

# Hanwha at a Glance

**01** About Hanwha

**02** Main Business Areas

**03** Global Presence

**04** Sustainability

**05** History

# About Hanwha

Hanwha, founded in 1952, is one of South Korea's top-ten business enterprises and a Fortune Global 500 company. Hanwha has 80 domestic affiliates and over 460 networks around the world spanning four business areas: chemicals & energy, aerospace & mechatronics, finance, and construction & leisure/lifestyle services. Hanwha's impressive growth over the past seven decades stems from its ability to anticipate change and embrace new challenges.



## Hanwha Business Overview

In the chemical industry, Hanwha is growing as a world-class leader in oil, chemicals, synthetics, and advanced materials. Hanwha is a global leader in total solar solutions, with sales and R&D presence in more than 40 locations around the globe. It captured the largest market share across Germany, Italy, the UK, South Korea, Japan and the US (residential market). In addition, the business is focused on electricity retailing and downstream power generation while developing other forms of eco-friendly energy such as green hydrogen.

Hanwha is expanding its presence in the aerospace industry. It is a trusted partner of global aircraft-engine manufacturers such as GE, Pratt & Whitney, and Rolls-Royce and produces vital rocket components for Korea's space launch vehicles. In 2021, Hanwha established its Space Hub to secure its leadership position in the space industry. The task force's prime focus is the development of ultra-compact and lightweight satellites—a key driver in developing future, advanced technologies. Hanwha continues to grow all future mobility-related projects, including those in the urban air mobility (UAM) market. In the field of mechatronics, Hanwha is responsible for a wide array of products, such as precision robotics, deep learning and AI, smart factory, and even imaging systems installed in orbital satellites. With world-class products, Hanwha continues to grow as a leader in the global security industry.

Hanwha is on track to become a top-tier financial service provider in Asia, having presciently entered emerging markets such as Vietnam, China, and Singapore. With the expertise gained from being South Korea's second-largest non-banking financial operation, Hanwha provides customers with a comprehensive catalog of services including insurance, securities, and asset management. The company is delving into digital finance by fostering the next generation of fintech startups, investing in insuretech, and launching a digital securities firm. In 2021, in pursuit of more sustainable practices, its six financial divisions jointly announced a "coal-free commitment"—a pledge to reduce their carbon footprint while providing greener financial services.

Hanwha's solid reputation in the engineering and construction industry is built on a foundation of industrial site developments located around the world. One of the developments include building Bismayah, a brand-new city in Iraq, established on the outskirts of Baghdad with 100,000 residential units. Hanwha also provides luxury resort and shopping experiences at locations in Korea, Japan, and Southeast Asia and is growing as a premium lifestyle services provider across the globe.

## Hanwha’s Spirit and Core Values



### Spirit – Trust and Loyalty

**Trust** is a valuable, intangible asset that is the backbone of Hanwha’s corporate culture. Hanwha understands that trust among the company, its employees and partners is essential for success. Once trust is earned, this improves productivity and creates a culture that better embraces change. The trust fostered throughout Hanwha is a reward in itself, leading to growth and excellent performance.

**Loyalty** can bind people together and save an organization from crisis. Hanwha encourages its employees to develop strong ties with colleagues, customers, business partners, families, and communities. Employees must not only consider personal and professional benefits with their actions, but also show allegiance to others even if it leads to losses.



### Core Values – Challenge, Dedication, Integrity

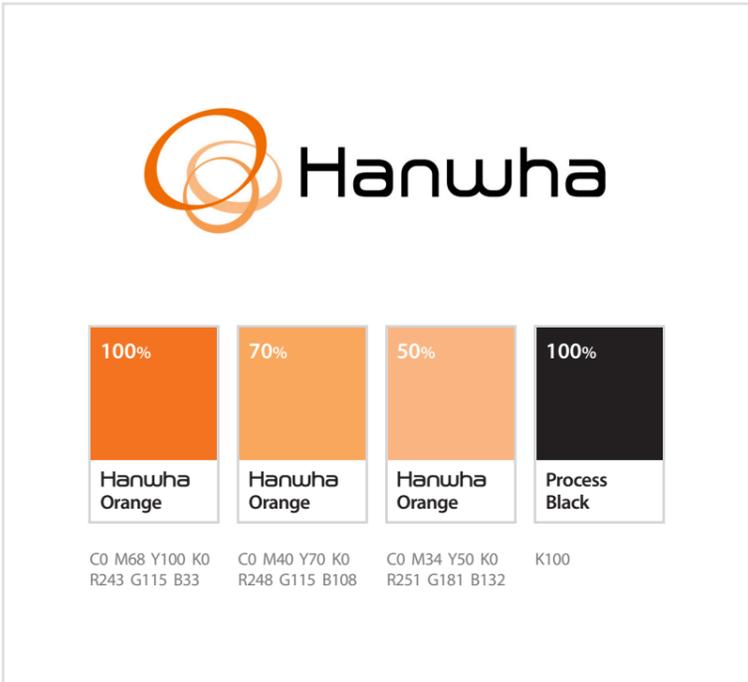
- Hanwha believes in **challenging** the status quo in the pursuit of excellence through change and innovation.
- Hanwha is **dedicated** to its company, customers, and colleagues to achieve a greater goal.
- Hanwha believes in acting with **integrity** in everything that the company does as individuals and employees.

## Hanwha’s Corporate Identity

The Tricircle logo is an essential part of Hanwha’s corporate identity. Its dynamic energy expresses Hanwha’s continuous progression and limitless potential.

Composed of three intertwined circles, the Tricircle represents Hanwha’s core values, corporate vision, and business interests across various industries.

The Tricircle signifies Hanwha’s transformation into a world-class enterprise that cares deeply about its customers and the communities in which its operates.



The image shows the Hanwha logo (three intertwined orange circles) and the word "Hanwha" in a bold, sans-serif font. Below the logo is a color palette with four color swatches:

100%	70%	50%	100%
Hanwha Orange	Hanwha Orange	Hanwha Orange	Process Black
C0 M68 Y100 K0 R243 G115 B33	C0 M40 Y70 K0 R248 G115 B108	C0 M34 Y50 K0 R251 G181 B132	K100

## Main Business Areas

# Green Energy

Hanwha is ramping up its response to the challenges of climate change as green energy becomes a global necessity. To help protect the Earth from climate change, Hanwha pursues clean energy sources that are vital to human life. Our global technology leadership provides the foundation to build an eco-friendly energy ecosystem that encompasses emerging hydrogen and wind power as well as a full solar value chain. Our solar power business is expanding from cell and module production to high-value-added services using information technology. We are also researching carbon-free hydrogen production using renewable energies, such as solar and wind. Q ENERGY is accelerating our entry into Europe's renewable energy market through the development of onshore and offshore wind power generation. We are tapping into green energy's outstanding potential and strengthening our competitiveness as a green infrastructure developer to lead the way to carbon neutrality.

## Business Scope



- ✓ World-class solar module production capacity of 12.4 gigawatts (GW) per year
- ✓ Maintains No. 1 market share in the US residential and commercial solar markets
- ✓ Awarded its first EuPD Research Top Brand PV seal in the U.S., adding to nine consecutive years in Europe and seven consecutive years in Australia
- ✓ Awarded Top Performer recognition six years in a row by PVEL
- ✓ 102.5MW of Qcellssolar modules have been installed and commissioned in Facebook data centers as Facebook's first solar project in the state of Georgia, United States
- ✓ Operates the world's first 50-megawatt (MW) by-product hydrogen-fuel-cell power plant, powered solely by hydrogen extracted as a byproduct of chemical refining
- ✓ First in South Korea to secure mixed hydrogen combustion technology, reducing carbon and nitrogen oxide emissions

### Major Affiliates

Hanwha Corporation  
/Engineering & Construction

Hanwha Solutions  
Chemical Division

Hanwha Solutions  
Qcells Division

Hanwha Impact

Hanwha Energy

Hanwha Solutions  
Insight Division

Hanwha Power Systems

Hanwha Solutions Q ENERGY  
Division

### Major Products & Services

- Solar cell and module manufacturing equipment
- PV cells and modules
- Energy storage systems
- Downstream energy solutions
- Distributed energy solutions
- Overseas project development (PV, ESS)
- O&M
- Energy system solutions
- Energy retail
- Industrial air and gas compressor
- Eco-friendly power generation and hydrogen solutions

## Main Business Areas

# Aerospace & Mechatronics

At Hanwha, we provide solutions to create sustainable infrastructure on Earth and in space by innovating proprietary aerospace technologies. We have accumulated expertise in a range of business areas focused on the future of humanity, developing original technologies including engines for space-launch vehicles, advanced Earth orbit observation, satellite-based communication capabilities and urban air mobility (UAM).

Hanwha Aerospace played a pivotal role in the development of Nuri, also known as KSLV-II (Korean Space Launch Vehicle), South Korea's first homegrown space propulsion system. We were responsible for supplying core mechanical subsystems and critical components for Nuri, including the liquid propellant rocket engines. In fact, Nuri was successfully launched in June 2022, rendering South Korea to become the seventh country in the world to develop a space launch vehicle that can carry satellites weighing over 1 ton.

