

# Hanwha Profile 2019



Contents

**02 CHAIRMAN'S MESSAGE**

**08 BUSINESS HIGHLIGHTS**

- 10 Chemicals & Materials
- 20 Aerospace & Mechatronics
- 28 Solar Energy
- 36 Finance
- 46 Services & Leisure
- 54 Construction

**62 Hanwha OVERVIEW**

- 64 Hanwha's Vision, Spirit & Core Values
- 66 Hanwha Today
- 68 Milestones
- 70 Financial Highlights

**72 Hanwha BUSINESSES**

- 75 Manufacturing & Construction
- 93 Finance
- 99 Services & Leisure

**106 CORPORATE SOCIAL  
RESPONSIBILITY**

**114 GLOBAL NETWORK &  
DIRECTORY**

"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 Hānwahā, we believe in building trust and expressing loyalty. Our customers trust us because we've earned it over time. In turn, we express our loyalty through contributions to society. Trust and loyalty are in the DNA of every Hānwahā 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.

Let us not forget how we've come so far because it is with this same determination, we must move forward. Despite the rising competition in the Fourth Industrial era, we must continue to innovate and maintain stable growth, just as we have in the past three years. We've surpassed the global economic growth rate by 20 percent by recording 4.4 percent CAGR in sales and 5.0 percent CAGR in total assets. We achieved our vision of Quality Growth 2020 ahead of expectations and have become one of the world's top-tier companies in key business sectors by expanding our portfolios of high-value-added products and by making substantial changes in management. We're achieving greater sustainable growth and strengthening our competitive advantages in our core businesses: chemical, aerospace, mechatronics, solar energy and financial services. We're making a difference.

# Embracing innovations and pursuing opportunities to build a better future

With our chemical business, we're leveraging our vertical integration. We're refining and transforming 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 products. We continue to expand production capacity with a stable financial structure. In 2020, we will complete our large-scale expansion project, valued at USD 1.3 billion, and expect to sharpen our competitive edge in producing high-value-added resin products while also increasing production capacity for ethylene, the petrochemical industry's base chemical.

In aerospace, we have proven our capabilities by securing large-scale supply contracts with advanced solutions that meet the needs of global customers. 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 and with our world-class technology and quality recognized in the global aircraft industry, we are able to participate in the joint international development project for high-value-added aircraft engines. We are also upgrading our production technology and facilities, anticipating profitability in the long run. In December 2018, Hanwha Aerospace established a production base in Vietnam that will lead our global aircraft engine business with world-class competitiveness and production capacity.

In mechatronics, we're supporting manufacturing innovations in the Fourth Industrial era by developing logistics automation systems, collaborative robots, and Smart Factory solutions. In 2018, we entered the global market with contracts to supply collaborative robots to six European companies.

Our vertically integrated solar energy business leads the global market, bolstered by our cutting-edge technology and world-class production capacity. We've maintained the No. 1 market share in the new market for advanced renewable energy in Germany, the UK, South Korea, and Japan. We completed a 1.7GW capacity module plant in Georgia, USA. Commercial production in the US is only the beginning. Our intent is to build a worldwide production network that links South Korea, Malaysia, China, and the US to lead the eco-friendly energy market of the world.

In financial services, Hanwha continues to innovate and address the needs of customers, amidst challenges of an evolving market. We've achieved financial stability and strength by developing a customer-centric system and leveraging it to help our clients reach their financial goals. Using advanced digital technology, we expanded Fintech- and Insurtech-based business models and digital asset management services. We're investing in digital platforms to strengthen customer service and future financial services. By collaborating with Internet-only banks and Fintech startups, we will utilize AI, Big Data, and blockchain technologies to synergize financial businesses and advance the financial industry. We're doing a lot but more importantly, they're meaningful and all aligned to our global growth strategy.

Since entering the Vietnamese life insurance market in 2009, we've leveraged our nationwide sales network and have grown CAGR 58.7 percent in insurance premiums over the past ten years. We will continue to build on our solid reputation to execute our localization strategy and expand our market dominance in the rapidly growing Southeast Asia insurance market.

Our services & leisure affiliates provide differentiated services that cater to evolving leisure lifestyles and residential living. Opened in 2018, our premium marine resort offers visitors unique experiences with high-end activities like watersports and pampers them in an entire building dedicated to providing a VIP experience. We've created a new concept in residence services by offering hotel services and amenities for long term and permanent residencies. Our offerings are designed to address changing trends and the demand for hotel-like services and conveniences for extended stays. We plan to introduce Total Hospitality, a new urban complex service & leisure business model that meets the needs for senior living. Total Hospitality includes medical services online and offline, hotel-style conveniences, and financial planning and consulting.

And as a conscientious corporate citizen, Hanwha continues to meet our ethical, legal, and economical responsibilities in our business practices. We remain committed to our business philosophy that as a business we have a responsibility to do good. That's why we are increasing our social contributions and making efforts to resolve common issues in our society. For example, our reforestation programs have built entire forests in parts of China. We also sponsor social events and activities to promote culture, the arts, sports, and eco-friendly energy.

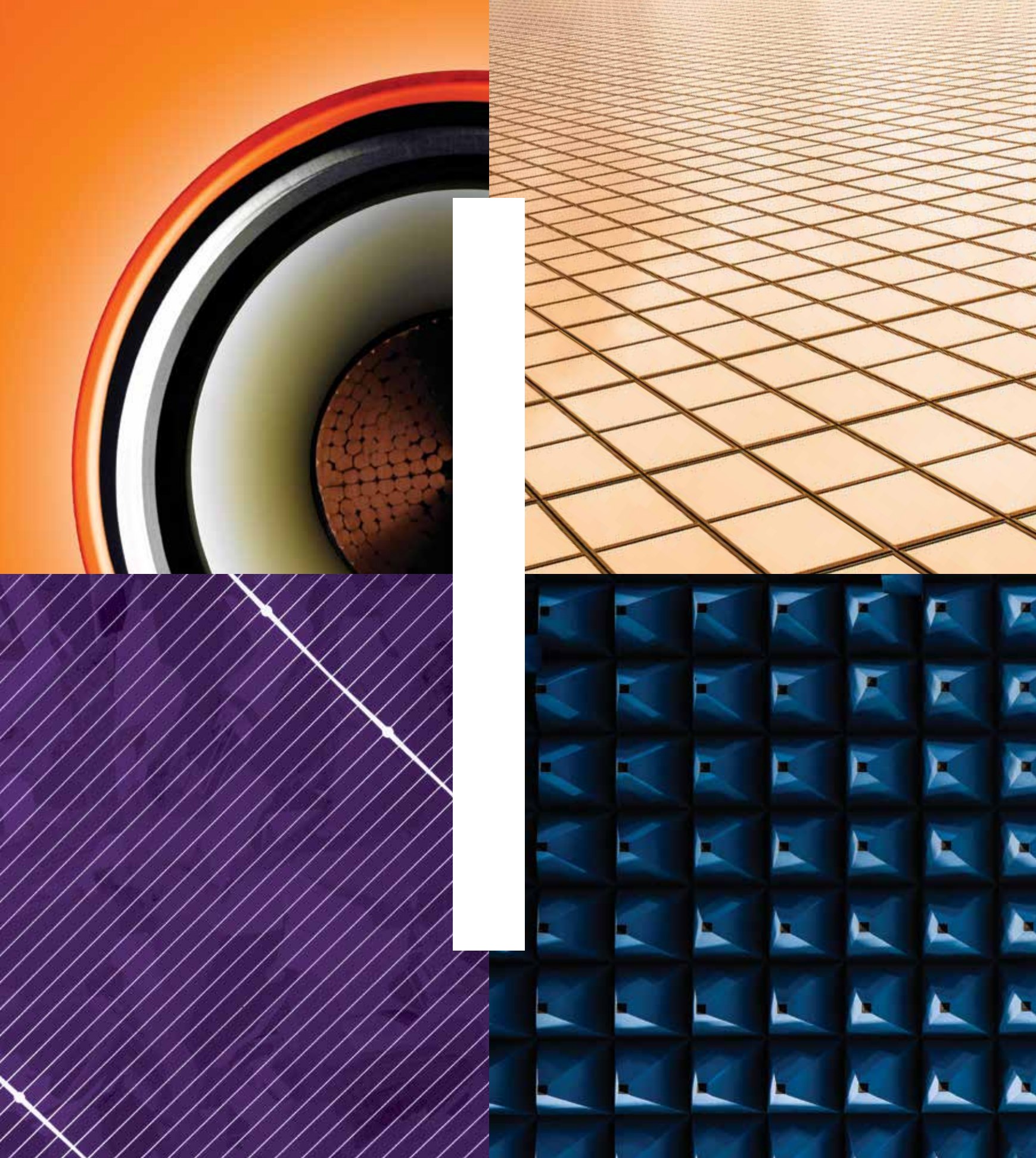
At Hanwha, we've remained steadfast to the UN's Sustainable Development Goals to work together with others to solve global environmental and social issues. Since 2013, we have supported the Towards a Greener Davos initiative by donating solar modules to the City of Davos at the World Economic Forum Congress Center. Our Happy Sunshine initiative has brightened lives across East Asia with solar panels and systems donations to 254 community development projects. And our Hanwha Solar Forest campaign continues to preserve the environment by planting thousands of trees. To date, we have planted 500,000 trees in seven locations across South Korea, Mongolia, and China.

But with all the ideas and opportunities, we need people to plan and execute initiatives. That's why we're hiring the best talent and fostering creativity. We're not only building partnerships with large companies but with small and medium-sized enterprises because we want to succeed and achieve, together. Our commitment to maintain strict compliance management and the highest standards are creating an ethical corporate culture on the inside and set an example in fair competition and transparency for others to follow on the outside.

We continue to face a world filled with uncertainty where advancements in digital technology are being accelerated by emerging technologies and changing infrastructure. Still, we will continue to rise to the challenges. Our response will be to innovate and do what others have not by taking 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

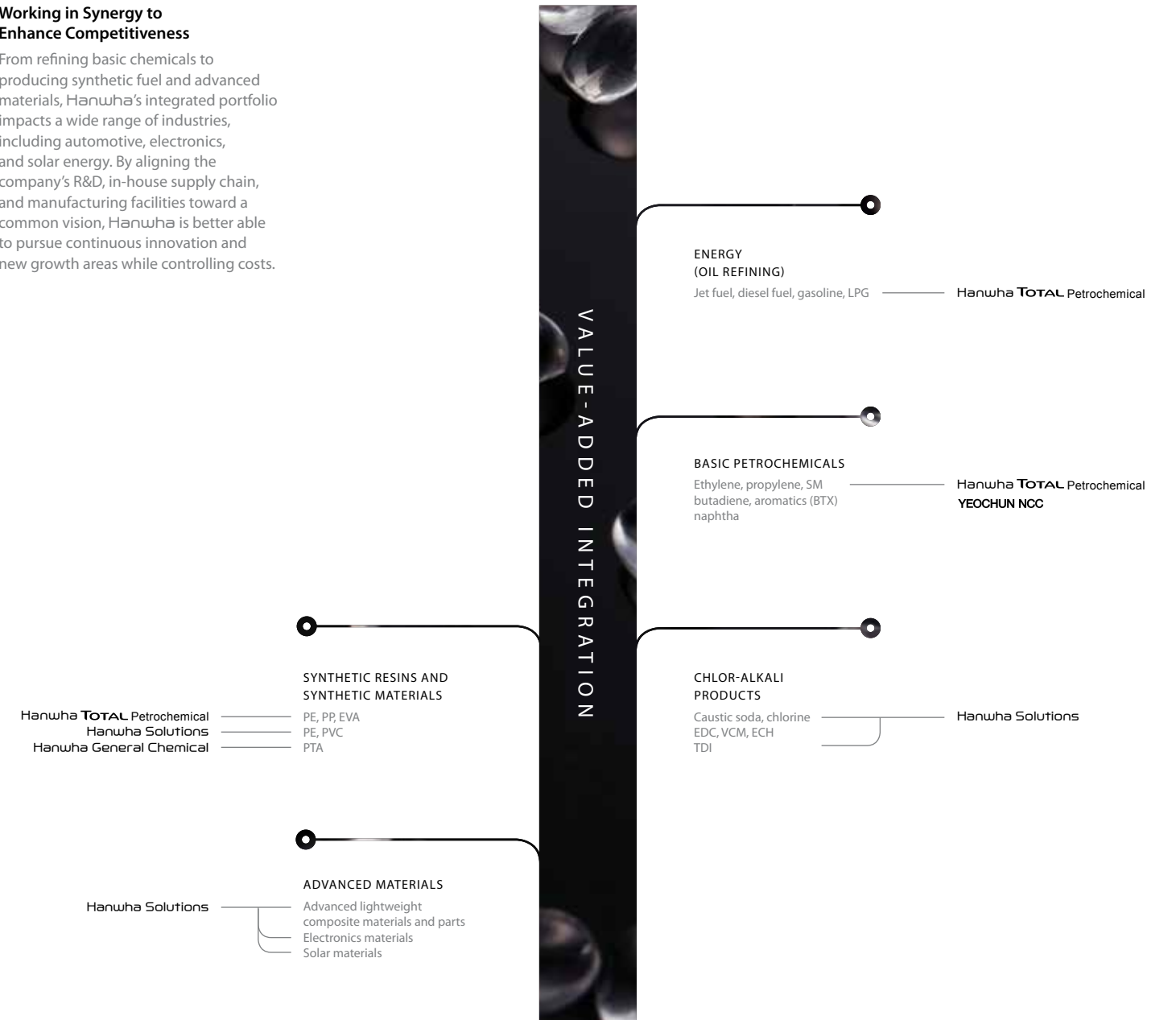
Hanwha researchers are leaders in their fields and passionate about innovating and exploring new ways to produce petrochemicals and advanced materials that our customers can leverage to push their own limits of what is possible in automotive engineering, solar energy, nanotechnology, and other fields. 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 18.1 billion.

