

Hanwha Profile 2020



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"We engage and listen to our customers to create the solutions they trust us to build."

SEUNG YOUN KIM



The world has already moved beyond the Fourth Industrial Revolution. It is now heading toward the next industrial revolution. So are we.

At HANWHA, we believe in building trust and strengthening loyalty. Our customers trust us because we've earned it over time. In turn, we strengthen our loyalty to the people we serve through contributions to society. Trust and loyalty are in the DNA of every HANWHA employee, motivating us to build for the good of all, amid constant changes and despite them. As a company, our never-ending goal is to improve the lives of everyone we touch. We seek to raise the standards of living and improve the quality of life. We know this is easily said but difficult to attain. And yet, if we persevere, continue to innovate and build for a better tomorrow, the future is ours to imagine.

In 2010, HANWHA's vision of "Quality Growth 2020" was unveiled. Since then, we have made significant strides toward realizing this vision through our expertise and innovations that have grown exponentially across the company's core businesses. We've established a solid foundation to support a strong global market position—in the midst of economic upheavals and changing trade landscapes around the world. So now, as we look forward to the next generation of advancements and greater qualitative growth, we're simultaneously preparing for what our accelerating digital transformation and adaptive business models for the Fourth Industrial Revolution will bring.

We are revamping our business infrastructure, intent on improving our business value chains for our customers and creating synergy between our businesses. In 2020, we launched a global chemical, materials and energy company that will lead the global eco-friendly energy market and high-value-added materials industry. And through a strategic reorganization, the company will be able to create a sustainable future through integrations and expansions that focus on innovating energy and materials technologies.

Embracing innovations and pursuing opportunities to build a better future

Our chemical business is leveraging its vertical integration to refine and transform raw materials and basic chemicals into synthetic fuel and advanced materials. We're winning awards along the way but more importantly, we're executing our strategy to use both upstream and downstream production processes to diversify our product portfolios with high-value-added and eco-friendly products. Our heavy investments in R&D will ensure that we become a global eco-friendly company built with industry leading technologies and solutions. And as we continue to expand production capacity, at the same time, we're maintaining financial stability. In 2021, we will complete our large-scale expansion project, valued at USD 1.3 billion. The successful completion of this project will help us to achieve a competitive edge with regard to high-value-added resin products while also adding to our production capacity for ethylene, the petrochemical industry's base chemical.

Hanwha's vertically integrated solar energy business leads the global market, and we're doing this with our cutting-edge technology and world-class production capacity. We're maintaining the No. 1 market share in the new market for advanced renewable energy across the US, Germany, the UK, and Japan. We are also actively participating in large-scale solar energy projects in the US, Europe, and other countries. And in response to the changing energy market, as evidenced by the dramatic popularity and productions of electric vehicles and distributed power generation, we're increasing our developments efforts across a variety of business models. We're transforming into a leading energy solutions provider for the future by providing solar energy systems, power plant development, and energy for sale.

In aerospace, we're securing large supply contracts with global customers for our advanced solutions that are built to exceed expectations, a testament to our capabilities and success in the industry. In 2019, we signed a supply agreement for USD 1.7 billion worth of aircraft engine parts with Pratt & Whitney, the global aircraft engine manufacturer. Mass production is set for 2022. As a trusted partner with world-class technology and renowned quality in the global aircraft industry, we are participating in a joint international development project to build high-value-added aircraft engines. Moreover, we are aggressively engaging in global mergers and acquisitions. For this purpose, we established **Hanwha Aerospace USA** in the US, a strategically located hub for global engine manufacturers that will allow access to rich resource pools to further our technological capabilities.

In mechatronics, we're investing in manufacturing innovations and developing logistics automation systems, and Smart Factory solutions for the Fourth Industrial revolution. We are also addressing the anticipated needs of this new era by providing global video security solutions that combine AI algorithms and advanced optical technologies.

In financial services, **Hanwha** continues to innovate to better address the needs of customers, amidst challenges of an evolving market. Our integrated brand, LIFEPLUS, is pushing the boundaries of financial services with a mission to enrich the lives of our customers. We're using advanced digital technology to further capitalize on Fintech opportunities, while investing in Insurtech-based business models and digital asset management services. In 2020, we launched South Korea's first digital non-life insurer and now are offering a new digital experience that delivers a higher standard of service to our customers. We're investing in digital platforms to strengthen customer service today and build a better set of financial services for the future. We're collaborating with Internet-only banks and fostering Fintech startups to better leverage AI, Big Data, and blockchain technologies to create synergy between financial businesses and advance the financial industry. Our efforts are all aligned to our global growth strategy and we're doing a lot but what drives us is our goal to provide meaningful value-added services.

At **Hanwha**, we are infusing our many years of experience, expertise, and unique brand value into our affiliate companies in construction and operation & management services to deliver differentiated experiences that cater to evolving lifestyles and residential living. Launched in 2019, our premium residential brand, **FORENA**, offers customers with a new residential lifestyle and culture. As a real estate developer, this is part of our comprehensive set of solutions that include the building of well-designed cities that provide a new concept of living. Our multiplex development projects are the convergence of residential, retail, office, commercial, and hotel space. We leverage and build on the foundation designed for sustainable growth. And our growth will depend on how effectively we respond to the needs of our customers for retail and leisure services that support their diversified lifestyles and leisure activities.

And as a conscientious corporate citizen, **Hanwha** continues to meet its ethical, legal, and economical responsibilities in all of our business practices. We remain committed to our business philosophy that as a business we have a responsibility to do good. This is why we are increasing our

social contributions and making efforts to improve our society. We sponsor social events, community activities to promote talent development, culture, the arts, sports, donations, and volunteering. We're also raising awareness on eco-friendly energy in our communities. Our recent response to the recent global pandemic, offering **Hanwha** Life Park as the first COVID-19 treatment center in Gyeonggi-do, South Korea, is one such example of doing good.

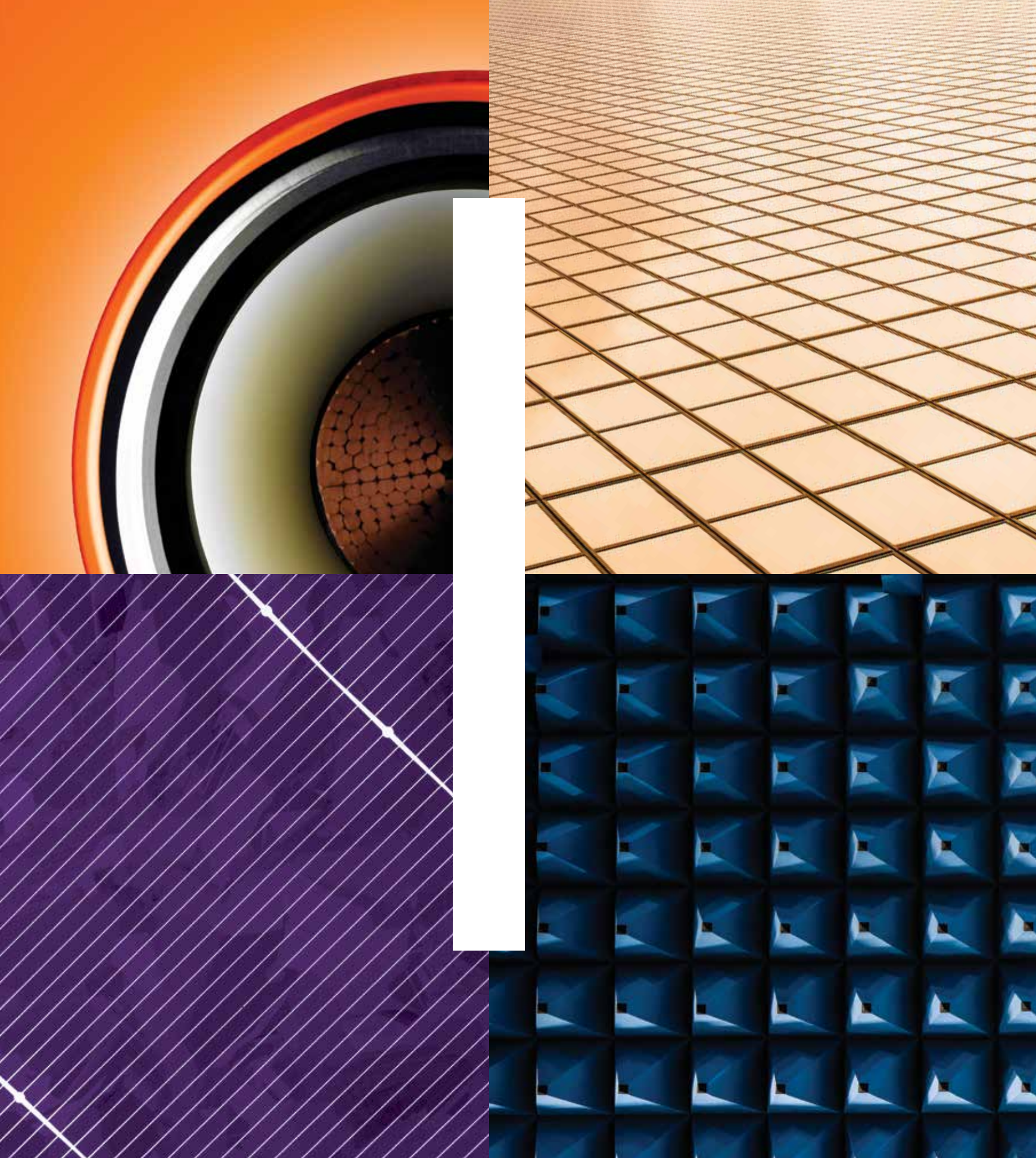
At **Hanwha**, we've remained steadfast to the UN's Sustainable Development Goals to work together with others to solve global environmental issues. In June 2019, we launched the Clean Up Mekong campaign to help solve the waste problems in the rivers of Vietnam. We donated solar-powered boats for this effort, while raising environmental awareness to prevent climate change. Our **Hanwha** Solar Forest campaign has also been protecting the environment by planting thousands of trees. To date, we have planted about 500,000 trees in seven locations across South Korea, Mongolia, and China

But even with all these ideas and opportunities, we believe people are the most important asset. That's why we're hiring the best talents and fostering their creativities. And we're not only building partnerships with large companies but also with small and medium-sized enterprises so we can succeed and achieve together. While investing in talents and partnerships, through the **Hanwha Compliance Committee**, we're also aggressively working to maintain strict compliance and the highest standards. This is creating an ethical corporate culture on the inside, and setting an example in fair competition and transparency for others to follow, on the outside.

We continue to face a world full of uncertainties where advancements in digital technology are accelerated by emerging technologies and changing infrastructure. Despite them, we will rise to the challenges and overcome. We will do this through innovation and by doing what others have not. We will take the road less traveled, never losing sight of why or for whom it's all for—our customers.



Chairman
SEUNG YOUN KIM



BUSINESS HIGHLIGHTS

At **Hanwha**, we partner with our customers. We listen first and only then create solutions. And it is from the understanding of our customers with which we create the products and services that are changing how the world works, lives, and plays.





SEEK



FIND

WE SEEK NEW TECHNOLOGIES WITH WHICH YOU CAN FIND NEW APPLICATIONS.

CHEMICALS & MATERIALS

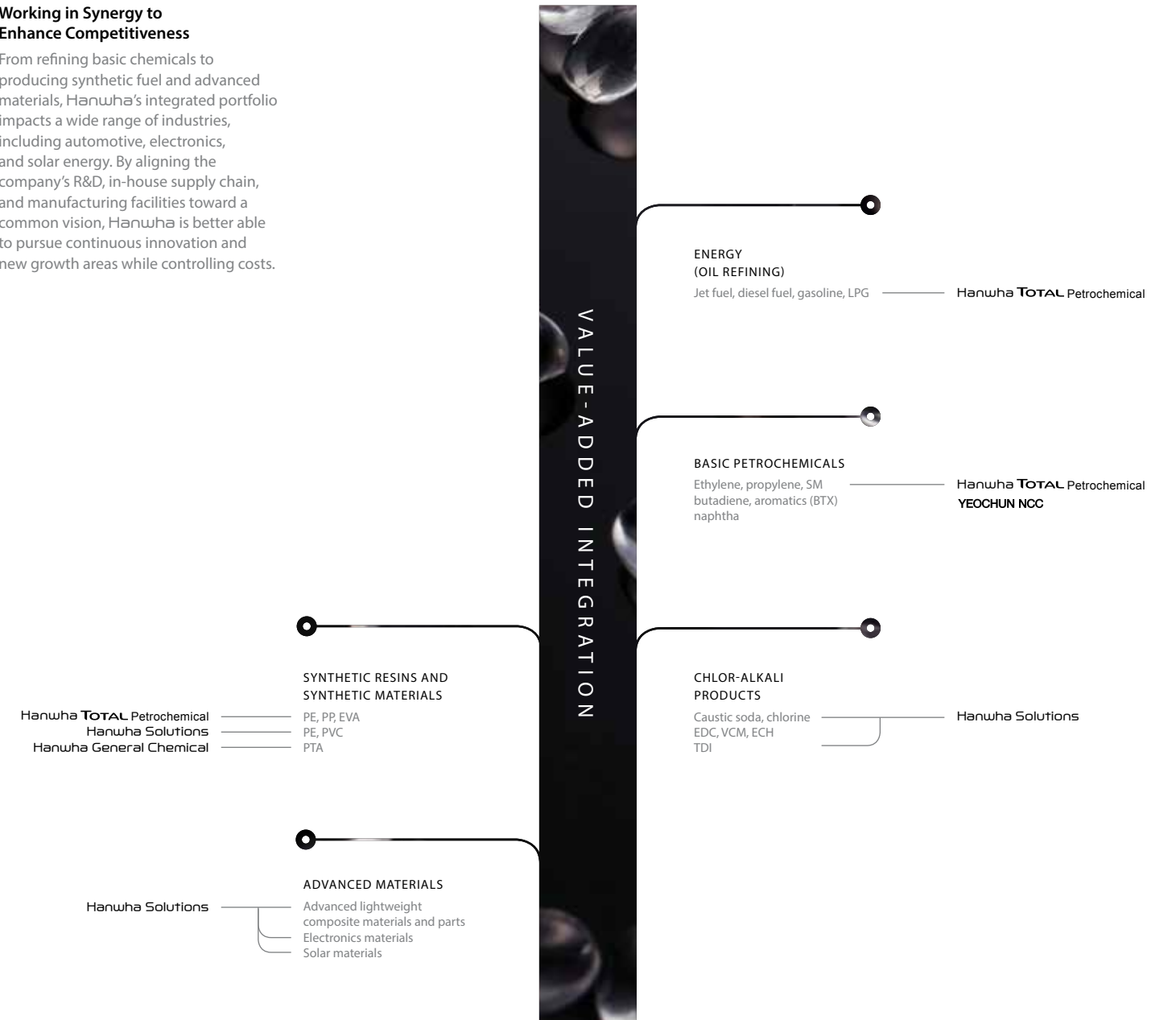
Hanwha researchers are leaders in their fields and passionate about innovating and exploring new ways to produce petrochemicals and advanced materials that our customers can leverage to push their own limits of what is possible in automotive engineering, solar energy, nanotechnology, and other fields. For example, our breakthrough process for producing the synthetic resin EVA is allowing companies to manufacture solar cells with higher purity, transparency, and efficiency at lower costs.

In the automotive industry, our revolutionary lightweight composite materials are prized for their durability and flexibility—comparable to steel in strength but with up to 25 percent less mass. This means cars can weigh less but perform better. These and other innovations provide greater value for our customers and attract partnership opportunities for Hanwha, worldwide.



Working in Synergy to Enhance Competitiveness

From refining basic chemicals to producing synthetic fuel and advanced materials, Hanwha's integrated portfolio impacts a wide range of industries, including automotive, electronics, and solar energy. By aligning the company's R&D, in-house supply chain, and manufacturing facilities toward a common vision, Hanwha is better able to pursue continuous innovation and new growth areas while controlling costs.



PETROCHEMICAL

A Leader In South Korea

Hanwha continues to be a leading producer in South Korea's petrochemical sector with total sales of USD 14.58 billion.

ETHYLENE

Petrochemical Powerhouse

Hanwha has an ethylene production capacity of over 3.35 million tons and is rapidly becoming a major player in this important market.

Hanwha **TOTAL** Petrochemical's
Daesan Petrochemical Complex





EVA

Global Leader

Hanwha has built a world-class ethylene vinyl acetate (EVA) production plant with an annual capacity of 710,000 tons. By adopting new processes and investing in advanced facilities, we are developing high-value products that are helping to further increase our market share.

W&C COMPOUND

World-Class Innovation

After developing the W&C compound, an innovative polyethylene synthetic resin, for the South Korean market, Hanwha had in effect, freed the South Korean manufacturers from their dependence on imported resins for power transmissions and distribution cables.



PTA

Proven PTA Technology

With a purified terephthalic acid (PTA) production capacity of more than two million tons per year, Hanwha leads the domestic PTA market. As we continue to export our process technology, we are increasingly recognized around the world for technological prowess.

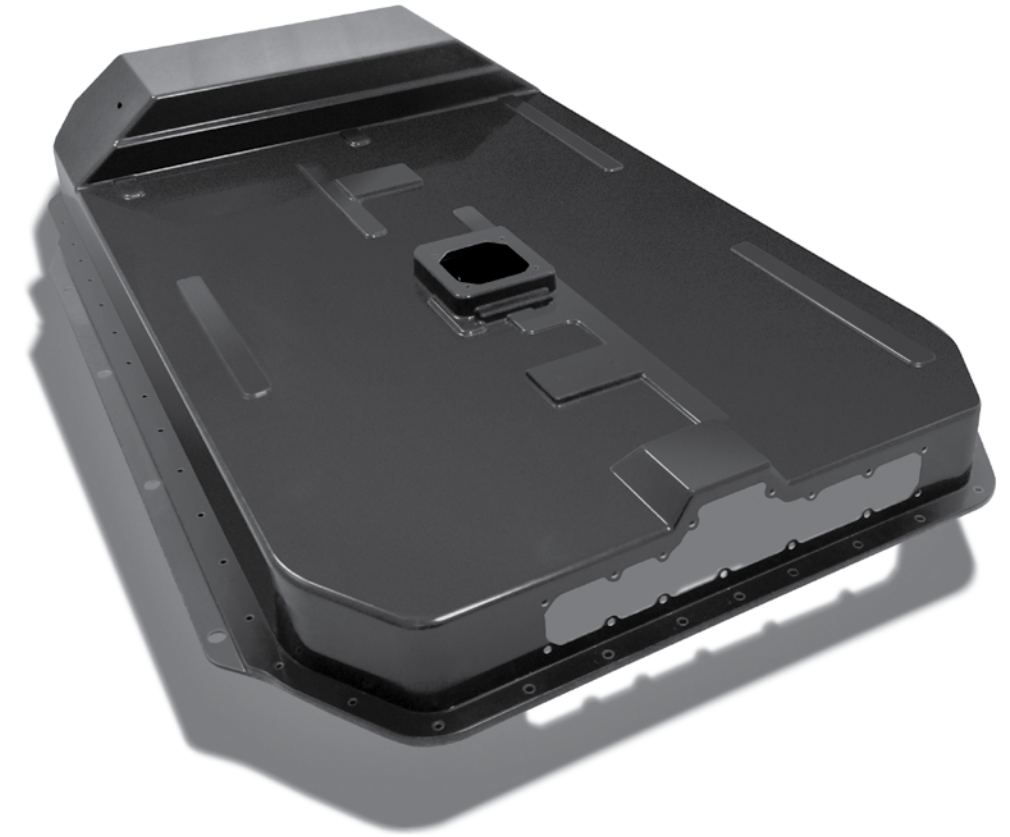




AUTOMOTIVE THERMOPLASTICS

70%
Global
Market Share

Hanwha StrongLite and SuperLite products now account for 70 percent of the global market in GMT (glass fiber mat-reinforced thermoplastics) and LWRT (low weight reinforced thermoplastics) technologies.



ELECTRIC VEHICLE BATTERY SOLUTION

Advanced
Eco-Friendly
Solution

Hanwha's new battery housing for eco-friendly electric vehicles and hydrogen tank for hydrogen fuel cell vehicles are examples of how Hanwha's innovative lightweight composite materials are being applied. These products are expected to lead the mobility market and raise the bar for other manufacturers. With cutting-edge products, we are leading the market and becoming a major supplier to global automakers. We are also developing new products with which to enter the battery sensing material market for electric vehicles. By expanding our ultra-high-pressure hydrogen tank business, a key component of hydrogen fuel cell vehicles, we are paving the way not just to sustainable growth but to a better future for all.





QUESTIONS



ANSWERS

WE HAVE THE ANSWERS TO THE QUESTIONS YOU HAVE FOR THE FUTURE.