As part of our bold vision for the future, we also aim to explore space and search for natural resources and energy. But our solutions aren't limited to the atmosphere. Hanwha is also creating an industrial ecosystem to enhance the safety and enrich the lives of our customers right here on Earth by offering integrated solutions for the future, including intelligent AI camera and analysis technology, AIoT platform convergent technology and blockchain security.

## Business Scope



- ✓ Assembled and delivered more than 9,700 aircraft engines over 40 years as of 2022
- ✓ Strategically invested USD 170 million in Overair, a U.S. aeronautics company that develops electric aircraft, air taxis, and personal air vehicles
- ✓ USD 300 million investment in OneWeb, a leading global satellite broadband internet provider based in the U.K.
- ✓ Acquired the business and assets of Phasor Solutions, a U.K.-based satellite communication antenna developer, to step up its advance into the global business
- ✓ USD 41 million of equity investment in Kymeta to support growth in the global mobile satellite-cellular connectivity technology market
- ✓ Global leading video-surveillance solutions provider
- ✓ Fast-growing player in the global-security industry with next-generation technologies such as deep learning and AI

### Major Affiliates

Hanwha Corporation  
/Momentum

-----  
Hanwha Aerospace

-----  
Hanwha Systems

-----  
Hanwha Techwin

### Major Products & Services

- Aircraft engines and engine components
- Aerospace sensors and electronic systems
- UAM (Urban Air Mobility), and Satellite communication antennas
- Video surveillance devices and solutions
- Industrial equipment and engineering solutions
- Collaborative robots

## Main Business Areas

# Materials

A circular economy that facilitates efficient and eco-friendly use of resources is now a pressing global priority. In response, Hanwha is taking the lead in fast-tracking carbon neutrality and promoting a sustainable infrastructure that dramatically reduces carbon emissions by manufacturing green essential materials. We are also expanding investment in and development of innovative technologies as we continue to advance our eco-friendly and high-value-added chemical businesses, including recycling waste plastics and eco-friendly bioplastics.

## Business Scope



- ✓ Annual ethylene production capacity: 3.82 million tons
- ✓ Annual purified terephthalic acid (PTA) production capacity: 2 million tons
- ✓ 70% global market share for lightweight composite materials for motor vehicles, including glass mat thermoplastics (GMT) and lightweight reinforced thermoplastics (LWRT) (globally #1)
- ✓ Supplying global automotive companies with lightweight composite materials for battery housings

### Major Affiliates

Hanwha Corporation  
/Global

Hanwha Solutions  
Chemical Division

Hanwha Solutions  
Qcells Division

Hanwha Advanced Materials

Hanwha Impact

Hanwha TotalEnergies  
Petrochemical

YEOCHUN NCC

### Major Products & Services

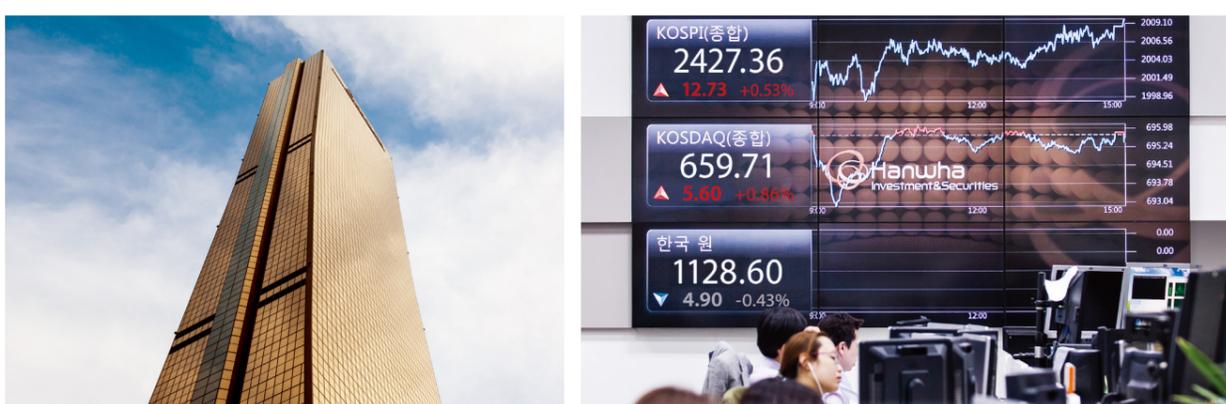
- Energy (oil refining, jet & diesel fuel, gasoline, LPG)
- Basic Petrochemicals (Ethylene, propylene, SM butadiene, aromatics (BTX), naphtha)
- Synthetic resins and synthetic materials (PE, PP, EVA, PVC, PTA)
- Chlor-alkali products (Caustic soda, chlorine, EDC, VCM, ECH, TDI)
- Advanced lightweight composite materials and parts
- Electronic materials
- Solar materials

## Main Business Areas

# Finance

As a leader in the digital innovation of the financial industry, Hanwha aims to generate sustainable prosperity as we help our customers and society grow. We offer digital financial solutions optimized for diverse lifestyles, proactively investing and advancing into tech-based financial services such as AI and big data. We expect to lead in digital financial innovation as we develop and operate a breakthrough digital platform and expand into a variety of new areas. We also continue to support startups and young entrepreneurs to establish a healthy industry ecosystem that creates opportunities for shared growth.

## Business Scope



- ✓ Korea's 2nd largest non-banking financial solutions provider
- ✓ Hanwha Life (data as of 2021)
  - Total assets: KRW 129 trillion/USD 109.2 billion (2nd largest in Korea)
  - Premium income: KRW 14.7 trillion/USD 12.9 billion
- ✓ Launched Hanwha Life Financial Service, largest insurance agency in Korea
- ✓ Launched Carrot, Korea's first digital non-life-insurance company, in collaboration with SK Telecom and Hyundai Motor Company in 2019
- ✓ Launched Pinetree Securities in Vietnam, which offers digital investment opportunities
- ✓ Hanwha Asset Management (data as of 2021)
  - Assets under management (AUM): KRW 109 trillion/USD 91.4 billion

### Major Affiliates

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

### Major Products & Services

- Insurance
- Securities
- Asset management
- Banking Products

## Main Business Areas

# Retail & Services

With robust online and offline platforms in engineering & construction (E&C) and retail & services, Hanwha sustains the lifestyles and dreams of customers. We plan to expand into developing large-scale complexes and change the view of urban living by using our accumulated design and operational capabilities as well as our technology and expertise to provide benefits for the public and achieve business success.

We offer customers differentiated experiences in E&C and retail & services to enrich leisure and lives, from premium lifestyle department stores, luxury boutique hotels and high-end resorts to commercial complexes that showcase city living and culture. We expect to leap forward as a lifestyle platform company. By developing new and relevant content while strengthening the competitiveness of our existing businesses, we will create innovative experiences and value for daily lives.

## Business Scope



- ✓ Hanwha offers more than 4,716 condominium-like rooms across 10 resorts
- ✓ Five luxury department stores across major Korean cities including Seoul
- ✓ Hanwha leads the Korean leisure industry by operating three golf courses, five eco-friendly aquariums, and much more
- ✓ Cumulative orders over KRW 11.9 trillion/USD 10 billion due to the construction of Bismayah New City
- ✓ Building power and chemical plants in the Middle East and North Africa
- ✓ Constructing Saudi Arabia's Yanbu Phase 2 Expansion MED Seawater Desalination Plant, which will produce 15 million gallons of fresh water per day
- ✓ Constructed the Philippines Arena, the world's largest domed performance hall, and an outstanding example of creative architectural design
- ✓ Recipient of the 2021 CTBUH Renovation Award for sustainable development

