced services to enhance customer value and offer a comprehensive product portfolio, ranging from long-term insurance to auto and general insurance.

We are building a risk-based management structure, improving our long-term insurance loss ratio, improving the compensation process and increasing high yield, higher value contracts. By identifying diverse, stable bonds and alternative investments at home and abroad, we are posting healthy financial growth.



Our priority is always our customers. We created a Consumer Protection charter. We also expanded the authority of our customer service center to ensure improved customer value and consumer protection. In addition, we offer a variety of services for customers who may prefer more conversational interactions, including live video chats, conversational AI chatbots and simple payment request services for long-term insurance.

Our efforts to improve customer services were certified by the Korea Service Quality Index as an excellent call center for eight consecutive years in 2021, achieving a record of 14 certifications in total. In 2022, we were awarded the Certification for Excellence in Consumer-Centered Management (CCM) for the eighth consecutive time.

In addition, we were the first South Korean insurer to introduce an electronic signature system, making it easier for customers to complete transactions from mobile devices. In 2019, we launched Carrot, South Korea's first all-digital platform for non-life insurance products, in keeping with our development of new digital businesses in the industry. By consistently upgrading our mobile access, such as the Smart Insu app for long-term insurance, and Smart Chadori, an app for auto insurance, we have attracted the more than 1.5 million customers who have installed both applications.

Hanwha General Insurance will continue to strengthen its core insurance business competencies while solidifying stable profit and actively advancing digital innovation. We plan to enter new businesses, such as healthcare services, to develop overseas markets and to create new customer values as we grow as a non-life insurance company.



## Finance

# Hanwha Asset Management

[www.hanwhafund.co.kr](http://www.hanwhafund.co.kr)

2022 Total Sales

109 In USD millions

2022 Total Assets

1,094 In USD millions

### EXPERTISE

Collective investment fund, discretionary investment



Founded in 1988, Hanwha Asset Management has grown into a comprehensive asset management company offering a full range of financial instruments, including stocks, bonds, MMFs, fund of funds, social overhead capital, derivatives, real estate, ETFs, special assets and PEFs in both domestic and overseas capital markets. Our professional staff have unparalleled expertise in operating highly organized systems across all areas, including product development, research, compliance and risk management. All of our products and services cater to customer needs because we strictly adhere to the principle and management philosophy of placing customers above all else. Building on our capabilities in South Korea, we are growing into a global asset management company by operating local subsidiaries in the US, Singapore and China.

At the end of 2022, we were one of South Korea's top asset management companies with USD 78.63 billion in assets under management (AUM). By demonstrating our outstanding expertise in both alternative investment and traditional investment, we achieved the No. 1 position among comprehensive asset

management companies in the overseas infrastructure investment fund category. In 2021, as part of expanding into digital finance, we launched the PINE app, a platform for direct sales of funds for individual investors. The app has gained recognition from investors, particularly Millennials and Generation Z, for its user-friendly interface, low sales commission, and valuable investment information. Additionally, we have obtained a REITs AMC license from South Korea's Ministry of Land, Infrastructure and Transport, and entered the REITs business in the first quarter of 2023.

These diverse efforts earned us the Best Overseas Equity Fund at the 2022 Korea Fund Awards by Money Today news media, the Top Prize in global bonds at the 2021 KG Zeroin Korea Fund Awards and the Grand Prize in real estate funds at the 2021 Herald Fund Awards of the Korea Herald news media. Looking ahead, we will continue to build the foundation for future growth with a focus on the retirement plan market and alternative investments. We are also actively promoting global businesses and digital financial platforms as we become a comprehensive asset management solutions provider and top-tier asset management company in Asia.

## Finance

# Hanwha Investment & Securities

[www.hanwhawm.com](http://www.hanwhawm.com)

2022 Total Sales

1,595 In USD millions

2022 Total Assets

8,769 In USD millions

### EXPERTISE

Securities brokerage and underwriting, asset management



Established in 1962, Hanwha Investment & Securities provides comprehensive asset management services, including brokerage and acquisition of stocks, bonds and derivatives, as well as sales and asset management services for various financial products. With our differentiated systems and high-quality talent, we have successfully established ourselves as a reliable asset management partner. Our financial products and customer-oriented services are offered domestically and overseas. We are dedicated to providing sources for stable and diversified income even in the rapidly changing financial environment of digital transformation. In 2021, we achieved record-breaking performances in operating profit and net profit with a significant increase in capital, further improving our foundation for growth. In wealth management, we provide professional total asset management services. At 12 financial centers across South Korea, we support regional-specific sales and customer management with prompt decision-making. Our strategic marketing as well as digital platforms and content attract Millennials and Generation Z while expanding our VIP customer base. Our trading division continues to diversify its income structure, while we quickly respond to the rapidly changing financial environment to improve profitability. We are also improving our operating infrastructure and risk analysis system to secure stable growth. Our wholesale business focuses on domestic and international institutional investors and corporate clients by providing investment information and brokerage services

for stocks, bonds, derivatives and other financial products. Our expertise is well recognized as we received high grades from major institutions in 2021. As we sharpen our competitive edge, we will continue to grow by expanding global business and diversifying trading products.

We are expanding our investment banking business to include domestic and international corporate finance, real estate investment and infrastructure investment in overseas regions such as Japan, the US and Europe. We will further widen our business scope with global ESG investment and overseas alternative asset investment. Hanwha Investment & Securities continues to build its digital financial platform to provide differentiated products and services that respond to digital transformations and trends. In addition, we are actively promoting partnerships with, and investments in, Fintech companies to spur future growth engines. After introducing our investment app STEPS, then the industry's first facial recognition technology to open accounts, in 2022, we launched the 1 Dollar Shop, a fractional trading service that lets small investors easily invest in overseas stocks. In alliances with PAYCO and Woori Bank, we expanded our fintech business. Responding to the changing digital environment, we acquired stakes in Dunamu, a blockchain startup operating South Korean cryptocurrency exchange UPbit, and Toss Bank, an Internet banking operator. As part of expanding global operations and securing new growth engines, we officially launched a Vietnam subsidiary, Pinetree Securities Corporation, in December 2019, which achieved an earnings surplus only two years after launch. Designed to deliver a digital financial platform that offers competitive products and services, Pinetree Securities Corporation launched Stock 123 and AlphaTrading apps, offering quick, easy and practical information about stock trading. The company also introduced e-KYC (electronic Know Your Customer) using facial recognition technology, which received a great response from customers. Our Singapore subsidiary, established in 2020, is also widening our global business by identifying promising new alternative investment opportunities and unlisted companies in Southeast Asia. Our business motto is "To provide financial solutions for wealth and life" for our clients, shareholders and employees with sustainable products that yield stable profitability. As a trusted and financially stable company with expertise in a range of industries, we are confident we can build a better future for our customers.



## Finance

# Hanwha Savings Bank

[www.hanwhasbank.com](http://www.hanwhasbank.com)

2022 Total Sales

70 In USD millions

2022 Total Assets

1,274 In USD millions

### EXPERTISE

Deposits, commercial and personal loans

Founded in 1997, Hanwha Savings Bank joined the Hanwha Group in 2008 and has since grown into one of the most stable savings banks in the industry. Always putting customers first, we strive to protect customer assets and provide high returns.

Exceeding USD 789.27 million in assets in 2020, we then achieved USD 1.27 billion in assets in 2022, maintaining excellent profitability and a sound financial structure. We also found success by extending the fundamental roles of microfinance institutions and supporting small- and medium-sized businesses that show solid potential. Specifically, we develop new products, identify niche markets and pursue growth in both sales and profitability through systematic risk management.

We offer differentiated services in corporate business loans, such as business lines of credit, secured loans, PF, ABL, and NPL, by relying on our experienced sales teams and highly disciplined management. We are also preparing for digital transformation in the rapidly changing financial environment as a digital banking operator. We launched the "Mymo" app in October 2022 as part of our innovations in providing customized digital services to Gen Y (Millennials) and Gen Z customers as well as to business owners.

Mymo, short for "My Money," is the first app in the industry to feature a "self-managed loan service," which enables customers to reduce interest rates on their own. The app also offers convenient benefits for interest rate reductions as customer credit scores improve. In addition, we aim to provide exceptional financial services to our customers by introducing products tailored to customer lifestyles, including for the needs of Millennials and Gen Z.

Going forward, we will grow as a top-notch leader in the savings bank industry by enhancing fundamental business capabilities, nurturing digital retail businesses, upgrading corporate finance services, expanding business areas and discovering next-generation new businesses.