ETHYLENE

## Petrochemical Powerhouse

Hanwha has an ethylene production capacity of over 3.6 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 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 is technologically advanced as it uses lightweight composite materials. This product is expected to lead in the electric vehicle battery housing market and set a new bar for other electric battery housing manufacturers. With cutting-edge products, we are leading this market and becoming a major supplier to global automakers.





QUESTIONS



ANSWERS

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

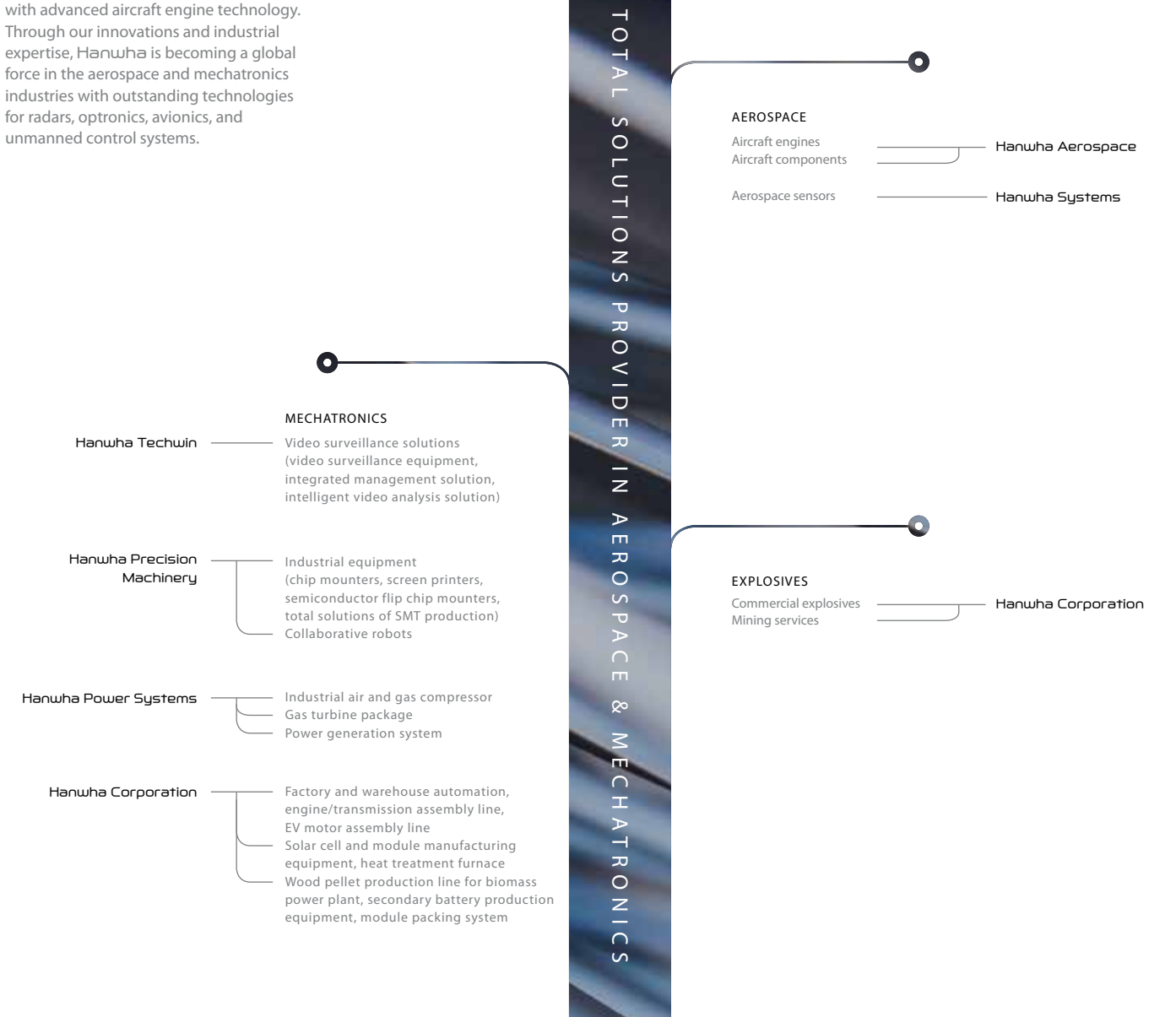
# AEROSPACE & MECHATRONICS

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.



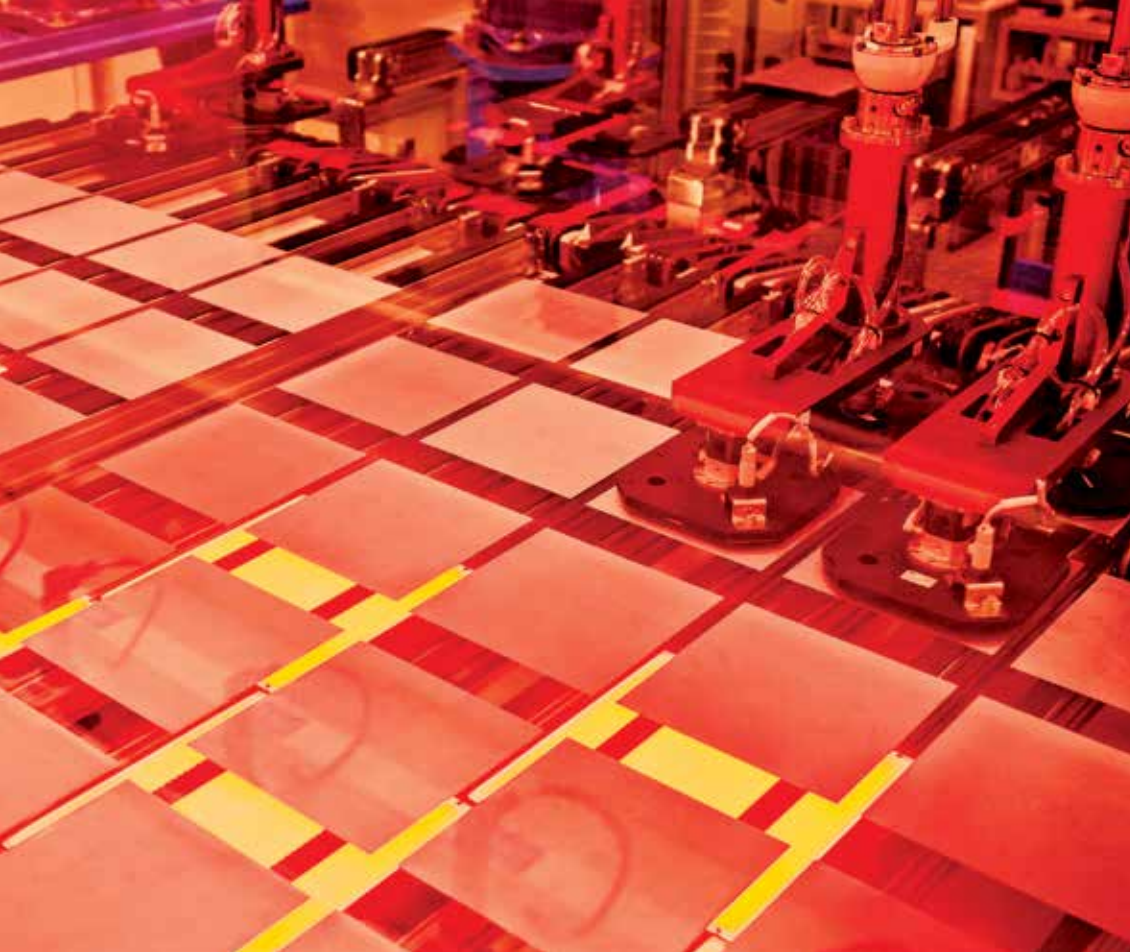
AEROSPACE

## USD 13 Billion

Over the past five years, Hanwha Aerospace has secured aerospace contracts worth nearly USD 13 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

## Expertise Leads to Growth

With more than 50 years of experience in global mechatronics, Hanwha continues to develop innovative technologies for this industry. 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.



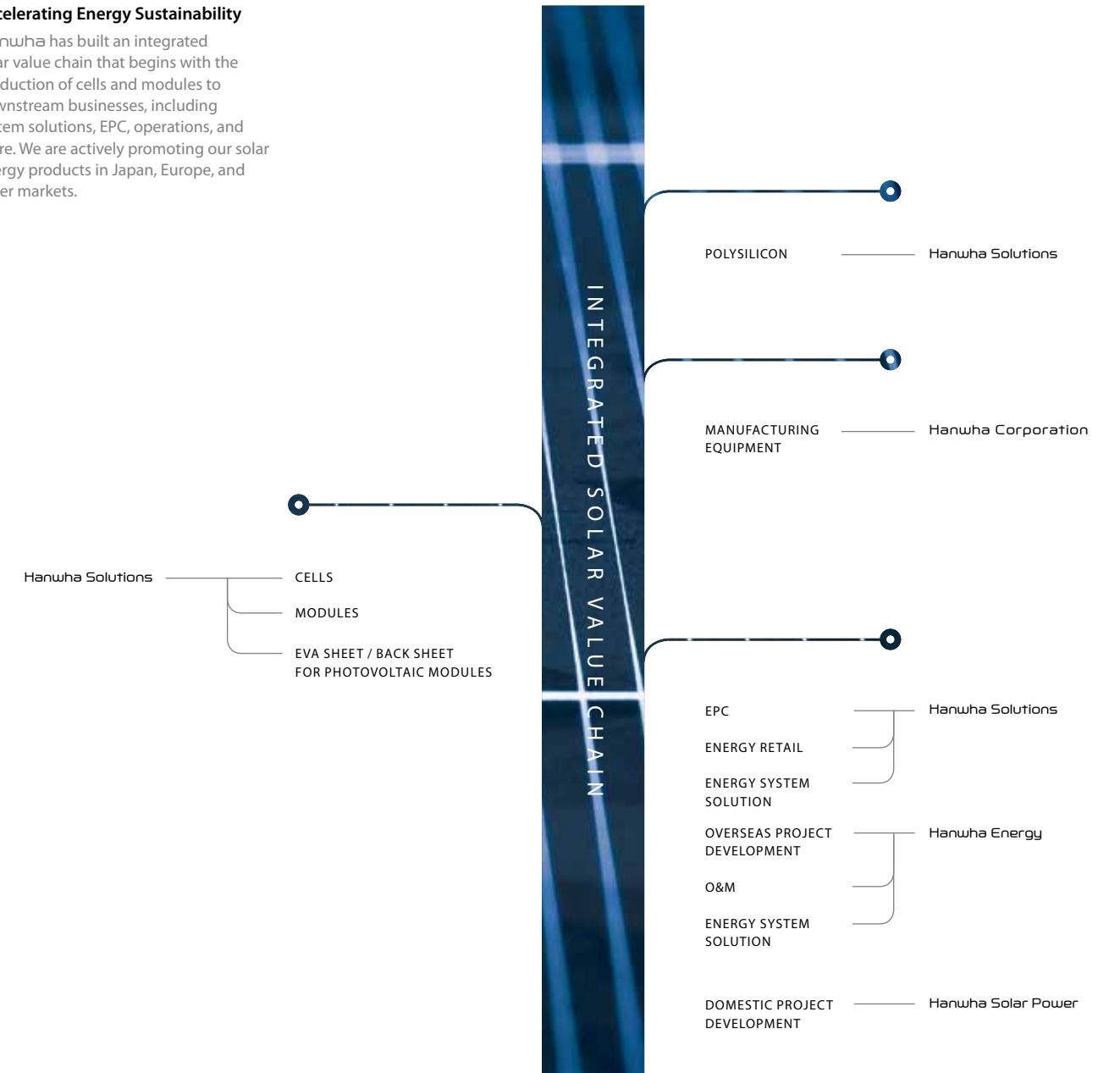
## SOLAR ENERGY

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 Energy Sustainability

Hanwha has built an integrated solar value chain that begins with the production of cells and modules to downstream businesses, including system solutions, EPC, operations, and more. We are actively promoting our solar energy products in Japan, Europe, and other markets.





SOLAR CELLS  
& MODULES

## Technology Leader

Hanwha Solutions' proprietary Q.ANTUM solar cells significantly reduce energy consumption by utilizing PERC (passivated emitter rear contact) 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. In 2019, DNV GL, the world's largest classification society, rated our key products like the Q.ANTUM, a "Top Performer" 4 years in a row.