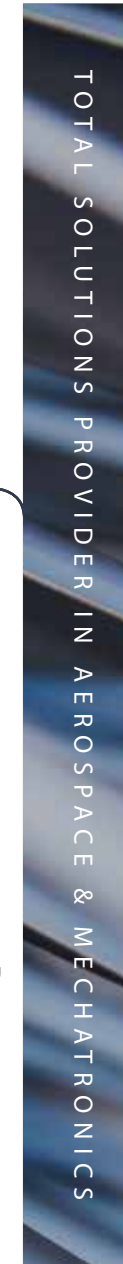
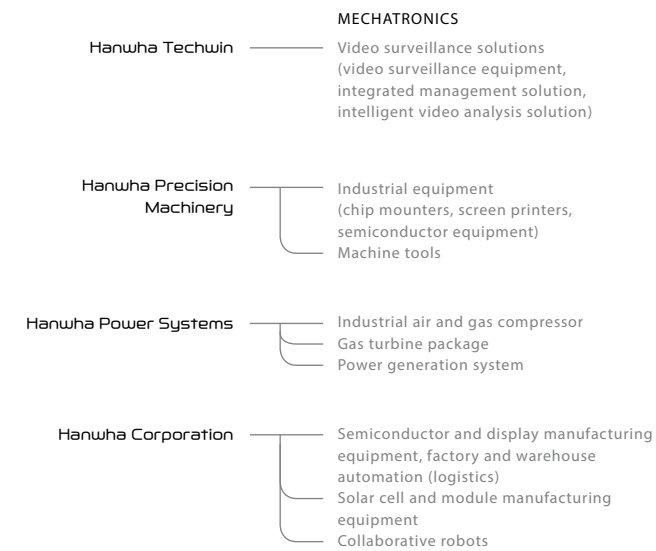
AEROSPACE & MECHATRONICS

From here on earth for the skies above, Hanwha is developing world-class products in aerospace and mechatronics to help corporations and governments meet their future needs in manufacturing, commerce, security, and travel. And we continue to pursue technology partnerships with other leading companies and develop solutions that satisfy customers around the globe.



Leading in Innovation and Expertise

We are the only company in South Korea with advanced aircraft engine technology. Through our innovations and industrial expertise, Hanwha is becoming a global force in the aerospace and mechatronics industries with outstanding technologies for radars, optronics, avionics, and unmanned control systems.



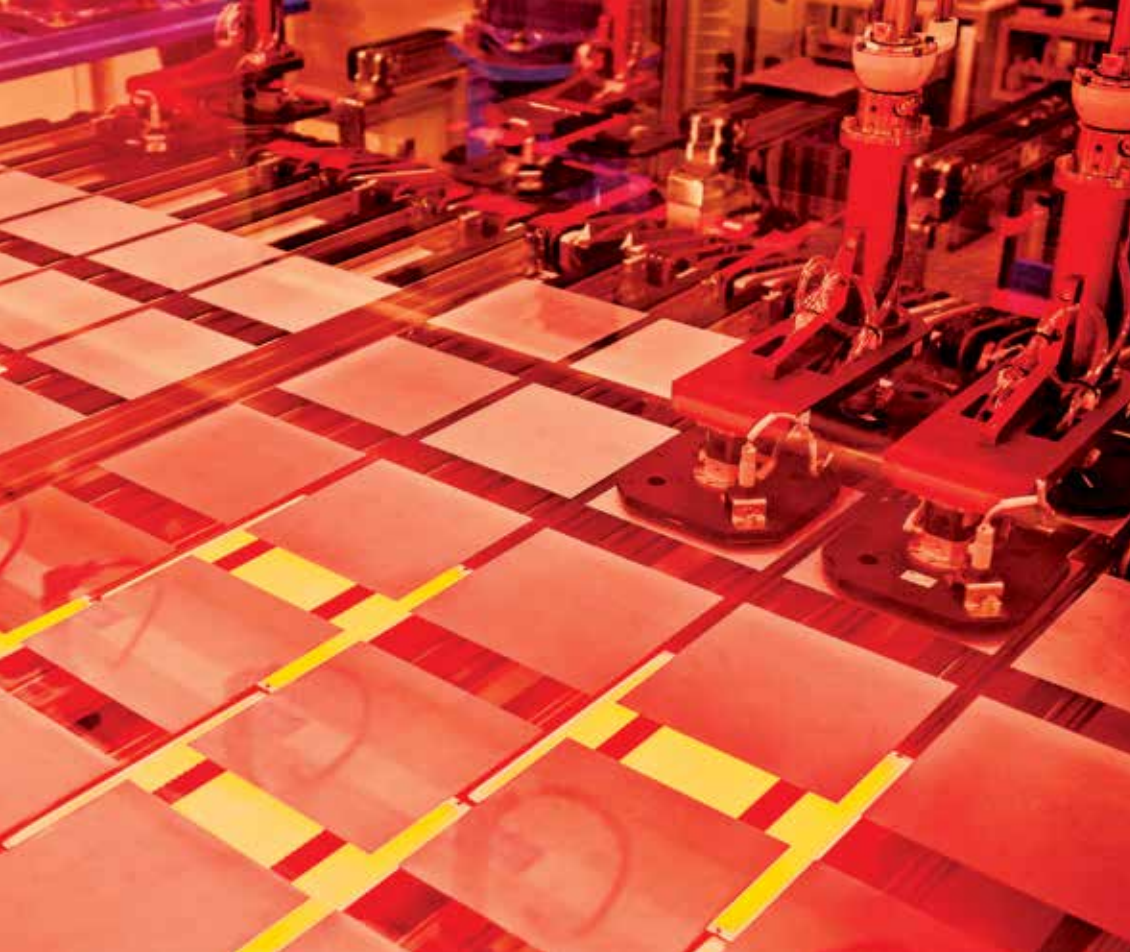
AEROSPACE

USD 20 Billion

Over the past five years, Hanwha Aerospace has secured aerospace contracts worth nearly USD 20 billion by partnering with global aviation engine companies such as Pratt & Whitney, GE, and Rolls-Royce. We also signed an agreement with United Technologies International Corp-Asia Pte Ltd. (Pratt & Whitney subsidiary) to acquire a 30 percent equity interest in P&W NGPF Manufacturing Company Singapore Pte. Ltd. The plan is to manufacture hybrid metallic fan blade parts and high-pressure turbine disks for engines.

Hanwha Aerospace's
aircraft engine production site





MACHINERY

Experience Your Smart Factory

Hanwha has more than 50 years of experience in global mechatronics and we've never stopped innovating. Our customers use our technology to improve productivity and efficiency.



SECURITY

Innovative Security Solutions

Hanwha Techwin has accumulated over 30 years' worth of core technologies in optics design, image processing, and manufacturing. We've built on these technologies with continuous technology development to grow rapidly and become South Korea's No. 1 video security solutions provider. And by leveraging our expertise and experience, we're on a trajectory to develop the next-generation technologies in deep learning. AI and business intelligence analytics is not only the natural next progression for our company but also, it is a way for us to increase our presence in the global security market.

ELECTRONICS

Defense Electronics Innovation

By leveraging our strategic alliances and building unique technologies in command, control, communication, computer, and intelligence (C4I), Hanwha Systems is bringing innovative solutions to global markets.





TOMORROW



TODAY

WE INVEST IN THE POWER OF TOMORROW SO YOU CAN MEET
THE ENERGY DEMANDS OF TODAY.

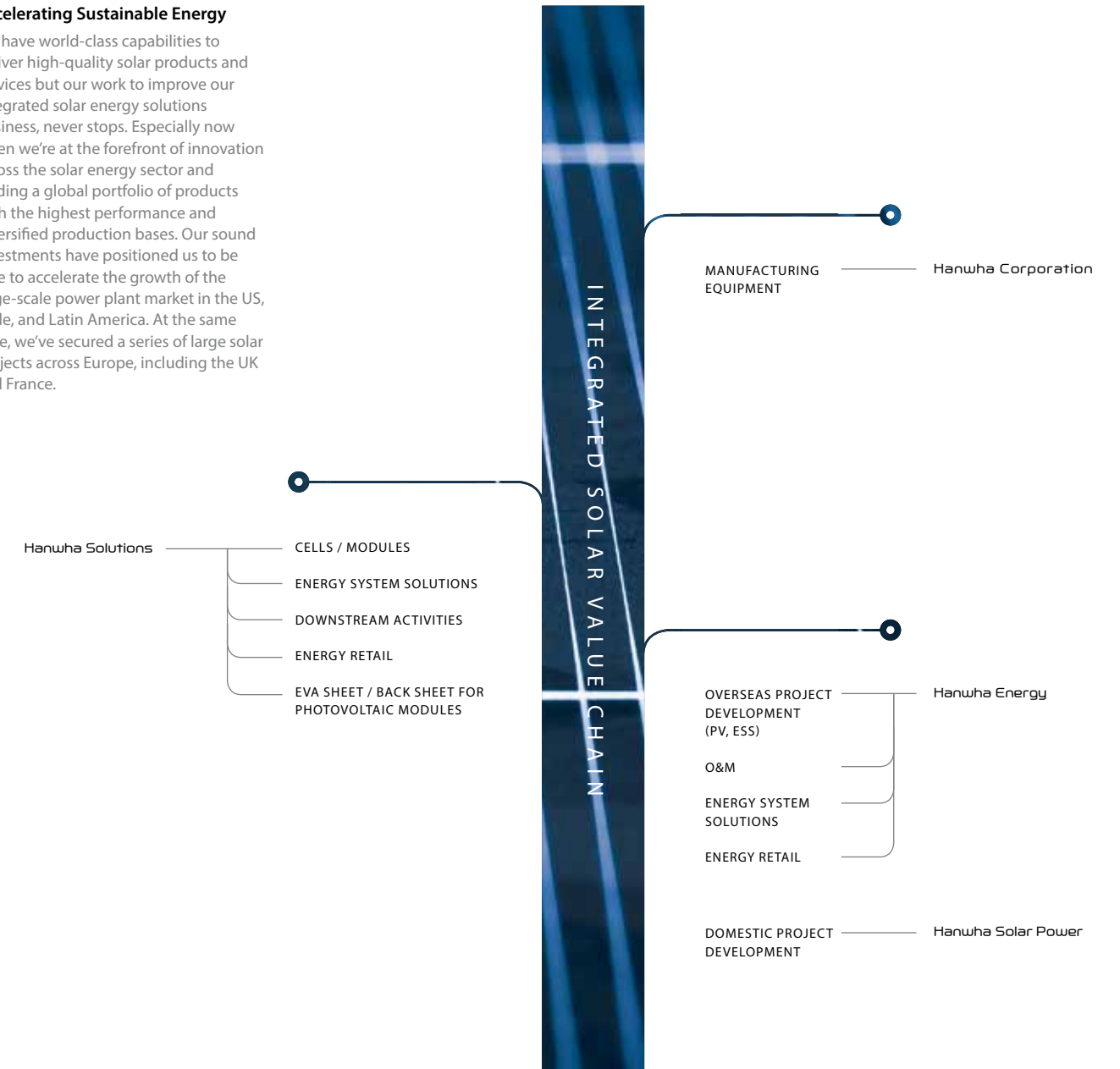
SOLAR ENERGY

With superior quality solar products and services that have incorporated world-class technology, Hanwha has rapidly become one of the most trusted names in the global solar industry. We are at the forefront of innovation in the solar energy sector, with sustainable products and solutions custom-designed to address the global energy challenges of today and tomorrow.



Accelerating Sustainable Energy

We have world-class capabilities to deliver high-quality solar products and services but our work to improve our integrated solar energy solutions business, never stops. Especially now when we're at the forefront of innovation across the solar energy sector and leading a global portfolio of products with the highest performance and diversified production bases. Our sound investments have positioned us to be able to accelerate the growth of the large-scale power plant market in the US, Chile, and Latin America. At the same time, we've secured a series of large solar projects across Europe, including the UK and France.





SOLAR CELLS
& MODULES

Technology Leader

Hanwha Solutions' proprietary Q.ANTUM solar cells significantly reduce energy consumption by utilizing Passivated Emitter Rear Contact (PERC) architecture. In 2015, the company achieved a record-breaking 19.5 percent efficiency rating with its multicrystalline solar module, the first module of its kind. For the 4 consecutive years, in 2019, DNV GL, the world's largest classification society, rated one of our key products like the Q.ANTUM, a "Top Performer." By the end of 2018, Hanwha Solutions had succeeded in mass-producing 15GW of Q.ANTUM solar cells. Our high-end technology is recognized around the world and has won the Top Brand PV Seal 2020 from EuPD Research 7 consecutive years in Europe and 5 consecutive years in Australia.

SOLAR RESEARCH
& SALES

40+ Countries

Hanwha has state-of-the-art solar energy R&D centers in Germany, South Korea, China, and Malaysia. Its marketing and sales operations are in more than 40 countries throughout Europe, Asia, and North America.

Power plant using Hanwha solar modules in
North Carolina, USA



SOLAR CELL
PRODUCTION

Global Production Leader

Hanwha Solutions is a world-class leader in solar module manufacturing with an annual module production capacity of 11.3GW.

(as of December 2020)



PV MODULES

Market Share Leader

In 2015, Hanwha Solutions signed, what was at the time, the largest single contract in the solar industry. The agreement was with the US company, NextEra Energy Resources, to provide more than 1.5GW of solar modules. Hanwha Solutions is the market share leader among all global manufacturers in Japan and the US (residential and commercial markets). We have achieved the biggest market share in Germany, and the UK. We're leading the charge in green growth and sustainable development to reduce poverty, create jobs and advance the synergy between the environment and economy for generations to come.



INNOVATE



SECURE

WE INNOVATE FINANCIAL PRODUCTS SO YOU CAN SECURE
A PEACE OF MIND.

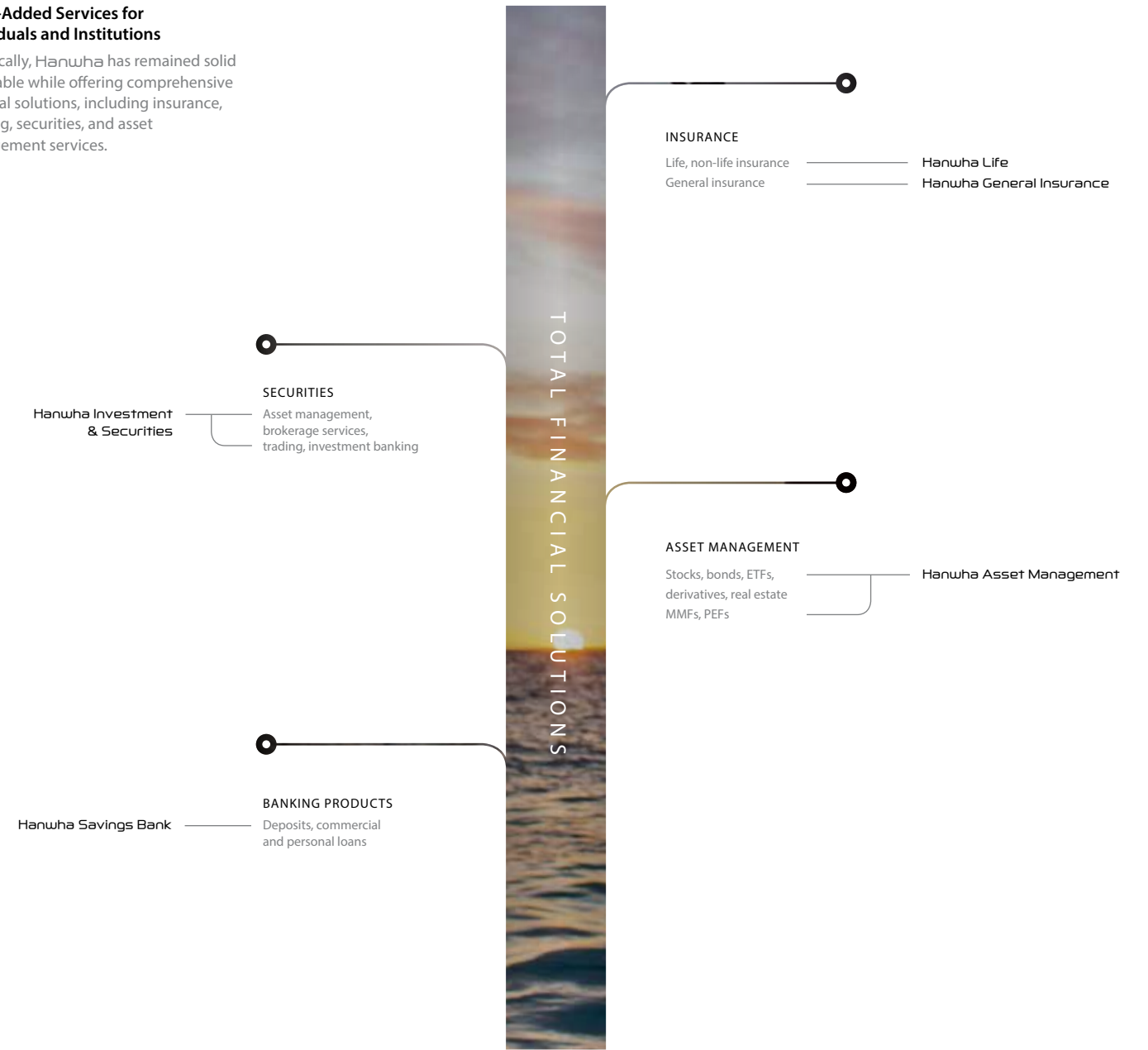
FINANCE

Hanwha offers a complete financial service platform with insurance, securities, asset management and banking products. We create value for individuals and institutional customers by continuously adapting to today's rapidly changing financial landscapes and providing financial solutions that give customers the freedom to pursue their dreams.



Value-Added Services for Individuals and Institutions

Historically, Hanwha has remained solid and stable while offering comprehensive financial solutions, including insurance, banking, securities, and asset management services.



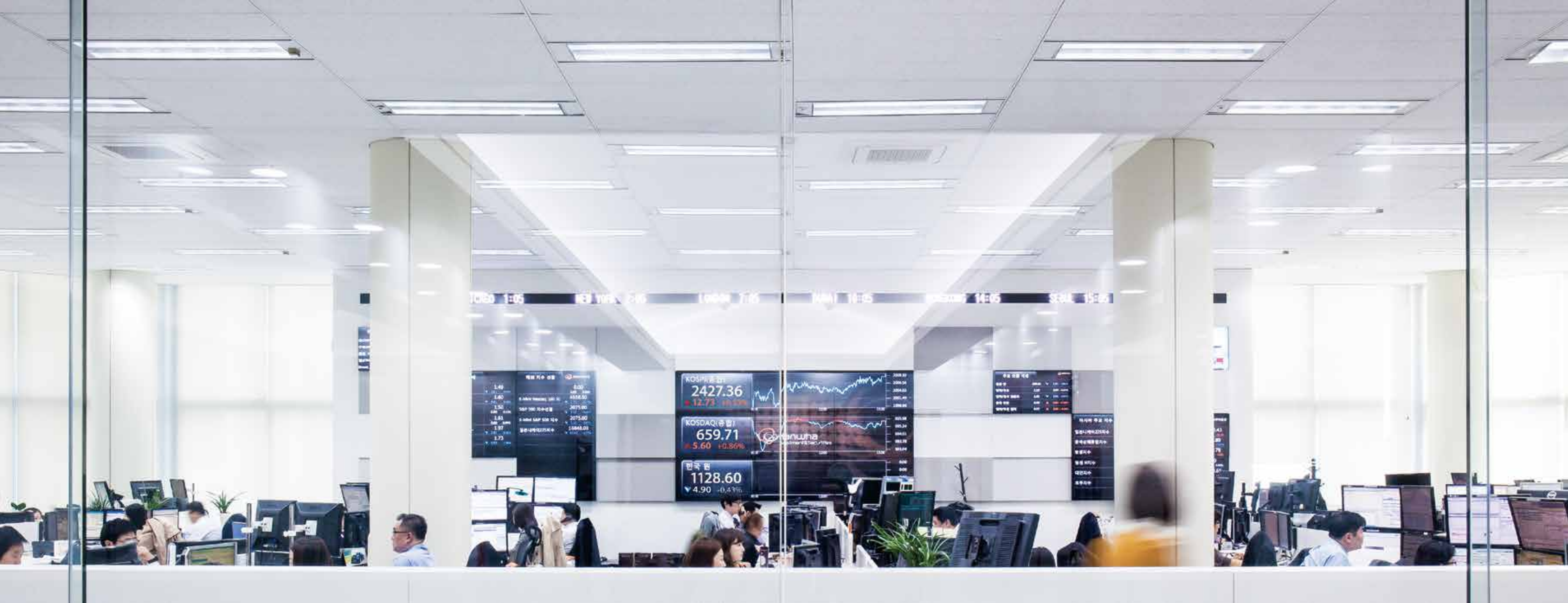
LIFE INSURANCE

A New Milestone

Seventy years after being established as South Korea's first life insurance company, Hanwha Life has reached a new milestone with USD 86.4 billion (KRW 100 trillion) in total assets. In 2019, we grew and achieved new heights to lead the industry with USD 104 billion in total assets. We've maintained a sound financial structure since 2010, when we were first recognized as a major domestic insurer in the securities market. Hanwha Life is achieving industry-leading value in asset management, on-site sales competitiveness, and product development capabilities.