Launch of the Mymo app

## Finance

# Hanwha Life Financial Service

[www.hanwhalifefs.com](http://www.hanwhalifefs.com)

2022 Total Sales

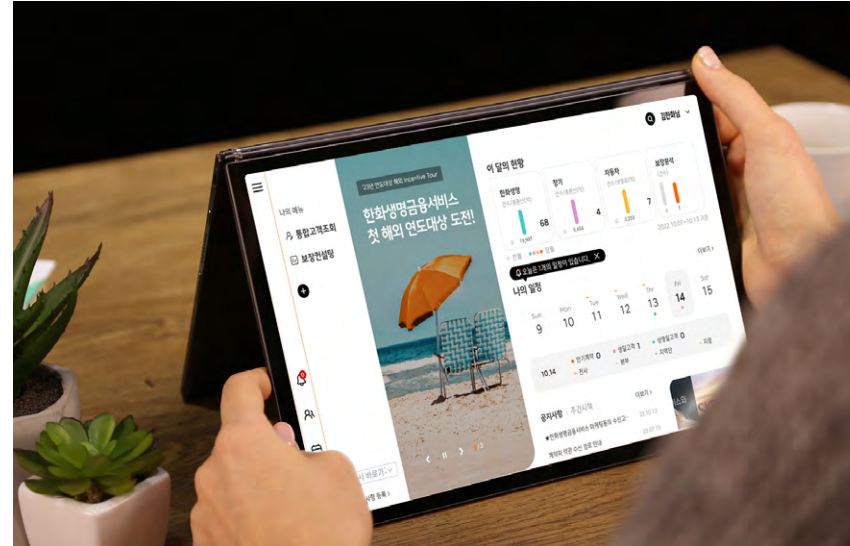
698 In USD millions

2022 Total Assets

868 In USD millions

### EXPERTISE

Insurance agency business, life and general insurance products



Launched in April 2021, Hanwha Life Financial Service was spun off as an insurance sales company from Hanwha Life's Personal Sales Division. We have more than 500 sales organizations and 10,900 financial planners, positioning us at the time of launch as the nation's leader in the general agency industry. Our vision is to consistently be "The First & Next Choice for Insurance, Hanwha Life Financial Services Enrich Customers' Lives." We are striving to enhance our sales expertise and become the nation's best insurance sales company.

We partner with multiple life and general insurers in professional insurance sales. By evaluating coverage, duration and premiums of a range of insurance products, we provide customized services to suit the lifecycles and financial situations of customers. We established rigorous internal control and consumer protection systems that exceed the general level of other corporate insurance agents. By removing misleading and inappropriate sales of financial products, we are taking the lead in protecting the rights and interests of consumers

For financial planners, drawing on our deep experience and knowledge as the flagship sales channel of South Korea's first insurance company, we offer excellent sales support systems, including the industry's highest commissions, training processes, expert support and the benefits of our ACE Club, which honors top-ranking planners. We achieved stable performance from our inception and gained momentum by recording average monthly insurance sale of USD 4.50 million, achieving the top revenue in the general agency industry.

To offer greater convenience to our financial planners, we focused on building a digital platform that links the sales systems of several life and non-life insurers. We expect to facilitate more efficient sales activities by avoiding the need for planners to use each independent system when handling a variety of products. Using these digital platforms, we will create and analyze our own database to further enhance sales competitiveness. We will also continue to develop a customer-centric digital platform to help financial planners and our customers build and maintain friendly relationships.

Hanwha Life Financial Service will increase its financial planners and build new sales channels through the M&A of small- and medium-sized corporate insurance agents. We will continue efforts for qualitative growth by strengthening our hands-on integrated consulting capabilities, expanding our network of experts and providing education programs to meet the changing financial environment. As we maximize corporate value and further hone our competitiveness by raising capital through an IPO, while expanding our business areas, we will become an insurance sales specialist that provides solutions for all the life needs of our customers.



## Finance

# Carrot General Insurance

[www.carrotins.com](http://www.carrotins.com)

2022 Total Sales

343 In USD millions

2022 Total Assets

280 In USD millions

### EXPERTISE

General insurance

Carrot is South Korea's first fully licensed 100% digital insurance carrier. With technology ingrained into its DNA, Carrot was founded with the vision of redefining insurance by changing the way people are protected, how they access insurance policies and information, how premiums are calculated and, ultimately, by recasting how insurance is perceived.

Carrot began by addressing the automotive insurance sector with a strictly usage-based insurance (UBI) strategy. Paying via online or mobile phone only for



A town hall meeting at Carrot

the number of miles driven at the end of each month was a novel concept for Korean consumers. A huge hit, the pay-per-mile program has now attracted more than 700,000 customers in our third year since launch. Ease of accessibility, fee transparency based on usage, AI-driven auto claims and accident detection and automated FNOL intake (first notification of loss) all support strong customer adoption, enabled by Carrot's proprietary technology and data science.

Carrot's innovation continues with focused R&D efforts into additional insurance carrier technology, including a recently introduced safe driving incentive algorithm. Using proprietary data analytics, Carrot monitors driving performance and provides driver customers with personalized scores based on key risk indicators. The algorithm's integrated in-app challenge rewards safe driving with cash points that has proven effective in reducing losses.

Carrot's wholly new insurance concept translates to non-auto insurance products as well. For instance, the SMART-ON series enables customers to instantly purchase plans without any charge until needed and then can be turned on with a click of a button. Carrot's options, tailored to various online platforms and ecosystems, also include coverage for SMEs, leisure/sport, pets, travel and ecommerce transactions and returns.

Traditional insurance companies have not always been transparent when pricing coverage. Likewise, fairness at the individual policy level has often been overlooked. Carrot is challenging the industry by building a company that recognizes that every individual is unique. We put customers in control and reward them for their actions.

We believe Carrot represents the future of insurance and we envision a paradigm shift in the legacy industry. While our opportunities are expansive and our ambitions are global, our purpose-driven journey has only just begun. We will keep moving forward to create financially sound and beneficial inspirational products for our customers and society.



# Retail & Services

Hanwha Hotels & Resorts  
Hanwha Galleria  
Hanwha Connect



## Retail & Services

# Hanwha Hotels & Resorts

[www.hwrc.co.kr](http://www.hwrc.co.kr)

2022 Total Sales

570 In USD millions

2022 Total Assets

1,688 In USD millions

### EXPERTISE

**Hospitality Division:**  
Resorts, hotels, leisure

**Estate Division:**  
Comprehensive real estate services



THE PLAZA

Hanwha Hotels & Resorts began operations in 1979 as the developer of South Korea's first resort condominium project. Since then, we have grown into the nation's premier leisure and service provider. Today, we are focusing business on the two pillars of hospitality and estate services, along with subsidiaries Aqua Planet, an aquarium business operator, The Tastable, a food and beverage service provider and Hanwha Next, an equestrian business operator.

Our Hospitality Division owns South Korea's largest condominium brands, including 10 resorts with 4,702 rooms as well as four hotels and three golf courses. We continually remodel resorts to strengthen our competitiveness. Geoje Belvedere, our resort launched in 2018 in Geoje, with a total of 470 rooms, is loved as South Korea's classic luxury marine resort complex.

THE PLAZA is a world-class luxury boutique hotel with 408 rooms, six restaurants and bars, nine convention halls, fitness center and spa. In 2020, we launched the premium resort hotel Yeosu BELLE MER, followed by Yangyang Breathe By MATIÈ in 2021. Yangyang Breathe By MATIÈ, in particular, is the first hotel in South Korea to combine the concept of surfing and healing. In July 2022, we launched a new lifestyle resort, MATIÈ Osiria in the Busan Osiria complex, which offers a unique sensibility. Featuring a new kind of relaxation and service in collaboration with local brands, and using digital transformational technology, we expect to launch ten or more MATIÈ franchised properties around the nation by 2030.

In addition, we own and operate three premier golf courses in Seorak, Yongin and Jeju, totaling 63 golf holes. Each course boasts high-end facilities, services and unique characteristics in harmony with the natural environment, the mountains and the sea. We also operate Xystum flower shops, with the largest number of florists in the nation, along with theme parks such as Seorak Waterpia and Pororo Aqua Village, which attract family visitors.

In the hospitality business, we are focused on developing a complex for leisure lifestyles and launching a new hotel brand. Building on our deep capabilities and expertise, we will expand our contract management services for golf courses and hotels. In addition, we are establishing a novel home interior ecosystem that bridges online and offline worlds. To achieve this, we plan to collaborate with proptech or property technology companies that can automatically convert 2D architectural blueprints into virtual 3D spaces.



Yangyang Breathe By MATIÉ

Seorak Plaza Country Club

Our Estate Division has become one of the top 5 real estate asset management companies in South Korea by providing comprehensive real estate services. We offer real estate consulting, asset and facility operation management, construction and security solutions designed to increase the value of client assets.

With efficient and stable operation and by managing 110 buildings around the nation, we are increasing the value of buildings and facilities, including office buildings, data centers, logistics warehouses, complex facilities, research centers and factories. Using our expertise in market trend prediction, analysis and strategies, we provide professional real estate consulting services for leasing, purchases and sales and investments. We are enhancing our competitiveness in other services that increase the value of real estate, such as interior design, new construction and extensions.

Recently, we developed digital real estate management solutions for more specialized and advanced services. We also launched a new real estate brand, Allside, to provide more systematic real estate service. At the same time, we are diversifying our business areas by actively participating in development projects, such as multifunctional complexes in Seoul Station, Daejeon Station and Jamsil, and in indirect investment markets, such as real estate funds and REITs.

To realize the goal of becoming “South Korea's leading real estate service company to create property innovation and value,” we will continue to grow steadily by focusing on high value businesses, such as real estate asset management, consulting and indirect investment.



## Retail & Services

# Hanwha Galleria

[www.hanwhagalleria.co.kr](http://www.hanwhagalleria.co.kr)

2022 Total Sales

436 In USD millions

2022 Total Assets

1,571 In USD millions

### EXPERTISE

Retail, fashion, Food & Beverage



Galleria Luxury Hall

Founded in 1976, Hanwha Galleria has specialized in retail services with a strong focus on department stores. Along with Galleria Luxury Hall, South Korea's first and premier department store, we provide differentiated customer experiences via a network of department stores in local areas. We also operate other retail businesses, including global brand direct sourcing, retail sales of exclusive brands and Food & Beverage operations.