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. And in 2016, EuPD Research ranked Hanwha Solutions as the top module manufacturer in the US.

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 cell manufacturing with an annual cell production capacity of 9GW.

(as of Q1 2019)



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. We have achieved the largest market share in South Korea, 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.

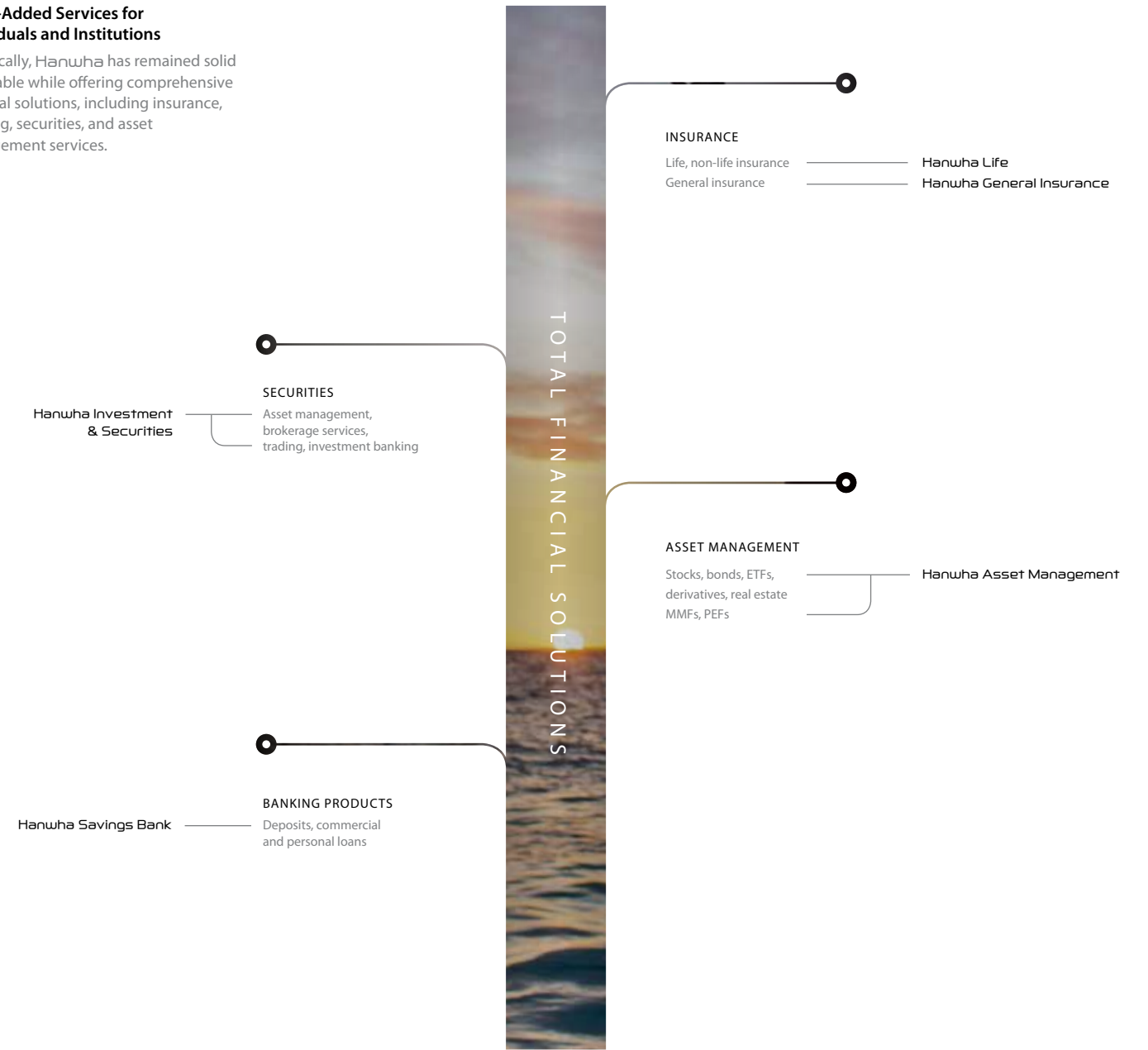
# FINANCE

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

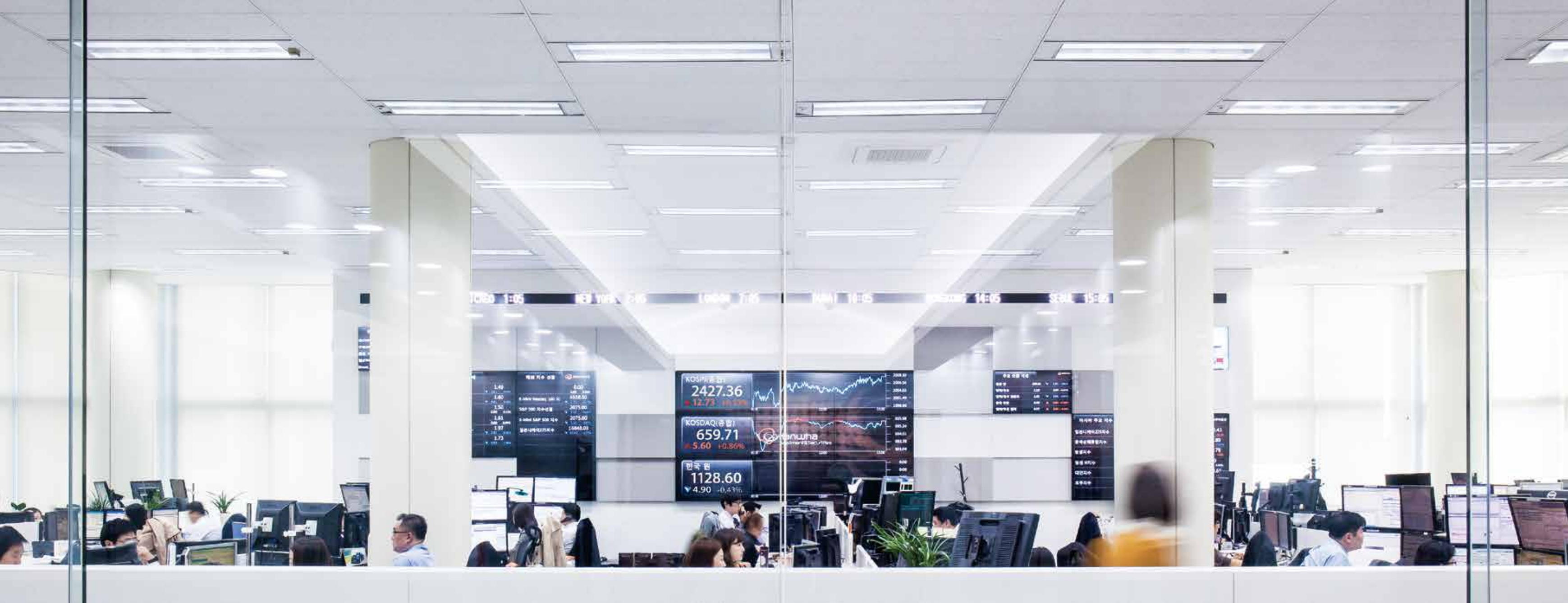
## A New Milestone

Seventy years after being established as South Korea's first life insurance company, Hanwha Life has reached a new milestone with USD 89.4 billion (KRW 100 trillion) in total assets.

In 2018, we grew and achieved new heights to lead the industry with USD 102 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.





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

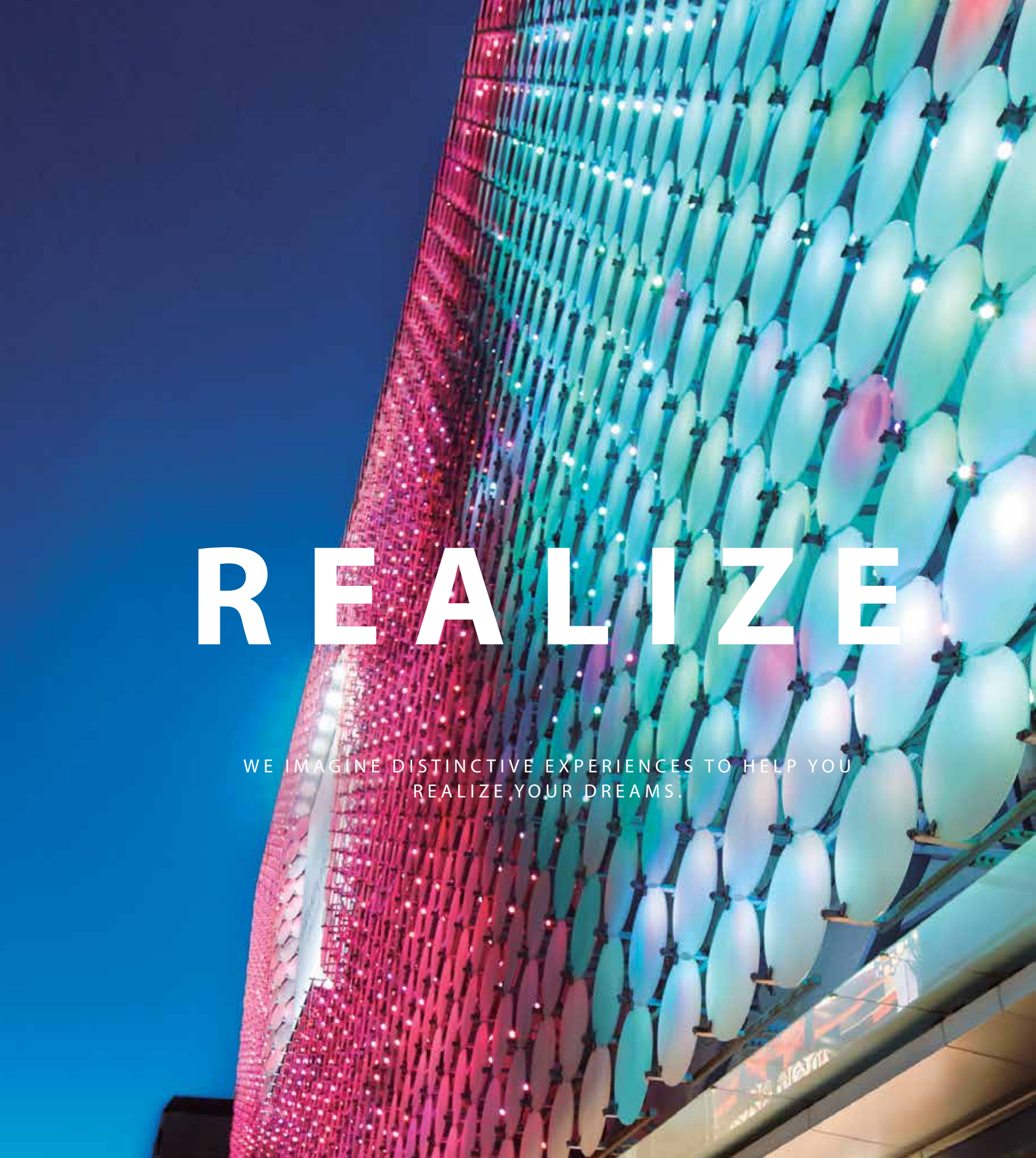
Hanwha Life continues to advance in the global market with successful subsidiaries in Vietnam, China, and Indonesia. Our next goal is to become the leading insurance company in each of these countries.







IMAGINE



REALIZE

WE IMAGINE DISTINCTIVE EXPERIENCES TO HELP YOU  
REALIZE YOUR DREAMS.