### Major Affiliates

Hanwha Corporation  
/Engineering & Construction

Hanwha Solutions  
Insight Division

Hanwha Solutions  
Galleria Division

Hanwha Hotels & Resorts

Hanwha Connect

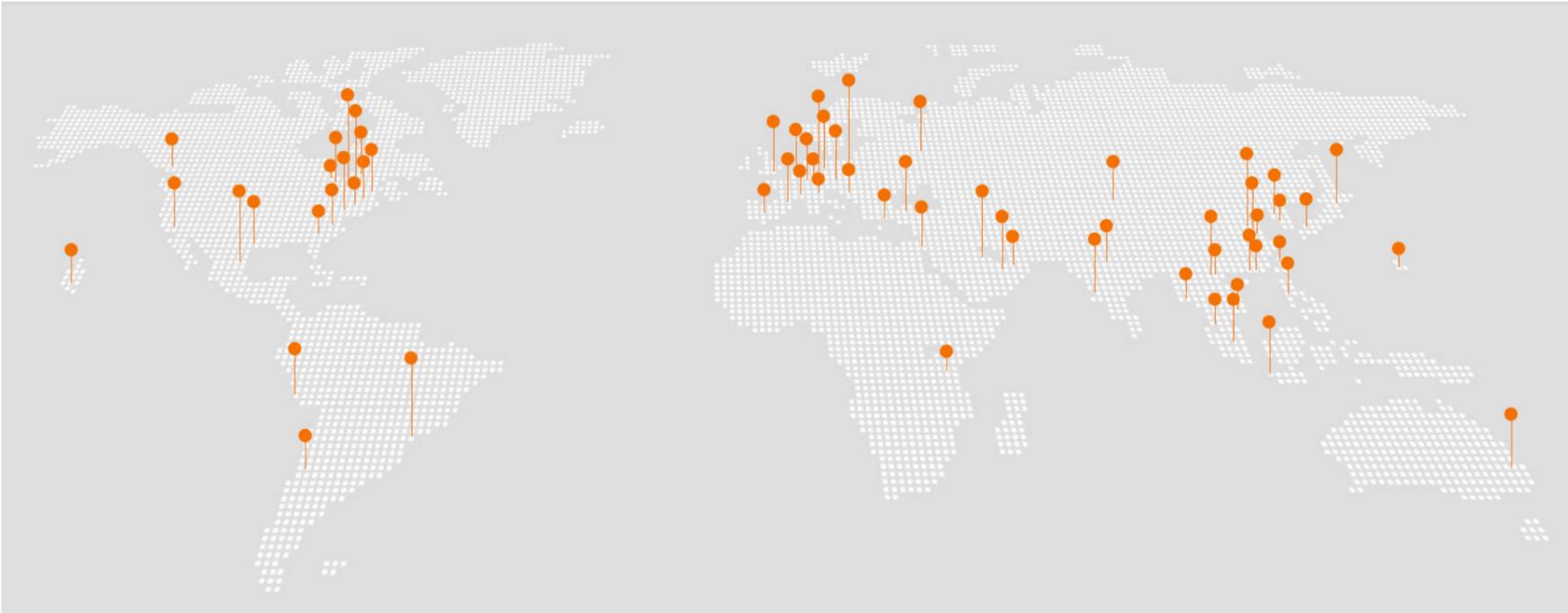
### Major Products & Services

- Environmental and industrial plants
- Petrochemical, refinery, power plants
- Renewable energy plants
- Expressways, roads, bridges, tunnels, and ports construction
- Water and sewage facilities
- Business, commercial, and institutional facilities
- Leisure, medical, cultural, and sports facilities
- Stations and terminals
- Apartments and luxury condominiums
- Residential and commercial complexes
- Real estate development
- Resorts, hotels, and leisure services
- Comprehensive real estate service
- Retail, fashion, and F&B
- Commercial development and property management

# Global Presence

For more than 70 years, Hanwha has grown steadily to become a leading global enterprise. Today, it has 93 affiliates in South Korea and over 616 networks around the world. As it continues its journey, Hanwha is expanding its capabilities and venturing toward new business opportunities.

The Americas | 
 EMEA | 
 Asia Pacific | 
 United States | 
 China | 
 Vietnam



## Global Presence

# The Americas

### Fast Facts about Hanwha in the Americas

**33**

Number of Affiliates

**3,500+**

Number of Employees

**4+ billion USD**

Total Sales in 2021

- ▶ **Hanwha Solutions' Qcells Division** is America's No. 1 residential and commercial solar power provider
- ▶ **Hanwha Advanced Materials** is ranked No. 1 in glass mat thermoplastics (GMT) and lightweight reinforced thermoplastic (LWRT) manufacturing and sales in the world

Since opening its first American office in 1982, Hanwha has rapidly expanded its presence in the Americas. It now has more than 30 affiliates located throughout Canada, Chile, Mexico, Peru, and the U.S.

Already the leading solar energy solutions provider in North America, Hanwha is building up its infrastructure holdings and expanding into the hydrogen-energy industry to become a recognizable regional supplier of green energy. It's also a valued player in the North American automotive industry, with its lightweight components being in high demand as automakers strive to reduce vehicle weight and boost fuel economy.

Looking beyond, Hanwha continues to innovate solutions for sustainable cities of the future. Investing in urban air mobility (UAM), Hanwha Systems has partnered with American personal air vehicle (PAV) manufacturer Overair to develop a 100% electric propulsion system for use in its air taxi, the “Butterfly.”

Additionally, Hanwha is taking flight in the American aerospace industry, having made an important acquisition that allows it to better service customers such as GE and Pratt & Whitney. Hanwha products are also becoming a mainstay in the American security-surveillance market, winning many awards from respected security institutions for the company’s cutting-edge capabilities. Furthermore, Hanwha is a leading industrial machinery and components manufacturer that offers products such as air and gas compressors and high-precision bearing systems.



102.5-MW solar farm powering Facebook’s ninth data center in Georgia, U.S.A.

**Hanwha Solutions’ Qcells Division** is a total energy solutions provider in solar cells and modules, energy storage, downstream project business and energy retail with operations in the U.S., Canada and Chile. According to the Q1 2022 U.S. PV Leaderboard report by Wood Mackenzie Power & Renewables, Hanwha Solutions’ Qcells division continues to maintain the No. 1 market share in the U.S. residential and commercial solar markets with 24.1% and 20.6% of the market share, respectively. The company has also received its first Top Brand PV seal in the U.S. from EuPD Research. In Georgia, the company provided solar modules for a 102.5-MW solar farm that powers Facebook’s ninth data center. It also operates the largest solar module plant in the Western Hemisphere, helping to meet the growing retail demand for renewable energy. Recently, Hanwha Solutions’ Qcells division completed the construction of a 168-MW solar power plant in the United States. This solar farm, located in Texas, can power 30,000 homes and is one of only two solar power plants in the state with over 100 MW in capacity.

**Hanwha Energy**, a comprehensive-energy-solutions company, works with subsidiary 174 Power Global to operate and manage solar power plants and offer energy storage systems for residential, commercial, and industrial customers. The company now generates 364 MW of renewable power and operates 4 MWh of energy storage systems for customers, following the completion of several solar power-related projects in the Americas. In 2019, 174 Power Global began operating Chariot Energy, a Texas-based energy retailer. It also operates OnForce Solar, a New York-based solar power developer of retail and commercial & industrial (C&I) projects. In 2021, 174 Power Global signed a joint venture agreement with TotalEnergies, a broad energy company, to develop utility-scale solar and energy storage projects in the United States.

**Hanwha Impact** is driving positive change for the future through innovative technologies and continuous investments that shift the paradigm in the fields of eco-friendly energy, convergence technology, and mobility.

**Hanwha Power Systems** maximizes customer value with technology, experience and world-class production facilities accumulated through the production of various gas turbine generator and compressor packaging as well as incorporating “hydrogen to gas turbine technology,” or H2GT to retrofit existing LNG-fired power plants’ gas turbines.

**Hanwha Advanced Materials** manufactures materials for automotive applications at its facilities in Alabama, Michigan, North Carolina, and Virginia, as well as Mexico. The company is No. 1 in glass mat thermoplastics (GMT) globally.

**Hanwha Azdel** is a subsidiary of Hanwha Solutions with a plant in Virginia that produces a wide variety of lightweight reinforced thermoplastic (LWRT) interior and exterior car parts for various automakers such as General Motors, Hyundai Motors, Toyota, and Volkswagen. These LWRT products help improve fuel economy for their customers, contributing to sustainable development. The company leads the world in LWRT manufacturing and sales.

**Hanwha International**, located in Teaneck, New Jersey, was the first Hanwha business established in the Americas. It played a significant role in Hanwha’s entry into the U.S. market. As Hanwha’s trading arm in North and South America, it facilitates the global movement of chemicals, steel, and machinery produced by other Hanwha affiliates.



Hanwha Aerospace USA is a vital part of Hanwha Aerospace’s expansion of its global operations

**Hanwha Aerospace USA** develops and produces advanced aircraft engine parts, with four state-of-the-art facilities in Connecticut. In 2019, it began supplying components for GE Aviation’s most advanced engines that will power the Boeing 777X, which will have the capacity for 400 passengers, but reduce fuel consumption by as much as 12%. In early 2021, Hanwha Aerospace USA received the Supplier Gold Certification by world-renowned aircraft engine manufacturer Pratt & Whitney for flawless quality control.

**Hanwha Techwin** specializes in video-surveillance systems with advanced optics and next-generation capabilities, such as AI, deep learning, and business intelligence. With clients ranging from Bank of America to Target and Mexico City, the company's products are designed to help protect people, property, and assets. In 2020, the company received the UL CAP (Cybersecurity Assurance Program) certification for its Wisenet7 camera series, meeting the program's stringent evaluation criteria in just three months. With such effort, the company won the Best Cyber Security Solutions award by ASTORS American Security Today for its Wisenet7 camera series.

**Universal Bearings** is a leading manufacturer of high-precision bearings — specializing in needle and loose-needle bearings — used mainly in automotive and industrial applications. Its manufacturing processes are accurate to within 2-3 microns, or smaller than a microscopic speck of dust. Currently, the company offers almost 1,000 different types of bearing products. It continues to add new products to its portfolio to become a complete-bearing manufacturer.

