

## Main Business Areas

# Green Energy

Hanwha is ramping up its response to the challenges of climate change as green energy becomes a global necessity. As a comprehensive green energy solutions provider, we are pioneering future markets by combining our energy production and transportation know-how with our expertise in energy sources and materials. Hanwha is at the forefront of building a green energy value chain that encompasses solar, hydrogen, and wind energy as well as green marine solutions. Our solar power business is expanding from module production to a fully integrated supply chain, in addition to offering high-value-added services using information technology. We are accelerating our development of onshore and offshore wind power generation and creating sustainable transformation in the ocean and marine energy ecosystem. From land-based energy solutions to low- and zero-carbon marine technologies, we are tapping into green energy's outstanding potential and strengthening our competitiveness as a green energy solutions provider to lead the way to net zero.

## 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
- ✓ Build next-generation eco-friendly special tankers, featuring high-efficiency engines and latest fuel-saving technology
- ✓ Build ultra-large wind turbine installation vessels (WTIV), develop smart ship systems
- ✓ 102.5MW of Qcells solar 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 Solutions
- Hanwha Ocean
- Hanwha Energy
- Hanwha Impact
- Hanwha Power Systems
- Hanwha Corporation

### 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
- Commercial ships, offshore plants, specialty ships
- Industrial air and gas compressor
- Eco-friendly power generation and hydrogen solutions

## Main Business Areas

# Aerospace, Ocean & Mechatronics

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

But our solutions have a far greater reach. As part of our bold vision for the future, Hanwha is also creating an industrial ecosystem of land- and ocean-based innovations to enhance the safety and enrich the lives of our customers right here on Earth. Our expansive portfolio includes intelligent AI camera and analysis technology, AIoT platform convergent technology and blockchain security as well as shipbuilding expertise, large-scale plant management, and advanced offshore plant construction capabilities.

## 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 leader in commercial ships, producing best-in-class LNG carriers with leading LNG-related technology such as fuel gas supply systems (FGSS) and partial regasification systems (PRS) as well as LPG carriers built with eco-friendly technology and high efficiency
- ✓ No. 1 leader in very large crude oil carriers (VLCCs)
- ✓ Built the world's first floating LNG facility
- ✓ 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

Hanwha Aerospace

Hanwha Ocean

Hanwha Systems

Hanwha Vision

Hanwha Precision Machinery

### Major Products & Services

- Aircraft engines and engine components
- Aerospace sensors and electronic systems
- UAM (Urban Air Mobility), and Satellite communication antennas
- Commercial ships, offshore plants, specialty ships
- 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
- ✓ Polyethylene (PE) and ethylene-vinyl acetate (EVA) combined annual production capacity: 2.03 million tons
- ✓ Annual purified terephthalic acid (PTA) production capacity: 2 million tons
- ✓ Leading global market for lightweight composite materials for motor vehicles, including glass fiber mat reinforced thermoplastics (GMT) and lightweight reinforced thermoplastics (LWRT)
- ✓ Supplying global automotive companies with battery housings made of lightweight composite materials

### 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

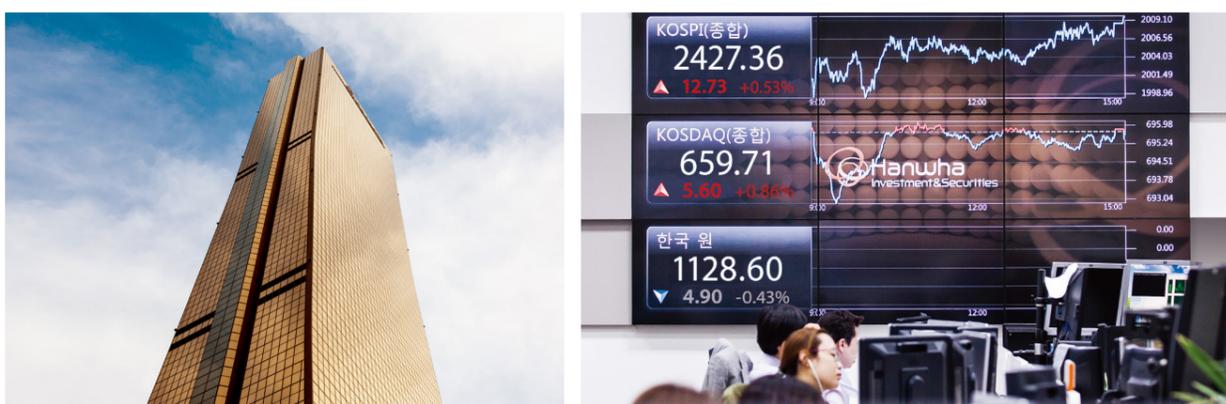
- Energy (oil refining, jet & diesel fuel, gasoline, LPG)
- Basic Petrochemicals (Ethylene, propylene, SM butadiene, aromatics (BTX), naphtha)
- Synthetic resins and synthetic materials (PE, PP, EVA, PVC, PTA)
- Chlor-alkali products (Caustic soda, chlorine, EDC, VCM, ECH, TDI)
- Advanced lightweight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

## Main Business Areas

# Finance

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

## Business Scope



- ✓ Korea's 2nd largest non-banking financial solutions provider
- ✓ Hanwha Life total assets: USD 100.06 billion (data as of 2022)
- ✓ Launched Hanwha Life Financial Services, the largest insurance agency in Korea in 2021
- ✓ 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 assets under management (AUM): USD 78.63 billion (data as of 2022)

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

## Business Scope



- ✓ Hanwha offers more than 4,702 condominium-like rooms across 10 resorts, while operating five luxury department stores across major Korean cities, and three premier golf courses
- ✓ Hanwha's Estate Division has become one of the top 5 real estate asset management companies in Korea
- ✓ Cumulative orders over USD 10 billion (KRW 11.9 trillion) due to the construction of Bismayah New City
- ✓ Building power and petrochemical 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 Galleria

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