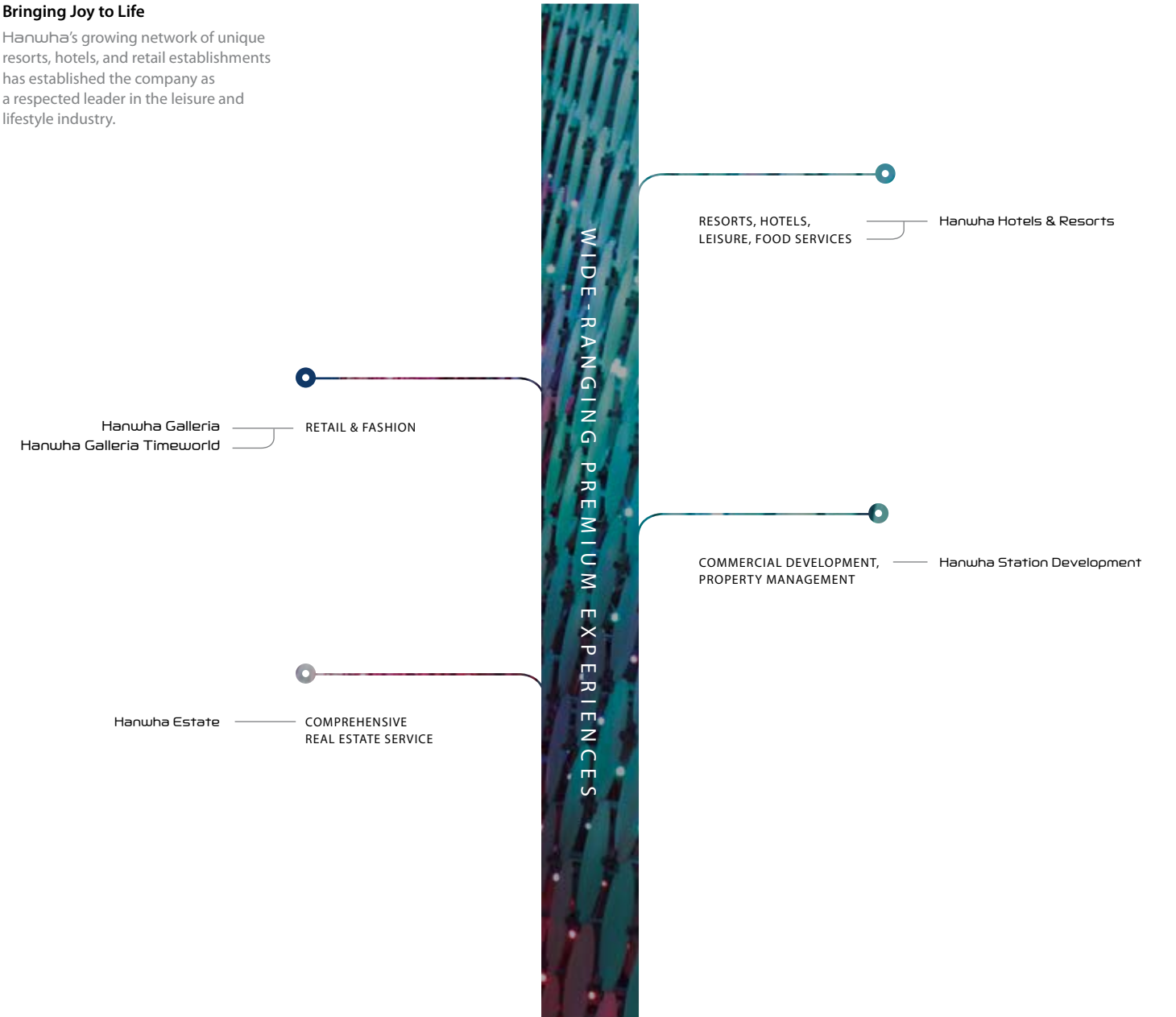
## SERVICES & LEISURE

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 400 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.

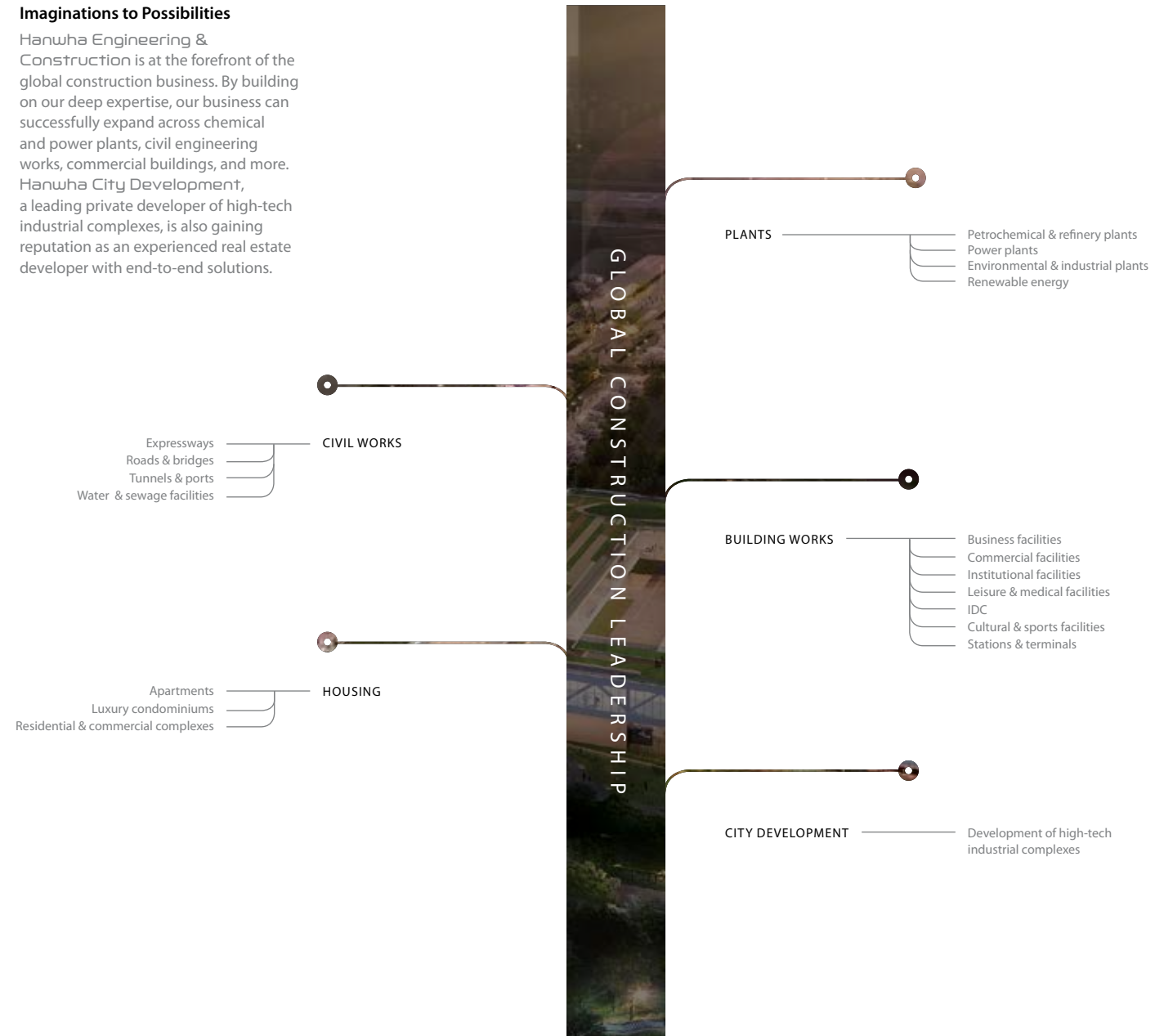
# CONSTRUCTION

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 800 apartment complexes. The Bismayah New City Project is the largest construction project in the history of the Middle East by a South Korean company. And recently, another contract worth USD 2.1 billion to build the social infrastructure for Bismayah city has been secured, pushing 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, which will have an annual production capacity of 1.5 million gallons of fertilizer.



SEAWATER  
DESALINATION PLANT

## Integrated Energy Development

Hanwha Engineering & Construction is expanding its technologies and capabilities. One example is the Saudi Yanbu II power generation and desalination plant. It produces 15 million gallons of water a day.



SUWON  
CONVENTION CENTER

## Multiple Innovative Projects

Hanwha Hotels & Resorts and Hanwha Galleria are partnering to build a hospitality infrastructure, a hotel, a department store, and an aquarium. And Hanwha's engineering and construction expertise is bringing the visually stunning Suwon Convention Center to life.





# Hanwha OVERVIEW

# Hanwaha's Vision

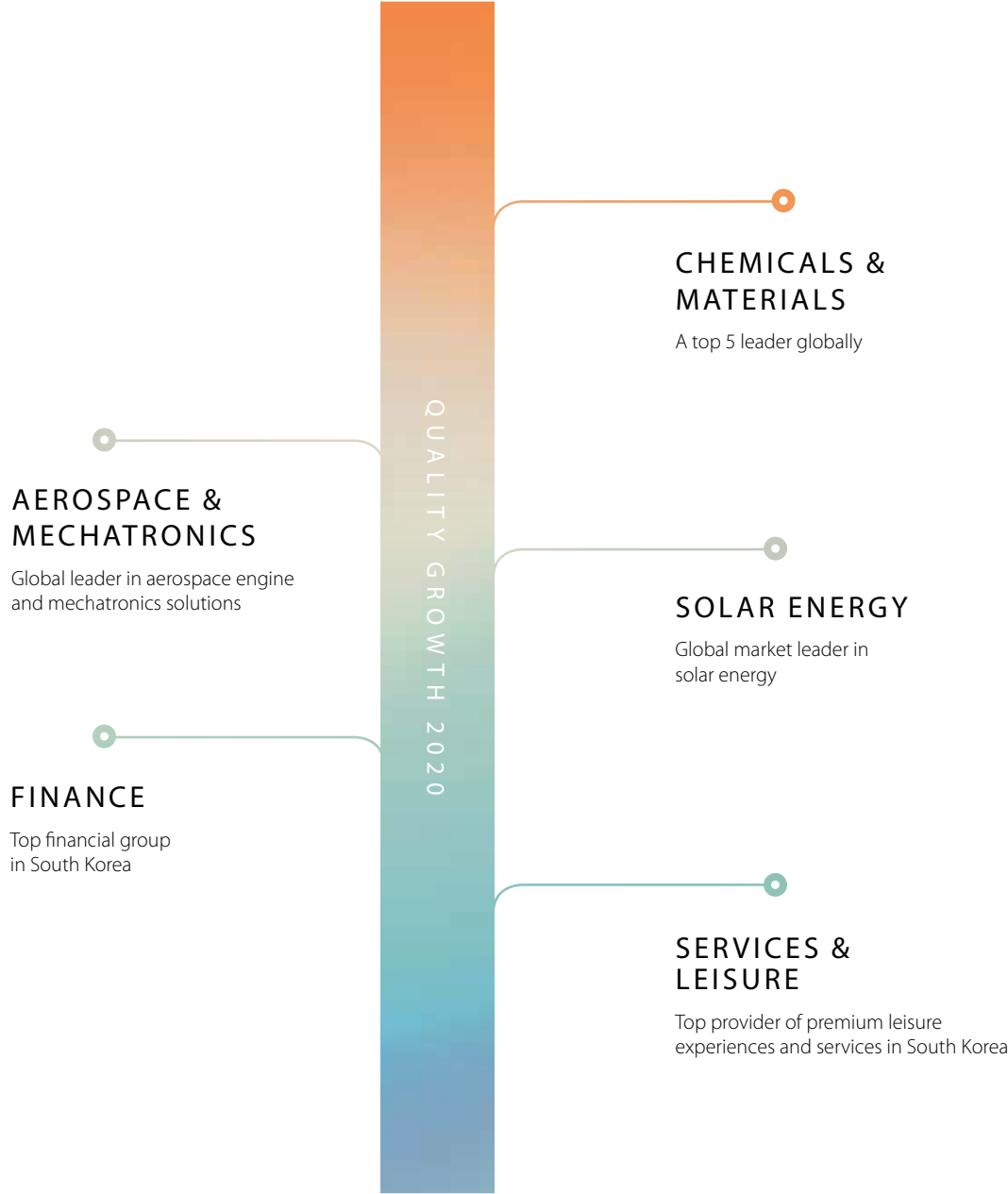
Our vision is to touch the lives of every individual in every country in which we operate. We want to elevate the quality of life with our innovations and solutions. And to achieve our vision, we've set goals to help us lead in all markets our businesses compete in. Anticipating change, innovating, and 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.