Currently, we have five stores in South Korea in the major cities of Seoul, Suwon (Gwanggyo), Cheonan, Daejeon and Jinju. Together, the Galleria department stores offer an unparalleled suite of upscale shopping experiences. Each carries distinctive brands and observes local fashion trends, while also offering a food culture sure to satisfy every discerning taste. All our stores have improved performance through unique luxury merchandising, unrivaled VIP marketing and premium branding, racking up record-high sales and operating profit in 2021 thanks to continuous efforts.

Our Galleria Luxury Hall in Seoul is South Korea's preeminent department store, featuring the world's leading luxury brands. In 2021, we achieved the world's highest-level sales per square meter, surpassing USD 874.13 million in annual sales. Galleria Gwanggyo, the largest of the five department stores operated by the Hanwha Galleria, represents a new concept in nature-friendly multicultural shopping complexes. Located in the metropolitan city of Daejeon, Galleria Timeworld specializes in luxury fashion brands from around the world and boasts the ultimate in customer convenience in addition to its reputation as the premier luxury shopping destination in the region. We also operate Centercity, an art and cultural center in central Korea, and Galleria Jinju, a premier department store in the western Gyeongnam area.

Our fashion business mainly focuses on retailing exclusive brands and stores. We direct-source from global luxury fashion houses, such as Italy's Stefano Ricci, US lifestyle retailer Fred Segal and luxury daily wear brand James Perse. Our collection of select premium brands and our ability to source the most exclusive fashion brands are unmatched in the markets in which we operate. That competitive advantage



enables us to keep expanding our footprint. We also operate South Korea's high-end fashion boutiques, such as G. STREET 494 HOMME, making us a leading fashion company and consistently the first to introduce the latest international trends in our industry.

Our F&B business continues to increase in brand value by promoting the GOURMET 494 brand. In February 2022, we refreshed Gourmet 494, which operated as a grocerant (grocery + restaurant) with the delicery concept, a combination of deli and grocery, once again pioneering food and beverage trends in the department store industry. In 2020, outside a department store, we launched the premium lifestyle platform Gourmet 494 Hannam in Nine One Hannam, a high-end residential

complex, offering food and lifestyle contents carefully selected by Galleria. We are also collaborating with gourmet restaurants to develop a variety of GOURMET 494 private brand products made with carefully curated ingredients. Recognized for high quality, we are loved by our customers.

Hanwha Galleria will continue to strengthen luxury brand merchandising, VIP marketing and premium branding, while actively promoting core competency, digital transformation and original content creation. We are leading the industry trends and providing differentiated customer experiences as the No. 1 premium content producer.

Galleria Gwanggyo



Galleria Timeworld





## Retail & Services

# Hanwha Connect

[www.hanwhaconnect.co.kr](http://www.hanwhaconnect.co.kr)

2022 Total Sales

118 In USD millions

2022 Total Assets

371 In USD millions

### EXPERTISE

Real estate development, commercial facility operation



Connect Place at Seoul Station complex



Connect Place at Cheongnyangni Station complex

Hanwha Connect is the nation's premier developer and manager of multifunctional commercial facilities. Since our 1987 founding, we have developed and operated building complexes in the centrally located Seoul Station and Cheongnyangni Station. We pioneered efficient development and operation of complexes with commercial environmental analysis, merchandising strategy and rental and facility management. In February 2022, we relaunched the company, changing our name from Hanwha Station Development to Hanwha Connect.

Currently, we are leading retail and leisure trends by combining commercial complexes with private stations, as in the transit hubs Seoul Station and Cheongnyangni Station. We are generating stable profits with effective merchandising and efficient operations for commercial environments of privately funded stations that have many visitors. In April 2022, we launched our remodeled

premium multifunctional complex in the Seoul Station, resulting in better differentiation as well as greater popularity and luxury. We also participated in developing complex commercial facilities near the Seoul Station and Daejeon Station to secure mid- to long-term growth engines.

Hanwha Connect plans to expand business areas by developing new commercial facilities in Seoul center and the metropolitan area in addition to identifying opportunities that connect online and offline spaces. By leveraging our expertise and capabilities in business assessment, concept development, project financing, lease marketing, construction management and facility operation, we are fast becoming an industry-leading developer and manager of commercial complexes. We are creating central places for urban living and culture by offering new experiences that connect different cultures and businesses.



# Sustainability

Sustainability Management

Environmental

Social

Governance





## Hanwha's Commitment to Sustainability

### Hanwha's sustainable management to build a 100-year-old company

As a responsible corporate citizen, Hanwha believes what we do today will have an impact on the world tomorrow. To help individuals, society and the planet grow sustainably, we are leading worldwide bold innovation by creating transformative solutions for economic, environmental and social issues with our businesses, technology and social choices. With a firm belief in "Going Further Together," we will create a better future for everyone by engaging in fair and ethical business practices while committing to mutually beneficial relationships with our employees, customers, business partners and communities.

## Hanwha's ESG Vision and Strategy

### Creating values with ESG activities

We pursue growth that creates sustainable values with our stakeholders, including customers, shareholders, business partners, employees and communities. All of us at Hanwha are working together to introduce sustainable principles and systems as we practice sound and responsible management by ushering in ESG (Environmental, Social and Governance) initiatives. Taking a step beyond corporate growth, we are becoming a world-leading sustainable company by fully internalizing ESG values that allow us to grow harmoniously with the environment and society.

## Key ESG Activities







## ESG Management Governance

### Strengthening ESG management

In 2021, to promote deeper understanding and encourage full implementation of ESG management, Hanwha established ESG committees for each of our seven listed affiliate companies and two non-listed affiliate companies. As the highest decision-making body overseeing ESG management activities, our ESG Committees develop basic ESG-centric policies and strategies as well as review our mid- to long-term goals of responding to climate change, ensuring workplace safety, fulfilling social responsibilities and increasing stakeholder engagement and governance.

In order to encourage more diverse and professional discussions about ESG, more than two-thirds or all of members of each committee are outside directors. The Hanwha Group ESG Committee works to improve the ESG-management system within Hanwha Group and to support affiliate ESG-management activities by helping establish strategies for each business area, sharing information and providing professional training in ESG-related seminars and workshops.

### Hanwha affiliates with an ESG Committee\*

Hanwha Group | Hanwha Corporation | Hanwha Solutions  
Hanwha Aerospace | Hanwha Systems | Hanwha Life  
Hanwha General Insurance | Hanwha Investment & Securities  
Hanwha Asset Management | Hanwha Energy

\* As of September 2022

## ESG Management Performance

### Earning "Grade A" in ESG ratings

Our efforts to implement ESG management have been recognized by the 2021 environmental, social and governance (ESG) ratings of the Korea Corporate Governance Service (KCGS). Six out of seven listed affiliate companies of Hanwha received an overall Grade A. Hanwha Corporation, Hanwha Aerospace and Hanwha Life maintained Grade A ratings for two consecutive years, while Hanwha Solutions and Hanwha General Insurance each improved ratings by one grade level over the previous year. Hanwha Corporation and Hanwha Solutions received Grade A+ in the social category because of their active engagements in social responsibilities and expanded stakeholder communications. In addition, Hanwha Corporation was once again recognized for ESG management performance with an overall Grade A for corporate ESG evaluation in 2022, conducted by the NICE Investors Service.

## Hanwha Support for UN Sustainable Development Goals

### Collaborating to support UN SDGs

Hanwha is a firm supporter of UN SDGs, particularly those we can directly address through our business, technology and social impact activities. Our primary areas of focus are SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action) and SDG 17 (Partnerships for the Goals). We are actively engaged in each ESG area, working together to achieve a sustainable future for humankind.



#### Affordable and Clean Energy

- Solar energy
- Hydrogen energy
- Wind energy
- Eco-friendly mobility
- Coal-free financing declaration



#### Responsible Consumption and Production

- Research and development of eco-friendly materials and plastics (such as Plastics-to-Chemicals, ECO-DEHCH plasticizer, bioplastics and more)
- Research on effective methods for storing and utilizing natural resources (Research focused on improving LNG efficiency, such as reducing evaporation rate, preventing methane slip, and re-liquefaction)
- Implementing consistent and structured procedures for managing hazardous substances



#### Decent Work and Economic Growth

- Quality job creation
- Economic productivity improvement
- Shared growth and fair trade agreements with small- to medium-size business partners
- Win-win growth fund



#### Climate Action

- Solar energy
- Hydrogen energy
- Wind energy
- Eco-friendly mobility
- Coal-free financing declaration



#### Partnerships for the Goals

- World Economic Forum
- United Nations Convention to Combat Desertification
- Global Green Growth Institute
- Partnering for Green Growth and the Global Goals 2030 (P4G)





## ENVIRONMENTAL

We lead changes in the environment created by producers.

As a world-class leader in a range of industries, including manufacturing, finance, retail and services, Hanwha is spearheading a new business model to respond to environmental issues and create a sustainable future. By utilizing Hanwha's technologies and capabilities, such as eco-friendly energy solutions, developing a circular economy and reducing energy use and carbon emissions, each affiliate is actively practicing eco-friendly management to minimize environmental impact and reduce greenhouse gas emissions.



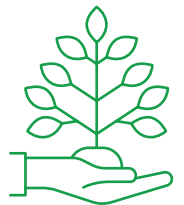
Expanding Eco-Friendly Technology



Creating an Eco-Friendly Industrial Ecosystem



Improving Environmental Management



Advocating Eco-Friendly Values



## Expanding Eco-Friendly Technology

We are leading renewable energy markets, such as solar, hydrogen and wind power, by capitalizing on our cutting-edge technology and production capacity. As we develop a variety of business models in response to changes in the electricity market, we will become a total energy solutions provider in all eco-friendly energy arenas.