Hanwha Finance Plaza
near City Hall in Seoul





FINTECH

Securing Future Growth

Hanwha is leveraging Big Data strategically and applying the latest financial technologies to create sustainable growth in new markets, including online banking, insurance, and lending with mid-range interest rates.



SALES NETWORK

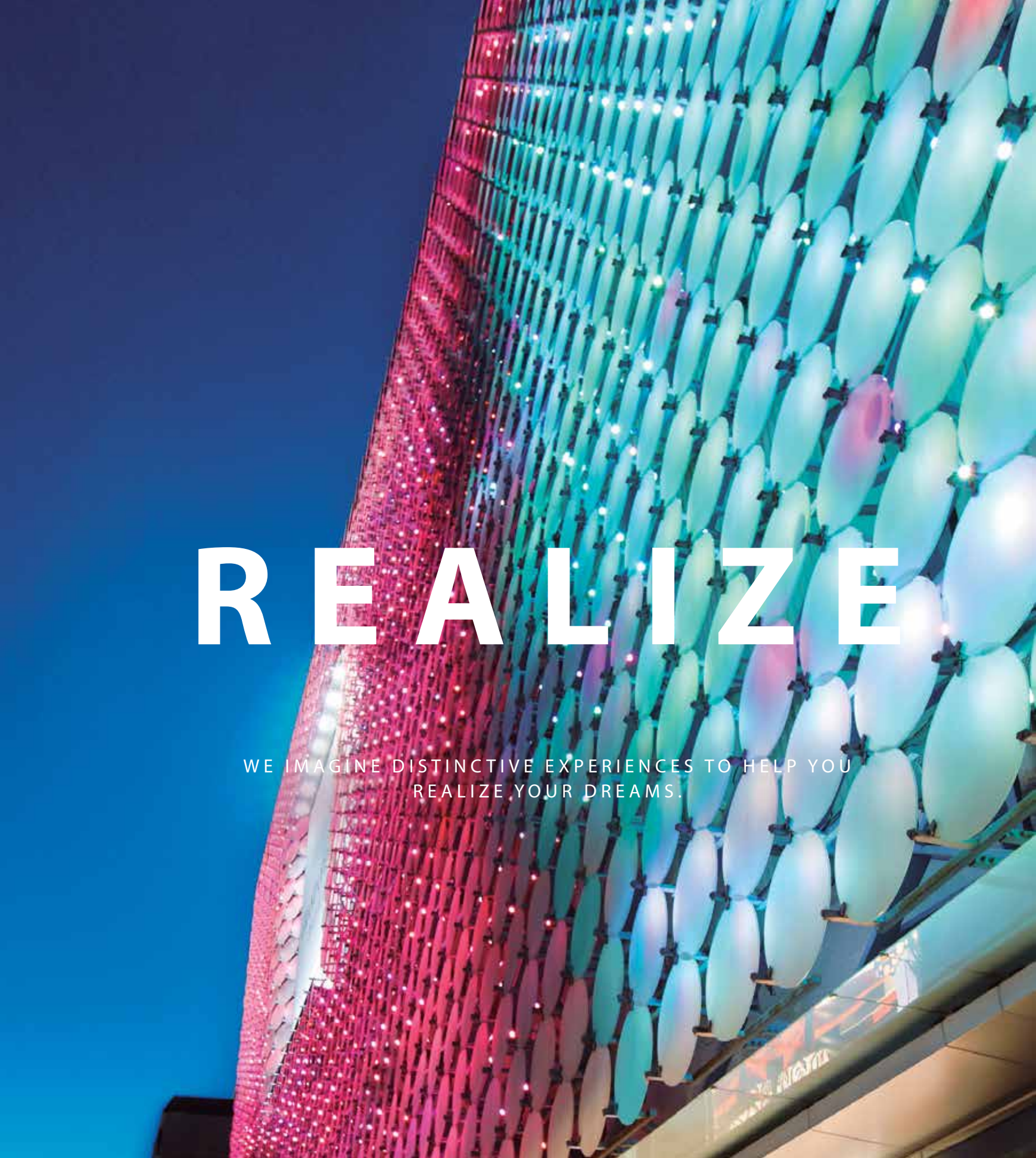
Global Expansion

Hanwha's financial business is accelerating its entry into the pan-Asian market, across the US, Vietnam, China, Indonesia and Singapore. We're leveraging our diversified global financial business portfolio including life insurance, securities, and asset management. We will also continue to strengthen our future growth engines as we advance into the digital financial market while providing financial solutions that match the lifestyle of our local customers.





IMAGINE



REALIZE

WE IMAGINE DISTINCTIVE EXPERIENCES TO HELP YOU
REALIZE YOUR DREAMS.

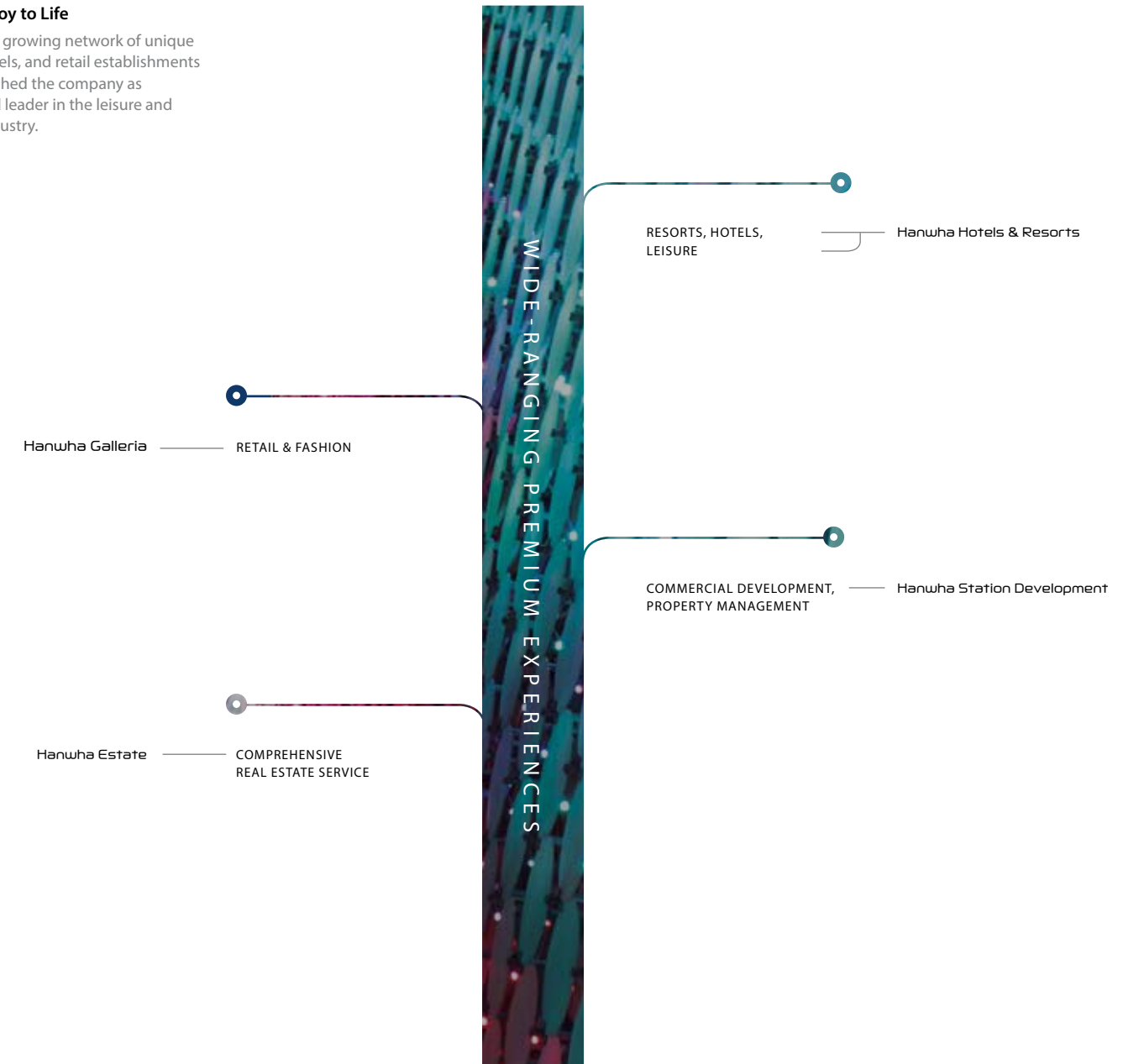
SERVICES & LEISURE

From first-class shopping experiences to luxury hotels and resort stays, Hanwha is dedicated to helping our customers enjoy richer and more fulfilling lives. We continue to expand our services and leisure businesses to bring dream-like experiences to life for people around the world.



Bringing Joy to Life

Hanwha's growing network of unique resorts, hotels, and retail establishments has established the company as a respected leader in the leisure and lifestyle industry.



RETAIL

Premium Contents Producer

The Galleria is Korea's first and foremost premium department store chain. These stores represent Hanwha's commitment to providing differentiated customer experiences by incorporating timely lifestyle consumer trends into its offerings. As a premium provider in retail, we develop luxury brands, food and beverages, VIP services, and new platforms for both offline and online stores.





AQUARIUMS

Leader in Maritime Culture

Hanwha's affinity for marine life shows in our chain of award-winning aquariums, including the eco-friendly Aqua Planet located in the South Korean cities of Jeju, Yeosu, Ilsan, and Seoul. Aqua Planet Jeju features a diverse and world-class marine aquarium. Aqua Planet Ilsan features an aquarium and a zoo combined. Aqua Planet Yeosu showcases Korea's only 360-degree dome aquarium. Our expertise in marine-life and aquarium architecture is renowned and sought out internationally.



HOTELS

One of A Kind

THE PLAZA is South Korea's most luxurious boutique hotel and considered one of the preeminent hotels in Asia. This 5-star hotel is centrally located in the heart of Seoul, amidst a myriad of tourist attractions and a bustling nightlife. THE PLAZA boasts 408 rooms and over 20,000 square feet of event space. It's impressive in size but it is in its refined design, impeccable service, and premium accommodations that we take pride. THE PLAZA is the first hotel in Korea to join the Autograph Collection, Marriott International's premium portfolio of distinctive hotels. We are introducing exclusive services that combine the advantages of a local hotel brand with the benefits of a premier-chain hotel brand.

RESORTS

Luxury At Its Best

Launched in 2018, Hanwha Hotels & Resorts Geoje Belvedere is an upscale beachfront resort complex that offers its guests a holistic experience—where wellness and wellbeing are taken to a whole new level. Nestled between a lush coastal mountaintop and an idyllic sea, the Belvedere is the ultimate destination where nature meets luxury. There are 470 rooms, each with breathtaking views overlooking the ocean. Guests can luxuriate in amenities from fine dining and nature immersion programs to aquatic activities including yachting. The Belvedere's single purpose is to help guests connect to nature so you can unwind, rejuvenate, and enjoy life as it was meant to be.





ENVISION



ACHIEVE

WE ENVISION POSSIBILITIES SO YOU CAN ACHIEVE YOUR GOALS.

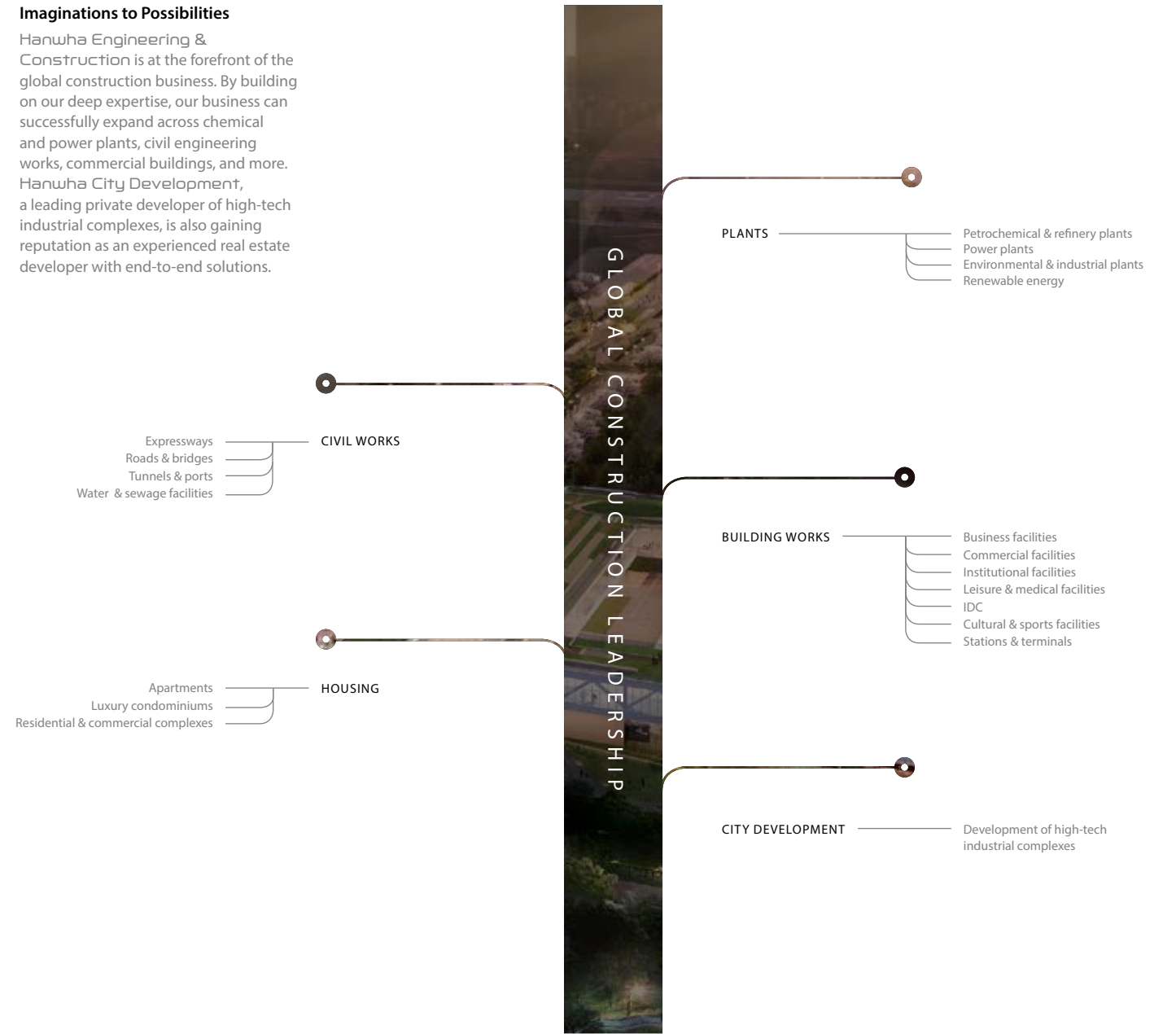
CONSTRUCTION

Hanwha partners with customers to understand their needs and goals. Our deep level of engagement enables us to truly envision before we build and exceed customer expectations after we do. From spectacular performance venues to cutting-edge manufacturing facilities to affordable housing that brings families and communities together, Hanwha is helping to enrich the lives of millions worldwide.



Imaginations to Possibilities

Hanwha Engineering & Construction is at the forefront of the global construction business. By building on our deep expertise, our business can successfully expand across chemical and power plants, civil engineering works, commercial buildings, and more. Hanwha City Development, a leading private developer of high-tech industrial complexes, is also gaining reputation as an experienced real estate developer with end-to-end solutions.





IRAQ PROJECTS

Building A City

Hanwha's Bismayah New City Project is the unprecedented effort to build an entire city covering nearly 60 city blocks and including over 830 apartment complexes totaling more than 100 thousand units. The Bismayah New City Project is the largest construction project in the history of the Middle East by a South Korean company. And recently, we secured another contract worth USD 2.1 billion to build the social infrastructure for Bismayah city. This pushes the total value of the project to more than USD 10 billion.



PETROCHEMICAL PLANT
DEVELOPMENT

Turnkey Solutions

Hanwha Engineering & Construction continues to solidify its market presence in the Middle East and North Africa with industrial, power and petrochemical plant projects, including the construction of the Saudi-owned Ma'aden petrochemical plant. The Ma'aden plant will have an annual production capacity of 1.5 million gallons of fertilizer.



THE PHILIPPINES ARENA

World's Largest Dome Arena

Hanwha Engineering & Construction is constructing buildings that are expressions of creativity and innovation. One of them in the Philippines has even become a landmark. The Philippines Arena, built by Hanwha is an outstanding example of creative architecture that uses a design motif inspired by ancient arenas. It is the world's largest domed performance hall.



SUWON GWANGGYO
CONVENTION CENTER

Multiplex Development Project

Hanwha Hotels & Resorts and Hanwha Galleria are partnering to build a tourism & leisure infrastructure and it will support a multiplex that includes a hotel, a department store, and an aquarium. The addition of this multiplex coupled with Hanwha's engineering and construction expertise will bring the visually stunning Suwon Gwanggyo Convention Center to life.



Hanwha OVERVIEW

Hanwaha's Vision

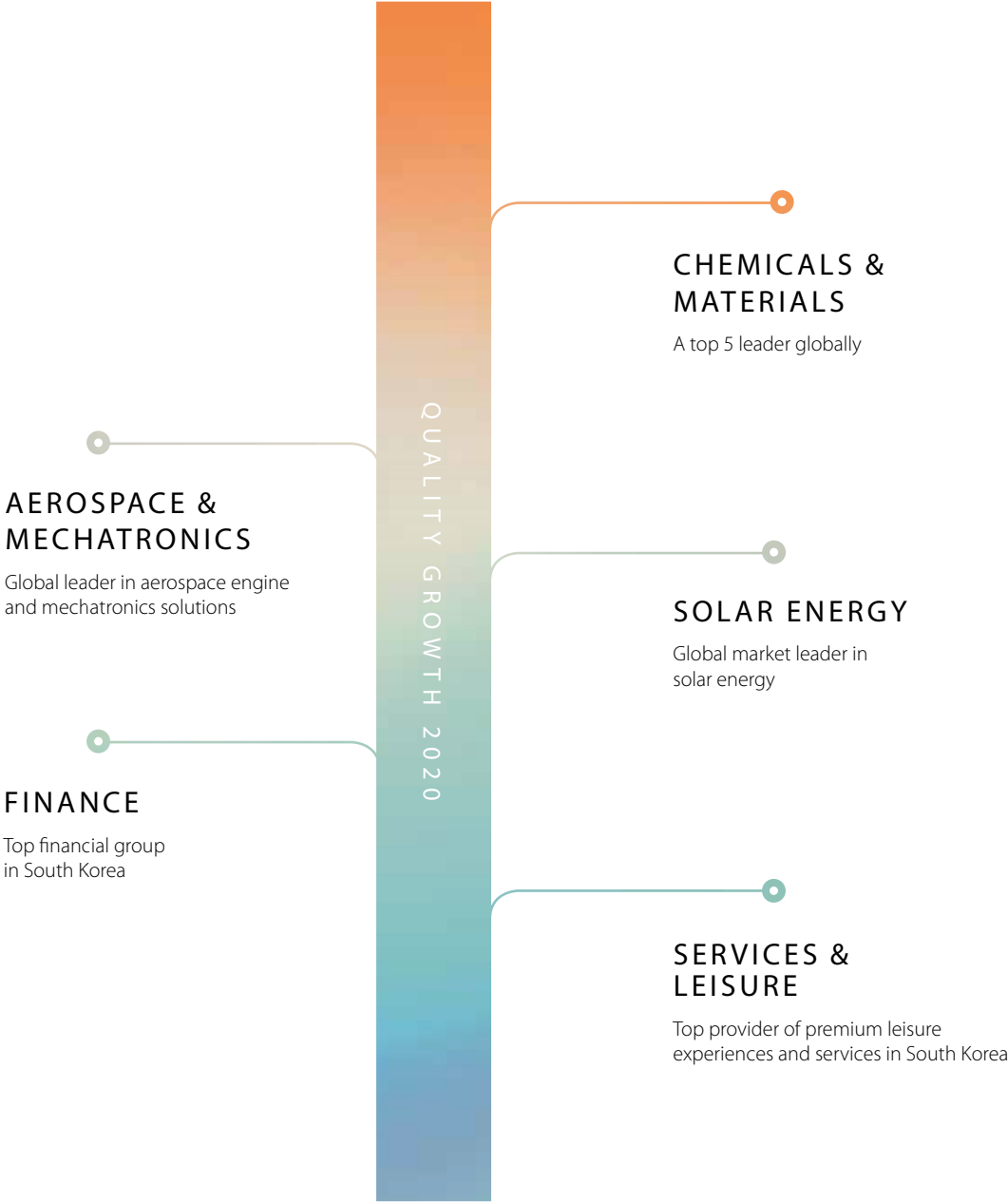
Our vision is to touch the lives of every individual in every country in which we operate. We want to elevate the quality of life with our innovations and solutions. And to achieve our vision, we've set goals to help us lead in all markets our businesses compete in. Anticipating change, innovating, and investing in future technologies and infrastructure are at the forefront of our agenda for each of our businesses. At the same time, we remain steadfast in our commitment to help our customers grow with us with the products we build for them. After all, our commitment is to our customers, employees, and to the world in which we live.