## Fast Facts about Hanwha in the Americas

- ✓ **Hanwha Solutions' Qcells Division** is America's No. 1 residential and commercial solar power provider
- ✓ **Hanwha Energy** generates 364 MW of solar power in North America
- ✓ **Hanwha Advanced Materials** is ranked No. 1 in glass mat thermoplastics (GMT) and lightweight reinforced thermoplastic (LWRT) manufacturing and sales globally
- ✓ **Hanwha Azdel** is the global No. 1 supplier of lightweight reinforced thermoplastics (LWRT), a material that helps lower fuel consumption and carbon emissions, used by automakers such as General Motors, Hyundai Motors, Toyota, and Volkswagen
- ✓ **Hanwha Aerospace USA's** advanced engine parts will help the all-new Boeing 777X fly more fuel efficiently
- ✓ **Hanwha Techwin** is ranked second in network-camera manufacturing and sales in North America (as of 2020)
- ✓ **Hanwha Power Systems'** "hydrogen to gas turbine technology", or H2GT, can be retrofitted to existing LNG-fired power plant's gas turbines, allowing them to run on hydrogen fuel.

## Global Presence

# EMEA

### Fast Facts about Hanwha in EMEA



**28**

Number of  
Affiliates



**1,500+**

Number of  
Employees



**1.8+ billion  
USD**

Total Sales  
in 2021

- ▶ **Hanwha Solutions' Qcells Division** has won EuPD Research's Top Brand PV Europe seal for nine consecutive years
- ▶ **Hanwha Corporation/ Engineering & Construction** is building Bismayah New City, the most ambitious mega-city project in Iraq's modern history

Hanwha has over 25 affiliates spread across Europe, the Middle East, and Africa. They offer solar energy solutions that contribute to sustainable development, surveillance technologies, and advanced material applications, as well as infrastructure engineering and large-scale-construction capabilities.

Its solar-technology R&D hub in Germany develops some of the world's most-advanced solar energy solutions. Hanwha also established the Europe Technical Center on the outskirts of Frankfurt, Germany, to showcase its high-precision products and technologies to potential European customers.

Hanwha focuses on researching next-generation technologies such as deep learning, AI, and business intelligence. Many of these advances are applied to Hanwha's surveillance products, making it a go-to supplier for security solutions in EMEA. It is also in the final stages of constructing a brand-new city just outside Baghdad, Iraq, improving the lives of over a million people.

**Hanwha Europe** is Hanwha's hub on the European continent. Based in Germany, Hanwha Europe paves the way for solar-power products, chemical products, high-precision industrial machinery, automotive parts, and agricultural machinery to move in and out of Europe.



*In March of 2019, this house powered by Q CELLS' solar panels in Augsburg, Germany, received the Federal Prize for Outstanding Innovative Achievements from the German Federal Ministry of Economics and Technology for achieving carbon neutrality through eco-friendly construction.*

**Hanwha Solutions' Qcells Division** is a total energy provider in solar cell and module production, energy storage, downstream projects, and energy retail with global R&D headquarters, manufacturing, and sales operations in the region. It is developing a 940-MW solar portfolio in Spain that will generate enough clean electricity to meet the annual power needs of more than half a million households when completed. Construction has also begun on a new 50-MW solar PV project in Las Majadillas—creating 200 jobs in the local community. To the northeast, Hanwha Solutions' Qcells Division has partnered with local solar equipment enterprises and organizations in Berlin as a part of the city's "Solarcity Masterplan." The company also garnered EuPD Research's Top Brand PV Europe seal for nine years running and won the top prize in the solar category of the Life & Living Awards in Germany for a third consecutive year in 2022.

**Hanwha Energy** is helping to expand solar power adoption across Europe. Currently, the company conducts 1.4 GW of solar power projects in Spain and Italy through the Hanwha Energy Corporation Europe S.L.U. In addition to developing, constructing, and selling a 50-MW solar power plant in Seville, Spain, the company has signed a memorandum of understanding (MOU) with Korea Midland Power to jointly develop a Spanish solar business. Hanwha Energy is also operating a 120-MWh frequency-regulation energy-storage system in Ireland. The system provides customers with a steadier flow of electricity as the country adopts more renewable-energy sources. In Turkey, the company runs a 32-MW solar power plant. Further strengthening its position, Hanwha Energy launched Imagina Energía in October 2020. Imagina Energía is a power-retail and solar-distributed-power-generation business for commercial and industrial use of 100% eco-friendly power at home.

**Hanwha Solutions' Chemical Division** is the first Korean company to enter the Middle Eastern petrochemical market. With Saudi Arabia's Sahara International Petrochemical Company (SIPCHEM), it jointly operates such as International Polymers Company (IPC) and Gulf Advanced Cable Insulation Company (GACI). IPC specializes in the production of low-density polyethylene (LDPE) and ethyl vinyl acetate (EVA), while GACI is the first Middle Eastern company to produce composite resins for electric wires.

**Hanwha Advanced Materials** is a leading manufacturer of materials for mobile phones, automobiles, photovoltaic energy systems, and other eco-friendly products. In Germany, the company offers a diverse portfolio of high-strength, lightweight parts for automobile structures and interiors, from bumpers to seatback frames for BMW and Audi, which help improve fuel economy of vehicles, contributing to sustainable development.

**Hanwha Corporation** is innovating industry-agnostic robotics. The Hanwha Collaborative Robot Advanced (HCR Advanced) series and a collaborative-robot-solutions package are building Hanwha's momentum in the growing collaborative robot (cobot) market. Pairing Hanwha's AI technology with mobility, the company seeks to satisfy the diverse needs of customers worldwide. The HCR Advanced Series retains the excellent design and versatility of the original HCR cobots while boosting speed, consistency, and accuracy to provide better productivity and increased workplace safety.



**Hanwha Corporation/Momentum** provides smart factory solutions that drive the development of automation technologies and collaborative robots for the manufacturing industry. In 2019, the company opened Hanwha Europe Technical Center in Germany, offering state-of-the-art technologies, services, training programs, cycle-time computations, and production demonstrations.

*The Hanwha Europe Technical Center is a base to expand Hanwha Corporation/Momentum's business across Europe*

**Hanwha Techwin** specializes in video-surveillance systems with advanced optics and next-generation capabilities, such as AI, deep learning, and business intelligence. In 2020, the company introduced new ultra-high-definition 4K AI cameras equipped with deep learning video analytics that offer a high level of detection accuracy. The company also introduced network video recorders embedded with 3G and LTE modems specialized for the Middle Eastern market. And the company's most recent AI city solution features traffic detection, accident detection, littering detection and more, all overarched to tackle down EMEA's typical city challenges. The company is ranked third in HD-camera manufacturing and sales in EMEA as of 2020.

**Hanwha Impact** is driving positive change for the future through innovative technologies and continuous investments that shift the paradigm in the fields of eco-friendly energy, convergence technology, and mobility.

**Hanwha Power Systems** provides turbo machinery via direct and aftermarket sales to oil & gas, petrochemical, and power-sector customers throughout the Middle East. The company is an approved vendor of air and gas compressors to Saudi Aramco and Abu Dhabi National Oil Company (ADNOC). It also became an approved service provider to ADNOC after setting up a compressor workshop to deliver dedicated aftermarket support.



*Bismayah New City is a 100,080-unit residential-housing project located 10 kilometers southeast of Baghdad, Iraq*