### Solar energy

With worldwide solar solutions, we are the market leader in solar modules in major renewable energy markets. In addition, we are involved in solar power plant projects in the US and Europe. Beyond solar energy production, we are expanding our value chain to downstream retail electricity and distributed energy solutions businesses. We continue to sharpen our competencies by setting a new standard for the efficiency of next-generation perovskite-silicon tandem cells and modules.

### Hydrogen energy

Generated with renewable energy such as solar or wind power, green hydrogen is the most eco-friendly energy and does not emit carbon in the production process. We are building a comprehensive value chain of green hydrogen—one that encompasses everything from production and storage to delivery and utilization. Our advanced technology, capabilities and experience will produce high-quality green hydrogen and provide the ultimate eco-friendly energy at a reasonable price.

### Wind energy

With our deep EPC (Engineering, Procurement and Construction) experience in wind power complexes, such as the 76MW wind farm in Yeongyang, 25MW farm in Jeju Sumang and 90MW farm in Yangyang Suri, we are cultivating the wind power business by establishing a forward-looking value chain, from business development and operation to management and investment. We are expanding as a green developer into offshore wind farms in Sinan and Boryeong. Hanwha Ocean is currently constructing a state-of-the-art Wind Turbine Installation Vessel (WTIV) with the capacity to install 15MW ultra-large wind turbines in offshore locations. We are also engaged in developing floating offshore wind power substructures and offshore substations for global energy companies operating in the South Korean market.





## Creating an Eco-Friendly Industrial Ecosystem

Hanwha is creating an eco-friendly industrial ecosystem by harnessing world-class green technologies. We produce eco-friendly products, including plastics that won't harm nature, as well as plasticizers without environmental hormones. In addition, we focus on commercializing technologies that promote LNG as a bridge fuel while simultaneously reducing greenhouse gas emissions. We are also building a circular economy as we develop Plastic-to-Chemicals technologies beyond mere recycling of petroleum-based materials such as plastics. Moreover, we are expanding eco-friendly investments with coal-free financing while also promoting carbon neutrality.

### Developing eco-friendly technologies and products



We are striving to develop eco-friendly technologies and products that minimize environmental impact and reduce greenhouse gas emissions. Hanwha Solutions Chemical Division developed ECO-DEHCH\*, a premium eco-friendly phthalate-free plasticizer, which passed a safety test for EU regulations on Food Contact Materials. We are also advancing eco-friendly mobility with ultra-high pressure hydrogen fuel tanks using ultra-light composite materials. In addition, Hanwha TotalEnergies Petrochemical developed eco-friendly products such as phthalate- and BPA-free PP products.

\* Acquired EU REACH compliance and certified by EU Food Contact Materials

Hanwha Ocean has expanded the potential of LNG as a bridge fuel that can help us move toward a carbon-free world by commercializing technologies such as re-liquefaction technology and high-manganese steel LNG fuel tanks, which minimize losses during natural gas operations. In addition, our ESD (Energy Saving Device), including an air lubrication system and the industry's first localized shaft generator motor system, contribute to reducing greenhouse gas emissions by maximizing ship operational efficiencies.



---

## Building a circular economy

We aim to create a circular economy. First, we are improving the efficiency of using resources throughout the production process, from acquiring raw materials to the actual consumption of products. We salvage resources as much as possible through recycling after use. We will lead the plastics circular economy with differentiated technologies, such as Plastic-to-Chemicals (PTC) of waste plastics, biodegradable plastics and bioplastics. Hanwha Solutions Chemical Division is establishing a commercial plant to convert waste plastics into raw materials using PTC technology. A subsidiary of the division also launched a packaging material based on PLA (polylactic acid), a characteristic biodegradable plastic. In addition, we are developing bioplastic production technology using biomass-based raw materials with the goal of commercial production.

---

## Practicing coal-free financing

Hanwha's six financial affiliates, including Hanwha Life, jointly announced commitments to support carbon-free power and are instituting practical ways to reduce carbon emissions through financial choices. The financial affiliates all agreed to refuse to fund construction of any coal-fired power plants or underwrite bonds issued by special purpose companies (SPCs) that have been established to build coal-powered plants locally or abroad. The affiliates will also refuse to underwrite general bonds that would finance construction of coal-fired plants. In addition, the companies promise to expand investments in environmentally friendly assets, such as renewable energy sources. We are leading change in investment standards and supporting the transition to eco-friendly energy through coal-free financing.





## Improving Environmental Management

To respond to climate change and address environmental issues, Hanwha is increasing its use of low-carbon energy and minimizing environmental impact at all stages of corporate management. We are actively engaging in a range of international and national initiatives to reduce energy and carbon emissions. Some of our affiliates are practicing low-carbon and eco-friendly management, such as installing solar power generation facilities at business sites while also expanding their use of renewable energy.

### Joining RE100 and EV100 initiatives

Hanwha Solutions Qcells Division declared its participation in RE100\*, the first for a South Korean renewable energy company. By 2050, we plan to replace 100% of our electricity usage with renewable energy. Hanwha Solutions and Hanwha TotalEnergies Petrochemical joined in the K-EV100 campaign to convert 100% of owned or leased corporate vehicles to electric or hydrogen vehicles by 2030.

\* RE100: A voluntary campaign to replace 100% of electricity used by companies with renewable energy such as solar and wind power

### Recycling solar panels

Solar panel installation is rapidly increasing owing to global interest and investments in solar energy. Accordingly, concerns are growing about the carbon dioxide generated during solar module production and how to dispose of solar panel waste. Hanwha is working to solve waste issues and contribute to a circular economy through the reuse and recycling of solar modules. As a responsible solar energy producer, Hanwha Solutions Qcells Division is responding to an extended producer responsibility (EPR) program for solar panels that will be implemented starting in 2023 by establishing a waste panel recycling system and eco-friendly recycling.

### Operating eco-friendly workplaces

Each Hanwha affiliate is introducing low-carbon, eco-friendly operations that minimize the environmental impact that business sites or facilities may cause. At the Hanwha Headquarters building, we generate electricity and use it for office lighting with an all-in-one solar power system and solar panels installed on the roof. We also use the electricity generated by solar power at our business sites around the country, such as Hanwha Life LIFEPLUS Research Center, Hanwha Data Center, Hanwha Life Eagles Park and Galleria Luxury Hall. Going forward, we will strengthen low-carbon and eco-friendly operation in our workplaces by building eco-friendly power generation facilities, including solar power.



## Advocating Eco-Friendly Values

As a world-class solar energy enterprise, our mission is to achieve sustainable growth by sharing eco-friendly values. That's why we are committed to eco-friendly programs and invite people to join the energy revolution through activities that counteract climate change and help the environment. With campaigns such as Hanwha Solar Forest, Making a Clean School, Solar Beehive, Clean Up Mekong and more, we are not only relying on solar energy, we are also making a difference.

### Hanwha Solar Forest



Since 2011, the Hanwha Solar Forest campaign has planted approximately 530,000 trees across ten locations in South Korea, Mongolia and China, creating forests that add up to 1.45 million square meters, the equivalent of 200 soccer fields. The initiative stands out among others because we use solar energy to power nurseries. Solar energy supports clean water supply, temperature and humidity control, while providing the lighting needed to nurture saplings—all resulting in a more environmentally friendly, carbon-neutral forest. This natural climate solution reduces the impact of desertification, removes carbon dioxide from the atmosphere, helps keep water and air clean

while preventing soil runoff. With the support of our Solar Forest app, we are also virtually engaging the public in the project, raising empathy and awareness for environmental issues. As a result of Hanwha's efforts, the Hanwha Solar Forest campaign, the world's first corporate campaign utilizing solar energy development to prevent desertification, was introduced as a best practice at the 2011 United Nations Convention to Combat Desertification (UNCCD). It was also cited as a model for how corporate partnerships can contribute to achieving Sustainable Development Goals (SDGs) in a meeting at the UN's High-Level Political Forum in 2018.



### Making a Clean School campaign

Since 2011, the Hanwha Happy Sunshine project has donated solar power generation systems to welfare centers across South Korea to help them save on utility bills. In 2022, we launched the Making a Clean School campaign for elementary schools by renewing the program. This campaign is designed to create a school where students can enjoy clean and healthy environments by addressing climate change and air pollution caused by fine dust and harmful substances in an eco-friendly way. Selected schools for the campaign are supported in various ways: with solar power generation facilities that produce eco-friendly electricity; green walls covered with vegetation that purify indoor air; air shower fans and purifier and window ventilators that reduce indoor fine dust; and air quality monitoring devices. We selected four schools in Seoul and around the metropolitan area for the first round, helping a total of 3,528 students in 140 classes experience a better environment. We also provided them with eco-friendly education to raise environmental awareness in the next generations, including measures to deal with fine dust and protect the planet.