Our Spirit & Core Values

At **Hanwaha**, we operate with the spirit of trust and loyalty above all else. They are reflected in our core values and serve to guide us in how we do business and why we innovate.

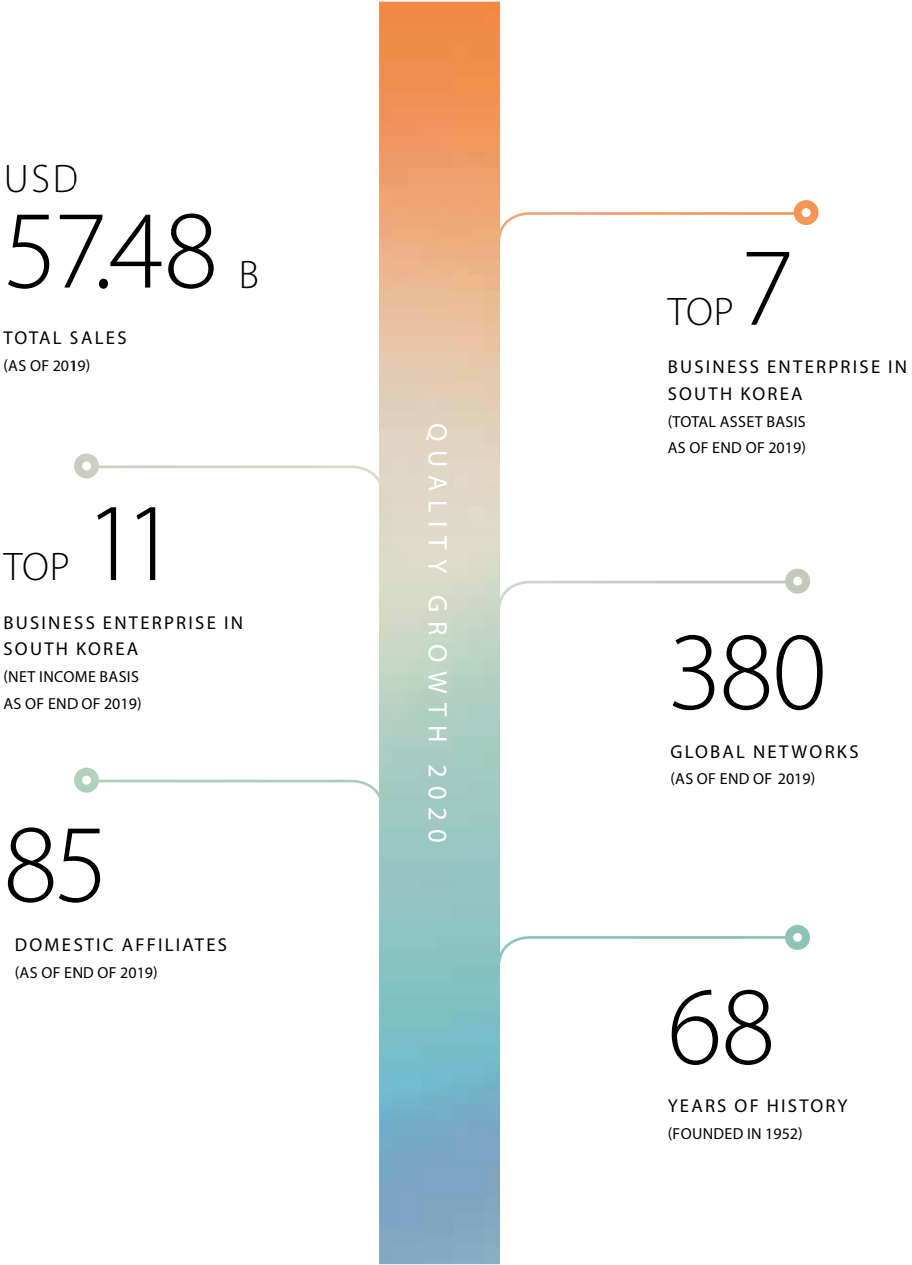
Our Core Values

- We believe in challenging the status quo in the pursuit of excellence through change and innovation.
- We are dedicated to our company, customers, and one another to achieve a greater goal.
- We believe in acting with integrity in everything we do, as individuals and employees.



Hanwha Today

After our founding in 1952, **Hanwha** has grown into a Fortune Global 500 company. Our business expertise and synergies in manufacturing & construction, finance, and services & leisure have made us the 7th largest business enterprise in South Korea. And by quickly anticipating and responding to changing market conditions, we've led the industry with world-class capabilities. Our focus, well-executed strategies, and our aggressive investments have helped us to successfully overcome the toughest challenges in key industries in chemical, aerospace & mechatronics, solar energy, and finance. We're now building the foundation for sustainable development and a brighter future for all.



Milestones

Foundation of a Business
1952–1963

RESTORING A NATION'S ECONOMY

After the Korean War, Hanwha played a critical role in reconstructing our devastated nation. In 1952, Korea Explosives Co. (now 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; and we do.

Business Expansions
1964–1980

MODERNIZATION OF A NATION

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. (now Hanwha Solutions) and entered the petrochemicals business. After launching Kyung-In Energy in 1969, we established Hankook Precision in 1971 (now Hanwha Corporation/Machinery). 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.

The Second Foundation
1981–1995

STRATEGIC DIVERSIFICATION

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 70's, 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 (now called 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 (now Hanwha Hotels & Resorts) to become Korea's leading leisure company. In 1986, we also acquired Hanyang Store (now Hanwha Galleria) and expanded into the retail industry.

Building Momentum
1996–2006

RESTRUCTURING FOR THE NEW CENTURY

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 it the second largest life insurance carrier in South Korea with assets of USD 104 billion in 2019. We emerged from the financial crisis without a single labor dispute and were heralded as a role model for other South Korean corporations to follow.

Accelerating Global Business
2007–Present

EMERGING AS A GLOBAL LEADER

At the turn of the 21st century, Hanwha began accelerating its global expansion by diversifying its businesses and building a robust network of overseas operations. 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 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.

Hanwha Life's investment to expand globally began with its Vietnam subsidiary in 2008 that led to another acquisition—an Indonesian life insurance company in 2013. Recently, the company entered the Fintech sector to capitalize on more opportunities that could provide greater financial security to people worldwide. 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. In 2019, Hanwha Solutions became the market leader in the US (residential and commercial markets), Germany, the UK, and Japan. Our progress and successes reflect our efforts and focus to strengthen our global competitiveness and adopt preemptive technologies.



1952 Korea Explosives Co. (now Hanwha Corp.) is founded

1965 Korea Hwasung Industrial (now Hanwha Solutions) is founded

1976 Sungdo Securities (now Hanwha Investment & Securities) is acquired

1994 Hanwha R&D Center is built

1986 Hanyang Stores (now Hanwha Galleria) is acquired



2002 Hanwha acquires Korea Life Insurance (now Hanwha Life)

2007 Hanwha announces its new corporate identity

2012 Hanwha acquires Germany-based Q.CELLS and Hanwha Solutions is launched

2015 Hanwha General Chemical, Hanwha Techwin and more companies are launched

Financial Highlights

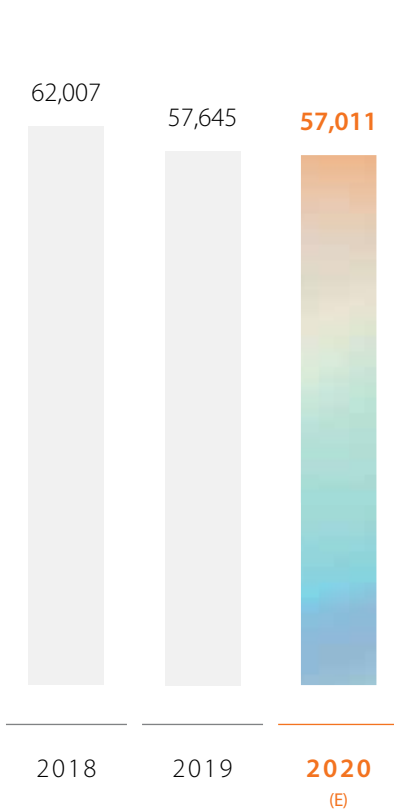
* The financial data in the Financial Highlights show the simple aggregate of sales, total assets, total liabilities, and total stockholder equity among Hanwha Group's major affiliates at home and abroad. (Source: Hanwha Group)
 Figures for sales and total assets of individual affiliate companies published on page 75 and subsequent pages of this brochure 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 change 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 must 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.

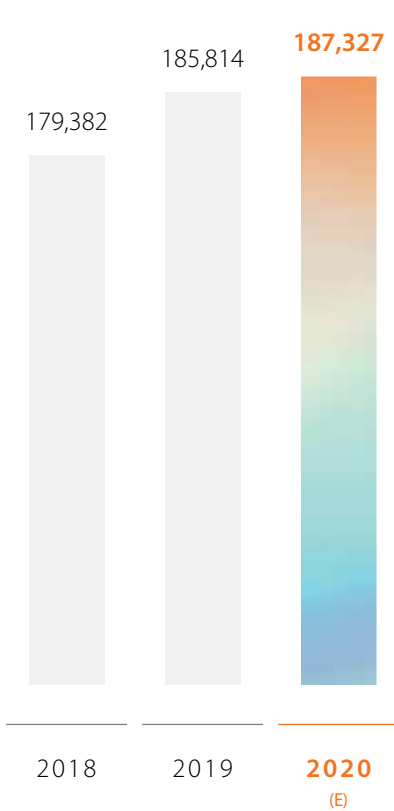
TOTAL SALES

In USD Millions



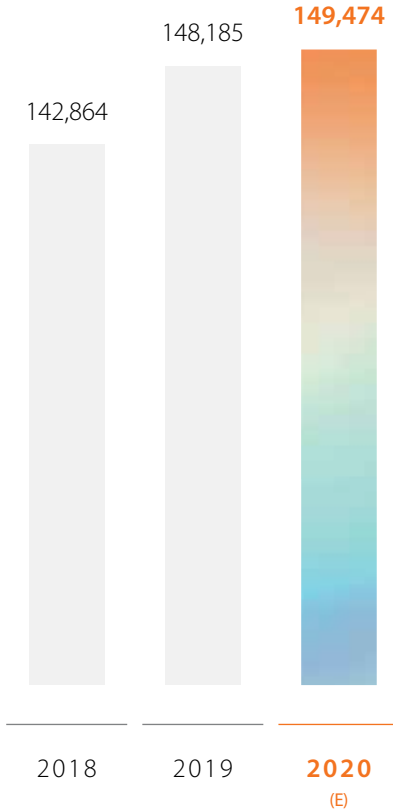
TOTAL ASSETS

In USD Millions



TOTAL LIABILITIES

In USD Millions



TOTAL STOCKHOLDERS EQUITY

In USD Millions



* Sales are converted into US dollars at the average exchange rate of USD 1= KRW 1,100.30 in 2018, and KRW 1,165.65 in 2019.
 * Assets, liabilities, and shareholder equity amounts are converted into US dollars at the December 31 closing exchange rate of USD 1= KRW 1,118.10 in 2018, and KRW 1,157.80 in 2019.
 * The 2019 expectancy data was converted based on Hanwha Group's internal exchange rate of USD 1=KRW 1,133.



Hanwha BUSINESSES



Manufacturing & Construction

- Hanwha Corporation
- Hanwha Aerospace
- Hanwha Defense
- Hanwha Systems
- Hanwha Techwin
- Hanwha Precision Machinery
- Hanwha Power Systems
- Hanwha Solutions
- Hanwha General Chemical
- Hanwha **TOTAL** Petrochemical
- YECHUN NCC**
- Hanwha Energy
- Hanwha Engineering & Construction
- Hanwha City Development

Hanwha Corporation

www.hanwhacorp.co.kr

EXPERTISE

Explosives: Industrial explosives products, raw explosives materials, explosives applications, domestic and overseas mining services

Defense: Precision-guided munitions, advanced ammunition, navigation systems, laser

Trading: Petroleum, petrochemicals, steel, machinery, defense sales, construction materials, automation facilities, wholesale food ingredients

Machinery: Semiconductor and display manufacturing equipment, factory and warehouse automation (logistics), secondary battery production equipment, solar cell and module manufacturing equipment, collaborative robots

2019 Total Sales

In USD millions

3,785

2019 Total Assets

In USD millions

6,850

Hanwha Corporation, the parent company of the Hanwha Group, is a global manufacturing and trading company that has directly contributed to the growth of South Korea's economy. There are 4 divisions under the Hanwha Corporation: Explosives, Defense, Trade, and Machinery.

Hanwha Corporation was founded in 1952 as Korea Explosives company, quickly becoming the leader in explosives and, in effect, creating the industry itself in South Korea. The company has since grown into a global manufacturing and trading company operating in four business areas—explosives, defense, trading, and machinery.

In 1959, Hanwha had become the first domestic manufacturer of dynamite in South Korea. After having successfully developed safer, high-quality industrial explosives and Initiating Systems, we have been able to supply the South Korean government with the crucial means to rebuild its cities and infrastructure.

We entered the defense industry in 1974 and our Explosives & Defense Division quickly became instrumental in the development of South Korea's military defense. We provided the South Korean military with manufactured precision-guided munitions, advanced ammunition, navigation system, lasers, and underwater surveillance equipment.

Since entering the mining services market in 2014, and since then, we've quickly established ourselves in Indonesia and Australia with high-quality products and services. Then in 2015, we acquired the Australian mining service company LDE and by pricing our high-quality products competitively, we were able to accelerate our market expansion. That same year, we completed our full vertical integration of nitric acid-ammonium nitrate-industrial explosives by acquiring production lines that included everything from prilled ammonium nitrate to electronic detonators. Our expanded portfolio of products and focus on meeting the needs of our customers have enabled us to expand further into other major markets across the globe. In

parallel, we're continuing our innovations and developing high value-added technologies. Through large mergers and acquisitions, we further increased our business footprint to include self-propelled guns and engines for aircraft and fleets, effectively entering the aerospace business. We then heavily invested in defense electronics such as radar and combat systems. By 2018, we became very competitive as a manufacturer of navigation systems and lasers—the core technologies of the future weapon system. These are our new growth engines.

Today, Hanwha's Explosives & Defense Division continues to apply its extensive experience and explosives technology to expand into raw explosives materials, explosives manufacturing, and explosives applications.

Our work to bring the level of the South Korean defense industry to the Fourth Industrial Revolution era has been recognized by the South Korean government. For our work in the forming the Korean 3-axis system by combining

the Korea Air and Missile Defense (KAMD), Kill Chain and Korea Massive Punishment and Retaliation (KMPPR), the South Korean government regard us as not only reliable but also as a "trusted global partner in providing innovative defense solutions." Not to stay satisfied by achievements, we continue to develop our core business competencies and strengthen our internal capabilities.

Our Trade Division is an international trading company that has played a leading role in globalizing Hanwha Group after it was founded in 1966. We have built a global network of more than 25 overseas corporations and offices. Our network allows us to work in synergy in world markets for the Hanwha Group. We're deepening our network within the countries we operate and in them, setting the groundwork to generate stable profits from businesses in petrochemicals, steel, machinery, and merchandising. We're intent on discovering and fostering new business models, including machinery exports, food ingredients wholesaler, and energy projects.

We're set to lead company globally and confident we can because along with the advanced operating systems, we have the people and talents to do so.

Established in 1953, our Machinery Division is today leveraging its deep experience and cutting-edge technology to lead the machinery equipment industry worldwide. We produce high-value-added machinery equipment with a focus on heat treatment, factory automation, and evaporation processing.

Our Machinery Division is leading the logistics automation industry using advanced factory and warehouse automation technology that we've been honing for the last 45 years. Our automation business is stronger than ever. We successfully completed the world's first system to automate the entire process in tire production. We are also innovating and making great strides in production logistics by building Smart Factories that combine highly automated assets with Industry 4.0 technologies.

And with our technology and ability to build quality, we've been able successfully segued into producing high-quality solar cells and modules in our world-class manufacturing facilities. We're already recognized in solar power equipment manufacturing in markets across the globe. With continuous R&D and innovations, Hanwha Corporation/Machinery will not only be a global leader in machinery equipment but a total engineering solutions provider.



Hanwha Corporation provides solar machinery to Hanwha Solutions, one of the world's largest photovoltaic manufacturers, recognized for its high-quality, high-efficiency solar cells and modules.

Hanwha Aerospace

www.hanwhaaerospace.com

EXPERTISE

Gas turbine engines, engine components, aircraft components

2019 Total Sales

In USD millions

4,516

2019 Total Assets

In USD millions

7,522

Hanwha Aerospace total sales and total assets are based on consolidated financial statements.

Hanwha Aerospace is the only aircraft engine producer in South Korea and trusted in the global market for our original application technologies.

In 1977, Hanwha Aerospace began by building businesses in the aircraft engine and film camera industry. Since then, we've aggressively invested in research to develop our technologies in optics, video, and military aircraft engines. We've then expanded into aircraft components and commercial engine parts business. To evolve as we have, we've had to successfully develop top-tier and original application technologies that gave us the competitive edge needed for our businesses around the globe. And as our technologies advanced, so did our expertise and our ability to not only meet the changing market demands but also anticipate them.

As South Korea's only manufacturer of gas turbine engines for the last 40 years, we have been in a fortunate position to capitalize on all the opportunities to build a powerful business in aerospace. We now provide a range of aircraft

components and gas turbine engine solutions that our nation needs and those that are also desired by markets all over the world. In 2015, we began a partnership with UTAS, a company in Turkey, to export aerospace parts. In the same year, our aerospace maintenance business also signed a memorandum of understanding with GE. In 2016, we became a trusted partner in the global aircraft industry when we entered a contract with the United States' Pratt & Whitney to operate a joint venture with Singaporean manufacturing company. Our partnership with Pratt & Whitney is a Risk and Revenue Sharing Partnership (RSP) to co-build the next-generation aircraft engine. This partnership represents our joining the ranks of other leading aircraft engine manufacturers of the world. In 2017, we established a production base in Vietnam to improve our cost competitiveness and increase production capacity. In 2019, we acquired EDAC Technologies, the US aircraft engine component manufacturer, and launched Hanwha Aerospace USA to expand our product portfolio and leverage high-end processing technology.

We're in an industry that sees changes great and fast but despite them, we've continuously achieved great successes and we remain committed to becoming the top global partner in aviation engine parts. Our strategy is simple: We anticipate the ever-changing markets and address them through continuous development of technology with a focus on quality.

World-class quality and continuous R&D have propelled Hanwha Aerospace's success as a global aviation products supplier for fighter jets and UAVs.



Hanwha Defense

www.hanwha-defense.co.kr

EXPERTISE

Artillery systems, armored vehicles, air defense systems, unmanned ground systems

2019 Total Sales

In USD millions

1,255

2019 Total Assets

In USD millions

1,612

Hanwha Defense is expanding its global business and is establishing itself as a total defense solutions provider with stronger competitive offerings that include artillery systems, armored vehicles, air defense systems, and unmanned ground systems.

By applying its extensive knowledge, experience and technological capabilities, Hanwha Defense has been able to develop the world's leading weapon systems portfolio that can excel in almost any dimension of warfare. Hanwha Defense's weapon systems have raised the standard for the global defense industry. Its wide selection of world-renowned products including artillery systems, armored vehicles with outstanding mobility and adaptability, air defense systems with state-of-the-art technology, and unmanned ground systems utilizing technological innovations, deliver optimal results designed for the future battlefield.

Hanwha Defense has successfully developed artillery systems designed to operate optimally in modern warfare. Over the years, the experience of producing more than a thousand K55 Self-Propelled Howitzers (SPHs), has allowed Hanwha to hone its skills to build its world-class K9 Thunder SPH artillery system that boasts overwhelming firepower, higher maneuverability and outstanding survivability. Also notable is the K10 Ammunition Resupply Vehicle.

Used along with the K9, it is the world's first fully operational automated ammunition support system. Hanwha Defense also manufactures more than 40 land-based launcher systems and naval launchers, including the Chungung (surface-to-air missile launcher), and the Korean Vertical Launching System (KVLS).

Hanwha Defense has a diverse portfolio of armored vehicles that are highly maneuverable and exceptionally adaptive in multi-domain combat operations. Key products include the 120mm self-propelled automatic mortar system; seven types of specialized armored vehicle models leveraging the technologies from the K200 Armored Personnel Carrier, such as the NBCRV (Nuclear, Biological, Chemical Reconnaissance Vehicle); and the K21, which is a world-class infantry fighting vehicle.

Hanwha Defense is applying the latest technologies that can be used to effectively respond to various aerial targets. We offer complete air defense solutions that can thwart a broad spectrum of mid and low-altitude aerial threats. The 30mm Hybrid BIHO self-propelled air defense system is renowned for significantly elevating South Korea's air defense. The system includes anti-aircraft guns and guided missiles that are capable of engaging low-flying targets and delivering optimal lethality. One of these air defense systems is South Korea's first surface-to-air guided system, the

CHUNMA—a highly effective weapon system to counter low-altitude aerial threats against any major facility.

