

To build an FCEV industry cluster district with international competitiveness



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JIADING HYDROGEN PARK

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Jiading Hydrogen Park

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HYDROGEN RESOURCES



Hydrogen energy is the clean energy with the greatest development potential in the 21st century

The survival and development of human beings are inseparable from energy. At present, the world's exploitable oil, natural gas, coal and other resources are becoming increasingly scarce. It is imminent to find and develop a kind of energy that does not rely on fossil fuels and has abundant reserves.

Hydrogen, among many secondary energy sources, stands out as a globally recognized clean energy and is expected to become the ultimate solution to address the future human energy crisis. Currently, China, the United States, Japan, Canada, the European Union, and others have formulated hydrogen development plans, committed to building a global hydrogen industry system.

Notice on the Action Plan for Peaking Carbon by 2030

Actively and steadily promote carbon peaking and carbon neutrality, based on China's energy resource endowment, deepen the energy revolution, and accelerate the planning and construction of a new type of energy system. Our country's hydrogen energy industry strategy now has top-level design.

20% share of non-fossil energy consumption in 2025.

25% share of non-fossil energy consumption by 2030. 12 billion kilowatts of wind power and solar power installed capacity.

Build a new type of power system with new energy as the main body, improve the power grid's ability to accommodate and regulate high proportions of renewable energy. Opinions of the Central Committee of the Communist Party of China and the State Council on Fully Implementing the New Development Concept and Doing a Good Job in Carbon Peak and Carbon Neutrality. By 2060, the proportion of non-fossil energy consumption will reach 80%, and the carbon neutrality goal will be successfully achieved.

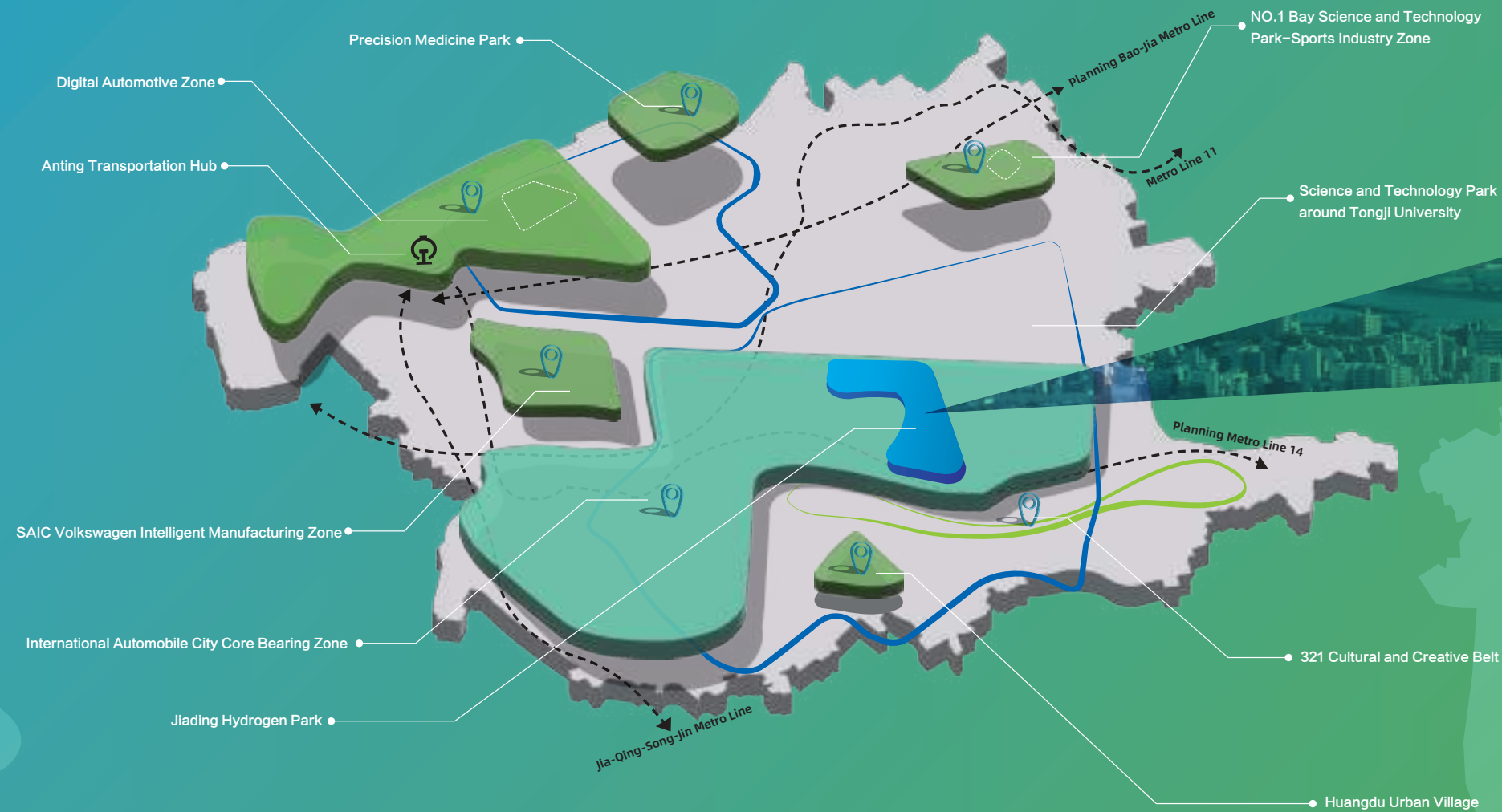
ANTING · SHANGHAI INTERNATIONAL AUTOMOBILE CITY