### Solar Beehive campaign

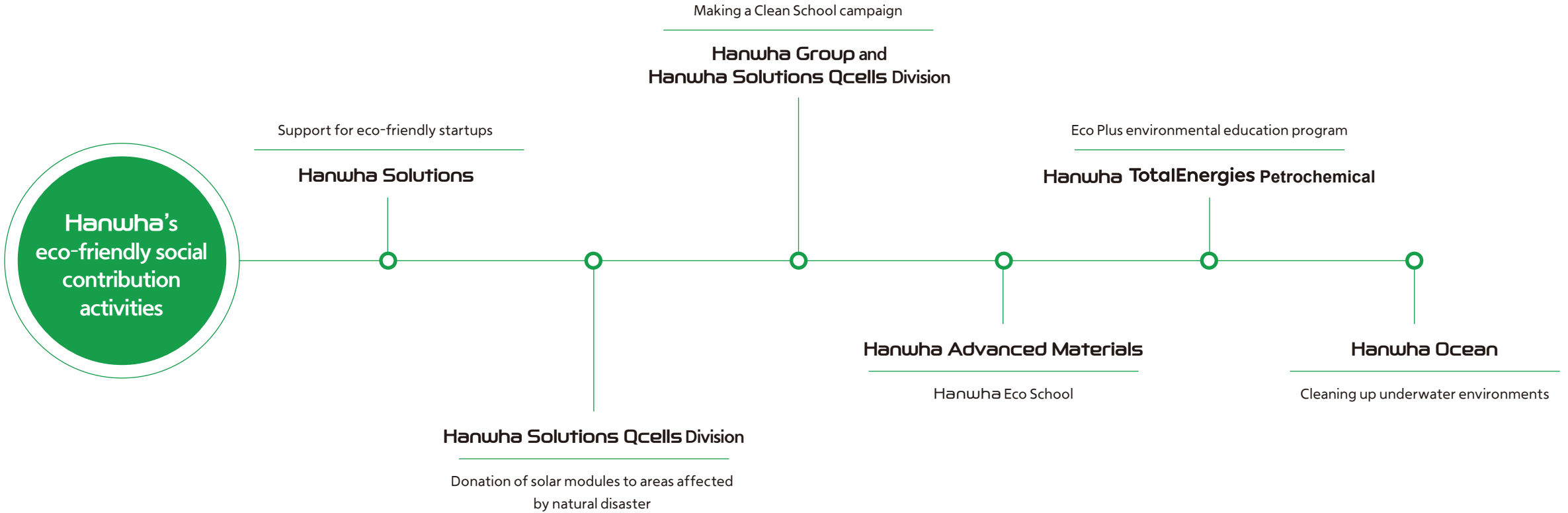
In May 2022, Hanwha unveiled South Korea's first-ever Solar Beehive, a photovoltaic low-carbon solar beehive that uses electricity generated from solar energy. The damaging effects of the climate crisis around the globe have significantly reduced bee populations, the world's most important pollinators. Through this project, we aim to increase bee populations by maintaining a stable environment for growth while promoting the importance of preserving biodiversity. Solar panels installed on top of the Solar Beehive generate electricity used to automatically monitor and control the temperature, humidity, water and food inside the structure. The beehive also contains a smart system that monitors and controls this data in real time through an app. We installed the Solar Beehive at the Korea National University of Agriculture and Fisheries (KNUAF) as a part of its pilot program. The 40,000 or so bees that live in the Solar Beehive help pollinate fruit trees on campus and vegetation in nearby wooded areas. The program also collects data on bee population growth and activities, which is now publicly available via a website for anyone doing research into bees.



### Clean Up Mekong campaign

Hanwha launched the Clean Up Mekong campaign to help address water pollution, one of the world's ongoing environmental issues. We donated two solar-powered boats that can remove waste from the Mekong River before the river water empties into the Pacific Ocean. The boats can collect 400 to 500 kg of waste daily without discharging any carbon emissions.









## SOCIAL

**We create a win-win ecosystem that shares values.**

Hanwha believes employees, business partners, customers and communities are all key stakeholders who share values in a win-win growth ecosystem. We respect the rights of our employees and their work-life balance as we pursue shared growth through win-win cooperation with business partners. We not only provide fulfillment and build a reputation by creating value for customers but also lead change by helping to solve issues in the community. Moving forward, we will keep striving and cooperating to attain sustainable and inclusive growth and to enhance the lives of all stakeholders.



Managing Talent



Win-Win Management



Customer-Centered Management



Social Contribution



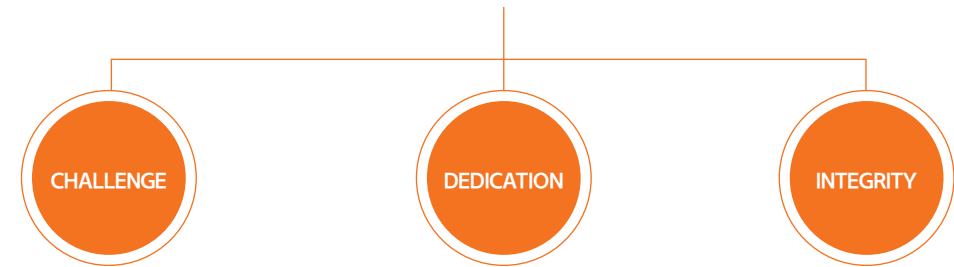
## Managing Talent

Talent with creative and passionate minds is our most important asset. As the foundation for Hanwha's development and success, innovative talent empowers our sustainable growth. We nurture our employees by operating fair and sound personnel and education programs to help them grow into globally recognized talent with challenging spirits, dedication and integrity. In addition, we respect individual rights and diversity and create a flexible organizational culture and healthy environments so employees can develop and achieve work-life balance.

### Talent that embraces challenge, dedication and integrity

Hanwha looks for talented people who share our core values, which include embracing challenge, dedication and integrity, and who can act on those values. We are committed to identifying and nurturing highly motivated people with a challenging spirit who pursue best results from change and innovation instead of settling for existing standards; who demonstrate dedication and try their best for the greater good while believing in relationships with companies, customers and colleagues; and who act appropriately with integrity based on principles and a sense of pride.

### Hanwha's Ideal Talent



#### People with a Challenging Spirit

Instead of settling for existing standards, people with the spirit of a challenger pursue the best that can come from change and innovation.

- They actively work on becoming the best possible professionals in their areas.
- They find new opportunities and methods with open minds and creative thinking.
- They set and achieve challenging goals with a "can do" spirit.

#### People with Dedication

People who demonstrate dedication and try their best for the greater good while believing in relationships with companies, customers and colleagues.

- They think about "we" first and make common goals a priority.
- They value promises made to customers and continually create customer value.
- They work together with team spirit and believe in their colleagues.

#### People with Integrity

People with integrity who act appropriately based on principles and a sense of pride.

- They act honestly by adhering to principles without being tempted by short-term wins
- They treat people fairly and transparently based on abilities and performance, regardless of feelings.





### Nurturing top talent

Hanwha is boldly investing in a well-grounded personnel system to recruit and nurture talented people who can lead Hanwha into becoming a 100-year-old company. We develop global talent with professionalism by providing a range of training programs for specific jobs and positions. Our Hanwha Pre Manager Program for all new Group employees provides education programs to instill job competency and loyalty. To develop Hanwha's potential future CEOs, we sponsor EMBA programs for team leaders and AMP (Advanced Management Program, a CEO course from the world's best programs) to executives. Our Global Talent Program encourages employees with potential and interests in global business by providing relevant education and opportunities to work overseas. Through our Regional Specialist Program, we send associate and junior managers around the world to become local experts by experiencing the business and culture of other countries.

### Creating a flexible and healthy organization

Hanwha's companywide work-life balance policies are designed to improve an employee's quality of life. We introduced corporate culture initiatives such as flexible shifts with varying work types and times; earning a one-month sabbatical after promotions; mandatory one-month paternity leave for male employees within three months of the birth of a child; and study leave and support for career development. In addition, each affiliate operates a differentiated benefits system depending on the characteristics of its business. We also work to gain community trust by promoting safety and creating safe workplaces as part of our corporate culture. We actively work to prevent accidents by requiring everyone to follow a strict set of rules and safety policies and to observe leading industry indicators for occupational safety. Along with regular safety inspections and safety education, we strictly manage training programs to respond to emergencies and establish a culture of safety.

### Respecting human rights and diversity

Hanwha actively supports and complies with human rights policies at home and abroad, including the ten principles of the UN Global Compact. Respecting diversity, we do not discriminate based on gender, race, nationality, place of origin or religion. To prevent sexual and workplace harassment and raise awareness of human rights, we provide human rights education to all employees and regularly conduct human rights impact assessments to avoid human rights risks in advance. We introduced programs that respond to workplace grievances, resolve grievances through counseling and prevent recurrences, such as the Hanwha Solutions Chemical Division's Hotline and Hanwha Aerospace's Smart Grievance Handling Center. Our family-friendly programs include maternity benefits and family-friendly company certification to create a better workplace for women.



# Hanwha's Talent Management Programs and Achievements

One month sabbaticals  
**Hanwha Group**

Paternity leave  
**Hanwha Group**

Career development leave  
**Hanwha Group**

Improving work opportunities and creating jobs  
**Hanwha Solutions Qcells Division**

Family-friendly policies and culture  
**Hanwha Advanced Materials**

**Hanwha Life**  
Human rights education based on human rights policies, human rights impact assessments, establishing basic safety and health policies for employees

**Hanwha Corporation/ Engineering & Construction**  
Improving employee benefits, paid employee leave for illness and COVID-19 vaccination

Certified by Great Place to Work Korea as a good company to work for, women-friendly company, HR hotline  
**Hanwha Solutions Chemical Division**

**Hanwha Systems**  
Selected in 2021 by the Ministry of Employment and Labor as one of South Korea's best companies in job creation and job quality improvement

**Hanwha Asset Management**  
Selected in 2021 by the Ministry of Employment and Labor as one of South Korea's best companies in job creation and job quality improvement

**Hanwha Aerospace**  
Implementing a system to prevent workplace and sexual harassment

**Hanwha Ocean**  
Running a youth board





## Win-Win Management

Our philosophy of “Going Further Together” in a spirit of “trust and loyalty” extends to our partner companies. Through our collaborations, we seek to ensure mutual growth rather than competition. With small- and medium-sized business partners, we encourage best practices in management and help foster self-sufficient environments. We also offer support through a variety of programs for employee rights and the working environments of partner employees as we build a sustainable foundation for the entire supply chain.