Hanwha Defense is taking the lead in the development of unmanned ground systems. Its innovative and cutting-edge defense solutions are ready for any future battlefields. These solutions include the technologically advanced Tactical Unmanned Ground Vehicle, the Remote-Controlled Weapon Station (RCWS), and the lithium-ion battery system for submarines.

Hanwha Defense has strengthened its reputation in the global market as a trusted partner due in no small part to its advanced technology and consistent product quality. Since the export of the K200 armored vehicles to Malaysia in 1993, marking the first large-scale overseas sales by a South Korean defense company, Hanwha Defense has been expanding its global footprint by exporting the K9 SPH and K10 ARV. In addition, global marketing activities are under way to aggressively promote the Hybrid BIHO air defense system, the Tigon wheeled armored vehicle, and the Redback next-generation infantry fighting vehicle.

Thanks to the continuous innovations and sustainable R&D investments, Hanwha Defense is poised to become the market leader providing a comprehensive set of defense solutions.



Leveraging our industry experience and expertise, Hanwha Defense is becoming a leading defense company with cutting-edge convergence solutions.

Hanwha Systems

www.hanwhasystems.com

EXPERTISE

Defense: Aerospace systems, surveillance, and reconnaissance systems, C4I-SR systems, naval systems, land systems, defense ICT

ICT: Integrated IT business services

2019 Total Sales

In USD millions

1,326

2019 Total Assets

In USD millions

2,082

Converging defense ICT and information infrastructure is part of **Hanwha Systems'** deep efforts to bring the Fourth Industrial Revolution to the public and private sectors, including the military.

Hanwha Systems is a leading global total solutions company providing differentiated smart technologies in defense electronics and information infrastructure. Our advanced defense IT and system integration capabilities make us more market competitive. Our defense IT & system integration capabilities combined with our product portfolio differentiate us, position us to lead in defense electronics, and allow us to naturally expand into areas of public infrastructure and private security.

Since its founding in 1978, the **Hanwha Systems** Defense Division has significantly advanced the defense capabilities of South Korea's military. The knowledge we've gained from working with the South Korean military and the 40+ years developing systems used globally are being used to develop advanced systems for surveillance, reconnaissance, control, communication, computer, and intelligence (C4I), naval and land.

We are using our state-of-the-art aerospace technology to develop South Korea's first synthetic aperture radar (SAR) for military reconnaissance satellites and an active electronically scanned array (AESA) radar for the next-generation South Korean fighter KF-X. We are also developing core avionic electronics for fixed wing, rotary wing, and unattended systems.

Our surveillance and reconnaissance systems that we developed for South Korea's national defense include the thermal observation device (TOD), electro-optic tracking system (EOTS), infrared detection tracking equipment and multifunctional observation scopes. **Hanwha Systems** is using cutting-edge technology to make significant improvements to its radars like the L-sam multi-function radar and M-sam multi-function radar. At the same time, we're developing new radars to our portfolio like the FFX Batch-III multi-function radar.

Hanwha Systems' C4I businesses rely completely on our original technologies to develop products that can operate in future combat environments. We produce next-generation tactical information communication networks (TICN) using these technologies and next-generation satellite communications systems. We are South Korean Navy's sole supplier for their naval combat management system. Our proprietary technology is at the heart of their enhanced combat systems and integrated solutions for sensors and armament.

Our strategy is to lead the future defense industry by improving our technical capabilities and building strong relationships with key partners who are leading in the Internet of Things (IoT) and Artificial Intelligence (AI).

Our seven customer support centers across the nation provide product support for weapon systems operations. **Hanwha Systems** offers integrated logistics support (ILS) with timely customer support, guaranteed.

Hanwha Systems ICT Division has accrued deep level experience in systems integration and management from having developed world-class IT solutions and services over the years for a variety of industries, including manufacturing, defense, construction, financial services, retail, service, and education. We're now building customized systems with expertise that differentiates us and makes us more competitive in these industries.

Our ICT Division operates a Cloud-based Big Data center that provides data analysis. And combined with our smart factories powered by IoT and Big Data technologies, we're developing capabilities to improve productivity, predictability, quality, and processes for our companies and our clients. We're even helping our nation as a whole—keeping cities safe with our integrated security and control platforms designed for the public infrastructure.

We're on a path to an unprecedented transformation, seeking both possibilities and opportunities with digital innovations and in disruptive technologies that combine AI, IoT, and Big Data. We're building internal blockchain platforms and forging technology partnerships with leading companies like Element AI in anticipation of the Fourth Industrial Revolution.

Hanwha Techwin

www.hanwhatechwin.com

EXPERTISE

Video surveillance solution

2019 Total Sales

In USD millions

498

2019 Total Assets

In USD millions

477

Hanwha Techwin total sales and total assets are based on consolidated financial statements.

Hanwha Techwin, a renowned global security company, provides optimized security solutions across a range of areas—including residential, urban, and commercial facilities—with its world-class image-processing technology.

Established in 1990, **Hanwha Techwin's** advanced optical design, manufacturing, and image-processing technology have made it a global leader in video surveillance. We're heavily investing in R&D to innovate and meet the ever-changing market needs. In so doing, we've been gaining recognition as a global top-tier company. By applying our experience and subject matter expertise to our product development, we've been able to create a complete line of security solutions, from cameras and recorders to integrated management software. Our products are designed to meet every application, including urban surveillance, retail, transportation, and banking.

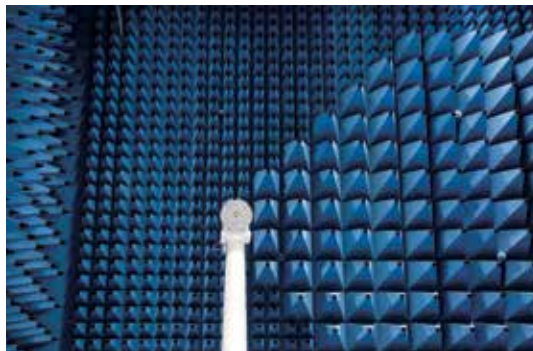
We manufacture over 2.15 million video surveillance devices in South Korea, China, and Vietnam. We maintain the largest share of the South Korean video surveillance

market. However, 75 percent of our total sales comes from our overseas markets.

Our products are sold through more than 16,000 global sales networks across Europe, the Americas, the Middle East, and Asia. The strength and breadth of our networks affords us the ability to market and sell our products directly to our customers.

Incorporating the next generation of technologies, such as deep learning, AI, and business intelligence, is at the core of what **Hanwha Techwin** is doing to ensure our portfolio of security solutions will catapult us to the forefront of the Fourth Industrial Revolution. We are becoming a global security solutions provider with industry-leading cybersecurity technology that offers customers the highest level of confidence and satisfaction.

(left) **Hanwha Systems** R&D Center develops cutting-edge technologies to build world-class radars, electro-optics, missile seekers, and tactical communication systems.



(right) The **Hanwha** Data Center embodies a state-of-the-art integration infrastructure that enables our clients to derive better solutions value for their customers.



Hanwha Techwin's flagship Wisenet brand represents our technological excellence in video surveillance systems. **Hanwha Techwin** offers a wide range of products from economically affordable to premium grade solutions that can be customized.

Hanwha Precision Machinery

www.hanwhaprecisionmachinery.com

EXPERTISE

Chip mounters, screen printers, semiconductor equipment, machine tools

2019 Total Sales

In USD millions

309

2019 Total Assets

In USD millions

217

Hanwha Precision Machinery is a Smart Factory total solutions company driving the development of the next-generation products in the manufacturing industry. We are leveraging our subject-matter expertise built over the years and continuously innovating to provide a comprehensive portfolio of products to deliver meaningful customer value.

After developing the first Surface Mount Technology (SMT) chip mounter in 1989, Hanwha Precision Machinery has become a leading worldwide Smart Factory solutions provider, offering semiconductor equipment, insertion and assembly automation equipment, machine tools, and integrated software solutions.

After launching in 2013, our flagship DECAN series has continuously evolved. It is now a high-speed mounter that is arguably the world's only modular conveyor system whose key components can be replaced. The SM Series is our bestselling product line with best-in-class performance. In addition, our newly

developed high-speed mounter HM520 boasts world-class productivity and is recognized by global customers for its modular head and various production modes.

Hanwha Precision Machinery's T-Solution is a comprehensive SMT production line solution designed for Smart Factories. It connects all assets in a production line and utilizes Big Data analysis to provide seamless operations, better quality control, and the ability to operate remotely. T-Solution, recently launched, embodies the principles of Industry 4.0 in terms of interoperability, connectivity, and autonomy. It yields higher production efficiencies, greater installation accuracies, zero defects, and lower maintenance costs.

We've been in the machinery business for over 50 years and, in that time, continuously built up our expertise and improved our technology. Our success can be seen in our machine tools business that commands a technical advantage in the market by producing South Korea's first multitasking automatic

lathes and turret-type lathes. Our machine tools are custom built to meet customer feature requirements and production lines—they've allowed us to capture the largest market share in CNC automatic lathes in South Korea.

Our solutions that include the SMT mounters, and machine tools, are just some of our products that represent our commitment to innovation and our ability to overcome the toughest of challenges. We do this to develop customer-oriented solutions that deliver greater efficiency, versatility, and value. We do this because ultimately, as partners, when our customers succeed, we succeed.

Hanwha Power Systems

www.hanwhapowersystems.com

EXPERTISE

Industrial air and gas compressors, gas turbines, power generation systems

2019 Total Sales

In USD millions

195

2019 Total Assets

In USD millions

214

Hanwha Power Systems is the global energy equipment company in South Korea with independent design, production, and testing capabilities. The diversity, quality and the advanced technology of our products have provided the highest value to our customers around the world.

After its establishment in 1977, Hanwha Power Systems launched its energy equipment business in 1997 on the strengths of reliable technology and deep experience in gas turbine engines. Since then, we've become a global powerhouse and have delivered more than 6,000 units of air and gas compressors worldwide. Using advanced technology, we developed high-value-added product lines. Our product lines include industrial air compressors, fuel gas compressors for power plants, and boil-off gas compressors for LNG terminals and plants.

We won the contract to supply the world's first marine Vapor Recovery Unit (VRU) steam recovery turbo compressor. We also have provided compressors for Floating Storage Regasification Units (FSRU) and LNG carriers. These machines allowed us to demonstrate our

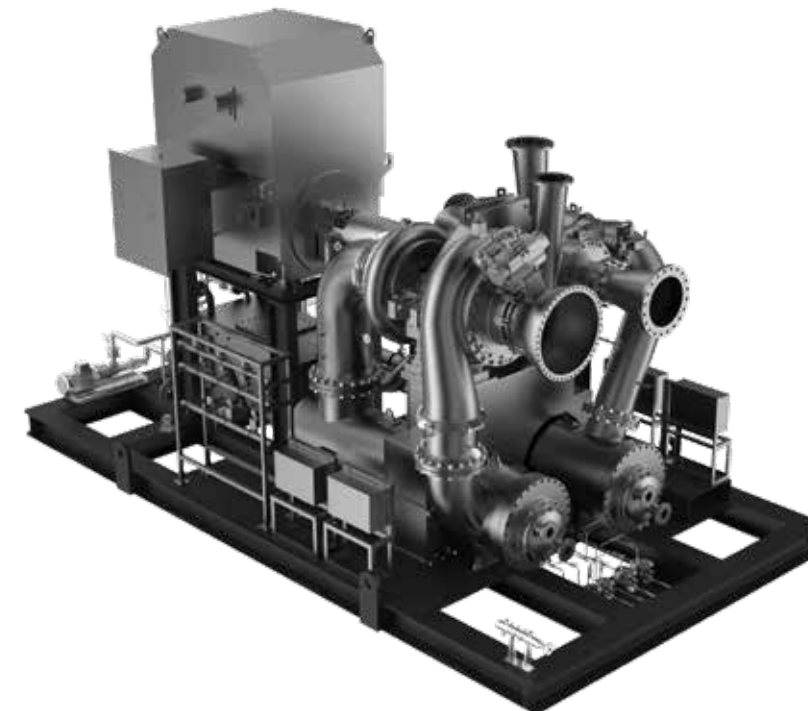
outstanding technology in the global market. Our compressors and expanders use core components developed in-house that make them operate with shorter lead times and better performance. Their high efficiency serves as a competitive advantage to our customers.

Hanwha Power Systems is intent on building long-term partnerships while rapidly expanding its sales, customer service and R&D networks globally. We're collaborating closely with our global offices and strengthening our partnerships so that we can provide better local customer service for our expanded product line. We're also focusing on building closer relationships with key customers in the oil & gas industry. For example, we have been 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 on innovative projects, on a global scale. One of these joint development projects is with the Southwest Research Institute (SwRI) to build a supercritical carbon dioxide (sCO₂) engine.

Our next goal is to become a global top-tier power and energy solutions supplier. To this end, we're working to strengthen our product portfolio in the compressor business and expand into turbine-related businesses that can support petroleum gas and power generation customers. One such strategic cooperation is with Baker Hughes (BH) to sell its packaged products, including gas turbines, steam turbines, and barrel compressors. In 2019, we signed an official service center contract with BH to serve the South Korean market.

We are currently working to fulfill our contract with the US Department of Energy (DOE) to develop sCO₂ engines. The sCO₂ project with the US DOE is expected to help us become a game changer in the distributed power generation market by effectively supplanting the steam turbine market. With the successful completion of this project to manufacture products like the turbo expander generator (TEG) that uses waste heat for power and chemical plants, we expect to secure a leadership position in the market boasting eco-friendly power generation solutions.

Hanwha Precision Machinery's high-speed chip mounter HM520 boasts best-in-class real productivity and is optimized for high-quality production with its modular head and various production modes. We consistently exceed customer expectations with our state-of-the-art high-speed modular system—part of our Smart Factory solutions with unmanned, continuous, and zero-defect production.



In the petrochemical process, our compander is a state-of-the-art turbomachine that features the capabilities of both a compressor and an expander. Hanwha Power System's compander represents the company's leading expertise in turbo compressor and turbo expander technology.

Hanwha Solutions

www.hanwhasolutions.com

EXPERTISE

Chemicals: PE, PVC, CA, TDI
Q CELLS: Solar cells & modules, energy system solutions, downstream activities, energy retail
Advanced Materials: Automotive materials, electronics materials, solar materials

2019 Total Sales

In USD millions

Chemical Division

3,025

Q CELLS Division

3,050

Advanced Materials Division

693

2019 Total Assets

In USD millions

Chemical Division

7,453

Q CELLS Division

7,780

Advanced Materials Division

1,212

Sales and total assets above are based on Hanwha Solutions' consolidated financial statements, which extracted some of performances from the Chemical, Q CELLS and Advanced Materials Divisions.

Chemical Division's Ningbo PVC plant in Zhejiang, China, was completed in 2011, enabling us to target China's PVC market with outstanding quality and value.

Hanwha Solutions was formed in 2020 with the merger of Hanwha Chemical, Hanwha Q CELLS and Hanwha Advanced Materials. We aim to deliver sustainable solutions for the planet through smart energy solutions and customer-focused materials. We are committed to enriching the future with sustainable solutions for all, from energy to materials.

Established in 1965, Chemical Division is a total solutions chemical company with streamlined production systems to offer Polyolefin (PO), Polyethylene (PE), Polyvinyl Chloride (PVC), Chlor-Alkali (CA), and Toluene Diisocyanate (TDI). And as South Korea's leading petrochemical company, we dominate the nation's chemical industry with high-quality and eco-friendly products that we offer at competitive prices.

In 2012, we successfully commercialized high-density ethylene vinyl acetate (EVA) for the first time in South Korea. Just four years later, we localized the production of chlorinated polyvinyl chloride (CPVC), enhancing the quality of our PVC. We obtained the New Technology Certification from the Korean Agency for Technology and Standards. And starting in 2017, we have been producing up to

30,000 tons of CPVC annually. We also expanded our line of specialty products. In 2019, our entry into the high-quality adhesives market was led with the construction of a plant and its commercial production. This new plant could produce up to 50,000 tons of dicyclopentadiene (DCPD) hydrogenated petroleum resins annually. Hanwha partnered with three universities to set up centers such as the Institute of Chemical Process at Seoul National University, Yonsei-Hanwha Chemical Innovation Technology Center, and the KAIST-Hanwha Chemical Future Technology Research Center. It was a significant step forward in our commitment to make quality a top quality while accelerating the pace of innovation to develop high-value-added and eco-friendly products.

We continue to improve production efficiency and cost competitiveness while meeting the growing demand for our products around the world. Our PVC plant, completed in 2011 in Ningbo city of China's Zhejiang province, was built to produce up to 300,000 tons of PVC annually. Today, with continuous improvements in the production process, the plant is producing 350,000 tons of PVC each year. In Bang Phli, Thailand, we built an alkali soluble resin plant with an

annual capacity of 17,000 tons. This facility serves as an important base of operations as we enter other markets in Southeast Asia.

Hanwha Solutions was the first South Korean petrochemical company to tap into new business opportunities in the Middle East. We signed joint venture contracts with International Polymers Company, a private petrochemical company in Saudi Arabia, and Gulf Advanced Cable Insulation Company back in 2009. Then in 2015, we achieved cost reductions and economies of scale as our joint venture with International Polymers began to produce EVA and LDPE. With Gulf Advanced Cable Insulation, we produced wire and cable compounds.

In 2016, through a strategic acquisition of Hanwha Fine Chemical company, we were able to achieve maximum synergy in production processing of CA and vinyl chloride monomer (VCM) while enhancing our production efficiencies with TDI, a raw material for polyurethane products.

Our facilities at our Chemical Division deploy advanced technologies that produce high-value-added products, such as ECO-DEHCH, an eco-friendly

premium plasticizer, while developing South Korea's first localization of high-purity xylyl diisocyanate (XDI), a raw material for high-end optical lenses. We are also developing a circular economy system, in which decomposed plastic waste can be recycled into naphtha, the raw material for petrochemical products. They represent our commitment to a better environment for a better future.

Q CELLS Division is a total energy solution provider worldwide. Our business scope ranges from the midstream of cells and modules to downstream solar solutions for residential, commercial and industrial buildings, and large solar power plants. We are already a global leader but with our expertise and strategy optimized for worldwide energy market trends and policies, we're poised for greater growth.

Since our foray into the solar energy business in 2010, the Hanwha has transformed its Q CELLS Division into the world's leading producer of solar modules. Q CELLS Division has a total capacity of 11.3GW as of the end of 2020 and its current production network spans across China, Malaysia, South Korea, and the US. Bolstered by strong revenue and driven to stay ahead of the growing worldwide demand, we're continuing to invest in R&D and manufacturing

innovations. Our Malaysia plant alone was able to produce more than 1GW of Q.ANTUM cells annually in 2015, the first of its kind in the industry. In Q1 2019, we penetrated the US market and began our acceleration to expand across the country starting with the construction of a 1.7GW capacity solar module plant in the state of Georgia.

Our Q.ANTUM technology is based on PERC cell technology, providing mono-crystalline efficiency for multicrystalline module cells. The multicrystalline QANTUM module, Q.PLUS, won the Module Manufacturing Innovation award at Solar Industry Awards 2015 in Hamburg, Germany. For two consecutive years, Q CELLS Division has won the Intersolar Award in the Photovoltaics from Intersolar, the most prestigious solar energy conference and exhibition in Europe. In 2017, our Q.PEAK RSF L-G4.2 steel-frame module also won in the Photovoltaics category. The following year, in June 2018, our Q.PEAK DUO-G5 solar module also won in the Photovoltaics category, earning high praise for its 120 half-cell, six-bus bar monocrystalline module that the Intersolar jury panel called "the new standard for residential and commercial rooftops." Q CELLS Division was selected as one of the best PV manufacturers by

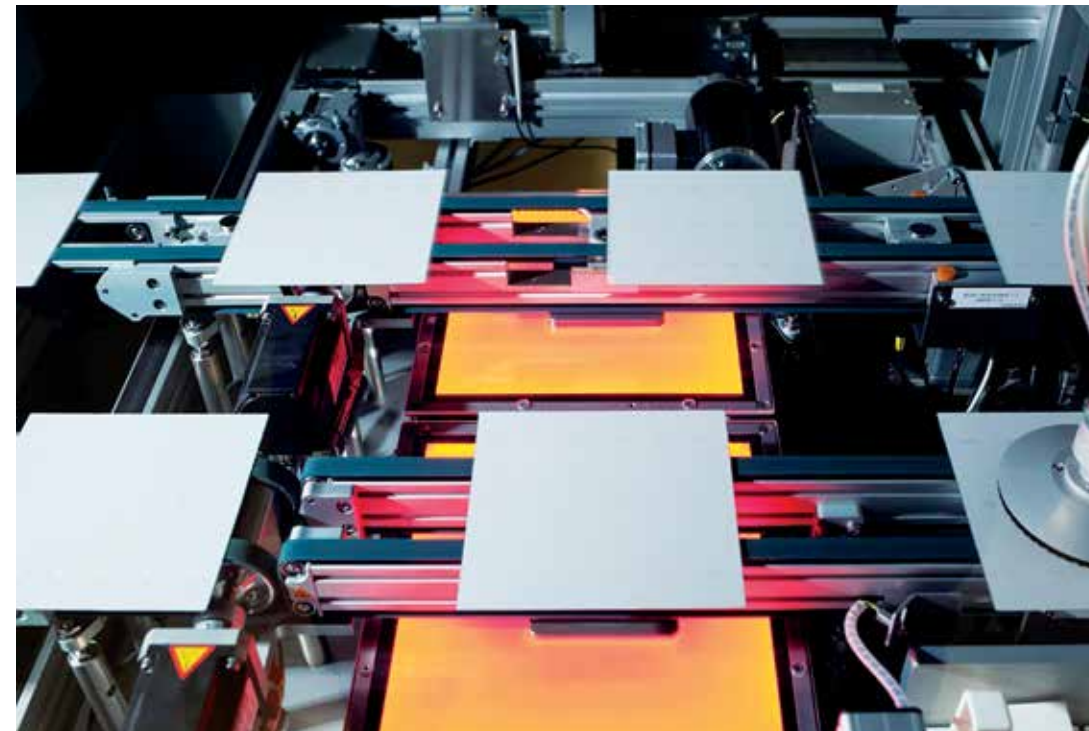
local installers, winning the Top Brand PV Seal 2020 from EuPD Research for the seventh time in a row in Europe and for the fifth time in Australia.