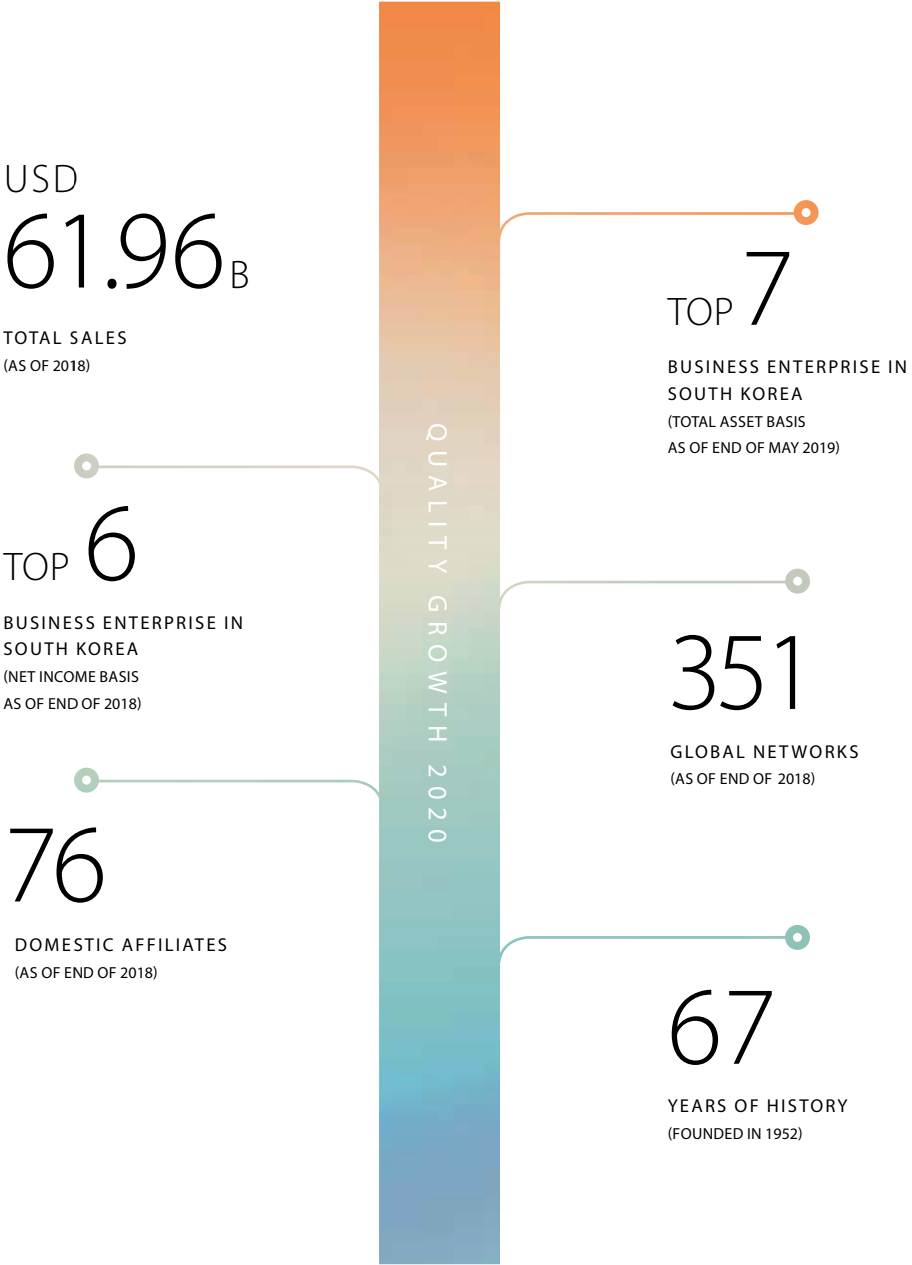
### Our Core Values

- 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 102 billion in 2018. 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

As the 21st century began, Hanwha accelerated global expansion by diversifying 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 2009, Hanwha Solutions began constructing 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 find more opportunities that could lead to greater financial security for more 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. Our solar energy solution business became the market leader in the US, Germany, the UK, South Korea, 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

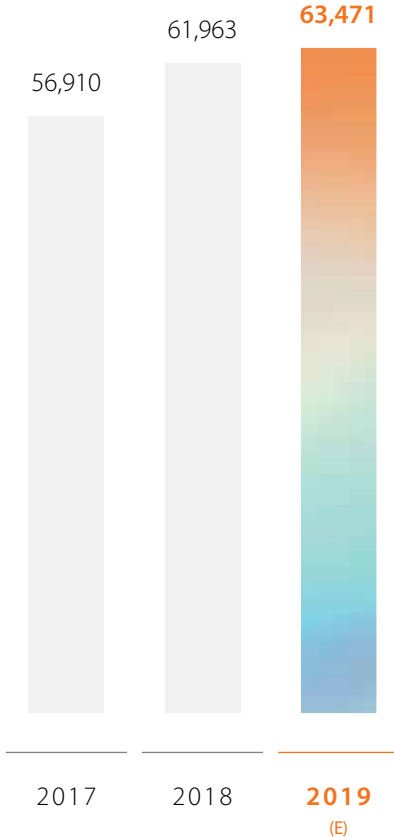
\* The financial data in the Financial Highlights show the simple aggregate of sales, total assets, total liabilities, and total stockholder equity among Hanwha Group's major affiliates at home and abroad. (Source: Hanwha Group)  
 Figures for sales and total assets of individual affiliate companies 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.

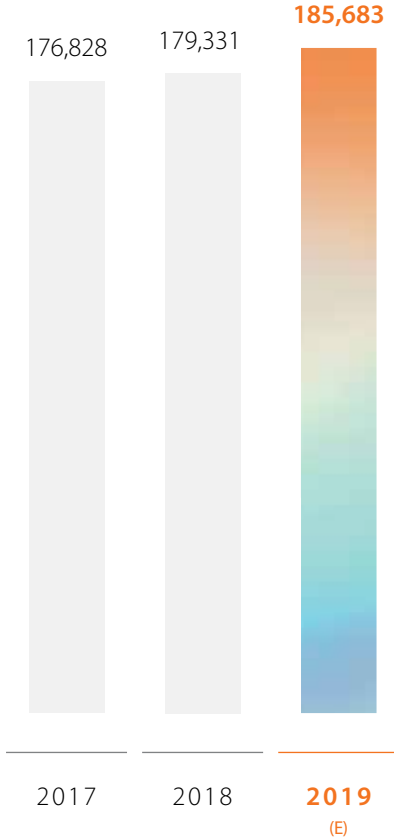
## TOTAL SALES

In USD Millions



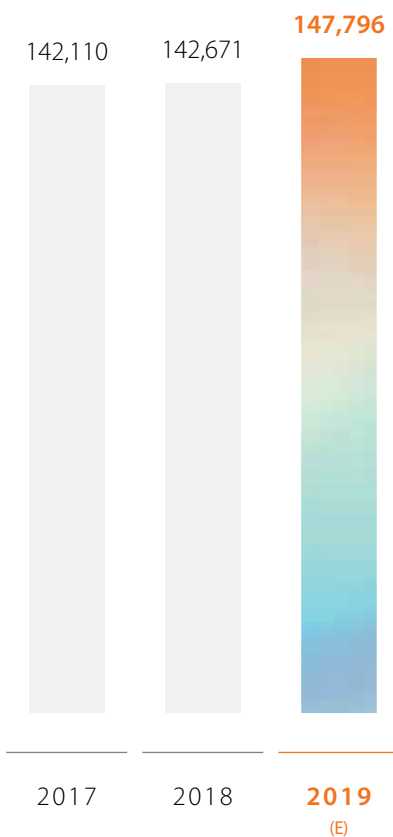
## TOTAL ASSETS

In USD Millions



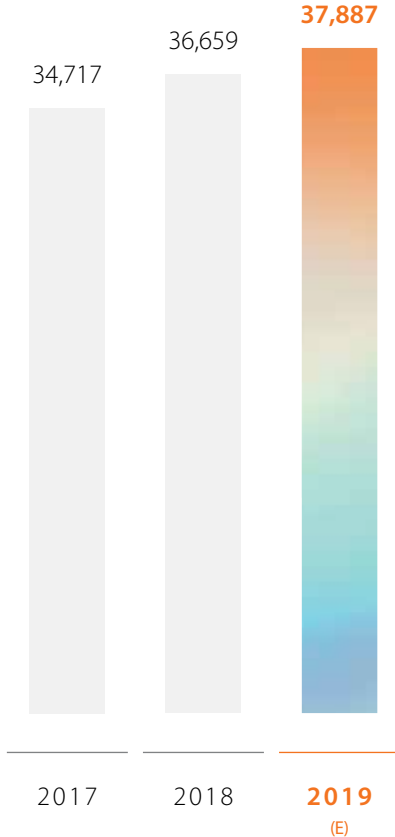
## TOTAL LIABILITIES

In USD Millions



## TOTAL STOCKHOLDERS EQUITY

In USD Millions



\* Sales are converted into US dollars at the average exchange rate of USD 1= KRW 1,130.84 in 2017, and KRW 1,100.30 in 2018.  
 \* Assets, liabilities, and shareholder equity amounts are converted into US dollars at the December 31 closing exchange rate of USD 1= KRW 1,071.40 in 2017, and KRW 1,118.10 in 2018.  
 \* 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, underwater surveillance equipment, navigation systems, laser

**Trading:** Petroleum, petrochemicals, steel, machinery, defense sales, construction materials, paper, automation facilities, project organization, food resources, energy

**Machinery:** Solar, factory & warehouse automation, powertrain, plant machinery

## 2018 Total Sales

In USD millions

4,748

## 2018 Total Assets

In USD millions

6,957

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 3 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 fire process products, 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 precision-guided munitions, advanced ammunition, navigation systems, lasers, and underwater surveillance equipment.

Since entering the mining services market in 2014, 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 granular ammonium nitrate production lines to produce electronic detonators. These detonator products enabled us to expand further into other major markets across the globe and continue our innovations and development of 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 Korea 3-axis system by combining the Korea Air and Missile Defense (KAMD), Kill Chain and Korea Massive Punishment and Retaliation (KMPP), 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 27 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 resources 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 precision 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

### 2018 Total Sales

In USD millions

# 4,047

### 2018 Total Assets

In USD millions

# 6,615

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

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

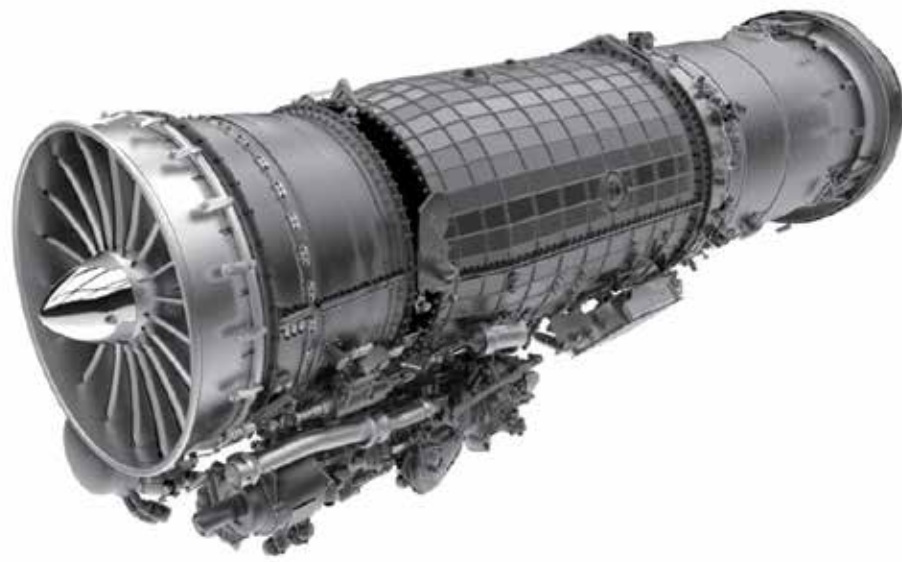
Hanwha Aerospace is the only aircraft engine producer in South Korea and trusted in the global market for our original application technologies.

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, 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.



# Hanwha Defense

www.hanwha-defense.co.kr

## EXPERTISE

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

### 2018 Total Sales

In USD millions

Hanwha Land Systems

# 703

Hanwha Defense Systems

# 635

### 2018 Total Assets

In USD millions

Hanwha Land Systems

# 1,201

Hanwha Defense Systems

# 708

Sales and total assets are based on each company's financial statements before the merger of Hanwha Land Systems and Hanwha Defense Systems.



Hanwha Defense is expanding its global business as a total defense solutions provider with highly competitive offerings in artillery systems, armored vehicles, air defense systems, and unmanned ground systems.

In January 2019, Hanwha Land Systems merged with Hanwha Defense Systems to become Hanwha Defense. This merger secures our highest capability in all areas of artillery systems, armored vehicles, air defense systems, and unmanned ground systems. By strengthening our product competitiveness with the combined benefits of the technology, experience, and outstanding talents of both companies, we are firmly established as a sustainable global defense company.

In artillery systems, we're developing artillery solutions for modern warfare based on our experience and technology in the defense industry. We have applied our experience in producing more than a thousand K55 self-propelled howitzers. We developed the K9 self-propelled howitzer, the world's top-quality howitzer with overwhelming firepower, high maneuverability, and survivability. Our K10 ammunition resupply vehicle is the world's first fully automated ammunition resupply system equipped with a K9 self-propelled howitzer. Our EVO-105 evolved wheeled self-propelled howitzer is a new-

concept weapon system. It comes with a 105mm towed gun and an automatic fire control system on a vehicle.

Our armored vehicles have been recognized for their outstanding maneuverability and adaptability. We have seven specialized armored vehicle models that use the K200 or Armored Personnel Carrier as the base, including the NBCRV (Nuclear, Biological, Chemical Reconnaissance Vehicle) and 120mm self-propelled automatic mortar. We also produce the K21, a world-class IFV.

We provide a lineup of air defense and guided missile solutions that are optimal for a range of operations to combat mid- and low-altitude aerial threats. Our Gun and Missile Air Defense System BIHO is used in air defense operations. The BIHO has boosted the anti-air defense capabilities of the South Korean armed forces. Because of its excellent maneuver capabilities, the BIHO can be highly effective in various air defense operations, such as in mechanized infantry. The CHUNMA is South Korea's first surface-to-air guided system, an effective weapon system against low-altitude aerial threats on core assets. We also produce more than 40 other land-based launcher systems and naval launchers, as well as other related products.

In unmanned ground systems, we are aggressively driving the effort to bring the Fourth Industrial Revolution to the defense industry with innovative and cutting-edge solutions for future battlefields. Our products include the Tactical Unmanned Ground Vehicle, a remote-controlled weapon station, and a lithium battery system for submarines.