### Commitment to fair trade and shared growth

Since 2009, Hanwha has fostered collaborative partnerships with over 1,500 small- and medium-sized enterprises. With our Shared-Growth and Fair-Trade Agreement, we help grow small hidden champions by strengthening core competencies, promoting shared growth and offering guidance to engage in fair trade practices.

### Supporting partners' management through co-prosperity funds

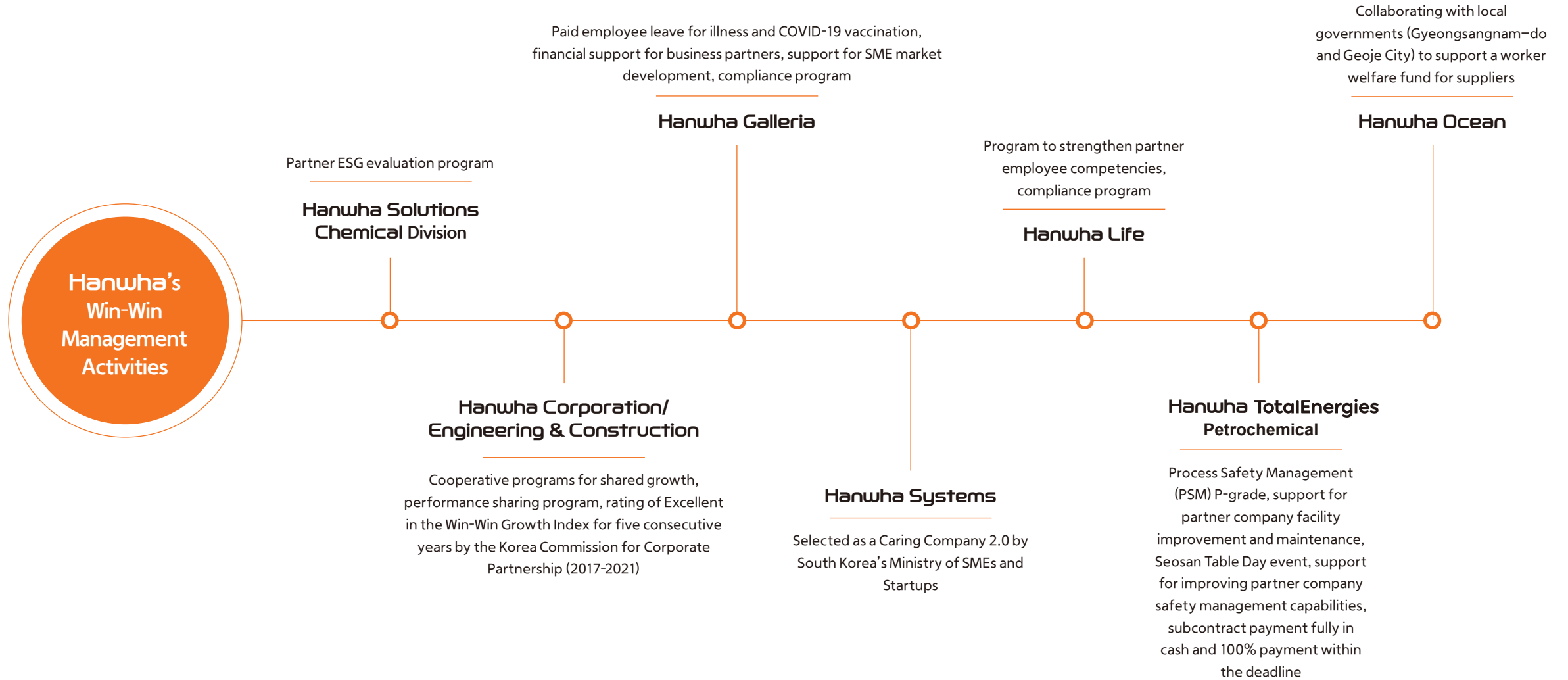
We created an annual co-prosperity fund of USD 175 million and earmarked a private equity fund of USD 175 million for these mutually beneficial partnerships. The funds allow partner companies to obtain low-interest-rate loans. We also support business partners' stable financial operations by increasing cash payments, making early payments for traditional holidays and offering performance sharing programs to selected affiliates.

### Building winning partnerships

In our frequent work with partner companies, we have put our “Going Further Together” belief into practice by engaging in joint businesses, exchanging technology, sharing information and offering exemptions from performance guarantees. We are increasing industry-specific programs to help partners become more competitive as they expand domestic and international sales networks. We also support their management innovations and equipment purchases while assisting them in best practices for safety, process, environment and quality controls. In addition, each affiliate holds regular meetings for partners to enhance mutual trust through close communications.

### Improving supply chain sustainability

Hanwha strives to enhance the importance of sustainability throughout the supply chain by supporting supplier sustainability management. By providing ESG-related education and with consultations from each affiliate, we are helping ESG management in partner companies. We further support their safety and environmental management to prevent industrial accidents and promote employee health. In addition, we are providing training programs to strengthen the competencies of partner employees.







## Customer-Centered Management

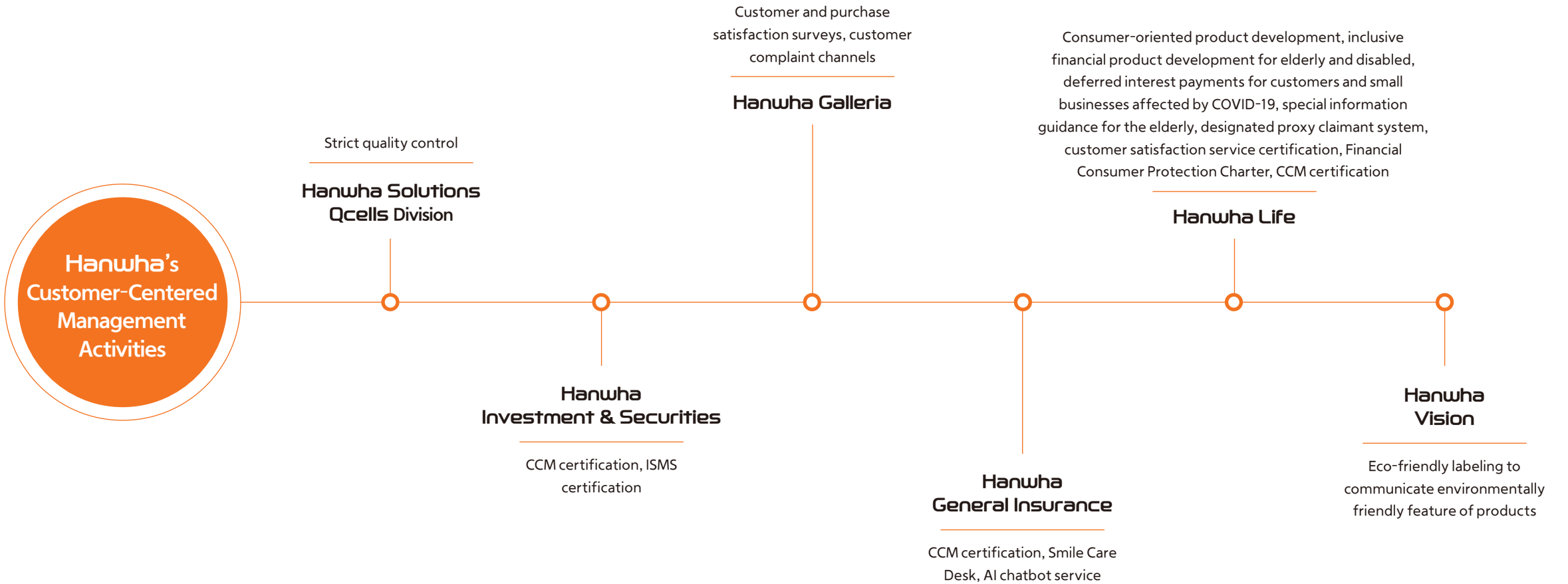
Customers are Hanwha's biggest reason for being. We continue to exist and grow by constantly creating value for our customers. We prioritize a long-term relationship of trust with our customers in all our business processes of planning, producing, publicizing and providing products and services. We will become the most trusted company by all customers by providing high-quality products and services, including eco-friendly products, by protecting consumer rights and interests and by supporting people who have lesser access to information or financial services.

### Protecting consumer rights

Using our well-planned system tailored to the characteristics of each business, we actively protect consumer rights and interests. Hanwha Life performs a consumer impact assessment to verify whether the development or sale of a product is likely to infringe on consumer rights. The company also enacted a Financial Consumer Protection Charter and set up related principles. All employees and financial planners make online pledges to conform to the charter, affirming their resolve to offer products and services while protecting consumer rights. Hanwha Investment & Securities continues to improve consumer protections by refunding sales commissions when a product is canceled owing to a simple change of mind and guaranteeing a complete return for any misleading sales. By building an excellent system to protect consumer personal and financial information, the company earned the Information Security Management System (ISMS) certification from the Financial Security Institute in 2018. In recognition of those efforts, Hanwha Life, Hanwha General Insurance and Hanwha Investment & Securities also obtained the Consumer-Centered Management (CCM) certification from the Fair Trade Commission and the Korea Consumer Agency.