Our technology infrastructure enables differentiated technology innovations. Our R&D headquarter is located in Thalheim, Germany and our R&D network is located across China, Malaysia, and South Korea. Our R&D centers all receive Hanwha's continuous support and investments to develop solar technology, including Anti-LID, Anti-LeTID, Tra.Q, and more.

By employing our cutting-edge technology and economies of scale, Q CELLS Division has been able to take advantage of the growing demand for solar power around the world. We have been able to offer higher quality products at competitive prices. In 2014, we entered the rooftop solar power equipment market in Japan and Europe and large-scale power plant markets in the US, Thailand, Chile, and Latin America. In the same year, we secured a series of large solar projects across Europe—in the UK, France, and other countries. In 2015, we partnered with US-based NextEra Energy to manufacture 1.5GW of modules, accelerating our entry into one of the world's largest solar markets. We

also capture the biggest market shares across the US (residential and commercial markets), Germany, the UK, and Japan.

Q CELLS Division has been recognized for its business capabilities, original technology, strategic investments, and job creation in South Korea. We were awarded the Presidential Award at the 16th Annual Korea New Growth Management Award event in 2019.



The outstanding quality control capabilities of Anti-LID, Anti-LeTID, and Tra.Q demonstrate how Q CELLS Division's global R&D can successfully leverage a variety of solar technologies.

Founded in 1965, our Advanced Materials Division 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. Our global sales continue to rise.

Since entering the automotive materials business in 1986, we have launched a diverse portfolio of products for automobile structures and interiors. We now leverage original technologies to build high-strength, super-lightweight materials and parts. Among the materials we produce are: StrongLite—Glass fiber Mat-reinforced Thermoplastic (GMT), SuperLite—Low Weight Reinforced Thermoplastic (LWRT), Expanded Polypropylene (EPP), Sheet Molding Compound (SMC), Long Fiber Reinforced Thermoplastics (LFT), Continuous Fiber Reinforced Thermoplastics (CFRTPC), and Ultra-High-Pressure Hydrogen Tanks. Advanced Material Division's StrongLite and SuperLite materials captured the highest market shares globally, in their respective categories.

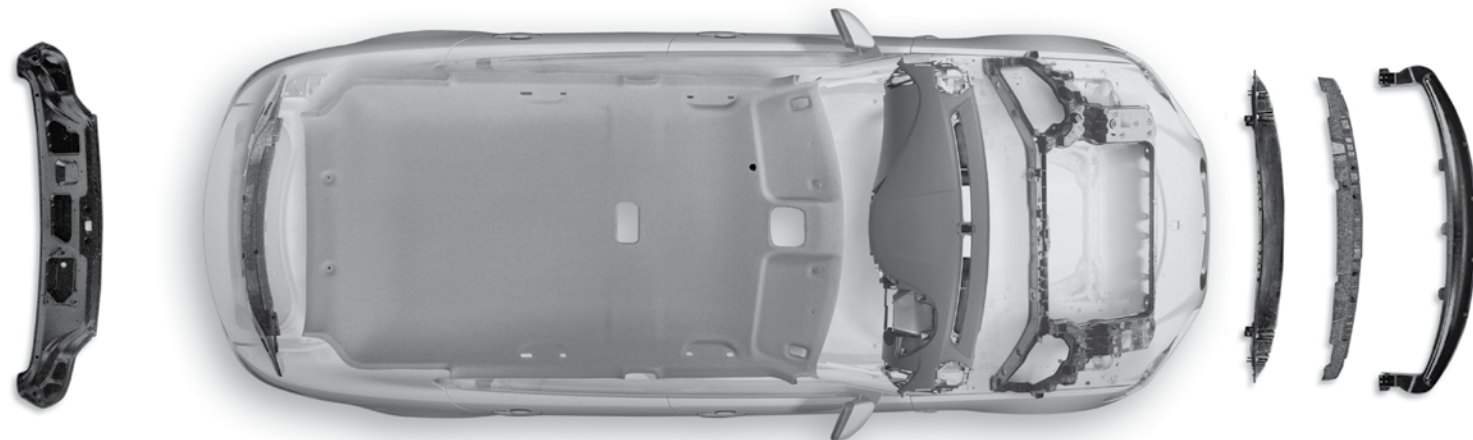
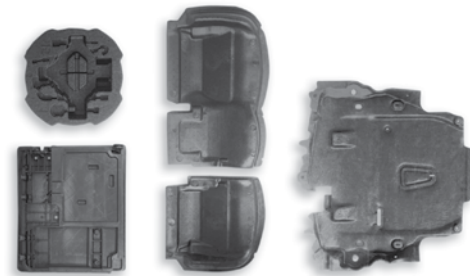
Currently, there is a global trend toward lightweight automotive parts. Advanced Materials Division anticipated this and it's

why we had strengthened our investments in R&D years ago so that we could lead in the changing industry. We have been focusing our research on thermoplastic, thermosetting composite materials, and on designing and developing new applications. We've also been developing new materials and manufacturing methods, offering improved functionality and innovative plastic hybrids that represent the latest technologies in the market. We are actively tracking paradigm shifts in the automotive market, evident in the emergence of smart cars and electric vehicles. While keeping pace with this rapidly expanding electric vehicle market, we are exploring opportunities for manufacturing battery cases for electric vehicles. We've 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. We are also developing future mobility markets, such as eco-friendly automotive vehicles, hydrogen-powered ships, personal air vehicles (PAVs), and aerospace.

We are especially competitive in the high functional film market. Currently, we produce components for Flexible Printed Circuit Boards (FPCB) such as coverlay film

(insulation film), 3-layer Flexible Copper Clad Laminate (FCCL), bonding sheet (adhesive sheet), and Electro-Magnetic (EMI) shielding film. Furthermore, we are actively responding to the 5G market by successfully developing ion-resistant materials for microcircuit patterns, such as low dielectric materials and OLED displays. And we are expanding into manufacturing materials used in automotive electronics and electronic battery sensors for electric vehicles.

Advanced Materials Division maintains the world's largest market share for StrongLite (GMT) and SuperLite (LWRT)—materials proven to reduce the weight of automobiles. We are now expanding our operations and production facilities globally to keep up with the rapidly growing market for lightweight composite materials for auto parts.



Hanwha General Chemical

hgc.hanwha.com

EXPERTISE

PTA, PV Business

2019 Total Sales

In USD millions

1,404

2019 Total Assets

In USD millions

3,080

Hanwha General Chemical was the first company in South Korea to localize production of purified terephthalic acid (PTA). We're maintaining our No. 1 domestic market share while exporting our process technology to enter into new businesses.

Hanwha General Chemical was established in 1974 before being acquired by the Hanwha Group in 2015. It was the first company in South Korea to localize production of purified terephthalic acid (PTA), a primary component in many types of polyester. PTA is used in clothing, industrial fibers, film, and paint. The applications for PTA are expanding dramatically.

Today, our annual PTA production of two million tons, makes us No. 1 in both production capacity and market share in South Korea. Our experience and technology are recognized worldwide. We have leveraged many years of our expertise and applied our PTA processing technology—technology that we've proven since 2010 in the Middle East.

And since joining the Hanwha Group, we have become more globally competitive by creating synergies with chemical affiliates and diversifying our markets through innovative management and sales practices.

In June 2017, we established Hanwha Solar Power to serve as a growth engine for our PV business and to advance our mid- to long-term growth beyond our single PTA business. Today, Hanwha Solar Power is working hard to promote and invest in solar energy business both domestically and internationally. At the same time, to be more globally competitive, we're working to improve our PTA-related technologies and develop related businesses in the value chain we have built over the last 40 years.



PTA is the primary raw material for polyester and is widely used in PET resin, bottles, films, paint, and industrial materials.

Hanwha TOTAL Petrochemical

www.hanwha-total.com

EXPERTISE

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

2019 Total Sales

In USD millions

8,446

2019 Total Assets

In USD millions

6,113

Hanwha **TOTAL** Petrochemical is a comprehensive chemical and energy company that produces high value-added chemical and energy products. We have a proven track record of generating stable business results through product innovations, strategic diversified investments, and economies of scale. We have earned South Korea's World Class Products designation five years in a row. We continue to dominate our market because of our high quality and innovations.

Since its founding in 1988, Hanwha **TOTAL** Petrochemical has led the growth of the petrochemical business in South Korea through technological innovations and by executing its market expansion strategy successfully. In 2003, Hanwha **TOTAL** Petrochemical set out to build a foundation to become a global chemical and energy company. The company executed this plan by forming a joint venture with the Total Group, a major French company in the energy and chemical industry. Since then and after becoming a Hanwha affiliate, Hanwha **TOTAL** Petrochemical has exhibited solid financial performances.

The product portfolio of Hanwha **TOTAL** Petrochemical includes basic chemicals, such as ethylene, propylene, and butadiene. Hanwha **TOTAL** Petrochemical also produces base chemicals like styrene monomer, paraxylene, and ethylene glycol. With 18 plant units in the Daesan Petrochemical Complex, the company is able to produce a wide range of products from those needed for energy, such as gasoline, diesel, jet fuel, and liquefied petroleum gas, to polymers that are used in feedstock materials, such as polyethylene and propylene.

We are the only company in South Korea that operates a naphtha-cracking center (a core facility in our petrochemical plant), a condensate fractionation unit (a refining facility), and an aromatics plant, all in one single complex. This complex represents a successfully organized vertical system—from sourcing to producing to distributing the final products. The efficiency we've achieved with this system allows us to diversify our business portfolio and pursue stable growth. In 2010, after registering our refining business with the South Korean Ministry of Trade, Industry & Energy

(MOTIE), we began as a full-fledged energy business. In 2014, we made the biggest investment since establishing the business by building an additional aromatics plant, a condensate fractionation unit, and an ethylene-vinyl acetate (EVA) plant. With the additional production facilities, we now produce 1.40 million tons of ethylene, 2 million tons of paraxylene, and 1.06 million tons of styrene monomer annually.

We have the No. 1 market share in numerous markets: EVA used in solar cells, HDPE used in bottle caps, EVA used in extrusion coating, flow mark free polypropylene (FMF PP) used in automotive composite materials, high isotactic polypropylene (HI PP) used in electronic applications, and protective polypropylene films for display products. These products have been recognized as World Class Products by MOTIE. We attribute our success, not only to the vertical system we employ and our product diversifications, but also to the vast and global network of the Hanwha Group.

Hanwha **TOTAL** Petrochemical is the leading producer of EVA, used in solar cells, and the global leader in terms of market share.



YEOCHUN NCC

www.yncc.co.kr

EXPERTISE

Petrochemical feedstock production

2019 Total Sales

In USD millions

4,295

2019 Total Assets

In USD millions

2,203

YEOCHUN NCC produces high-purity petrochemical base materials. We are enhancing customer value with our advanced production facilities, cutting-edge technology, and domain expertise.

YEOCHUN NCC operates the world's leading naphtha-cracking facility in the Yeosu National Industrial Complex. The facility was built in 1999 and is located on the southern tip of the Korean Peninsula. YEOCHUN NCC represents a fifty-fifty joint venture between Hanwha and Daelim, two South Korean conglomerates that own naphtha-cracking facilities. The facility annually produces 1.95 million tons of ethylene, 1.11 million tons of propylene, and 5.50 million tons of various petrochemical base materials, 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 to produce high-quality downstream petrochemical products.

Although our production facilities are already technologically advanced with large-scale production capacities, we're continuing to make improvements. We attribute our improvements and growth each year to loyal customers, the use of a sophisticated management system, and 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.

Supported by steady flow of investments, product specialization, facility expansion, and business focus, we're one of the top Naphtha Cracking Center (NCC) companies in the world backed by a steady stream of investments and continuing to expand our footprint. We are, however, focused and as we continue efforts to improve our capabilities, our expansion will take us across the globe.



As a leader in naphtha-cracking production, our YEOCHUN NCC plant produces ethylene, propylene, and other petrochemical feedstocks. This state-of-the-art facility gives our Hanwha affiliates a competitive edge in petrochemicals.

Hanwha Energy

hec.hanwha.co.kr

EXPERTISE

Cogeneration, solar energy, ESS, O&M, system solution, energy retail, LNG

2019 Total Sales

In USD millions

632

2019 Total Assets

In USD millions

3,752

Starting with its cogeneration business back in 2007, Hanwha Energy has diversified its business portfolio—including solar power, ESS, and LNG—to transform into an energy retail business offering a comprehensive set of energy solutions. Our advanced technology is at the core of who we are and the means by which we can develop eco-friendly, highly efficient global energy markets through a forward-looking global energy paradigm.

Hanwha Energy is a comprehensive energy solutions company. We operate cogeneration plants to provide a stable supply of high-quality electricity and ultra-high-pressure steam to companies in national industrial complexes in 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 greenhouse gas emission reductions. Our relentless pursuit to improve our technology gives us the means to continuously improve our existing solutions and at the same time, seek new ones. To build sustainable growth, we are diversifying our energy business and building businesses overseas

in solar power generation, energy storage system (ESS), operation & maintenance (O&M) business, system solutions, energy retail, LNG business and more.

At Hanwha Energy, we also operate solar power plants in the US, Mexico, Japan, Vietnam, Turkey, and India. More solar power plants are being built in Malaysia and Spain. We are also developing solar projects in the Americas and Australia. In June 2019, we successfully launched and operationalized our energy retail business in Houston, the US. In February 2020, we also began our energy retail business in Australia.

We provide a cloud-based integrated control system for the efficient O&M of solar power plants. Our integrated platforms and solutions are applied across our utility scale solar power plants, ESS and abroad. We also developed a platform to support small-sized distributed energy sources, which was applied overseas in Australia. Our O&M business has helped businesses manage and improve plant performance and deliver stable growth of customer assets.

In addition, we are expanding our energy system solutions with our smart energy

business model. We already built a 152MWh ESS and currently building a 438MWh solar energy-connected ESS in South Korea. In Ireland, we also operate a 120MWh ESS for frequency regulation (FR). Going forward, we plan to implement our energy solutions for distributed energy sources, such as ESS and microgrids in other countries including Japan, the US, Australia and in Europe.

We are also pursuing LNG, a clean energy source as we look to future growth engine and new business opportunities. In South Korea, we are partnering with Hyundai Development Company (HDC) to build a plant in Tongyeong city—a 1GW LNG power plant. Once complete, HDC and Hanwha Energy will jointly supply the LNG needed to power the plant and open LNG terminal rental businesses. Overseas, as part of our strategy to expand our global energy business into new markets, 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.

Hanwha Engineering & Construction

www.hwenc.com

EXPERTISE

General construction, residential complexes, urban development, industrial plants, civil engineering, water treatment

2019 Total Sales

In USD millions

3,474

2019 Total Assets

In USD millions

5,967

Hanwha Engineering & Construction is recognized for its ability to successfully complete large-scale and complex projects in the global market, such as building an entire city; constructing chemical plants in the Middle East and North Africa; and completing various real estate projects in the Americas.

Hanwha Engineering & Construction has quickly become a global player by leveraging its extensive experience in construction projects and by applying its new technologies and subject matter expertise across industrial, chemical, and power plants, civil engineering works, commercial buildings, and more. We've been recognized as a top global contractor in *Engineering News Record* and our works are often used and referred to as the "bible of the construction industry."

The Bismayah New City is a USD 10.1 billion project, the largest urban development in Iraq's modern history. It is also Hanwha Engineering & Construction's flagship project. Bismayah city will be the world's largest urban construction that includes infrastructure facilities to support 100,000

households and 300 schools. The Bismayah New City is the first overseas project of its kind by a South Korean company and is expected to be lauded for its sheer development scale and global design of an entirely new city.

In 2014, we demonstrated our technological prowess by successfully building the world's largest domed arena in the Philippines, a bridgehead for our Southeast Asian market entry. We are also building power and petrochemical plants in the Middle East and North Africa, and developing large real estate projects in North America.

In South Korea, Hanwha Engineering & Construction has been responsible for the nation's largest urban development projects that have included the construction of homes for more than 90,000 households across 169 sites for the past 20 years. Recently, we've applied our extensive experience to build and launch a new residential brand, **FORENA**. **FORENA** provides customers with differentiated residential products that connect people to premium living space. We led the industry by pioneering large-scale site construction, including Daedeok Techno Valley, South Korea's first

development project to build an entire city.

We also developed the nation's first advanced membrane filtration water treatment technology and sewage water treatment technology. By leveraging future technology into what we build that is also eco-friendly, we are raising the bar for value that can be derived from construction projects.

This cogeneration plant provides a stable supply of high-quality electricity and ultra-high-pressure steam to companies in the Yeosu and Gunsan national industrial complexes in Korea.



Hanwha Engineering & Construction's business reputation is recognized globally. Our reputation for reliability and dependability has allowed us to secure a series of contracts to build large-scale petrochemical plants in the Middle East and North Africa.

Hanwha City Development

www.hcd21.co.kr

EXPERTISE

Real estate development, including multifunctional industrial complexes

2019 Total Sales

In USD millions

64

2019 Total Assets

In USD millions

228

Hanwha City Development exemplifies the kind of business that is needed in the Fourth Industrial Revolution — it is able to use its experience and know-how to develop high-tech complexes and at the same time, operate in a way to generates the trust and loyalty of its local communities.

Hanwha City Development has been recognized as the leading private developer of high-tech industrial complexes since it was established in 2001. Starting with success in Daedeok Techno Valley, additional projects followed, such as the Asan Techno Valley project (2,984,000m², 300 enterprises, 8,000 households), the Seosan Techno Valley project (1,994,000m², 200 enterprises, 6,000 households), the Gimhae Techno Valley project (1,643,000m², 200 enterprises),

and the Gyeonggi Hwaseong Bio Valley project (1,745,000m², 200 enterprises). Each completed project stood out as an achievement and garnered high praise. The projects are considered exemplary development models and not surprisingly, they have been benchmarked by several local governments.

Encouraged by these achievements, we've made further investments for the future, breaking ground on the Yongin Techno Valley project in 2015. There is high anticipation Yongin Techno Valley will be an industrial complex that will be home to many R&D centers, companies and startups in IT, fusion technology, and in other areas of technology. When completed in 2020, the industrial complex is expected to play an important role as the center of the industrial belt, south of Seoul.

We're also building for the future of our local economies. The Siheung Recycling Industrial Complex will help revitalize the local economy by improving industrial environments, attracting businesses, and creating local jobs.

Daedeok Techno Valley is the technology hub of South Korea and home of the most technologically advanced companies and research facilities. Daedeok Techno Valley is considered an exemplary model of how a high-tech industrial complex should be built and is credited with revitalizing the local economy.



Finance

Hanwha Life
Hanwha General Insurance
Hanwha Investment & Securities
Hanwha Asset Management
Hanwha Savings Bank

Hanwha Life

www.hanwhalife.com

EXPERTISE

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

2019 Total Sales

In USD millions

13,798

2019 Total Assets

In USD millions

105,162



*LIFEPLUS: is the official co-brand name representing a group of Hanwha financial affiliates. It offers financial, health, and cultural content as well as products and services optimized for a variety of lifestyles to help customers make better financial decisions that lead to better life and experiences.

Hanwha Life, which leads the life insurance industry in South Korea, launched Onsure, the first online life insurance sales channel in South Korea. Onsure serves as yet another channel through which we will expand our life insurance business.

Hanwha Life outperforms in asset quality stability, sales, and product development. And we're moving forward, digitizing our advanced capabilities so we can lead in the financial markets of the future worldwide.