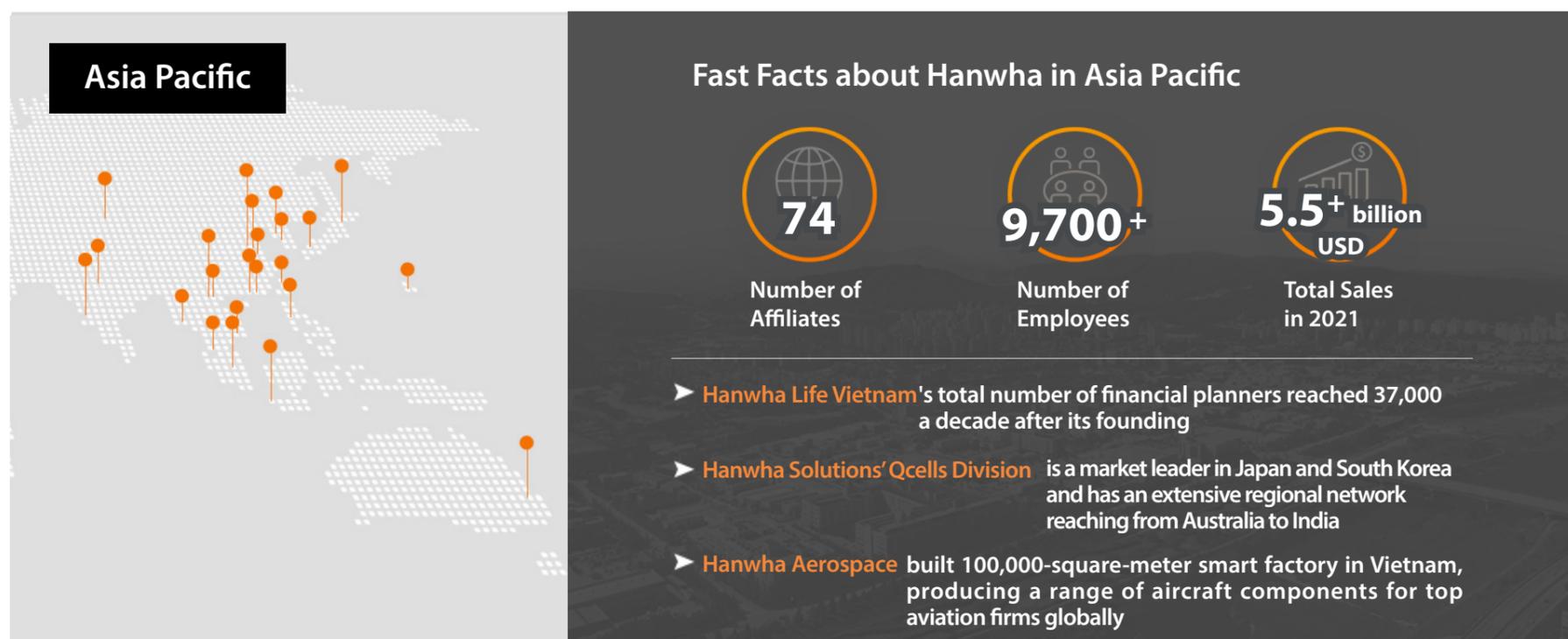
**Hanwha Corporation/Engineering & Construction** is a global engineering, procurement, and construction (EPC) contractor. Its diverse project portfolio includes housing, commercial buildings, industrial plants, and city development. In 2013, the company started work on the Bismayah New City project near Baghdad, Iraq. When completed, the brand-new city will cover 1,830 hectares, eight districts, and 59 street blocks that will include 834 apartment complexes with 100,080 residential units. The company is also constructing Saudi Arabia's Yanbu Phase 2 Expansion MED Seawater Desalination Plant, which will produce 15 million gallons of fresh water per day.

## Fast Facts about Hanwha in EMEA

- ✓ **Hanwha Solutions' Qcells Division** has won EuPD Research's Top Brand PV Europe seal for nine consecutive years
- ✓ **Hanwha Advanced Materials's** high-strength, lightweight parts for partners including BMW and Audi to help lower fuel consumption and carbon emissions, thus helping protect the environment
- ✓ **Hanwha Power Systems' "hydrogen to gas turbine technology",** or H2GT, can be retrofitted to existing LNG-fired power plant's gas turbines, allowing them to run on hydrogen fuel.
- ✓ **Hanwha Corporation's** latest HCR Advanced Series retains the excellent design and versatility of the original HCR cobots while boosting speed, consistency, and accuracy
- ✓ **Hanwha Techwin** is ranked third in HD-camera manufacturing and sales in EMEA (as of 2020)
- ✓ **Hanwha Corporation/Momentum's** new Europe Technical Center opened in 2019, offering next-level technology and services for smart factories
- ✓ **Hanwha Corporation/Engineering & Construction** is building Bismayah New City, the most ambitious mega-city project in Iraq's modern history

## Global Presence

# Asia Pacific



Throughout the vast Asia-Pacific region, Hanwha offers both highly localized services and a brimming portfolio. Its chemical refineries and petrochemical processing plants in the region produce raw materials used in industrial, commercial, and household goods around the world. It also develops and manufactures high-tech products such as solar power solutions, aircraft engines, video-surveillance solutions, and collaborative robotics for manufacturing applications.

Hanwha is one of the largest foreign life-insurance providers in China and Vietnam. It also provides securities services in Vietnam and asset management services in China and Singapore. As a fintech pioneer, Hanwha backs start-ups that disrupt how financial services are delivered.

In the leisure sector, Hanwha operates several vacation destinations where people can enjoy their holidays, including resorts and golf courses in Saipan and Nagasaki, Japan.

**Hanwha Solutions' Chemical Division** is a considerable presence in the Asian petrochemical industry. With subsidiaries in China, India, Malaysia, and Thailand, it is one of the world's largest manufacturers and suppliers of petrochemical products, including synthetic resins such as caustic soda, polyvinyl chloride (PVC), and polyethylene (PE). The company places great emphasis on developing new products and manufacturing techniques to best address the shifting needs of the global petrochemical market. It is also very focused on commercializing products that are more sustainable and safer for the environment.

**Hanwha Advanced Materials** develops and manufactures lightweight composites, films, sheets, and thermoplastics for use in the automotive and electronics industries. It also maintains a plant that produces materials used in high-performance solar modules. In China, the company manufactures lightweight composites at plants in Beijing, Chongqing, and Shanghai for global automakers like General Motors, Hyundai Motors, Toyota, and Volkswagen. These composites are also used to meet the needs of China's growing electric vehicle market.

**Hanwha TotalEnergies Petrochemical** specializes in the sustainable development, production, and sales of polymers, base chemicals, and energy products. In Asia, the company has business operations in China, Japan, and Singapore. In China, it is a market leader for many synthetic resin products, coatings, and photovoltaic sheets. The company is the global market leader in encapsulants for solar batteries. Hanwha Total Petrochemical recognizes that safety, health, environment, and quality are the key factors for social good as well as its own prosperity and growth. It has achieved numerous certifications in line with its commitment — from KOSHA 180001 to ISO 4001 to ECO YHES.

**Hanwha Solutions' Qcells Division**, a total energy solutions provider in solar cell and module production, energy storage, downstream energy projects, and energy retail, is a market leader with operations in China, Japan, Korea, and Vietnam. Since being acquired, the company's manufacturing plant in Qidong, China, has almost quadrupled its production capacity from 1.3 GW to 5 GW annually. In Vietnam, Hanwha donated two solar-powered boats to the Clean Up Mekong campaign. Powered and propelled by the company's Q.PEAK solar modules, the boats collect up to 500 kg of waste daily in the Mekong River without emitting any greenhouse gases or other pollutants.

**Hanwha Qcells Japan** is an umbrella organization that provides customers with solar power solutions, chemical products, surveillance solutions, and trade services.

**Hanwha Energy** is expanding its presence in the Asian and Oceanic energy-retail markets by pursuing commercial and industrial power-generation projects and signing new power purchase agreements. In Australia, India, Japan, and Vietnam, it operates solar power plants that supply local consumers with clean, renewable electricity. In 2020, Hanwha Energy advanced its position in the Australian market by establishing Nectr, an energy retailer that operates solar farms and works to decentralize electricity generation. Overall, the company is constructing additional solar power plants in Australia, Japan, and Malaysia to make solar power more widely available to consumers in the region.



*Hanwha Aero-Engines factory in Vietnam*

**Hanwha Aerospace** develops and manufactures a range of aircraft components and gas turbine engine solutions. In 2017, the company built a 100,000-square-meter factory in Vietnam to produce parts at competitive prices for GE Aviation, Pratt & Whitney, and Rolls-Royce. The company looks to increase its engine part sales for civil aircraft to lead the aircraft parts processing industry by 2025.

**Hanwha Techwin** specializes in video-surveillance systems with next-generation capabilities, such as AI, deep learning, and business intelligence. In 2017, the company built a state-of-the-art factory in Bac Ninh province in Vietnam to produce CCTV security products, including network cameras and recording devices. The facility supports Hanwha Techwin's growing customer demand in North America, Europe, and the Middle East where its technology helps protect people, property, and assets.

**Hanwha Corporation** is a global manufacturing and trading company that has three divisions: Global, Defense, and Machinery. In China, the company's machinery division operates a manufacturing plant that produces machine tools and powertrains to meet increasing demand from Chinese customers. Where demand for industrial explosives is on the rise, the company's mining business is thriving. As of 2021, Hanwha has two industrial explosives manufacturing facilities in Australia alone. They have the combined capacity to produce up to 100,000 tons annually. In Indonesia, Hanwha has a production facility capable of producing 40,000 tons of industrial explosives annually as of 2021. In 2019, the company's Machinery Division started selling cobots (collaborative robots) through partner Wipro PARI's industrial network to meet rising demand for automation in India.

**Hanwha Power Systems** designs and manufactures turbo machinery for customers around the world. Its product catalog includes industrial air compressors, fuel-gas compressors for power plants, and boil-off-gas compressors for liquefied-natural-gas terminals and plants. The company also develops technologies like turbo-expander generators, supercritical-carbon-dioxide (sCO<sub>2</sub>) engines, and oxy-fuel-gas turbines that will make power generation much more efficient in the future.