### Supporting accessible financial services

Hanwha's financial affiliates provide a range of support as part of customer-centered management. Hanwha Life offers easily accessible outlets for those who have difficulty receiving services, such as a phone number for the disabled and priority connection service for the elderly. In addition to also having a number for the disabled, Hanwha General Insurance operates Smile Care Desk service, with dedicated staff along with a call bell at branches so elderly and disabled customers may receive financial services without any physical barriers. We developed a mobile insurance claim guidebook for those who are not adept at digital services. Our Service Idea Contest for the Digitally Vulnerable lets consumers propose ideas that we may select to develop more consumer-friendly insurance services.







## Social Contribution

As background to our founding philosophy of “fostering social growth and prosperity through our business” and the Hanwha spirit of trust and loyalty, we build solid trust through close cooperation with communities. By pursuing our social contribution philosophy of “Going Further Together,” we strive to fulfill our social responsibilities as a global corporate citizen. To create shared value with various members of society, including communities, we utilize our core technologies and resources in a range of social contribution activities, including talent development, culture and the arts, active donations and volunteer activities.

### Talent Development

#### Hanwha Science Challenge

Since 2011, we have sponsored Hanwha Science Challenge, South Korea's largest high school science competition, which is aimed at discovering and nurturing outstanding students in science. This event gives young students opportunities to explore their scientific quests. It represents the dream stage of embracing challenges and inspires future science prizewinners. High school students and teachers with interest and talent in science may participate as a team. With the theme of Saving the Earth and envisioning a sustainable tomorrow, we encourage students to explore and understand the science behind global environmental issues, such as sustainable energy, disease, famine, climate change and water shortages. Finalists receive special benefits, such as exemption from credential screening when applying for a job at Hanwha Group. Winners of each year's challenge are awarded top national scholarships and the opportunity to take overseas trips to leading engineering colleges, scientific institutions or Hanwha's global business sites to gain new perspectives on the subjects they are studying.



### Hanwha-KAIST Science Outreach Program

In 2016, we began hosting the Hanwha-KAIST Science Outreach Program, a science education program for middle school students who have a special gift in science. Through this program we help support and advance young students' skills and ambition in science and engineering. KAIST students serve as mentors and provide online and offline science, math, coding and software classes for first two grades of middle school in Daejeon, South Korea. We also operate field programs, such as cultural experiences and business site visits so students can broaden their experiences. Mentors provide not only academic help to students, but also emotional support for growing together.



### Hanwha-KAIST Spacekids

In 2022, in an alliance with KAIST (Korea Advanced Institute of Science and Technology), Hanwha Space Hub launched Spacekids, a South Korean version of the NASA STEM Engagement program. Designed to advance talent to lead the new aerospace era, the project is an experiential space education project for middle school students with the theme of "science plus humanities." The main program is the Space Mission Project course, which combines science, technology, engineering and mathematics tailored for middle school. In addition, a two-month Space Humanities Conference course develops student creativity and imagination. Professor Sang Wook Kim of the Department of Physics at Kyunghee University, Professor Jeong Jae-seung of the Department of the Bio and Brain Engineering at KAIST and Professor Paul Yun, a NASA Solar System Ambassador lead space humanities courses. A total of 30 middle school students were selected as the first class of Spacekids, after screenings and interviews by the KAIST faculty, and the second class will be expanded to educate 45 students. After six months of training, benefits such as a certificate from the KAIST President, a session pass for the KAIST Center for Gifted Education and one-on-one expert career consulting are also awarded. Following the year-end performance presentation and completion ceremony, we also offer opportunities for overseas scientific expeditions.





### Hanwha Life DREAMPLUS

An open innovation hub, Hanwha Life's DREAMPLUS identifies and encourages startups based on core values of connection, sharing and collaboration. We provide comprehensive solutions from the business establishment and acceleration to global expansion through the startup life cycle. Our DREAMPLUS Fintech Center and DREAMPLUS Gangnam Center provide co-workspaces for early startups. Through open innovation activities, we also help entrepreneurs to continuously discover new business and investment opportunities with various partners. DREAMHAUS is our shared housing program designed to provide more housing options for young generations and set a foundation for them to grow and achieve their dreams. We recruit residents every year and provide a complex living space and customized education programs.



### Hanwha Life Economics Class

To help children and youth improve financial literacy skills, Hanwha Life operates the Hanwha Life Economics Class. We offer content jointly developed by the Financial Supervisory Service and Hanwha Life. We educate students with actual cases concerning basic financial knowledge and upright financial habits so they can learn and practice in real life. Financial experts with work and teaching experience were selected as lecturers. We began by giving priority to women who had lost jobs in 2021 when hiring lecturers in order to help create jobs for women. The 30 selected lecturers disperse financial information and knowledge to over 10,000 students of 300 classes at 281 elementary and middle schools around the country for a year. For students who had limited face-to-face learning due to COVID-19, we added real-time online education for better access.



## Culture and Arts

### Orchestra Festival with Hanwha

As a firm supporter of arts and culture, Hanwha has been the sole sponsor of the annual Orchestra Festival since 2000 in partnership with the Seoul Arts Center. We provide performance opportunities to local symphony orchestras, senior classical musicians and next-generation prospects, and support classical music for public audiences to enjoy. Our sponsorship for over 20 years helped the Orchestra Festival become South Korea's largest classical music event and one of most recognized corporate-sponsored arts programs.



### Hanwha Classic

Our Hanwha Classic has performed classical music since 2013. We have planned and hosted the annual music festival to provide quality performances for South Koreans. In planning the program, we focus on inviting artists and performers who specialize in classical music to present unique performances. Every year, we invite baroque music specialists from all over the world, including Germany, Italy, the Netherlands, France and the UK, to deliver their in-depth impressions to music lovers with high-quality performances and audience-friendly introductions to music.



### Seoul International Fireworks Festival with Hanwha

Since 2000, we've sponsored the Seoul International Fireworks Festival each fall. With the slogan "Sharing Hope through Fireworks," this has become a flagship Seoul cultural festival featuring a thrilling spectacle of light and energy, including the fireworks, cultural performances and experiential events. Every autumn, we host the event with the world's leading fireworks technology companies. Since its debut, the festival has wowed over a million spectators, providing unforgettable memories for families and friends. Each year, Hanwha colleagues volunteer to help make the festival a safe and orderly event.