We have become a trusted partner in global markets by successfully incorporating advanced technology without compromising reliability or quality. We have exported the K200 to Malaysia in 1993, marking our first success in large-scale overseas exports by a South Korean defense company. We are also exporting our K9 self-propelled howitzer and K10 ammunition resupply vehicle overseas. In addition, we developed the BIHO (Gun and Missile Air Defense System) and the Tigon (a wheeled armored vehicle), which secure our technological competitiveness for export as we actively engage in overseas marketing.

Hanwha Defense is South Korea's leading defense company. Through hard work and strong R&D investments, we are also becoming a leader in the global defense industry and gaining recognition for delivering reliability and quality in the same solution.

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

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

**ICT:** Integrated IT business services

## 2018 Total Sales

In USD millions

1,026

## 2018 Total Assets

In USD millions

1,701

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. In August 2018, we launched our new ICT division after merging with Hanwha S&C. Our ICT division represents our advanced defense IT and system integration capabilities that make us more market competitive. Our 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 system 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

## 2018 Total Sales

In USD millions

467

## 2018 Total Assets

In USD millions

455

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

Hanwha Techwin has taken its 30 years of technological prowess to build a renowned global security company.

Established in 1977, 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 2.7 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.

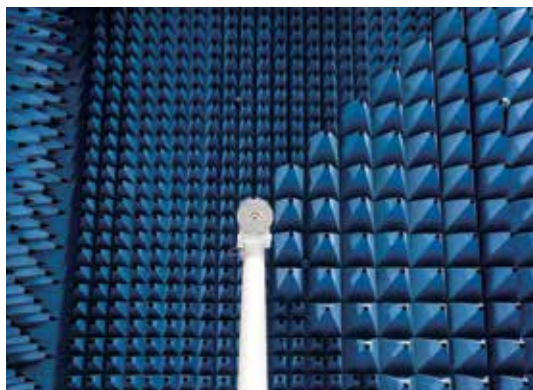
Our products are sold through more than 16,000 global sales networks across Europe, the Americas, the Middle East, and Asia. The strength and breadth of our networks affords us the ability to market and sell our products directly to our customers.

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.



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.

(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 Precision Machinery

www.hanwhaprecisionmachinery.com

### EXPERTISE

Chip mounters, screen printers, machine tools, collaborative robots

### 2018 Total Sales

In USD millions

234

### 2018 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 chip mounter in 1989, Hanwha Precision Machinery has become a leading worldwide Smart Factory solutions provider, offering Surface Mount Technology (SMT) mounters, semiconductor equipment, insertion and assembly automation equipment, machine tools, collaborative robots, industrial automation equipment, 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.

Leveraging our unmanned automation technology and experience, we launched South Korea's first collaborative robot in April 2017. Robots that can perform basic tasks and supplementary work enable us to maximize efficiencies in many industries, including automotive, electronics, food, and medicine.

Our solutions that include the SMT mounters, machine tools, and collaborative robots, 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 Precision Machinery's high-speed chip mounter HM520 boasts best-in-class real productivity and is optimized for high-quality production. 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.



## Hanwha Power Systems

www.hanwhapowersystems.com

### EXPERTISE

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

### 2018 Total Sales

In USD millions

155

### 2018 Total Assets

In USD millions

198

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

Hanwha Power Systems launched 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 5,500 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 are the only energy equipment company in South Korea capable of independently designing, producing, and testing large-capacity high-pressure gas compressors. In addition to high-efficiency compressors, we provide expanders with short lead times and in-house developed core components that give our customers a competitive

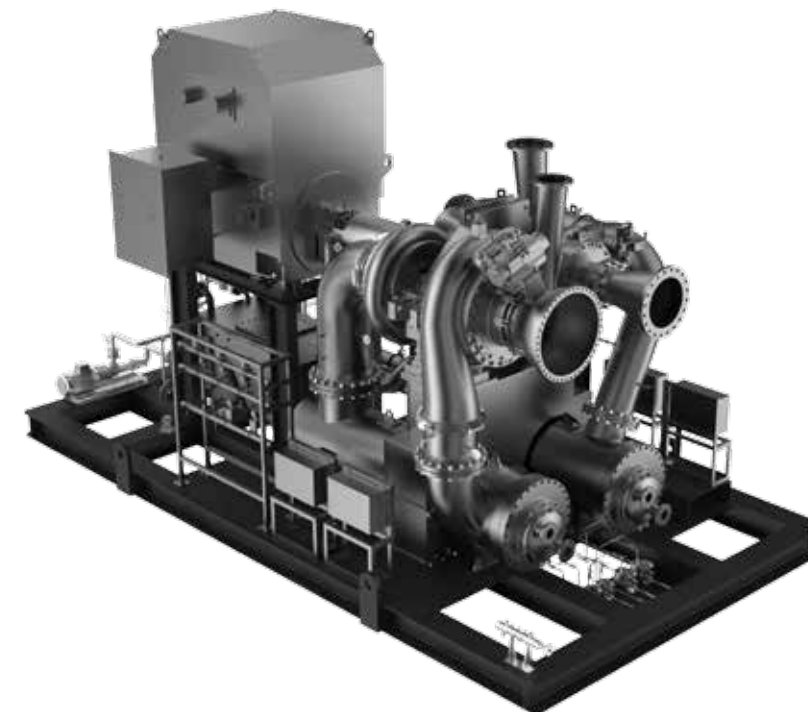
advantage. In 2014, we won the contract to supply the world's first marine Vapor Recovery Unit (VRU) steam recovery turbo compressor. In 2017, we also won the contract to provide compressors for Floating Storage Regasification Units (FSRU) and LNG carriers that gave us the opportunity to demonstrate our outstanding technology.

Hanwha Power Systems is building long-term partnerships by rapidly expanding its sales, customer service, and R&D networks globally. We currently have eight international sales offices that provide sales and customer service, in addition to production facilities in Korea and China. Our US Houston R&D center alone is creating partnerships on a global scale, like with Southwest Research Institute (SwRI) to build sCO2 engines. At the same time, we are focusing on building closer relationships with key customers in the oil & gas industry. We obtained vendor approval for API617 and API672 from Saudi Aramco in 2016 and have been working on securing vendor approvals from other major clients in the Middle East and Asia.

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. In strategic cooperation with Baker Hughes, a GE company (BHGE), we're selling BHGE's package products, including gas turbines, steam turbines, and reciprocating and barrel compressors. In 2019, we signed an official service center contract with BHGE to service the South Korean market on a wide range of products, including gas turbines and steam turbines.

We are currently working to fulfill our contract with the US Department of Energy (DOE) to develop sCO2 engines. This project is expected to help us become a game changer by creating new markets in the distributed power generation, effectively supplanting the steam turbine market. Along with our turbo expander generator (TEG), currently being developed as a power generation system using waste heat, we expect our partnership efforts and increasing developments to propel us to leadership in the eco-friendly power generation solutions market.



In the petrochemical process, our compander is a state-of-the-art turbomachine that features the capabilities of both a compressor and an expander that doesn't use redundant components, such as a base frame, gearbox, or an oil system. Hanwha Power System's compander represents the company's leading expertise in turbo compressor and turbo expander technology.

# Hanwha Solutions

www.hanwhasolutions.com

## EXPERTISE

**Chemical:** PE, PVC, CA, polysilicon, TDI  
**Q CELLS:** Solar cells & modules, system solution, downstream, energy retail  
**Advanced Materials:** Automotive materials, electronics materials, solar materials

## 2018 Total Sales

In USD millions

Hanwha Chemical

3,634

Hanwha Q CELLS

2,964

Hanwha Advanced Materials

1,261

## 2018 Total Assets

In USD millions

Hanwha Chemical

6,995

Hanwha Q CELLS

3,887

Hanwha Advanced Materials

2,039

Sales and total assets are based on each company's financial statements before the merger of Hanwha Chemical, Hanwha Q CELLS and Hanwha Advanced Materials.

Chemical Division 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 by the merger of Hanwha Chemical, Hanwha Q CELLS and Hanwha Advanced Materials. We aim to create new synergies and sustainable growth by resolving environmental and climate issues faced by customers and society. We are headquartered in Seoul, South Korea, and have more than 70 locations worldwide. We are committed to enriching the future and building sustainable growth.

Established in 1965, Chemical Division is a total solutions chemical company with streamlined production systems for polyethylene (PE), polyvinyl chloride (PVC), and chlor-alkali (CA). And as South Korea's leading petrochemical company, we dominate the nation's chemical industry with high-quality PVC, CA, and linear low-density polyethylene (LLDPE) 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, in 2017, we built a production line that could produce up to 30,000 tons of CPVC annually. We also expanded our specialty product lineups. In 2019, we entered the high-quality adhesives market by building a plant dedicated to producing up to 50,000 tons of dicyclopentadiene (DCPD) hydrogenated petroleum resins annually and beginning commercial production. We partnered with the Institute of Chemical Process at Seoul National University and the Korea Advanced Institute of Science and Technology (KAIST) to establish joint research centers. It was a significant step forward to enhance quality and accelerate the pace of innovation.

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 located in 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.

Chemical Division 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 in 2009. 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 are producing wire and cable compounds. In 2016, we strategically acquired a company to maximize the synergy in production processing of CA and vinyl chloride monomer (VCM) while enhancing our production efficiencies with toluene diisocyanate (TDI), a raw material for polyurethane products.

In our upstream solar businesses, we're continuing our investments in infrastructure and working to become a global leader. One of our facilities alone can annually produce up to 15,000 tons of polysilicon. Our facilities employ advanced technologies that produce environmentally friendly products, such as ECO-DEHCH, an eco-friendly premium plasticizer. They represent our commitment to a better environment for a better tomorrow.



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, as well as for large solar power plants.

Since our entry into the solar energy business in 2010, the Hanwha Group has transformed Q CELLS Division into the world's leading producer of solar cells and modules. Our current production networks span across China, Malaysia, South Korea, and the US. Bolstered by strong revenue and driven to stay ahead of the growing worldwide demand, we've continued to invest in R&D and manufacturing innovations. Our Malaysia plant alone was able to produce more than 1GW of QANTUM 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 into the country by building a 1.7GW capacity module plant in the US state of Georgia.

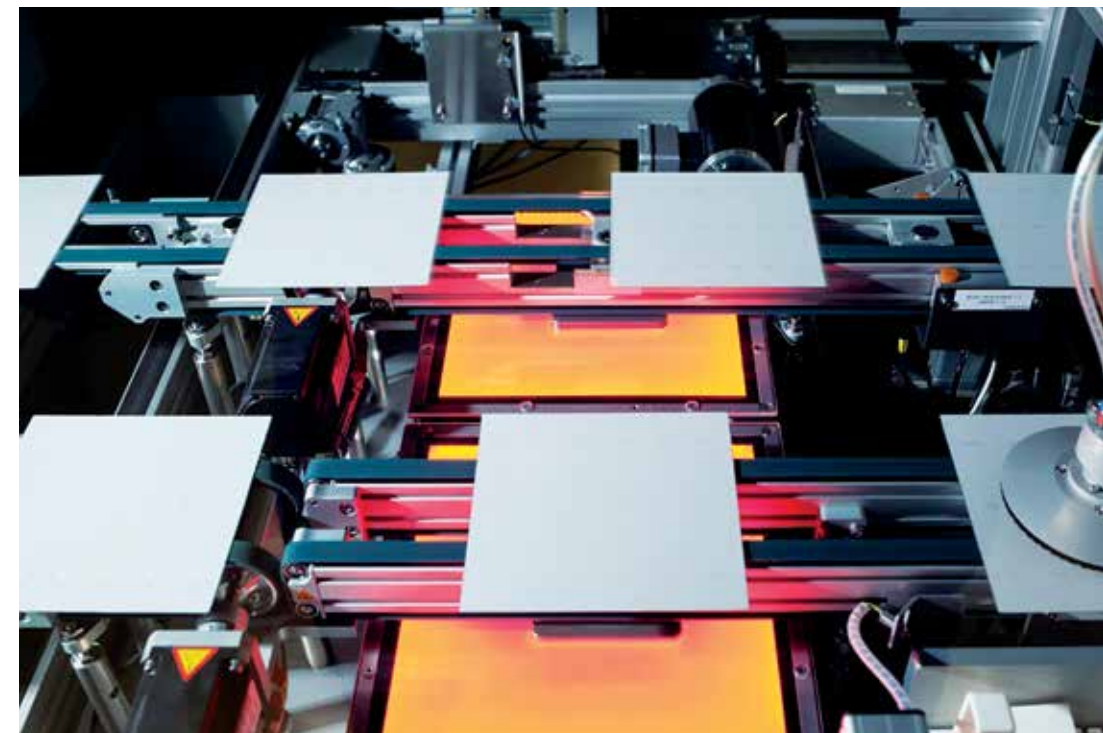
Our QANTUM technology is based on PERC cell technology, providing monocrystalline efficiency for multicrystalline module cells. The multicrystalline

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 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 covers 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 provide 1.5GW of modules, accelerating our entry into one of the world's largest solar markets. We also captured the biggest market shares across Germany, the UK, South Korea, and Japan.

Based on its strategies and policies optimized to global energy market, Q CELLS Division is securing its global leadership in the solar industry through long-term growth and expertise.