*The grand opening of a public health center constructed and donated by Hanwha Life Insurance Vietnam in Cao Phong, Vietnam*

**Hanwha Life** is a leading insurance company that offers innovative products and services to meet a wide range of customers' needs. It is meeting increased demand for insurance coverage in China, Indonesia, and Vietnam as standards of living rise in Southeast Asia, using big data to understand customers' needs and offer localized policies. The company is also one of China's largest foreign insurance providers and received the "Best Value for Investment Insurance Product Award" at the prestigious China Innovation Insurance Awards in 2019. In Vietnam, the number of financial planners has grown significantly, reaching 37,000 since its founding 10 years ago. In 2015, Hanwha Life constructed and donated public health centers to provide healthcare services to residents in a remote, rural region in Vietnam and donated life insurance policies as part of the company's "Love Life" service campaign.

**Hanwha Investment & Securities** launched Pinetree Securities in Vietnam in 2019 to help customers take advantage of digital investment opportunities in the local market. The company also has an affiliate in Singapore. Hanwha's financial businesses are investing in fintech companies in Southeast Asia that help low-income people get access to funds. In 2020, **Hanwha Asset Management's** Singapore-based affiliate facilitated a USD 5 million endowment

in iSTOX, a Singapore-based capital markets platform. Hanwha Investment & Securities also staked USD 10 million in Bangkok-based Lightnet, which provides easier and safer remittance services in Southeast Asia.

## Fast Facts about Hanwha in Asia Pacific

- ✓ **Hanwha TotalEnergies Petrochemical** is the global leader in solar battery encapsulants
- ✓ **Hanwha Solutions' Qcells Division** is a market leader in Japan and South Korea and has an extensive regional network reaching from Australia to India
- ✓ **Hanwha Aerospace** built 100,000-square-meter smart factory in Vietnam, producing a range of aircraft components for top aviation firms globally
- ✓ **Hanwha Techwin's** state-of-the-art factory in Vietnam produces high-tech CCTV security systems to meet rising global demand
- ✓ **Hanwha Corporation** is supplying India's growing manufacturing sector with automation cobots
- ✓ **Hanwha Life Vietnam's** total number of financial planners reached 37,000 a decade after its founding
- ✓ **Hanwha Investment & Securities** led USD 31.2 million investment in Lightnet, a Bangkok-based fintech company offering global remittance service using blockchain technology

## Global Presence

# United States

Prospects abound in the U.S., where Hanwha first established its presence in 1982. Hanwha’s American businesses are major players in the manufacture, sale, and support of a wide variety of products. These include solar power solutions, aircraft engines, automotive parts, industrial equipment, security systems, and chemicals. Because of this, Hanwha is making a push to further expand its American operations, focusing on disruptive high-tech and sustainable enterprises as well as finance and start-up incubation.



10.86-MW Maywood Solar Farm in Indianapolis (Left) and 5-MW Kalaeloa Renewable Energy Park in Hawaii, U.S.A. (Right)

**Hanwha Solutions’ Qcells Division** is a total energy solutions provider in solar cells and modules, energy storage, downstream project business and energy retail with operations in the U.S., Canada and Chile. According to the Q1 2022 U.S. PV Leaderboard report by Wood Mackenzie Power & Renewables, Hanwha Solutions’ Qcells division continues to maintain the No. 1 market share in the U.S. residential and commercial solar markets with 24.1% and 20.6% of the market share, respectively. The company has also received its first Top Brand PV seal in the U.S. from EuPD Research. In Georgia, the company provided solar modules for a 102.5-MW solar farm that powers Facebook’s ninth data center. It also operates the largest solar module plant in the Western Hemisphere, helping to meet the growing retail demand for renewable energy. Recently, Hanwha Solutions’ Qcells division completed the construction of a 168-MW solar power plant in the United States. This solar farm, located in Texas, can power 30,000 homes and is one of only two solar power plants in the state with over 100 MW in capacity.

**Hanwha Energy** is a comprehensive energy solutions company. Through its subsidiary 174 Power Global, the company is involved in all aspects of the North American solar energy market—from power financing to power plant operations. It provides clean solar energy through 364 MW of Power Purchase Agreements with utility providers in various states. The company generates 364 MW of renewable energy and operates 4 MWh of energy storage systems under active development for customers in North America. In 2019, 174 Power Global acquired Chariot Energy, a Texas-based energy retailer. It also acquired OnForce Solar, a New York-based solar power developer of retail and commercial & industrial (C&I) projects. In 2021, Hanwha Energy signed a joint venture agreement with TotalEnergies, a broad energy company, to develop utility-scale solar and energy storage projects in the United States.

**Hanwha Impact** is driving positive change for the future through innovative technologies and continuous investments that shift the paradigm in the fields of eco-friendly energy, convergence technology, and mobility.

**Hanwha Power Systems** maximizes customer value with technology, experience and world-class production facilities accumulated through the production of various gas turbine generator and compressor packaging as well as incorporating “hydrogen to gas turbine technology,” or H2GT to retrofit existing LNG-fired power plants’ gas turbines.

**Hanwha Advanced Materials** and **Hanwha Azdel** develop and produce a wide range of reinforced thermoplastics interior and exterior parts for automakers. The former is No. 1 in glass mat thermoplastics (GMT) in the world, while the latter is No. 1 in lightweight reinforced thermoplastic (LWRT) manufacturing and sales globally. When used in automotive manufacturing, these materials help produce stronger and safer automobiles. They also help reduce vehicle weights, leading to lower fuel consumption and carbon emissions, thus helping protect the environment.



*Hanwha Advanced Materials America*

**Hanwha International** is a trading company that facilitates the import of chemicals, steel, and machinery produced by other Hanwha affiliates into North and South America. Located in Teaneck, New Jersey, it is also the first Hanwha business to have been established in the Americas and played a crucial role in Hanwha's entry into the U.S. market.



*Hanwha Aerospace USA's team members develop and produce cutting-edge aircraft engine components for manufacturers like GE and Pratt & Whitney*

**Hanwha Aerospace** develops and produces advanced aircraft engine parts and acquired EDAC Technologies to create Hanwha Aerospace USA in 2019. With four state-of-the-art facilities in the state of Connecticut, the company specializes in the development and production of aircraft engine components, such as engine cowlings and integrally bladed rotors. In early 2021, Hanwha Aerospace USA received the Supplier Gold Certification by world-renowned aircraft engine manufacturer Pratt & Whitney for flawless quality control.

**Hanwha Systems** develops smart technologies in defense electronic systems and information infrastructure. In 2019, the company invested USD 25 million in Overair, US-based air taxi start-up, with the aim of bringing the Butterfly, a cutting-edge electric air taxi to market by 2025.

Recently, the company invested in OneWeb, a global leader in LEO satellite communications company, in order to expand its business to the global satellite communications sector and to join the field as a global supplier of LEO satellites and satellite terminals.

In addition, Hanwha Systems established Hanwha Phasor by acquiring business and assets of Phasor Solutions, a U.K.-based satellite communication antenna developer in 2020 and also made a USD 30 million equity investment in Kymeta, a global mobile satellite-cellular connectivity company.

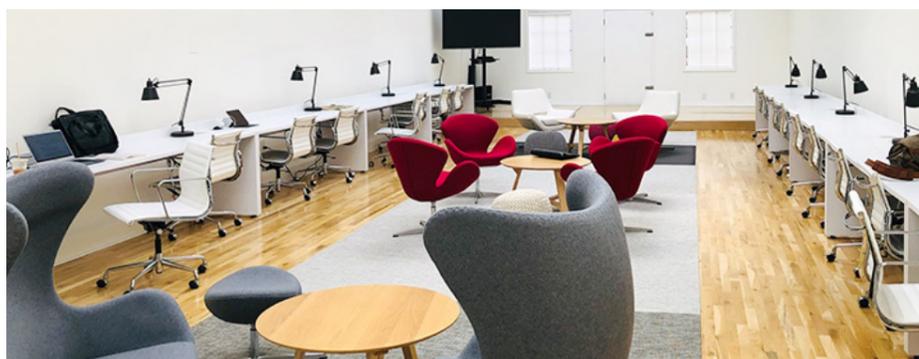
By leveraging such technologies, Hanwha Systems plans to provide multi-layered, hyper-connectivity solutions that connect all the communication satellites and observation satellites in the outer space.

Therefore, providing high quality satellite internet services as well as communications with the urban air mobility and autonomous driving vehicle can be possible, which will continuously generate more demand.

**Hanwha Techwin** provides a wide selection for residential, commercial, and industrial surveillance applications. The company's ultra-high-definition cameras, cloud-based recording systems, and analytical software are widely deployed. They have also won numerous awards from American security-trade organizations, including Platinum in the network-video-surveillance-camera category at the 2021 Govies Government Security Awards presented by Security Today. The company is ranked second in network-camera manufacturing and sales in North America as of 2020. In 2020, the company received the UL CAP (Cybersecurity Assurance Program) certification for its Wisenet7 camera series, meeting the program's stringent evaluation criteria in just three months. With such effort, the company won the Best Cyber Security Solutions award by ASTORS American Security Today for its Wisenet7 camera series.