Internationally influential innovation center for the automotive industry, internationally renowned health and medical service center, and the gateway city to the northwest of Shanghai in the Yangtze River Delta



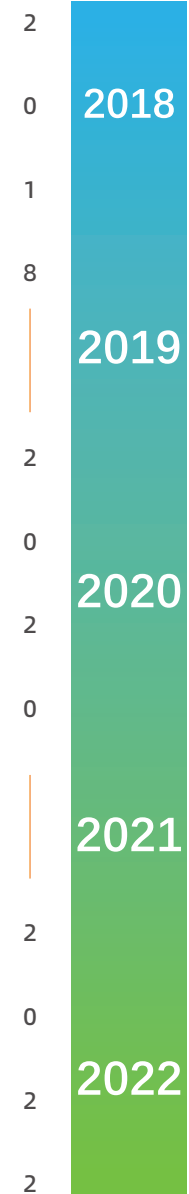
Intelligent manufacturing is an important pillar for Shanghai to promote the construction of a global scientific and technological innovation center. It is an inevitable choice to establish the "Shanghai Manufacturing" brand, enhance the reputation of "Shanghai Manufacturing", and promote the high-quality development of "Shanghai Manufacturing". Shanghai's level of intelligent manufacturing development ranks among the top in the country, and it is actively promoting the high-end, intelligent, and independent development of the equipment industry.

ANTING SPATIAL DEVELOPMENT STRATEGIC LAYOUT FRAMEWORK



JIADING HYDROGEN PARK FOCUSES ON "HYDROGEN"

Jiading Hydrogen Energy Port, the spatial core formed by Tongji University, Huangdu Community, and Huangdu Residential Area, extends from Yantietang in the east to Cao'an Road in the south, and to the Shanghai-Nanjing Railway in the north. The total land area of the area is about 2.16 square kilometers.



2018

The first hydrogen industrial park in Shanghai



On February 6, 2018, Shanghai's first hydrogen and fuel cell industry park was unveiled in Anting Town, Jiading District, Shanghai Tongji Smart City.

2019

Shanghai Jiading District launched Jiading Hydrogen Park



On June 10, 2019, the unveiling ceremony of the Jiading Hydrogen Fuel Cell Vehicle Industry Cluster (Jiading Hydrogen Energy Port) and the signing ceremony of the project were officially held.

2020

Included in the first batch of 26 Shanghai characteristic industrial parks



Shanghai's level of intelligent manufacturing development ranks among the top in the country, and it is actively promoting the high-end, intelligent, and independent development of the equipment industry.

2021

Focusing on Carbon peak and carbon neutral target



Jiading District has formulated the Action Plan for Accelerating the Development of Hydrogen Energy and Fuel Cell Vehicle Industry in Jiading District (2021-2025).