Established in 1946, Hanwha Life is not only a leading life insurance company but also it is the first and oldest in South Korea. Early on, we played a critical role in developing the industry and the country's economic growth. In 2019, while expanding, we made sure to remain structurally sound, reporting total assets of USD 104 billion. At the end of 2019, we achieved a 235.3 percent risk-based capital (RBC) ratio, demonstrating the soundness of our asset quality. Our strong ratings from domestic and international agencies attest to our creditworthiness. We have received sterling AAA credit ratings from South Korea's top rating agencies for the past thirteen years.

Hanwha Life is committed to adding innovative products and services that meet a wide range of customer needs. By upgrading our customer, product, and channel (CPC) strategy, we provide customized products and services that solidify our LIFEPLUS brand.

We also innovate our offerings that are aligned to customer life stages. Using Big Data to analyze customer needs, behavior, and interests, we systematically apply this knowledge to better satisfy customers. To this end, we've trained our call center customer service professionals to deliver exceptional care.

Our efforts have been rewarded with the Grand Prize—the Korea Service Award from the Korea Standards Association in the life insurance sector for eight consecutive years through 2017. We were also inducted into the Hall of Fame. The Quality Index survey, managed by Korea Management Asset Consulting, gave us top ranking for ten straight years for customer service and eight years for our call centers. Since our first certification in 2007, the Korea Fair Trade Commission has awarded Hanwha Life with seven consecutive Certifications for Excellence in Consumer-Centered Management (CCM), which led us to be inducted into its CCM Hall of Fame in 2019.

To increase sales and profitability, we are focusing on value-based sales, improving product features, and expanding protection-type and variable insurance sales. We are also diversifying our investment assets and applying risk management to aggressively and preemptively respond to changes in the financial market. In 2019, we continue to sharpen our competitiveness in the market by using multi-channels to provide differentiated products and services and by enhancing communications across headquarters, sales reps, and customers. However, in anticipation of market changes, we're upgrading our digital capabilities, product development, digital technology, and our governance-oriented data support.

We're committed to helping our subsidiaries all over the world in their respective local

markets. We provide all the necessary support to ensure that our subsidiaries can improve their competitiveness and win in their markets. One example is our Vietnam subsidiary where we executed an effective localization strategy and a strengthened sales network nationwide. As a result, our 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 has a newly appointed local CEO and seeking a more thorough localization and digital-based growth. In Indonesia, our subsidiary is building a balanced profit structure that is adding value to its growth and allowing it to increase its market share. Moving forward, we are setting the foundation that will enable us to be established as a comprehensive financial solutions provider across major Asian hubs. From here, we will promote digital financial products and at the same time, pursue future growth engines.

In 2020, Hanwha Life continues to secure profitable structures that support value-based sales and primary profit expansion. We plan to expand our global business and secure growth engines in Fintech and Big Data. We push for innovation and, with each success, we're inspired to drive forward as a world-class life insurance company.



Hanwha General Insurance

www.hwgeneralins.com

EXPERTISE

Long-term insurance, automobile insurance, general insurance, mortgages, personal loans

2019 Total Sales

In USD millions

6,883

2019 Total Assets

In USD millions

15,728

Hanwha General Insurance is a major insurer with USD 15 billion in total assets. We are internationally recognized for our financial stability and steady growth using diversified asset management strategies and increasing customer value.

Established in 1946, Hanwha General Insurance is the first South Korean insurance company funded solely by domestic capital. Throughout history, we've played a pivotal role in developing South Korea's general insurance industry. Today, we're a major insurer with total assets of nearly USD 15 billion. We use advanced services to enhance customer value and offer a comprehensive product portfolio ranging from long-term insurance to auto and general insurance.

We created a Consumer Protection charter, improved service quality, and minimized customer inconvenience to provide an overall superior customer experience. We also expanded the scope of what our call center agents could do to ensure a one-call, one-stop system. In addition, we were the first South Korean insurer to

introduce an electronic signature system, making it easier for customers to complete transactions from their mobile devices. We have even introduced mobile applications for long-term insurance, Smart Insu, and an app for auto insurance, Smart Chadori. Both were specifically designed to cater to the needs our customers. Since then, more than one million customers have installed both applications.

Our efforts to improve customer service have been recognized by South Korean government organizations with the Consumer Centered Management (CCM) certificate. Our customer service is evaluated by the Korea Consumer Agency and certified by the Fair Trade Commission every two years. Biennially, for the last 12 years, we've been given the certificate, affirming the excellence of our customer-centric services.

Our company is on an upward trajectory to build a risk-based management structure, improve long-term insurance loss ratio, advance the compensation process, and increase high yield,

higher-value-added contracts. We are posting healthy financial growth by seeking diverse, stable bonds and alternative investments at home and abroad.

As a result, in 2019 we were favorably scored by global credit rating agencies for our financial stability and growth potential. Both S&P and A.M. Best, the international insurance industry rating organization gave us a rating of A for our financial strength and potential growth last year.



Hanwha General Insurance has implemented a set of customer-centered business processes and has organized its management to deliver customer-value-oriented solutions. Our solid financial structure allows us to invest in research to develop the products and services with the customer's best interests in mind.

Hanwha Investment & Securities

www.hanwhawm.com

EXPERTISE

Securities brokerage and underwriting, asset management

2019 Total Sales

In USD millions

1,328

2019 Total Assets

In USD millions

7,876

Hanwha Investment & Securities is a trusted financial investment partner dedicated to providing sources for stable and diversified income even amidst a rapidly changing financial environment in an era of digital transformation.

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.

In the ever-changing capital market, we're grounded by our company policy to listen to our employees, our customers, and to continuously encourage innovations within the organization. We differentiate our services by putting customers first and building customer trust.

We have established a stable and diversified income structure with our business portfolios in investment banking, trading, wealth management, and institutional investors. To be able to readily respond to the rapidly changing digital financial environment, we developed unique ways to ensure simpler and more convenient investment experiences for our clients. Our easy-to-use STEPS application displays essential information that is beneficial to both experienced and inexperienced investors. The application's user-friendly e-commerce-style platform provides features to customize your investment portfolio and matches each customer's investment tendency and areas of interest to an easily accessible set of digital financial services. We have improved even the intuitive features of our mobile trading system and continue to upgrade others based on customer feedback.

Hanwha Investment & Securities continues to grow its digital financial platform so it can provide differentiated products and services that can respond to digital transformations and trends. In July 2017, we established the Data Analytics

Lab, the first Big Data analysis company in the South Korea's financial investment industry. The Lab conducts research on various topics such as Big Data analysis and then offers general consultation and applications consultation. In April 2019, as part of our efforts to expand our global operations and secure a new growth engine, we acquired HFT Securities, Vietnam's online stock brokerage company. Then, in December 2019, we officially launched our subsidiary in Vietnam: Pinetree Securities Corporation. Its launch represents Hanwha Investment & Securities' first step to enter Vietnam's potentially high-growth market and establish a digital financial platform offering competitive products and services.

Our business motto is "To grow together" with 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.

Hanwha Asset Management

www.hanwhafund.com

EXPERTISE

Asset management

2019 Total Sales

In USD millions

95

2019 Total Assets

In USD millions

201

Hanwha Asset Management is one of the top three asset management companies in South Korea. With our comprehensive operation systems, innovative solutions, and customer-focused management philosophy, we're rapidly becoming an investment company of choice in Asia.

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, and PEFs in both domestic and overseas capital markets. At the end of 2019, we were among South Korea's top three asset management companies with USD 89.10 billion in assets under management (AUM). We have people with unparalleled expertise who operate highly organized systems across all areas, including product development, research, compliance, and risk management. All of our products and services cater to the needs of our customers because we strictly adhere to our principle and

management philosophy to place our customers first before anything else.

Hanwha's expertise and industry-leading innovations have been recognized with numerous industry awards in South Korea, including the Top Prize in TDF and general funds at the 2020 Korea Fund Awards by KG Zeroin; the Grand Prize in alternative investment funds at the 2019 Korea Securities Awards by *Seoul Economic Daily* news media; the Best Fund Seller Award in ETF at the 2019 Maekyung Securities Awards by *Maeil Business News Korea*; and the Top Prize in international bonds at the 2019 Korea Fund Awards by KG Zeroin.

Hanwha Asset Management is accelerating its strategic overseas expansion to become a leading asset management company in Asia. Our Singapore subsidiary manages equity and alternative investments in the pan-Asian market. We acquired a New York-based subsidiary to handle our assets in the US and other countries. We have also established a Chinese subsidiary as a wholly foreign-owned

enterprise (WFOE) so we could better execute our global strategy and expand our business footprint overseas.

The foundation of our principles is customer satisfaction, protecting investments, and growth. At Hanwha Investment & Securities, we're committed to responsible management and service innovations to ensure we can be a reliable financial partner.



Hanwha Asset Management is widely recognized for its innovative solutions and a disciplined approach to asset management. With them, Hanwha Asset Management's mid- and long-term plan is to become the best asset management company in Asia.

Hanwha Savings Bank

www.hanwhasbank.com

EXPERTISE

Deposits, commercial and personal loans

2019 Total Sales

In USD millions

45

2019 Total Assets

In USD millions

825

Hanwha Savings Bank is a financially sound blue-chip savings bank. We faithfully fulfill our role as a microfinance institution by supporting small and medium-sized businesses with great potential, developing new products, and providing convenient services.

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. Even in unfavorable business climates, we've been able to relentlessly pursue external growth with our experienced sales teams and a highly disciplined management. We also found success by extending the fundamental roles of microfinance institutions and supporting small and medium-sized businesses with great potential.

Today we are a sound savings bank, continuing to grow with the confidence of our customers on our side. We constantly strive to take care of our clients and our communities by offering products that serve their needs. Our risk management system enables us to perform faithfully and operate as a financially secure institution, providing top-quality financial products and services to both individuals and businesses alike.

Services & Leisure

Hanwha Hotels & Resorts
Hanwha Galleria
Hanwha Estate
Hanwha Station Development

Hanwha Savings Bank is a stable financial institution that has earned its customers' trust over the years with its expert sales team, financial products and management discipline.



Hanwha Hotels & Resorts

www.hwrc.co.kr

EXPERTISE

Resorts, hotels, leisure

2019 Total Sales

In USD millions

530

2019 Total Assets

In USD millions

2,120

Hanwha Hotels & Resorts is becoming South Korea's premier leisure and service provider of resorts, and hotels. We deliver a differentiated customer experience through our premium condominium chains, golf courses, aquariums, theme parks, and boutique hotels.

Hanwha Hotels & Resorts began operations in 1979 as the developer of South Korea's first resort condominium project. We own one of South Korea's top condominium chains that include the Saipan World Resorts in Saipan and the Ocean Palace Golf Club & Resorts in Japan that combined, boasts over 5,200 guest rooms across 13 properties. In Japan and South Korea, we own and operate six premier golf courses totaling 126 holes.

We also operate Seorak Waterpia, Pororo Aqua Village in Gyeongju, Jeju Therapy Center, Royal Saddle Equestrian Society, and Jade Garden in Chuncheon—all renowned attractions and the envy of other companies in the industry. In addition, we operate 63 Square on the Han River, which offers high-quality services and attractions, including 63 Art and an elaborate aquarium.

With our expertise and technologies used in the construction of Sea World (now Aqua Planet 63), the first aquarium in South Korea, we also built the breathtaking Aquarium Belt. The Aquarium Belt is South Korea's largest network of aquariums located across 4 cities: Jeju, Yeosu, Ilsan, and Seoul. And in partnership with Geoje city government, we recently created a new tourist destination, the Hanwha Hotels & Resorts Geoje Belvedere. The marine resort with 470 rooms and a private marina opened in 2018 to rave reviews.

We also have transformed THE PLAZA into a world-class 408-room luxury boutique hotel with six restaurants and bars, nine convention halls, a fitness center and spa. Located in the heart of Seoul, THE PLAZA offers impeccable service and experience accented by its unique interior design. In 2016, the hotel became the first in South Korea to join the Autograph Collection, a luxury portfolio owned by Marriott International. Our exceptional customer service and upscale accommodations have been recognized by the hotel industry. THE PLAZA was selected as one of the Top 25 Hotels for Luxury and Best Service by the

TripAdvisor 2019 Travelers' Choice Awards. It also ranked No. 2 of the nine Best Luxury Hotels in Korea by *Global Traveler*, a worldwide business travel magazine. The International Hotel Awards selected THE PLAZA as its 2018 Best Luxury Hotel and Best City Hotel, the first of its kind in South Korea.

Connoisseurs can experience seven outstanding cuisines in the landmark 63 Building, along with a panoramic view of Seoul. Food is prepared with fresh seasonal ingredients by top award-winning chefs.

Seorak Sorano combines the beautiful natural scenery of the East Sea with the high peaks of Mount Seorak, where guests can appreciate a soothing and relaxing experience. Guests can also enjoy leisure facilities such as Seorak Waterpia, Seorak Cinerama, Film Lot, and Plaza CC Seorak.



Hanwha Galleria

www.hanwhagalleria.co.kr

EXPERTISE

Retail, fashion

2019 Total Sales

In USD millions

Hanwha Galleria

302

Hanwha Galleria Timeworld

226

2019 Total Assets

In USD millions

Hanwha Galleria

1,726

Hanwha Galleria Timeworld

301

Hanwha Galleria offers high-quality fashion, food culture, and differentiated customer experiences at Galleria Luxury Hall, South Korea's preeminent department store, and across our local department store network.

Since its 1976 founding in South Korea, Hanwha Galleria has specialized in retail services with a great focus on department stores. We also operate other retail businesses, including online malls, global brand direct sourcing, and the retail of exclusive brands.

Currently, we have five stores across Korea in major cities of Seoul, Suwon (Gwanggyo), Cheonan, Daejeon, and Jinju. Together, the Galleria department stores offer an unparalleled suite of upscale shopping experiences. They carry distinctive brands and follow local fashion trends, while also offering a food culture that is sure to satisfy every discerning taste. Our Galleria Luxury Hall in Seoul is South Korea's preeminent department store, featuring the world's leading luxury brands. The Luxury Hall East offers high-end luxury brands with unique values while the other side of the building, the Luxury Hall West, showcases global fashion trends, fine dining, and premium services.

The Galleria Gwanggyo is the largest of the five department stores operated by Hanwha Galleria. It opened next to the

Suwon Gwanggyo Convention Center in March of 2020. The Galleria is the first new department store that Hanwha has launched in the last 10 years through meticulous planning and execution of strategy to make Galleria Gwanggyo the company's flagship store capable of succeeding in the rapidly growing retail market in Gwanggyo. The Galleria Gwanggyo is visually stunning. It takes the form of a block of granite and its sculpted facade that is textured in mosaic stone. The store is completed with a 540m-long prism-like glass passageway that meanders through the building starting at the entrance to the roof. The creative architecture and design of the Galleria Gwanggyo introduces a new paradigm that allows sunlight to shine on every floor and destined to become an iconic landmark in Gyeonggi-do, Korea. Inside and out, Galleria Gwanggyo will infuse new inspiration into the shopping experience for our customers. And coupled with the best high-end luxury brands, the nation's largest VIP lounge, and cultural facilities, shopping has been redefined.

Hanwha Galleria Timeworld, a subsidiary of Hanwha Galleria, primarily oversees the Galleria Timeworld department store. It is located in the metropolitan area of Daejeon city, where public institutions, financial companies, and large apartment complexes are concentrated. Hanwha Galleria Timeworld specializes in luxury fashion brands from around the world and

was the first in the region to feature brands such as Louis Vuitton, Gucci, and Prada. It's now known as the premier high-end shopping destination in Daejeon, one of the largest cities in Korea.

At Galleria Timeworld, we offer unique amenities and attractions such as Gourmet 494, the premium food marketplace for select food ingredients and a maze of International gourmet restaurants. There's also the Maison Galleria, an exclusive VIP clubhouse which includes a cafe and space to host regular cultural and entertainment-themed shopping events. In 2020, we will improve the exterior of our building with a differentiated design that will make it a Daejeon city landmark.

Our vision is to be the No. 1 premium contents producer. To this end, Hanwha Galleria and Hanwha Galleria Timeworld will offer unparalleled values that no other retailer can provide. We've already begun by enhancing our merchandising with better lifestyle products and offering more services dedicated to VIP customers. Our department store division is stocking the best high-end brands, Galleria-Only brands and making them available in exclusive stores and environments our customers have come to expect. And going forward, we'll look more to sustainable business models for the rapidly changing landscape.



Galleria Luxury Hall's luxury brands, global fashion trends, fine dining, and premium services are all part of our vision to create the next-generation of luxury malls that cater to the upscale and refined shopping experience.

Hanwha Estate

www.hanwhaestate.com

EXPERTISE

Comprehensive real estate services

2019 Total Sales

In USD millions

130

2019 Total Assets

In USD millions

55

Hanwha Estate has extensive experience in managing more than 100 diverse facilities and properties around the nation. We offer differentiated solutions by maximizing customer asset value and providing advanced energy-efficient and eco-friendly models.

Hanwha Estate is a comprehensive real estate services firm offering real estate consulting, asset and facility operation management, construction, security solutions, and energy-efficient projects designed to increase the value of client assets.

Our real estate consultations are designed to yield maximum profits through the employment of optimized solutions. Our consultations begin with a thorough market analysis and innovative perspectives appropriate to customer and property characteristics. In asset and facility management services, we assign highly skilled and experienced professionals to the project to provide ongoing administrative and technical support. Harnessing our full spectrum of facility management experience, we provide high-quality services that fulfill customer needs.

We also have continually expanded business and enhanced our competitiveness. Building on our deep operational expertise, we have provided real estate management services for more than 100 Hanwha affiliate buildings and client assets, including office buildings, data centers, resorts, complex facilities, and research centers. Our years-long management experience has sharpened our skills in property management and deepened our expertise in electrical facilities, machinery, equipment, disaster prevention, firefighting, communications facilities, building maintenance, and security. Our comprehensive technical services include completed construction site inspections, safety audits, functional checks of firefighting facilities, and physical inspections.

In the construction and security businesses, Hanwha Estate guarantees excellent construction quality and safety by rigorously following basic principles across process, safety, construction, and quality control. We also check energy flow throughout each building and provide eco-friendly models for energy efficiency. Our converged services add up to one-stop solutions for all customer needs.

We have also taken advantage of our nationwide network and solid business portfolio to steadily increase our stake in real estate management. Building on that portfolio, we expect to become an innovator in real estate services as we reinvent and enhance the value of commercial space by creating synergies from our diverse businesses.

Hanwha Estate is an ever-evolving real estate services provider. We create new cultures and environments by nimble adjustments in how we work. We also pursue innovation through communications and collaboration. Our goal always is to increase the value of customer real estate assets.



Hanwha Station Development

www.hwds.co.kr

EXPERTISE

Commercial development, property management

2019 Total Sales

In USD millions

176

2019 Total Assets

In USD millions

430

Hanwha Station Development is a premier developer and manager of commercial complexes whose core competencies are in its experience in developing and operating advanced railway stations.

Hanwha Station Development is our nation's premier developer and manager of railway stations. Since our founding in 1987, we have pioneered the retail and leisure culture by combining commercial complexes with private stations. We developed building complexes in the centrally located Seoul Station and the Cheongnyangni Station—logistics hubs in the northeastern part of Seoul. 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.



Located in the northeastern part of Seoul, Cheongnyangni Station is a nine-story complex with more than 177,793 square meters of space, including three underground levels. With a department store, an outlet mall, a theater, and restaurants, it is driving economic growth for the community around it.



Corporate Social **Responsibility**

SOCIAL RESPONSIBILITY

- Eco-Friendly Solar Energy

As a world-class solar energy business, our mission is to achieve sustainable growth; our guide is our social responsibility. This is why we're educating children through eco-friendly programs, and people to join the energy revolution through activities that counteract climate change and help the environment. From installing entire solar power generation systems to make communities energy self-sufficient, building **Hanwha** Solar Forest to fight deforestations in China to cleaning up the Mekong river in Vietnam, we're not only using solar energy, we're making a difference.



Hanwha solar modules donated to the World Economic Forum Congress Center in Davos

Having installed a total of 640 solar modules on a 1,000-square-meter roof on the World Economic Forum Congress Center, we will be able to reduce 20 tons of CO₂ emissions per year.

- Happy Sunshine Campaign
- Hanwha Hope Project: Happy Sunshine
- Hanwha Solar Forest
- Solar modules donated to the World Economic Forum in Davos
- Clean Up Mekong Campaign

Happy Sunshine Campaign

Hanwha is driving the use of sustainable energy in communities with expertise gained from vertical integration of our solar businesses. Our best-known program is Happy Sunshine, a project where we donated a total of 2,014kW solar power generation systems to 291 welfare centers in South Korea to help them save on utility bills. We also operate **Hanwha** Hope Project where we donated solar power generation systems to elementary schools in underserved areas in China.

Hanwha Solar Forest

Since 2011, the **Hanwha** Solar Forest campaign has planted 500,000 trees across seven locations in Korea, Mongolia, and China. Our three forests in China and

one in Incheon used the seedlings grown by solar energy facilities and donated by **Hanwha**. **Hanwha** Solar Forest is the first demonstration of how solar energy can be used to prevent desertification. The UNCCD has praised it as a best practice, urging others to follow.