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, 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 have also 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) and SuperLite – Light-Weight Reinforced Thermoplastic (LWRT). They've captured the highest market shares globally, in their respective categories.

We are a major supplier to global automakers, including Hyundai, Kia, BMW, Daimler, Volkswagen, GM, Ford, and Toyota. As a global supplier, we have manufacturing factories in Alabama and Virginia in the United States; Beijing, Shanghai, and Chongqing in China; the Czech Republic and Germany in Europe;

and in Mexico, where the largest number of cars are produced for North America. By relying on our ten production sites around the world, we can anticipate the needs of global automakers for parts standardization and global sourcing.

Currently, we're tracking a global move toward lightweight automotive parts. We anticipated this and it's why we strengthened our investments in R&D years ago so that we could lead in the changing industry. Our R&D Center makes our research and development more globally competitive and helps us lead the worldwide trends toward lighter parts. Our research focuses on thermoplastic, thermosetting composite materials, and on designing and developing new applications. We also develop new materials and manufacturing methods, offering improved functionality and innovative hybrids that enable the latest technologies in the market.

Keeping pace with the rapidly expanding electric vehicle market, we are exploring sales opportunities for battery housing in electric vehicles. We are also developing future mobility markets, such as eco-friendly automotive, personal air vehicles (PAVs), and aerospace.

We offer products built with in-house technologies we've been refining for sheet manufacturing for the last 30 years. In 2010, we succeeded in developing and mass-producing EVA sheets and back sheets used in photovoltaic modules. We operate a plant for 8GW EVA sheets and 2.5GW back sheets in Korea and we're expanding the business to Europe, the US, and Southeast Asia.

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), and bonding sheet (adhesive sheet). We are expanding sales and responding to the 5G market by successfully developing ion resistant materials for microcircuit patterns, such as low dielectric materials and OLED displays. Most recently we have been developing new products to enter the markets for automotive electronics and electronic battery sensors for electric vehicles.

## Hanwha General Chemical

hgc.hanwha.com

### EXPERTISE

PTA, PV Business

### 2018 Total Sales

In USD millions

1,727

### 2018 Total Assets

In USD millions

3,133

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.

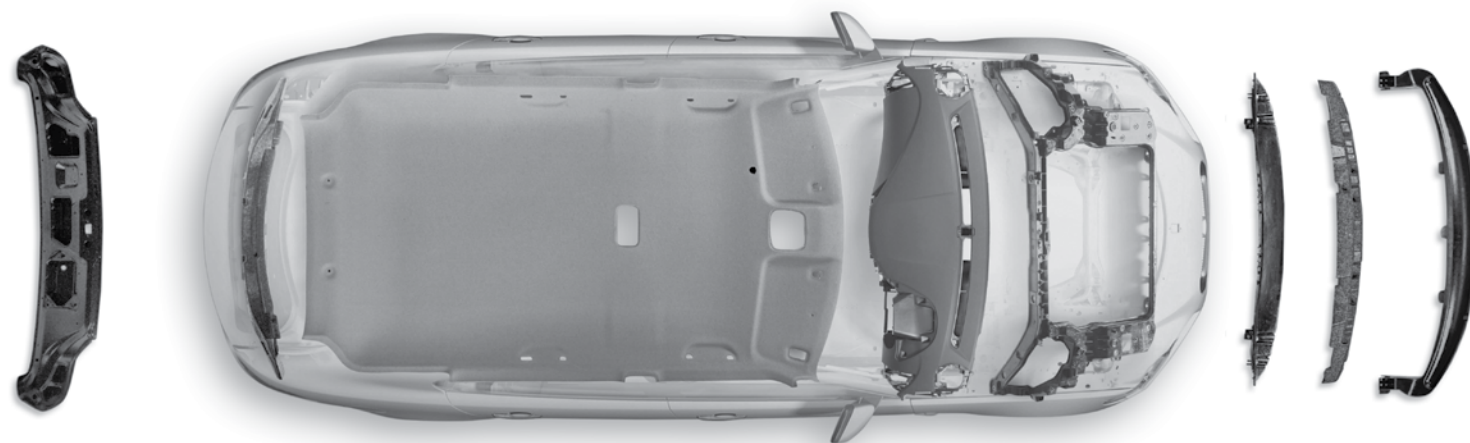
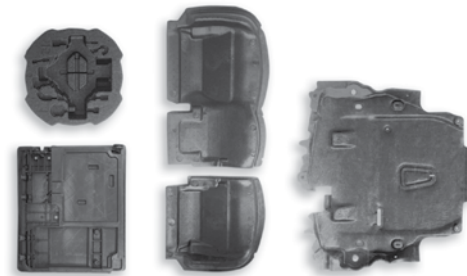
Hanwha General Chemical was established in 1974 before being acquired by the Hanwha Group in 2015. It was the first company in South Korea to localize production of purified terephthalic acid (PTA), a primary component in many types of polyester. PTA is used in clothing, industrial fibers, film, and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

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.



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, solvent

### 2018 Total Sales

In USD millions

# 10,188

### 2018 Total Assets

In USD millions

# 6,115

Hanwha **TOTAL** Petrochemical was incorporated into Hanwha Group in 2015. Since then we have not only generated stable business results but also earned the rank of South Korea's World Class Products 4 years in a row. We continue to strengthen our market dominance because of our 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 shares in the EVA used in solar cells, HDPE used in bottle caps, the EVA used in extrusion coating, flow mark free polypropylene (FMF PP) used in automotive composite materials, and high isotactic polypropylene (HiPP) used in electronic applications. 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

### 2018 Total Sales

In USD millions

# 5,321

### 2018 Total Assets

In USD millions

# 1,874

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

Group energy, solar energy, O&M, system solution

**2018 Total Sales**  
In USD millions

871

**2018 Total Assets**  
In USD millions

3,002

Hanwha Energy specializes in comprehensive energy solutions that produce high-quality electricity and steam. Advanced technology is at the core of who we are and the means by which we are able to develop forward-looking energy solutions for distributed energy sources.

Established in 2007, Hanwha Energy is a comprehensive energy solutions company. We operate cogeneration plants that 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 emissions reduction. 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, O&M business, system solutions, and more. In Japan, we've begun operating several solar power plants with a combined capacity of 105MW. One of the plants is a 24.5MW solar power plant located in Oita and another is a 31.5MW solar power plant in Kyushu, one of largest of its kind in Japan. We also operate a 31.7MW solar power plant among others in Turkey. In India, we run a 50MW plant. The solar power plants currently under construction in Japan are approximately 95MW. Plans to expand further are already underway. In the US, we signed more than 1GW PPAs through our local subsidiary across several locations, including Texas and Nevada. Commercial operations are expected to begin soon.

To efficiently operate and systematically maintain renewable assets, we've established an O&M business that uses our Hanwha Energy Integrated System (HEIS) as its base. Our O&M services

help to ensure stable profits for our customer's assets through improved performance, maximum productivity, and efficiency. As a result, our O&M business has grown to become the No.1 renewable O&M provider in South Korea and is now one of the main pillars of our renewable energy business.

In addition, we are expanding our energy system solutions with our smart energy business model. In December 2017, we built a 19MWh solar energy connected Energy Storage System (ESS) in Saemangeum, South Korea. We are using ESS to take advantage of the discount on the retail electricity rate and achieve peak savings at factories and buildings in South Korea. 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, and in Europe.

This state-of-the-art 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

www.hwenc.com

## EXPERTISE

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

**2018 Total Sales**  
In USD millions

3,442

**2018 Total Assets**  
In USD millions

5,140

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 70,000 households at 95 sites. We led the industry by pioneering advances in large-scale site construction, including Daedeok Techno Valley, South Korea's first development project and effort 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.



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

## 2018 Total Sales

In USD millions

# 147

## 2018 Total Assets

In USD millions

# 288

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 (2,984,000m<sup>2</sup>, 300 enterprises, 8,000 households), the Seosan Techno Valley project (1,994,000m<sup>2</sup>, 200 enterprises, 6,000 households), the Gimhae Techno Valley project (1,643,000m<sup>2</sup>, 200 enterprises),

and the Gyeonggi Hwaseong Bio Valley project (1,745,000m<sup>2</sup>, 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

### 2018 Total Sales

In USD millions

# 13,864

### 2018 Total Assets

In USD millions

# 102,229



\*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 2018, while expanding, we made sure to remain structurally sound, reporting total assets of USD 102 billion. At the end of 2018, we achieved a 212.2 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 twelve years. We also earned global credit ratings of A1 from Moody's and A+ from Pitch credit rating agencies in 2018.

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 by aligning our offerings 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 customer service professionals at call centers to deliver improved 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 nine 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 six consecutive Certifications for Excellence in Consumer-Centered Management (CCM).

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 changes to the market, we're upgrading our digital capabilities, product development, digital technology, and our governance-oriented data support.

In the international market, we lead the industry. Our Vietnam subsidiary was founded in 2008, the first of its kind by a South Korea company. With an effective localization strategy and a strong nationwide sales network, we turned a profit in 2016, a first for a South Korean insurer in Vietnam. Our Chinese subsidiary, Sino-Korea Life Insurance, is expanding its sales territory by entering new markets. In Indonesia, our subsidiary is building a balanced profit structure with a long-term perspective. Moving forward, we are setting the foundation to provide digital financial services in major Asian hubs while we pursue non-insurance products and digital financial businesses in Southeast Asia.

In 2019, 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

### 2018 Total Sales

In USD millions

# 6,746

### 2018 Total Assets

In USD millions

# 14,514

Hanwha General Insurance is a major insurer with USD 14 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 14 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 a mobile application called Smart Insu, catering to the ways and needs of our customer. More than 100,000 customers have installed the app.

Our efforts to improve customer service have been recognized by South Korean government organizations with their top three service quality awards: CCM certificate, Call Center Service KS Certificate, and the Certificate of Excellent Service Quality.

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 2018 we were favorably scored by global credit rating agencies for our financial stability and growth potential. S&P gave us a rating of A, while Moody's and Fitch gave us an A2 and A respectively. More recently, in August 2018, A.M. Best, the international insurance industry rating organization, upgraded our rating from A- to A because of our financial strength and potential growth.



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

### 2018 Total Sales

In USD millions

1,704

### 2018 Total Assets

In USD millions

6,135

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 application STEPS displays essential information that is beneficial to starting and experienced or inexperienced investors. 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 projects on various topics including Big Data analysis and offers general consulting and applications consulting. In April 2019, as part of our efforts to expand our

global operations and at the same time secure a new growth engine, we acquired HFT Securities, Vietnam's online stock brokerage company. The acquisition of HFT Securities is Hanwha Investment & Securities' first step to enter Vietnam's potentially high-growth market and establish a digital financial platform to offer 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.

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

www.hanwhafund.com

## EXPERTISE

Asset management

### 2018 Total Sales

In USD millions

92

### 2018 Total Assets

In USD millions

186

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 2018, we were among South Korea's top three asset management companies with USD 80.20 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 Best Fund Seller Award in ETF at the 2019 Maekyung Securities Awards by *Maeil Business News Korea*; the Top Prize in international bonds at the 2019 Korea Fund Awards by KG Zeroin; the Grand Prize in global funds at the 2017 Korea Fund Awards by *Money Today* news media; the Grand Prize in global funds at the 2017 Herald Fund Awards by *Korea Herald* news media; the Grand Prize in global funds at the 2017 Korea Securities Awards by *Seoul Economic Daily* news media; Top Financial Product in the First Half in 2017 by South Korea's *Economic Review* magazine; and the Grand Prize in Korean bond funds at the 2017 Asia Fund Awards for Hanwha Short-Term Government and Corporate Bond Funds.

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.



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

## 2018 Total Sales

In USD millions

# 45

## 2018 Total Assets

In USD millions

# 853

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 companies 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 safely pursue external growth with our experienced sales teams and a highly disciplined management team. We also found success by extending the fundamental roles of microfinance institutions and supporting small and medium-sized companies with great potential.

Today, we are a sound savings bank whose continued growth is backed by the confidence of our customers. We constantly strive to benefit both our clients and the society by developing products that serve their interests. Our risk management system enables us to perform faithfully by providing individual and business clients with top-quality financial products and services.

Hanwha Savings Bank is a stable financial institution that has earned its customers' trust over the years with its top-quality sales teams, financial products, and disciplined management.



## Services & Leisure

- Hanwha Hotels & Resorts
- Hanwha Galleria
- Hanwha Galleria Timeworld
- Hanwha Estate
- Hanwha Station Development

## Hanwha Hotels & Resorts

www.hwrc.co.kr

### EXPERTISE

Resorts, hotels, leisure, food services

### 2018 Total Sales

In USD millions

1,134

### 2018 Total Assets

In USD millions

2,196

Hanwha Hotels & Resorts is becoming South Korea's premier leisure and service provider of resorts, hotels, and food services.

Our Resort Division began operations in 1979 as the developer of South Korea's first resort condominium project.

We own South Korea's best 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 partner with Resort Condominiums International (RCI), a worldwide membership network, to operate hotels and resorts in China and Southeast Asia.