2022

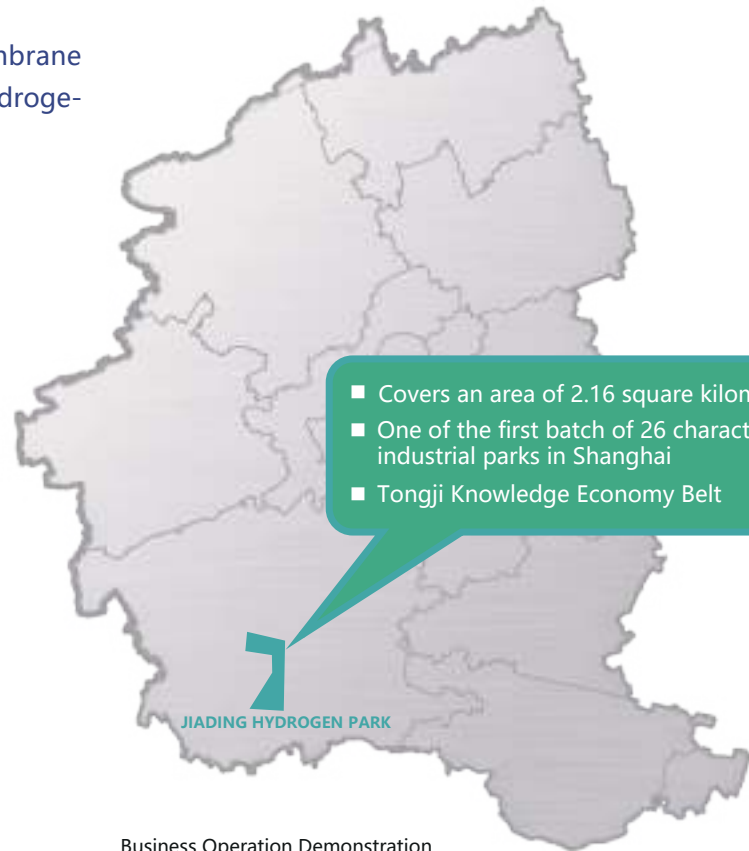
Gathering upstream and downstream to create hydrogen ecology



Aiming to promote the collaborative development of the hydrogen energy and fuel cell vehicle industry in the entire region, gather upstream and downstream, drive industrial ecology, build hydrogen energy ecology, and construct empowering ecology.

A COMPLETE INDUSTRIAL CHAIN OF HYDROGEN FUEL CELL VEHICLES

Fuel cell vehicles, fuel cell systems, fuel cell stack, hydrogen tank, membrane electrode, bipolar plate, air compressor, Hydrogen circulation system, hydrogenation station, detection equipment, etc.



- Business Operation Demonstration**
- Public Transportation Operation Demonstration
 - Logistics vehicle operation demonstration
- Well-equipped infrastructure**
- Longest operating hydrogen refueling station in the country
 - More than 5 types of hydrogenation stations

HOLDING FAST TO HYDROGEN CAR , WHILE MAKING INNOVATION IN HYDROGEN STORAGE

According to the development goals of the 18 provincial policies

until 2025

CNY **755**
Billion of the total industrial scale

101500
Hydrogen fuel cell electric vehicles

994 new
Hydrogen refueling stations in total



According to the Carbon Peak Action Plan

until 2023

12 billion kilowatts
Of total installed capacity of wind and solar power generation

55%
Electric power hydrogen production

until 2060

1 million tons
Of hydrogen production capacity

80%
Of hydrogen produced by electrolysis of h₂O



OBJECTIVES OF DEVELOPMENT

Jiading Hydrogen Energy Port, as an important part of Shanghai's efforts to build a global technology innovation center and automobile industry center, will focus on gathering key areas such as hydrogen energy and intelligent connected vehicles in the future. It will strive to introduce a group of leading industries in key technology research and development, production, and demonstration applications, and create a hydrogen energy industry innovation and entrepreneurship ecosystem with world competitiveness, seizing the high ground of the future automobile industry.