**Universal Bearings** is a leading manufacturer of high-precision bearings that specializes in needle and loose-needle bearings used mainly in automotive and industrial applications. Its manufacturing processes are accurate to within 2-3 microns, or smaller than a microscopic speck of dust. The company currently offers almost 1,000 different types of bearing products and continuously works to expand its portfolio to become a complete-bearing manufacturer.

**Hanwha Corporation's** offer smart factory solutions for manufacturing customers, with automated systems like Computer Numerical Control (CNC) machines and collaborative robots (cobots) that autonomously handle repetitive tasks that require precision. The Hanwha Collaborative Robot Advanced (HCR Advanced) Series retains the excellent design and versatility of the original HCR cobots with boosted speed, consistency, and accuracy to provide better productivity and increased workplace safety.



**Hanwha Life's** DREAMPLUS San Francisco Center serves as a vital springboard for American start-ups looking to expand into the Asian market. Companies accepted into the accelerator program receive access to workspaces and the chance to participate in networking events and pitch opportunities.

*DREAMPLUS operates an incubator in San Francisco for U.S.-based start-ups looking to enter the Asian market*

## Fast Facts about Hanwha in the U.S.

- ▶ **Hanwha Solutions' Qcells Division** is America's No. 1 residential and commercial solar power provider
- ▶ **Hanwha Energy** generates 364 MW of renewable energy under active development for customers in North America
- ▶ **Hanwha Advanced Materials's** high-strength, lightweight parts for cars help lower fuel consumption and carbon emissions, thus helping protect the environment
- ▶ **Hanwha Azdel** is No. 1 in manufacturing and sales of lightweight reinforced thermoplastics (LWRT) in the world
- ▶ **Hanwha Aerospace USA's** advanced engine parts will help the all-new Boeing 777X fly high
- ▶ **Hanwha Systems** has invested in US-based air taxi start-up with the aim of bringing electric air taxis to market by 2025
- ▶ **Hanwha Techwin America** is North America's No. 2 in network-camera manufacturing and sales (as of 2020), and received the UL CAP (Cybersecurity Assurance Program) certification for its Wisenet7 camera series
- ▶ **Hanwha Corporation's** smart factory solutions are advancing automation in America
- ▶ **Hanwha Life** DREAMPLUS incubator serves as a vital springboard for American start-ups with offices in California's Silicon Valley

## Major Affiliates

- › Hanwha Corporation
- › Hanwha International
- › Universal Bearings
- › Hanwha Aerospace
- › Hanwha Corporation/Momentum
- › Hanwha Techwin
- › Hanwha Power Systems
- › Hanwha Solutions Qcells Division
- › Hanwha Solutions Advanced Materials Division
- › Hanwha Azdel
- › Hanwha Impact
- › Hanwha Life
- › Hanwha Asset Management

## Global Presence

# China

China occupies an important position in Hanwha's global operations. Hanwha chemical refineries and plants produce raw materials exported around the world. Other plants produce solar power products and lightweight composite materials. Hanwha also manufactures industrial machinery and high-precision chip mounters. Beyond manufacturing, Hanwha is one of China's largest foreign insurance providers, offering a variety of products and services to meet the wide-ranging needs of its customers.



*Hanwha Solutions' Chemical Division's plant in Ningbo, China*

**Hanwha Solutions' Chemical Division** first entered the Chinese market in 2003, opening a regional headquarters in Shanghai. It also has regional offices in Beijing and Guangzhou. It is a total solutions chemical company with streamlined production systems for polyethylene (PE), polyvinyl chloride (PVC), and chlor-alkali (CA). Hanwha opened a PVC manufacturing facility in Ningbo, Zhejiang Province, in 2011. Improvements to the plant's equipment and workflow have allowed it to expand its annual production capacity to 500,000 tons of ethylene dichloride (EDC), 400,000 tons of vinyl chloride monomer (VCM), and 400,000 tons of polyvinyl chloride to meet growing demand for a range of consumer products.

**Hanwha Total Petrochemical** specializes in the sustainable development, production, and sales of polymers, base chemicals, and energy products. The company established two business operations in China in 2008 and 2009, with offices in Beijing, Hong Kong, Shanghai, and Shenzhen, and a plant in Dongguan. It is a market leader for many synthetic resin products, coatings, and photovoltaic sheets. It also is China's No. 1 bottle cap material supplier. With a reputation for outstanding quality and spotless safety record, the company's China operations continue to leverage its technological prowess in innovative product development, contributing to the company's global tally of 900 patents.

**Hanwha Solutions' Advanced Materials Division** manufactures materials for various products, including automotive components at its plants in Beijing, Chongqing, and Shanghai. These manufacturing subsidiaries specialize in the production of lightweight composite materials for global automakers like General Motors, Hyundai Motors, Toyota, and Volkswagen. These plants are working hard to meet the needs of China's growing electric vehicle market.

**Hanwha Solutions' Qcells Division**, a total energy solutions provider, manufactures solar-power products in Qidong, Jiangsu Province. Acquired in 2010, its facility has almost quadrupled its production capacity from 1.3 GW to 5 GW annually, helping the company maintain its position as a global leader.



*Q.PEAK solar modules of Hanwha Solutions' Qcells Division installed in Qinghai Province and Tongshan County, China*

**Hanwha Life** is a leading life-insurance company that provides customers with high-quality services through constant product development. In 2012, the company entered the Chinese insurance market by forming Sino-Korea Life Insurance in partnership with ZHEJIANG ORIENT FINANCIAL HOLDINGS GROUP CO., LTD. Sino-Korea Life Insurance is establishing itself as a premium insurance company that covers every aspect of customers' lives through smart asset management and health-related insurance products. Its services—covering general insurance, pensions, health insurance, accident insurance, and more—are targeted to meet customer needs precisely and provide security to both individuals and families. In 2019, the company's "Fu Duo Duo" insurance package, which combines pension and health insurance, received the "Best Value for Investment Insurance Product Award" at the 14th annual China Insurance Innovation Awards.

**Hanwha Corporation**, which specializes in industrial machinery, set up its first Chinese manufacturing plant in Zhangjiagang, Jiangsu Province, in 2014. The plant was 100% funded by Hanwha to produce machine tools and powertrains to meet increasing demand from the Chinese market.

**Hanwha Power Systems** provides direct sales services and aftermarket support for turbo-machinery customers. In China, the company supplies gas and air compressors to local steel manufacturers, air-separation plants, and chemical refineries.



**Hanwha** also conducts social impact activities throughout China. Hanwha Happy Sunshine donates solar power systems to schools, communities, and social projects to help them achieve energy independence through sustainable photovoltaics. Hanwha Solar Forest's reforestation project in Ningxia region achieved a global milestone when it became the first-ever reforestation project to power a seedling nursery 100% via solar power. The United Nations Convention to Combat Desertification (UNCCD) cited this as a best practice and urged other reforestation projects to follow its example.

The UNCCD commended Hanwha's donation of a solar power plant to this seedling nursery in Ningxia, China, which marked the first time ever that a reforestation project was powered solely by solar energy

### Fast Facts about Hanwha in China

- ▶ **Hanwha Solutions' Chemical Division** produces 1.3 million tons of petrochemical products per year
- ▶ **Hanwha TotalEnergies Petrochemical** is a market leader for synthetic resin products, coatings, and photovoltaic sheets
- ▶ **Hanwha Solutions' Qcells Division's** facility in Qidong has almost quadrupled its production capacity since 2010
- ▶ **Hanwha Corporation's** plant in Zhangjiagang produces machine tools and powertrains to meet increasing demand
- ▶ **Sino-Korea Life Insurance Co., Ltd** (Hanwha Life) won its fourth consecutive Social Responsibility Brand Award in 2019

### Major Affiliates

- > Hanwha Corporation
- > Hanwha Power Systems
- > Hanwha Solutions Chemical Division
- > Hanwha Solutions Qcells Division
- > Hanwha Advanced Materials
- > Hanwha TotalEnergies Petrochemical
- > Hanwha Life
- > Hanwha Asset Management

## Global Presence

# Vietnam

With its large workforce and business-friendly environment, Vietnam is a linchpin in Hanwha's global operations. It made significant investments and continuously expanded to become one of Vietnam's largest insurance providers. It also operates in the Vietnamese asset management and securities industries. The country is a manufacturing center for Hanwha, with purpose-built facilities that produce state-of-the-art aircraft engine components and cutting-edge video-surveillance solutions. Furthermore, Hanwha is helping Vietnam become less reliant on fossil fuels through solar power and liquefied-natural-gas (LNG) power.



*Hanwha Life Vietnam's head office in Ho Chi Minh City*

**Hanwha Life**, a leading insurance company that offers innovative products and services to meet a wide range of customers' needs, debuted in the Vietnamese insurance market in 2009. It was the first Korean company to set up a wholly owned subsidiary locally without a Vietnamese partner. Within a decade, Hanwha Life Vietnam's business has grown over 15-fold. It is now rated Vietnam's seventh largest insurer, with 37,000 financial planners and nearly 160 locations across major cities such as Ho Chi Minh City, Hanoi, Da Nang, and Can Tho. In recognition of its success, Hanwha Life Vietnam has received seven consecutive Golden Dragon Awards for Best Products and Services from the Vietnam Economic Times.