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 63 Sea World, 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 Geojje city government, we recently created a new tourist destination, the **Hanwha Hotels & Resorts** Geojje Belvedere. The marine resort with 470 rooms and a private marina opened in 2018 to rave reviews.

Our Hotel Division has developed THE PLAZA into a world-class 410-room luxury boutique hotel. 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 THE PLAZA's 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.

Hanwha Hotels & Resorts' Food Culture Division is becoming a global food services company providing a portfolio of services, including food service contracts, dining business services, and food material supplies. The food culture division uses a unique but highly effective food service operating system and has provided catering and a range of professional services for more than 30 years. We currently provide premier nationwide food services of 170,000 meals to 350 businesses a day. Our food culture division also runs concept restaurants including, the Chinese Bistro T-won and Downon-Style. Our dining business unit features commissioned services in multi-use complex facilities, as well as PLAZA, an elegant wedding and banquet service. And with a food analysis lab certified by the Food Sanitary Inspection Institution, a rigorous sanitation management system, and a state-of-the-art distribution system, we are an industry leader in food material supply.

## Hanwha Galleria

www.hanwhagalleria.co.kr

### EXPERTISE

Retail, fashion

### 2018 Total Sales

In USD millions

324

### 2018 Total Assets

In USD millions

1,670

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

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 (including the store **Hanwha Galleria Timeworld**, a subsidiary of **Hanwha Galleria**) across Korea in major cities of Seoul, Suwon, Cheonan, Daejeon, and Jinju. In 2020, as part of our expansion to meet growing demand, we will open our sixth department store in Gwanggyo, Suwon. 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.

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. Individually, each department store offers its own differentiated experiences tailored to the needs of local customer segments. Each store also maintains a solid No. 1 position among department stores in the region.

The Gwanggyo store is slated to open in 2020 and it will be our second Luxury Hall. This store will leverage **Hanwha Galleria's** decades of experience operating premium stores and managing luxury brands – some that are exclusive only to **Hanwha Galleria**. We will use our deep experience and skills in operating luxury department stores, the Gwanggyo store will set new department store standards by featuring customers' favorite high-end luxury brands, enhanced VIP services, and digital conveniences. As a growth engine for **Hanwha Galleria**, the Gwanggyo store is slated to become the flagship landmark in Gyeonggi-do, along with a convention center, hotel, and multi-use building in the luxury complex.

Our vision is to be the No. 1 premium content producer. To this end, **Hanwha Galleria** 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 and 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.

Our goal is to deliver the highest-quality service in the industry. Going digital is one path we're taking; the other is continuing our investment in our current business with renovations and new store openings. This way, as we pursue our vision, we'll continue our constant growth streak.

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.



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 Galleria Timeworld

www.hanwhagalleria.co.kr

## EXPERTISE

Retail, fashion

## 2018 Total Sales

In USD millions

302

## 2018 Total Assets

In USD millions

404

Hanwha Galleria Timeworld is the largest high-end department store in central province of South Korea. Our unique luxury brands, gourmet restaurants, and differentiated leisure facilities cater to seekers of premium lifestyle experiences and consumers of all ages.

Hanwha Galleria Timeworld, a subsidiary of Hanwha Galleria, primarily oversees department stores in the city of Daejeon.

Hanwha Galleria Timeworld is itself also the largest high-end department store in central province of South Korea. 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 it was the first of its kind in the region to feature brands such as Louis Vuitton, Gucci, and Prada. We're renowned as the premier high-end shopping destination in Daejeon, one of the largest cities in Korea.

We've subdivided expansive areas within the building for home living & décor shopping, experiencing culture, entertainment, and a maze of international gourmet restaurants to satisfy the interests and tastes of everyone young and old. In 2019, we expect to secure our status as the top department store in the central province of South Korea by launching additional luxury brands and renovating our group of restaurants. Timeworld West will focus on affordable fashion brands for trendsetting fashionistas while Timeworld East will be reorganized to offer exclusive signature product lines targeting more mainstream customers. We will also improve the exterior of our building with a differentiated design that will make it a Daejeon city landmark. Hanwha Galleria Timeworld is building on its local reputation to become a major department store recognized nationwide.

Hanwha Galleria Timeworld is the biggest department store in the central part of South Korea, providing premium lifestyle experiences with the widest selection of exclusive luxury brands and exceptional gourmet services.



# Hanwha Estate

www.hanwhaestate.com

## EXPERTISE

Comprehensive real estate services

## 2018 Total Sales

In USD millions

91

## 2018 Total Assets

In USD millions

35

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.

Since our founding in 1988, we 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.hwsd.co.kr

## EXPERTISE

Commercial development, property management

## 2018 Total Sales

In USD millions

# 198

## 2018 Total Assets

In USD millions

# 388

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 enterprise, 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 inviting people to join the energy revolution through activities that counteract climate change and help the environment. From installing entire solar power generation systems to making communities energy self-sufficient to building solar forests to fight deforestations, 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 CO<sub>2</sub> emissions per year.

- Happy Sunshine Campaign
- Hanwha Hope Project: Happy Sunshine
- Hanwha Solar Forest
- Solar modules donated to the World Economic Forum in Davos
- Hanwha 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 1,779KW solar power generation systems to 254 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 CO<sub>2</sub> emissions per year.

#### Hanwha 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.



Grand Prize Winner at the 2016 Seoul International Fireworks Festival photo contest.

#### 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 One Step Closer to Your Dream
- 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 and Hanwha One Step Closer to Your Dream

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. Hanwha One Step Closer to Your Dream supports people who cannot afford time for leisure. It is a unique campaign to help people achieve their inner dreams and passion for travel. It is recognized as an extraordinary social contribution program.

#### 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 company, to participate by sending volunteer teams for various social activities. We also make great efforts to identify employees with potential and to nurture the talents of our future leaders.



**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 our foundation, we have expanded our programs that develop leaders of the future, such as establishing the prestigious private school, the Bugil Foundation. In 2011, we began sponsoring the **Hanwha** Science Challenge, a high school science competition aimed at discovering outstanding students in science. Since 2016, we have also hosted the **Hanwha-KAIST** Science Outreach Program, a science education program for middle school students in the Daejeon area. Our employees provide various cultural and arts education to children through our **Hanwha** Arts Plus program. From 2009 to 2017, we have provided programs that offered 6,000 classes

in art, music, and dance to more than 3,000 disadvantaged children. And since 2018, we have supported creative arts education, such as social design and photography classes, for middle school students in 30 regions around the country. Launched in 2014, our DreamPlus program offers online and offline classes for young entrepreneurs seeking to start a business or find a job in promising new areas, such as Fintech and content creation. DreamPlus also offers guidance to young people on how to operate a business and enter markets overseas.

#### Caring Employee Volunteers

**Hanwha** actively engages in social contributions with the help of its employees. One of our flagship programs is an enterprise-wide program that supports

hands-on activities designed and taught by the employees themselves in whichever industry and area that they are formally trained in. Our other programs include giving assistance to people on welfare and participating in environmental cleanup campaigns. Every October to celebrate **Hanwha's** founding, all affiliates participate in volunteer services for the disadvantaged.

#### Hanwha Braille Calendar

Since 2000, **Hanwha** has annually produced and donated 50,000 braille calendars for the visually challenged. These braille calendar donations are the largest of its kind and 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, the first solar energy solutions provider to receive the Product Carbon Footprint Certification (ISO 14067)

**Hanwha Solutions** received an industry-first Product Carbon Footprint Certification (ISO 14067). Every **Hanwha Solutions** business site worldwide acquired an Environmental Management Systems Certification (ISO14001), which verifies minimal environmental impact in the entire production, products, and services process.

- Reduced 70,000 TOE (Ton of Oil Equivalent) in energy
- Reduced USD 30 million worth of energy costs
- Reduced more than 170,000 tons of GHG
- Reduced 1.19 million tons of water, waste water, and other wastes
- **Hanwha TOTAL** Petrochemical received ISRS 8 grade

#### Protecting the Environment and Addressing Climate Change

In 1991, through the ECO-2000 campaign, **Hanwha** became the first South Korean company to implement environmental management. We announced our Environmental Safety and Health Policy in 2000 and have since implemented sustainable management practices for environment safety, health, energy, and greenhouse gas. We also created a master plan to set performance index targets for 2020 for environmental performance and safety. The plan included the reduction of greenhouse gases, increasing energy productivity, and improving LTR (Loss Time Injury Rates).

#### Responding to Climate Change

Since 2013, **Hanwha** has provided free classes on solar panels to the general public to increase awareness of climate change and the ways to use eco-friendly energy. In addition, starting in 2016, we began collaborating with the government and environmental NGOs to operate a solar startup academy that offers professional education programs for the solar energy business, which, in future, will help create jobs. We hold these education workshops four times a year and they attract about 80 people in every session.

#### 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. We also actively work to prevent accidents by requiring everyone to follow a strict set of rules and safety policies and to observe industry leading indicators for occupational safety.

## 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 178 million and earmarked a private equity fund of USD 178 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 at the same time increase the local economy, we stock them in 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.

## 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
- One-month sabbaticals
- Flexible work shifts and an end to overtime
- Job placements

#### 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 to become local experts by experiencing the business and culture of those countries. We also operate a special program to select 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 in their pursuit of an MBA or EMBA from the world's best programs or to earn a masters or doctoral degree in STEM (Science, Technology, Engineering, and Math).

#### 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, 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 Hanuwa Q CELLS (sales & marketing)
- Canada Hanuwa Canada Development (solar business management)
- Chile Hanuwa Q CELLS (downstream solar)
- Mexico Hanuwa Advanced Materials (lightweight composite products)
- USA Hanuwa International (trading)
- USA Eagle Petroleum (oilfield development)
- USA Hanuwa TechM (powertrain assembly)
- USA Universal Bearings (producing bearings)
- USA Hanuwa Machinery America (machine tool sales)
- USA Hanuwa Techwin Automation Americas (chip mounter sales)
- USA Hanuwa Techwin (video surveillance system sales & marketing)
- USA Hanuwa Power Systems (energy equipment sales and R&D)
- USA Hanuwa Azdel (lightweight composite materials)
- USA Hanuwa Advanced Materials (lightweight composite materials and products)
- USA Hanuwa America Development (real estate development)
- USA Hanuwa Q CELLS USA (EPC)
- USA Hanuwa Q CELLS America (sales & marketing)
- USA 174 Power Global Corporation (sales & marketing)
- USA Hanuwa Life Investment (investment)

EUROPE & AFRICA

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

CHINA

- Beijing Hanuwa China (supporting Hanuwa affiliates in China)
- Beijing Hanuwa Advanced Materials (lightweight composite materials and products)
- Beijing Hanuwa Q CELLS (sales & marketing)
- Chongqing Hanuwa Advanced Materials (lightweight composite products)
- Dongguan Hanuwa TOTAL Engineering Plastic (producing polypropylene)
- Hangzhou Sino-Korea Life (life insurance)
- Hong Kong Hanuwa Corporation (trading)
- Liaryungang Hanuwa Q CELLS Technology (producing PV ingots)
- Ningbo Hanuwa Chemical (producing PVC)
- Qidong Hanuwa Q CELLS (producing solar cells, modules, and R&D)
- Shanghai Hanuwa International (trading)
- Shanghai Hanuwa Techwin Shanghai (chip mounter sales)
- Shanghai Hanuwa Power Systems (energy equipment sales & marketing)
- Shanghai Hanuwa Chemical (trading)
- Shanghai Hanuwa TOTAL Petrochemical Trading (polyethylene and polypropylene sales)
- Shanghai Hanuwa Advanced Materials (lightweight composite materials and products)
- Shanghai Hanuwa Q CELLS (sales & marketing)
- Suzhou Hanuwa TechM (machine tools and powertrain assembly)
- Tianjin Hanuwa Techwin (producing video surveillance system and sales)

ASIA, MIDDLE EAST & OCEANIA

- Australia Hanuwa Q CELLS (sales & marketing, EPC)
- India Hanuwa International (trading)
- India Hanuwa Chemical (sales)
- India Hanuwa Q CELLS (sales & marketing)
- Indonesia Hanuwa Life (life insurance)
- Japan Hanuwa Q CELLS (sales & marketing)
- Japan Acropark Golf (golf club and resort operation)
- Malaysia Hanuwa Chemical (sales & marketing)
- Malaysia Hanuwa Q CELLS (producing solar cells, modules, and R&D)
- Saudi Arabia Hanuwa Saudi Contracting (operation support)
- UAE SnP World Networks DMCC (trading)
- UAE Hanuwa Techwin (video surveillance system sales & marketing)
- UAE Hanuwa Power Systems (energy equipment sales & services)
- Vietnam Hanuwa Aero Engines (producing aircraft engine components)
- Vietnam Hanuwa Techwin (producing video surveillance system)
- Vietnam Hanuwa Techwin Automation Vietnam (chip mounter sales)
- Vietnam Hanuwa 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. Hanuwa has 76 affiliates in South Korea alone and 351 networks around the world (as of end of 2018). And as we continue improving quality and innovating to exceed customer expectations, Hanuwa will continue to grow beyond today's interconnected global business environment. This is Hanuwa Group.

## KOREA

### MANUFACTURING & CONSTRUCTION

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