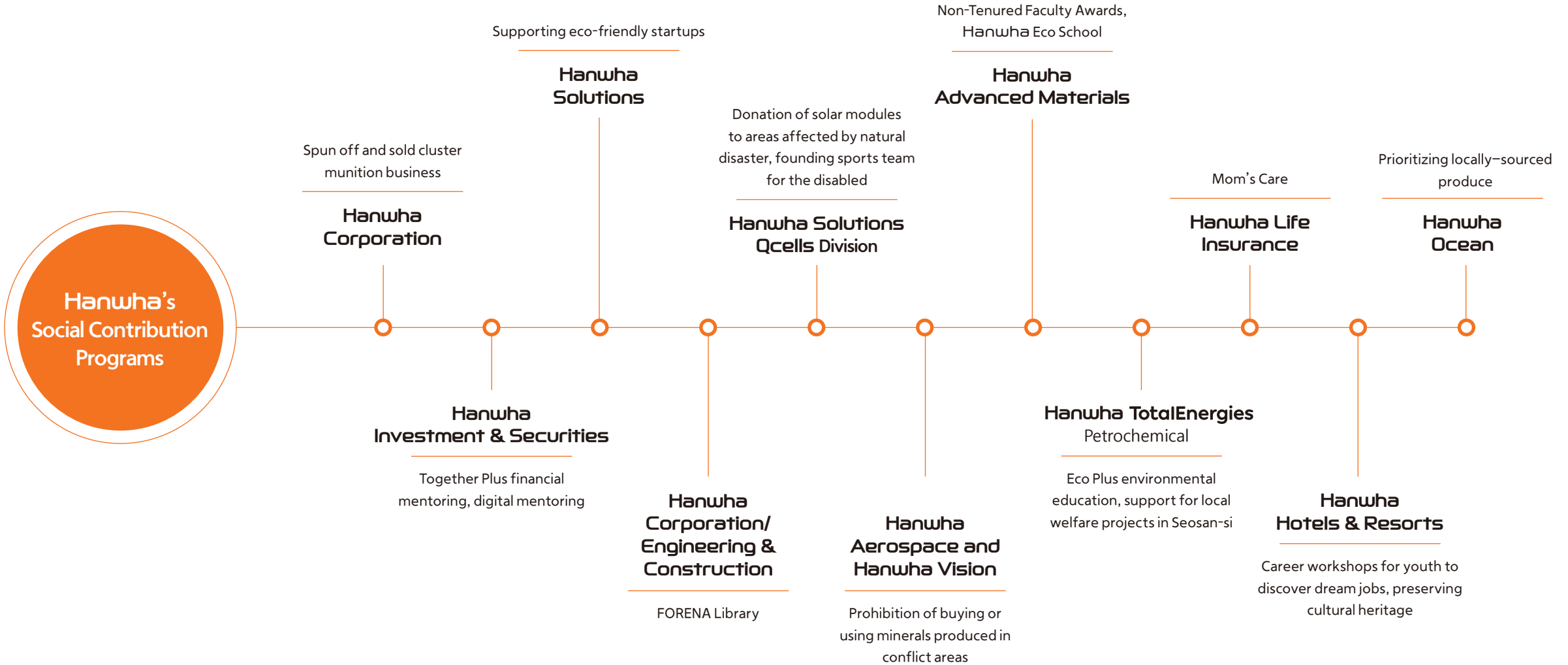


### Hanwha Youth Orchestra

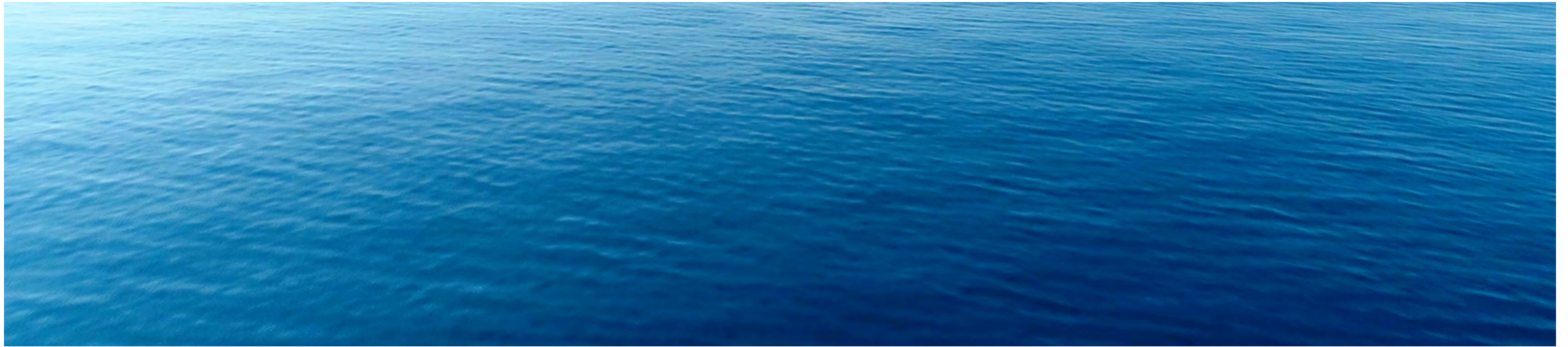
Since 2014, we have operated the Hanwha Youth Orchestra, a music education program in Chungcheong Province to help young people grow through art education and to bridge cultural gaps among regions. The orchestra is composed of about 30 members of string and wind ensembles, and we support various activities such as musical instrument education, attending music concerts, music camps and hosting regular concerts. Besides building cooperation and perseverance with peers in the ensembles, we also help the youngsters demonstrate their honed musical skills to an audience and experience a sense of accomplishment, all of which provides comprehensive personality and musical education.







Career workshops for youth to discover dream jobs, preserving cultural heritage



## GOVERNANCE

We pursue systemic procedural fairness created by the system.

Hanwha believes governance is the driving force for ESG practices. We are building a system to ensure procedural fairness for sound governance. To provide easy access for stakeholders, including employees and shareholders, our organizations set up systems in three areas: transparent management, shareholder-friendly management and ethics & compliance management. By ensuring fairness, transparency and independence, we will establish a more systematic and sustainable governance structure.



Transparent Management



Shareholder-Friendly Management



Ethics & Compliance Management





## Transparent Management

In order to practice transparent management, the Board of Directors, the company's highest decision-making body, should be appointed in a balanced manner and its professional role should be defined in advance. Hanwha affiliates organize their boards in ways appropriate to their respective business areas so directors can make rational decisions and solve problems in a creative manner supported by independence and diversity. We also established operating policies that are transparently disclosed to stakeholders.

### Board Autonomy

As the highest decision-making body of the company, the Board of Directors must be independent from senior management and controlling shareholders. Hanwha's seven listed companies appoint outside directors as a majority of their boards to ensure independence. Outside directors are selected as candidates by the board through recommendations of the Executive Candidate Recommendation Committee or the Outside Director Candidate Recommendation Committee, and finally appointed through a resolution of the General Meeting of Shareholders. For fair operation, we established a policy that prohibits the appointment of long-term outside directors whose tenure exceeds six years, and also prohibited outside directors from Hanwha affiliates. Hanwha Energy, even though it's not listed company, is enhancing governance transparency by including two outside directors out of a total of five board directors.

### Board of Directors diversity and expertise

Hanwha is strengthening the diversity and expertise of its Board of Directors by appointing outside directors with expertise and experience in specific fields. As a global eco-friendly energy company, Hanwha Solutions operates a multinational board that includes international outside directors. Our five subsidiaries, including Hanwha Corporation, Hanwha Aerospace, Hanwha Solutions, Hanwha Life and Hanwha Investment & Securities, expanded board diversity by appointing women as outside directors. Appointed directors receive a comprehensive assessment of expertise and responsible performance during a two-year primary term, then reappointment is determined by assessment results.

### Corporate Governance Charter

Our six listed companies, including Hanwha Corporation, Hanwha Aerospace, Hanwha Solutions, Hanwha Life, Hanwha General Insurance and Hanwha Investment & Securities, established the Corporate Governance Charter. This step forward strengthens competitiveness and builds a balanced governance system with mutual checks to ensure fairness, transparency and independence. The Charter specifies the authority and responsibilities of the Board of Directors and Audit Committee to ensure sound governance as well as the protection of stakeholder rights, including for shareholders, customers, partners, executives and employees. The Charter sets out principles and standards consistent with international corporate governance practices and is posted on the company's homepage for easy access.



## Shareholder-Friendly Management

To ensure financial and social sustainability, we prioritize active communications with shareholders within a strict system to protect shareholder rights. Shareholder communications includes listening to all opinions via several channels. We also promote shareholder participation in management so we can jointly determine management direction and create a more stable and fair corporate management system.

### Strengthening shareholder communications

Hanwha's affiliates actively communicate with shareholders as we transparently disclose corporate activities and achievements through offline and online channels, such as regular & special IR, Q&A sessions, conference calls, site homepages, social media and more. Hanwha Corporation, Hanwha Aerospace, Hanwha Systems, Hanwha Solutions and Hanwha Life host a Non-Deal Roadshow (NDR), which announces quarterly results. These events transparently disclose corporate activities and performances, regularly providing communications about the company's key performance and investor interests and needs. We also make efforts to ensure transparency in corporate management and earn shareholder trust by disclosing management information. Beyond complying with legally required disclosures, we voluntarily disclose important issues that may have a significant impact on stakeholder decision-making, including for shareholders. Our seven listed companies publish a sustainability report every year to transparently disclose ESG management activities and company performance to stakeholders.

### Increasing shareholder participation in management

Using various channels, Hanwha supports shareholders who seek to exercise their rights in more convenient ways at shareholder meetings. Hanwha's seven listed companies introduced an electronic voting system that allows shareholders to exercise voting rights online without needing to attend meetings in person. Hanwha Corporation, Hanwha Solutions and Hanwha Systems operate a written voting system that allows shareholders to vote and reply with written ballots mailed to them from the companies. The system improves minority shareholder rights and makes it more convenient for shareholders to participate in management.

### Communications channels for Hanwha listed company shareholders



Conference calls



Online channels, such as YouTube, blogs, company homepages



IR meetings, NDR\*, corporate presentations

\* Non-Deal Roadshow

Hanwha Corporation, Hanwha Aerospace, Hanwha Systems, Hanwha Solutions, Hanwha Life, Hanwha General Insurance, Hanwha Investment & Securities





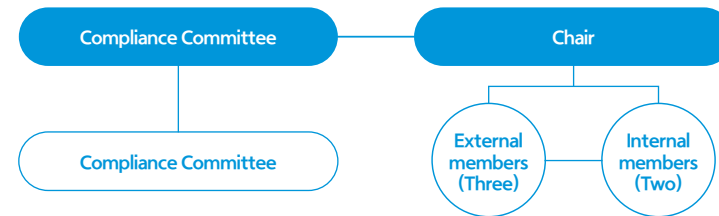
## Ethics & Compliance Management

Ethics & compliance management refers to management that makes individual decisions and actions with a moral principle, or “ethics,” and that rigorously follows the structured discipline established by society, or “compliance.” To fully internalize our ethics & compliance management, we operate a compliance committee within the Group and affiliates. We are focused on obtaining certifications for international standards to achieve our goal in a more objective and systematic manner, including compliance management systems and anti-bribery management systems.

### Internalizing ethics

Overseen by the Compliance Committee, Hanwha is working to internalize ethics in all employees so everyday work and life reflects ethics & compliance management. Launched in 2018, the Hanwha Compliance Committee promotes compliance management in all affiliates by establishing a groupwide policy, monitoring affiliate activities and offering advice and support on relevant issues. The Committee produces guidelines for employees for voluntary compliance with the rules and regulations and develops education programs to improve understanding about compliance. In addition, the Committee supports compliance teams in each affiliate in order to encourage spontaneous ethics & compliance management.

### Hanwha Compliance Committee



### Pursuing global compliance standards

Hanwha affiliates are committed to international compliance capabilities. As a result, our affiliates continue to obtain international standard certifications that recognize the level of our compliance management systems. In 2021, Hanwha Aerospace was the first in South Korea’s defense industry to obtain the certification of compliance management systems (ISO 37301).\* Hanwha Solutions and Hanwha Aerospace obtained both the compliance management systems (ISO 37301) certification as well as the anti-bribery management systems (ISO 37001) certification.\*\* In 2021, Hanwha Aerospace was ranked first in Asia and one of the top five companies worldwide by Transparency International’s Defense Companies Index on Anti-Corruption and Corporate Transparency (DCI), which rates anti-corruption policies in 134 of the world’s largest defense companies. Hanwha Aerospace received a B grade and was ranked in the top 12 percent of the 134 companies evaluated.

\* Compliance Management Systems (ISO 37301) certification: An international certification awarded after an assessment that a company’s compliance and risk management policies operate effectively and in line with global standards.

\*\* Anti-Bribery Management Systems (ISO 37001) certification: An international certification awarded to companies with in-house systems to prevent corruption, such as in monetary transactions, bribery and rebates.