Solar Panels Donated to Davos

The World Economic Forum, held annually in Davos, Switzerland, draws attention to pressing issues facing the world, such as environmental sustainability. In support, since 2013, we have donated photovoltaic modules to the City of Davos. The solar modules donated by **Hanwha Solutions** have a capacity of 340KW. This amount of energy is enough to reduce 20 tons of CO₂ emissions per year.

Clean Up Mekong Campaign

In June 2019, to commemorate World Environment Day, **Hanwha** launched the Clean Up Mekong campaign to help address one of the world's ongoing environmental issues: water waste. We donated solar-powered boats that could remove wastes from the Mekong River before the river water empties into the Pacific Ocean. We also developed a digital media campaign to publicly raise environmental awareness and educate the Vietnamese people on the use of eco-friendly energy and their responsibility to prevent climate change.

SOCIAL RESPONSIBILITY

- Culture, Arts, and Sports

At **Hanwha**, we're committed not only to our customers and employees but also to the people who live in the communities where we do business. Giving back is part of our culture and we do this through professional organizations and financial support. We engage in activities that help keep dreams alive and enthusiasms going. And by combining our professional talents with our desire to do good, we're turning ideas into practical solutions to improve lives and the world in which we live.



Hanwha Corporation team's fireworks showcase at the 2019 Seoul International Fireworks Festival.

Seoul International Fireworks Festival

Since 2000, **Hanwha** has annually held the Seoul International Fireworks Festival to put on spectacular fireworks shows with themes around optimism and dreams.

- Orchestra Festival with Hanwha
- Hanwha Pop and Classic
- Hanwha Classic
- Seoul International Fireworks Festival with Hanwha
- Hanwha Eagles
- Team Hanwha Q CELLS

Arts and Culture

Hanwha supports a range of arts and cultural events. Since 2000, we have sponsored the Orchestra Festival, the largest event of its kind in South Korea. Our annual **Hanwha** Pop and Classic has been held in cities across the country since 2004, and the **Hanwha** Classic has performed classical music since 2013. In recognition of popularizing classical music and promoting the Korean culture and arts, **Hanwha** was awarded the Grand Prize of the Presidential Award at the Mecenat Conference & Awards hosted by the Korea Mecenat Association in 2006 and 2011. In 2014, we received the Achievement Award at the SAC Awards by Seoul Arts Center.

Seoul International Fireworks Festival

Hanwha hosts the Seoul International Fireworks Festival with the world's leading fireworks technology companies, lighting up the sky over the Yeouido Hangang River Park every autumn. Since its debut in 2000, the festival has wowed over a million spectators, providing unforgettable memories for families and friends. With the slogan of *Sharing Hope through Fireworks*, this has become a flagship cultural festival. At the 2019 festival, we hosted a variety of events and seminars including the Fireworks Atelier, an art exhibition held from the 1st through the 5th of October. A unique attraction at the exhibit features a series of interactive kinetic light sculptures that creatively recreates the fireworks.

Operating and Assisting Sports Teams in South Korea

Through sports, **Hanwha** has created positive energy and communicated inspirational messages to sport fans and followers. In 1986, we founded the **Hanwha Eagles** to help revitalize professional baseball as a national favorite pastime. We also established **Team Hanwha Q CELLS** in 2011 to promote golf in South Korea and hosted the annual **Hanwha Classic**, the nation's top golf tournament.

SOCIAL RESPONSIBILITY

- Talent Development and Employee Volunteers

Since the **Hanwha** Social Responsibility Center was founded in 2002 to commemorate the company's 50th anniversary, **Hanwha** has called upon each affiliate companies to participate by sending volunteer teams for various social activities to give back to the communities. At the same time, **Hanwha** makes great efforts to identify and nurture the talents who can someday become future leaders of our society.



Hanwha-KAIST Science Outreach Program, Convergence Science Camp
Hanwha partnered with KAIST to jointly host a science camp to nurture future scientists.

- Bugil Foundation
- Hanwha Science Challenge
- Hanwha-KAIST Science Outreach Program
- Hanwha Arts Plus
- DreamPlus
- Relay Volunteer Service to Commemorate Company Founding
- Hanwha Braille Calendar

Supporting Young Leaders of the Future

Hanwha believes that fostering talents, will ultimately contribute to society. Since **Hanwha's** foundation, we have expanded our programs to give back to our communities and one way was to invest in education. This was why we established the Bugil Foundation in 1976, which is now a prestigious private school. And in 2011, we began sponsoring the **Hanwha** Science Challenge, a high school science competition aimed at discovering outstanding students in science. In 2016, we began hosting the **Hanwha-KAIST** Science Outreach Program, a science education program for middle school students in the Daejeon area. Our employees also provide various cultural and arts education to children through our

Hanwha Arts Plus program. Launched in 2014, our DreamPlus program began offering diverse opportunities for young entrepreneurs seeking to start a business or find a job in promising new areas. Through the DreamPlus center, we provide co-working spaces and guidance and support programs for prospective startups and college student interns. DreamPlus also operates an online platform (www.dreamplus.io), which provides content for future business leaders.

Caring Employee Volunteers

Hanwha actively engages in social contributions with the help of its employees. We offer a Volunteer Time off program—an employer-sponsored paid time for our employees to perform

volunteer work at any time. Our employees are involved in the Social Contribution Steering Committee to increase the transparency and effectiveness of our activities. Every October to celebrate **Hanwha's** founding, all affiliates participate in volunteer services for the disadvantaged. Our work for people in need keeps us committed to our philosophy to do good for all and for always.

Hanwha Braille Calendar

Since 2000, **Hanwha** has annually produced and donated 50,000 braille calendars for the visually challenged. These braille calendar donations represent our ongoing commitment to help everyone read and use the calendars for all seasons, holidays, and cycles, solar or lunar.

ENVIRONMENTAL AND SAFETY RESPONSIBILITY

Hanwha supports a sustainable future by proactively responding to a changing global energy paradigm and by building a corporate culture that embraces environmental protection and safety. We are expanding new and renewable energy businesses centered on solar energy. In response to climate change, we strive to reduce environmental impact with low-carbon energy sources in all areas of our businesses.



Hanwha Solutions acquired the Environmental Management Systems Certification (ISO14001)
Every **Hanwha Solutions** business site worldwide acquired the Environmental Management Systems Certification (ISO14001), which verifies minimal environmental impact in the entire production, products, and services process.

- Reduced 30,000 TOE (Ton of Oil Equivalent) in energy
- Reduced USD 15 million worth of energy costs
- Reduced more than 180,000 tons of GHG
- Reduced 3.6 million tons of water, waste water and other wastes

Protecting the Environment and Addressing Climate Change

All **Hanwha** affiliates have adopted and systematically practice environmental safety and health policy by organizing a company-wide Environmental Safety and Health Committee that puts the CEOs, senior executives, and general managers in charge. Each business site implements sustainable management practices for environmental safety and health, including accident prevention overseen by an individual committee. In addition, to ensure we share, improve, and develop best practices among business sites, we hold regular meetings and workshops.

Responding to Climate Change

Since 2013, **Hanwha** has provided free classes on solar panels to increase awareness of climate change. And by collaborating with government and environmental NGOs since 2016 to create jobs, we've established a solar startup academy where anyone wanting to start a solar energy business can be trained to do so. Our entry into the hydrogen ecosystem market in 2020 started with the commercial operation of Daesan Green Energy, the world's largest hydrogen fuel cell power plant. And with greater investments in eco-friendly plastic research, we're expecting to accelerate our transition into a circular economy.

Establishing a Culture of Safety

Hanwha works to gain community trust by promoting safety and creating safe workplaces. It's part of our corporate culture. Along with regular safety leadership training for executives and team leaders, we developed a diagnostic tool to monitor each employee's safety awareness. This system identifies and improves an employee's development areas and then encourages changes in behavior that align with to better and safer work culture. In 2020, we expanded our diagnosis to partner company employees to establish a safety culture across our supply chain. Additionally, we are reviewing historical data to identify when to apply stricter safety regulations to prevent accidents and build an advanced safety culture.

WINNING PARTNERSHIPS

Hanwha believes our partners are also part of our family. For small and medium-sized business partners, we help create self-reliant environments and encourage good management over them. We support our partners to build a foundation for the growth and independence.



Building an eco-friendly energy self-sufficient project on South Korea's Jukdo Island

In collaboration with Chungcheongnam-do, **Hanwha** transformed Jukdo Island to become energy self-sufficient.

- Agreements on fair trade and mutual growth
- Co-prosperity fund
- Private equity fund for mutual growth
- Ongoing meetings with partner companies
- Energy self-sufficiency project on South Korea's Jukdo Island

Commitment to Mutual Growth

Since 2009, **Hanwha** has fostered collaborative partnerships with over 1,500 small and medium-sized enterprises. We've helped them grow their businesses by strengthening their core competencies, supporting their financial needs, and guiding them to engage in fair trade practices. In 2011, we promoted mutual growth by working collaboratively with our partners instead of competing against them. Since then, we have created an annual co-prosperity fund of USD 172 million and earmarked a private equity fund of USD 172 million for this mutually benefitting partnership.

Building Winning Partnerships

Leveraging our spirit of "trust and loyalty," **Hanwha** stays connected with our suppliers. We work frequently with partner companies and have put into practice our belief in "Going Further Together" by engaging in joint businesses, exchanging technology, sharing information, and providing exemptions from performance guarantees. We are expanding industry-specific programs to help our partners become more competitive as they expand their domestic and international sales networks. We are also supporting their innovations, equipment purchasing, and assisting them in executing best practices for safety, process, environment and quality control.

Invigorating the Regional Economy

Hanwha helps suppliers in rural areas to sell their products at our retail department stores. For example, when we find hidden high-value-added agro-fishery products that can help the local economy, we stock them at our local retail stores. Also, using our micro-grid business, solar energy-linked ESS (Energy Storage System) technology, we transformed Jukdo Island in Chungcheongnam-do into an energy self-sufficient island, reducing energy costs and helping tourism. **Hanwha** is committed to social impact investments to benefit Southeast Asian communities and bring financial security to the regions.

HUMAN RESOURCES

Hanwha pursues a future-oriented organizational culture that continuously innovates while overcoming challenges. To this end, we recruit talented people from all over the world and sponsor programs that help employees grow into global talents. *Young Hanwha* is a program that fosters this effort, helping us to move forward and build on the passion that is part of our legacy and foundation.



Growing Hanwha with global talent

Together, **Hanwha's** worldwide talent is building *Young Hanwha*.

- Global talent program
- Overseas training programs
- Programs for core talent
- Work-life balance policies including paternity leave
- One-month sabbaticals
- Study leave
- Flexible work shifts and an end to overtime
- Job placement assistance

Sharing Values

Hanwha strives to hire creative individuals who are driven to innovate. We seek people who pursue excellence and will be loyal to our customers, colleagues, and company values. We seek people who work hard to achieve their goals and understand the importance of supporting a greater cause. We develop global talent with professionalism and by providing a range of training programs for specific jobs and positions.

Cultivating Global Leaders

Hanwha continues to invest in talent. Our global talent program nurtures employees with potential and interests in global business. In our regional specialist

program, we send associate and junior managers all over the world so they can experience the business and culture of those countries and become local experts. We also operate a special program to identify and develop executive talent to lead **Hanwha's** future and growth. In our commitment to develop **Hanwha's** future global leaders, we sponsor select employees pursuing their masters or doctoral degrees from the top universities at home and abroad. Our company also provides job shadowing and mentoring opportunities for our employees so they can experience management and leadership.

Promoting Work-Life Balance

Hanwha's company-wide work-life balance policies are designed to improve an employee's quality of life. Our efforts have received broad recognition. We're listed as one of Korea's 100 best places to work as a family-friendly and gender-equality company. When we commemorated our 64th anniversary in 2016, we announced the *Young Hanwha* program and introduced corporate culture initiatives like getting a one-month sabbatical when promoted, flexible work shifts, study leave, and support for career development. These initiatives are all contributing to the foundation that will ultimately help **Hanwha** become a global top-tier company.

AMERICAS

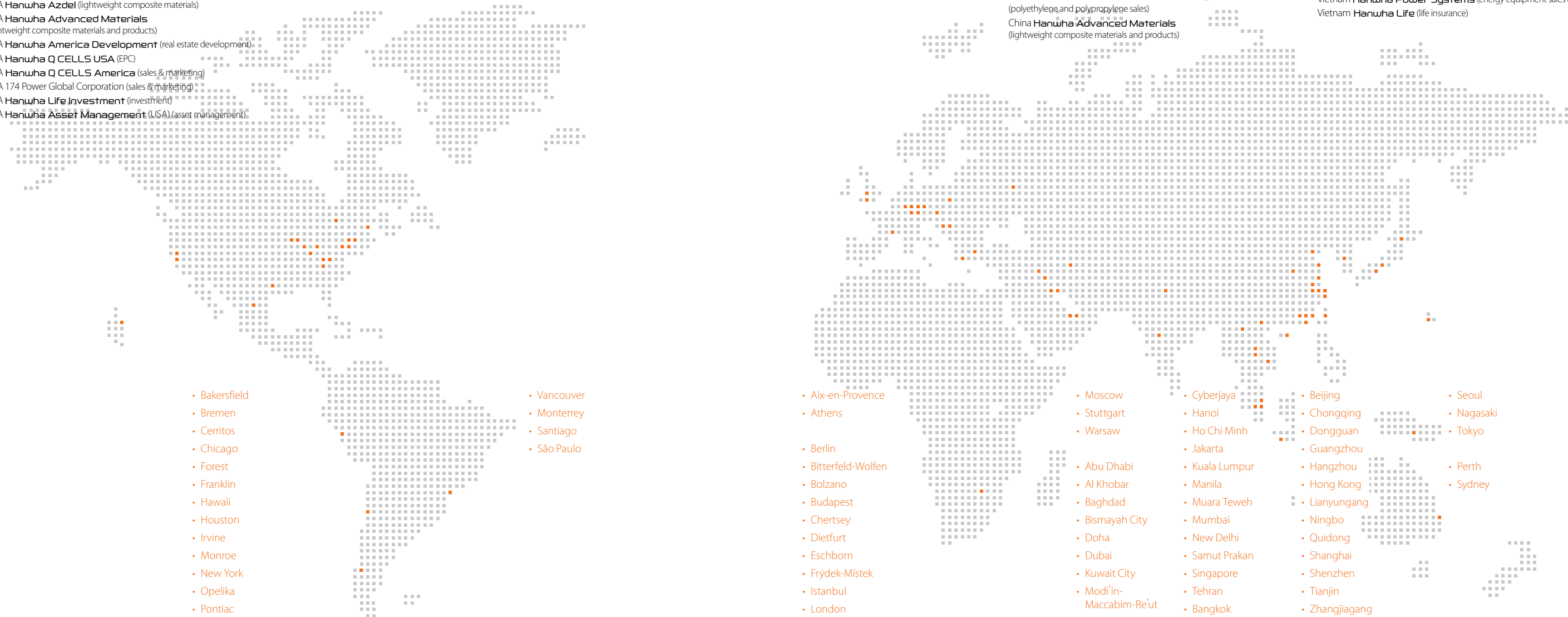
- Canada **Hanwha Q CELLS** (sales & marketing)
- Canada **Hanwha Canada Development** (solar business management)
- Chile **Hanwha Q CELLS** (downstream solar)
- Chile **Hanwha Mining Services Chile** (chemical products sales & blasting service)
- Mexico **Hanwha Advanced Materials** (lightweight composite products)
- USA **Hanwha Aerospace USA** (producing aircraft engine components)
- USA **Hanwha Mining Services USA** (chemical products and blasting agents sales)
- USA **Hanwha International** (trading)
- USA Eagle Petroleum (oilfield development)
- USA **Hanwha TechM** (powertrain assembly)
- USA Universal Bearings (producing bearings)
- USA **Hanwha Machinery America** (machine tool sales)
- USA **Hanwha Techwin Automation Americas** (chip moulder sales)
- USA **Hanwha Techwin** (video surveillance system sales & marketing)
- USA **Hanwha Power Systems** (energy equipment sales and R&D)
- USA **Hanwha Azdel** (lightweight composite materials)
- USA **Hanwha Advanced Materials** (lightweight composite materials and products)
- USA **Hanwha America Development** (real estate development)
- USA **Hanwha Q CELLS USA** (EPC)
- USA **Hanwha Q CELLS America** (sales & marketing)
- USA 174 Power Global Corporation (sales & marketing)
- USA **Hanwha Life Investment** (investment)
- USA **Hanwha Asset Management (USA)** (asset management)

EMEA

- Czech Republic **Hanwha Advanced Materials** (lightweight composite materials and products)
- France **Hanwha Q CELLS** (sales & marketing)
- Germany **Hanwha Europe** (trading)
- Germany **Hanwha TechM** (machine tools sales)
- Germany **Hanwha TOTAL Petrochemical Europe** (sales)
- Germany **Hanwha Advanced Materials** (lightweight composite products)
- Germany **Hanwha Q CELLS GmbH** (R&D)
- Germany **Hanwha Q CELLS Berlin** (sales & marketing, EPC)
- Italy **Hanwha Power Systems** (energy equipment sales & marketing)
- Italy **Hanwha Q CELLS** (sales & marketing)
- Russia **Hanwha Power Systems** (energy equipment sales)
- Saudi Arabia **Hanwha Saudi Contracting** (operation support)
- Turkey **Hanwha Q CELLS** (sales & marketing, EPC)
- UAE **Hanwha Techwin** (video surveillance system sales & marketing)
- UAE **Hanwha Power Systems** (energy equipment sales & services)
- UK **Hanwha Techwin** (video surveillance system sales & marketing)
- UK **Hanwha Q CELLS** (sales & marketing)

ASIA PACIFIC

- Australia **Hanwha Mining Services Australia** (chemical products manufacturing and sales & blasting service)
- Australia **Hanwha Q CELLS** (sales & marketing, EPC)
- China **Hanwha China** (supporting **Hanwha** affiliates in China)
- China **Hanwha Advanced Materials** (lightweight composite materials and products)
- China **Hanwha Q CELLS** (sales & marketing)
- China **Hanwha Advanced Materials** (lightweight composite products)
- China **Hanwha TOTAL Engineering Plastic** (producing polypropylene)
- China Sino-Korea Life (life insurance)
- China **Hanwha Corporation** (trading)
- China **Hanwha Q CELLS Technology** (producing PV ingots)
- China **Hanwha Chemical** (producing PV ingots)
- China **Hanwha Q CELLS** (producing solar cells, modules, and R&D)
- China **Hanwha International** (trading)
- China **Hanwha Techwin Shanghai** (chip moulder sales)
- China **Hanwha Power Systems** (energy equipment sales & marketing)
- China **Hanwha Chemical** (trading)
- China **Hanwha TOTAL Petrochemical Trading** (polyethylene and polypropylene sales)
- China **Hanwha Advanced Materials** (lightweight composite materials and products)
- China **Hanwha Q CELLS** (sales & marketing)
- China **Hanwha TechM** (machine tools and powertrain assembly)
- China **Hanwha Asset Management** (asset management)
- India **Hanwha International** (trading)
- India **Hanwha Chemical** (sales)
- India **Hanwha Q CELLS** (sales & marketing)
- Indonesia **Hanwha Mining Services Indonesia** (chemical products manufacturing and sales & blasting service)
- Indonesia **Hanwha Life** (life insurance)
- Japan **Hanwha Q CELLS** (sales & marketing)
- Japan Acropark Golf (golf club and resort operation)
- Malaysia **Hanwha Chemical** (sales & marketing)
- Malaysia **Hanwha Q CELLS** (producing solar cells, modules, and R&D)
- Singapore **Hanwha Asset Management** (asset management)
- Vietnam **Hanwha Aero Engines** (producing aircraft engine components)
- Vietnam **Hanwha Techwin** (producing video surveillance system)
- Vietnam **Hanwha Techwin Automation Vietnam** (chip moulder sales)
- Vietnam **Hanwha Power Systems** (energy equipment sales & services)
- Vietnam **Hanwha Life** (life insurance)



We have maintained trusted partnerships that have lasted more than 60 years. Together, we have collaborated, invested, and built across markets in almost every continent. Together, we have grown. **Hanwha** has 85 affiliates in South Korea alone and 380 networks around the world (As of the end of December 2019). And as we continue improving quality and innovating to exceed customer expectations, **Hanwha** will continue to grow *beyond* today's interconnected global business environment. This is **Hanwha Group**.

- Bakersfield
- Bremen
- Cerritos
- Chicago
- Forest
- Franklin
- Hawaii
- Houston
- Irvine
- Monroe
- New York
- Opelika
- Pontiac
- Saipan
- Shelby
- Teaneck
- London
- Vancouver
- Monterrey
- Santiago
- São Paulo

- Aix-en-Provence
- Athens
- Berlin
- Bitterfeld-Wolfen
- Bolzano
- Budapest
- Chertsey
- Dietfurt
- Eschborn
- Frýdek-Místek
- Istanbul
- London
- Moscow
- Stuttgart
- Warsaw
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