**Hanwha Asset Management**, a financial services company, made a 2018 investment in Vingroup JSC, Vietnam's largest conglomerate. Together, they are pursuing opportunities in fintech, automobile component materials, solar power system installation, and security. In 2019, **Hanwha Investment & Securities** launched Pinetree Securities, a securities brokerage that is now working to expand throughout Southeast Asia and move into investment banking. It actively partners with fintech firms and start-ups, helping customers take advantage of digital investment opportunities.

**Hanwha Aerospace**, which develops and produces advanced aircraft engine parts, opened an aircraft-engine-component plant near Hanoi to meet growing demand from companies such as GE Aviation, Pratt & Whitney, and Rolls-Royce. The 100,000-square-meter facility leverages the company's technology and experience to produce high-quality aircraft engine components in large volumes.



*Hanwha Aero-Engines in Hanoi, Vietnam*

**Hanwha Techwin** is a surveillance technology company with next-generation capabilities, such as AI, deep learning, and business intelligence. It invested in a state-of-the-art manufacturing facility in Bac Ninh Province to produce cutting-edge video-surveillance solutions. The facility supports the company's growing sales in North America, Europe, and the Middle East. It also represents a major logistics breakthrough in the region. By collaborating with the Vietnamese government, Hanwha Techwin secured an extensive supply chain to make sure the plant receives

the materials it needs.

**Hanwha Energy** is an energy retailer that provides customers with downstream-electricity-generation services. In Vietnam, the company is introducing energy sources that have less of an environmental and economic cost than hydroelectric, coal, and nuclear-power plants. This includes a 100-MW solar power plant in Khanh Hoa Province. Additionally, in 2019, Hanwha Energy began the development of liquefied-natural-gas (LNG) infrastructure in central southern Vietnam. The construction of LNG-power plants and terminals for LNG imports will help make up for electricity-generation shortages in the region.

**Hanwha Power Systems** provides Vietnamese customers with aftermarket support for industrial air compressors, including fuel-gas compressors for power plants, and boil-off-gas compressors for liquefied-natural-gas terminals and plants.

**Hanwha** is also engaged in numerous social impact activities in Vietnam. By end of 2020, Hanwha Life Vietnam had donated 53,570 health insurance cards to the underprivileged, including many children and elderly people, enabling them to receive treatment at government hospitals. Additionally, Hanwha has constructed free health clinics in poorer areas to ensure that people don't have to travel long distances to receive adequate healthcare. In acknowledgment of these efforts, the company was presented with a Certificate of Merit by the Ho Chi Minh City People's Committee and the Sponsoring Association for Poor Patients.



**Hanwha** has also launched “Clean Up Mekong” campaign to address the pressing issue of serious pollution on the Mekong River. The campaign raises public pollution awareness and scoops floating waste off the river’s surface with solar-powered boats equipped with Q.PEAK DUO solar modules of Hanwha Solutions’ Q CELLS Division. It received one gold award and five bronze awards at the New York Festivals 2020 Advertising Awards.

A solar-powered boat donated to Vietnam as part of the “Clean Up Mekong” campaign

### Fast Facts about Hanwha in Vietnam

- ▶ **Hanwha Life's** total number of financial planners reached 37,000 a decade after its founding
- ▶ **Hanwha Investment & Securities** launched Pinetree Securities Corporation in 2019 to help customers take advantage of fintech opportunities
- ▶ **Hanwha Aerospace's** factory in Vietnam is supplying advanced aircraft engine parts to top-flight aviation firms, including GE Aviation, Pratt & Whitney, and Rolls-Royce
- ▶ **Hanwha Techwin's** factory in Bac Ninh Province produces advanced surveillance systems to meet growing global demand for state-of-the-art security
- ▶ **Hanwha** donated two solar-powered boats to clean up pollution in the Mekong River, which won awards at the New York Festivals 2020 Advertising Awards

### Major Affiliates

- > Hanwha Aerospace (Aero-Engines)
- > Hanwha Techwin
- > Hanwha Power Systems
- > Hanwha Energy
- > Hanwha Life
- > Hanwha Investment & Securities

# Sustainability

Looking to create a cleaner and brighter world for future generations, Hanwha is committed to creating meaningful solutions to problems affecting communities worldwide.

Hanwha uses its capabilities and resources to grow its business while enriching people's lives and tackling environmental issues. Significant investments are being made to develop sustainable business practices and cut back greenhouse gas emissions. Hanwha is especially focused on helping to fulfill the United Nations' Sustainable Development Goals by 2030, particularly those addressing affordable and clean energy, responsible consumption and production, and climate action.

Since 2011, Hanwha has been shining a light on energy poverty across East Asia through Happy Sunshine, a corporate social responsibility project. Utilizing the expertise and experience it has gained as one of the world's leading solar-energy-solution providers, Hanwha has donated solar-energy systems to 320 community development projects as of 2021. These systems have a collective production capacity of 2,187 kW per year. The carbon emission reductions achieved through these donations are equivalent to planting over 910,000 pine trees. Beyond providing energy support to the project's recipients, Happy Sunshine also promotes the use of clean solar energy as an effective way to combat global warming.



Hanwha's sustainability roots run deep. Through its Hanwha Solar Forest campaign, Hanwha has planted over a million square meters of trees across eight "solar forests" in Korea, China, and Mongolia. These solar forests rejuvenate the environment by reversing global warming, capturing microdust particles in the air, and reclaiming land previously lost to desertification and landfills. The forests have an additional positive social impact by allowing communities—who were once pushed out because of logging and desertification—to return and rebuild their lives. Hanwha makes reforestation even greener by growing saplings in solar-powered tree nurseries that do not emit greenhouse gases. The United Nations Convention to Combat Desertification praised this as a best practice and urged others to follow Hanwha's example.

In 2019, Hanwha launched its latest environmental venture with the "Clean Up Mekong" campaign in Vietnam. It donated solar-powered boats to help scoop-up the floating garbage clogging the Mekong River's surface and endangering the lives of millions of people and aquatic ecosystem. The two donated boats use their conveyor systems to collect up to 400 to 500 kilograms of waste from the river daily. Because they're solar-powered, the boats also don't emit any harmful fumes or leak fuel to add to the river's pollution problem. Beyond the actual cleanup, Hanwha also raised public awareness of the Mekong River's pollution problem online through social media and rallied support for its efforts.

# Hanwha History

It would be difficult to start talking about Hanwha without mentioning trust and loyalty.

These values have been at the core of Hanwha since its founding in 1952, and have guided the company through decades of growth and diversification. In addition, Hanwha's emphasis on teamwork and precision has created a unique culture that directly contributed to the company's expansion into a number of strategic sectors and regions. Through the most challenging times and most celebrated ones, the people of Hanwha have remained loyal and steadfast.

## Restoring a Nation's Economy : 1952 – 1963



After World War II, much of South Korea's infrastructure was in ruins. In 1952, Korea Explosives Co. (presently Hanwha Corporation) was established to help the economic growth of the nation as explosives would be instrumental in the country's rebuilding effort.

## Modernization of a Nation : 1964 – 1980



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 1960s, Hanwha began expanding into major industries, including chemicals and materials, machinery, energy, and finance.

## Strategic Diversification : 1981 – 1995



Led by Chairman Seung Youn Kim, Hanwha continued to diversify its business portfolio through a number of strategic acquisitions. Chairman Kim established a solid foundation for the company's chemical business by acquiring Hanyang Chemical and Dow Chemical Korea. Through the acquisition of Junga Group (presently Hanwha Hotels & Resorts), Hanwha became South Korea's leading leisure group. By acquiring Hanyang Stores (presently Hanwha Galleria), the company grew its network of retail businesses.

## Restructuring for the New Century : 1996 – 2006



The Asian Financial Crisis of 1997 hit South Korea hard—companies failed and unemployment reached an all-time high. Unlike many other companies, Hanwha overcame these challenges through radical innovation and company restructuring. The experience prompted Hanwha to take another big step: acquiring Korea Life Insurance in 2002, which has grown steadily to become the second largest life insurance carrier in South Korea, with assets of USD 102 billion in 2018.

## Emerging as a Global Leader : 2007–2014



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

## Innovating for a Better Tomorrow : 2015–PRESENT



Hanwha continues to strengthen its global leadership position across chemical, material and eco-friendly energy industries. Its solar business maintains the No. 1 market share position in major solar energy markets, including the US and Germany due to its product competitiveness. Furthermore, Hanwha's investment in important hydrogen R&D activities spurs continued innovation in green energies. The only aircraft engine producer in South Korea, Hanwha launched the Hanwha Space Hub in 2021 to pioneer the private-led space industry. Moving forward, the company is actively innovating solutions for urban air mobility (UAM), while expanding in sectors such as fintech and urban-multifunctional-complex development.