Scale of development

Land area of Jiading Hydrogen Park

2.16
km²

Total building surface area

251.5
million square meters

Development goals

Quality development, a charming urban area with organic renewal, an open and shared dynamic community that is livable and suitable for business, an innovation-led, composite development cluster park

Industrial scale (2021-2025)

The scale of demonstration operation of fuel cell vehicles will increase from 87 to

1500



10



The number of hydrogen refueling stations will be increased from 4 to

The total output value and operating income of industrial enterprises above designated size will reach CNY

500 billion



20



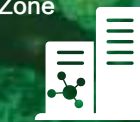
Research and Development Center, Laboratory, Testing Platform

Attract and recruit more than 10,000 innovative and entrepreneurial talents such as R&D engineers and managers.

10000



1-2



The Net Zero Carbon Demonstration Zone

Create "three Ecosystems"

Comprehensive Ecosystem

Realize the industrialization of hydrogen fuel cell systems, key components, and materials

Empower The Ecosystem

Building an industrial environment empowered by standard systems, investment funds, and scientific and technological innovation platforms

Hydrogen Energy Ecosystem

Form a complete industrial ecosystem for hydrogen production, storage, transportation, utilization, and application

Lift "six degrees"

Degree Of Industrial Agglomeration

By 2025, strive to introduce and cultivate a total of 100 companies, establish 10 hydrogen energy industry headquarters, and have 30 research and manufacturing enterprises for hydrogen fuel cell components above a certain scale. The annual output value and revenue of Jiading Hydrogen Energy Port's hydrogen energy and fuel cell vehicle industry chain will exceed 50 billion yuan.

Degree Of Technological Leadership

By 2025, a total of 20 hydrogen energy research and development centers, key laboratories, inspection and testing platforms, and other types of scientific research institutions will gather 10,000 innovative talents in hydrogen energy from both domestic and international sources, and 30 projects for the transformation of scientific research achievements will be implemented.

Degree Of Brand Characteristic Degree

Establish collaborative innovation centers, hydrogen energy data centers, technology incubation platforms, and hydrogen carbon trading platforms to enhance brand features, create innovation-driven development engines, and improve the core competitiveness of industrial development.

Degree Of Application Coverage

By 2025, the number of demonstration runs of fuel cell vehicles will reach 1500; more than 3 hydrogen fuel cell bus operation routes will be added within Anting Town; 1-2 low-carbon parks or hydrogen energy demonstration application areas will be built.

Degree Of Equipment Completeness

Optimize the layout of fuel cell vehicles and hydrogen energy supply in Anting Town to 2025, and build no less than 10 hydrogen refueling stations.

Degree Of Bearing Energy Strength

Establish a standard system, improve the detection service system, and enhance the carrying capacity. Encourage leading hydrogen energy enterprises and public platforms to actively participate in the establishment of standard systems and form an industry standard system aggregation center.

HYDROGEN DRIVES A CARBON-NEUTRAL VISION

Form a deep integration development model based on urban communities (Huangdu Residence, Huangdu Community), university campuses and research institutes (Tongji University) as the center, and industrial parks (Huan Tongji Chuangzhi City) as the base.

1

Hydrogen Energy Storage Power Station



- Building hydrogen energy storage peak shaving power station
- Thermoelectric cogeneration zero-carbon heating (cooling)

2

Building Zero-carbon Parks



In recent years, facing power shortages and blackouts, enterprises have a high demand for green electricity. Zero-carbon parks are ideal locations for such enterprises to settle.

- Power generation
- Energy storage
- Disposal aspect

3


Hydrogen Innovation Center



Shanghai Jiading Hydrogen Energy Port gathers research resources for the hydrogen energy industry and collaborates with local government agencies to promote the establishment of hydrogen energy research institutes, technology industrial parks, national laboratories, talent centers, etc.

4

Smart Energy Management Platform



- Combining the digital system platform of virtual power plants, establish smart energy management for power generation, energy storage, and electricity consumption.
- Combining the city's energy management data, supplementing other energy consumption data on the platform, and using the carbon calculation model to enrich the 'electricity-energy-carbon' smart management platform.
- Using IoT and AI technology, dynamic electricity, energy, and carbon footprint management of park enterprises are carried out to achieve real-time dynamic control.

5

Hydrogen Carbon Trading



Research regional carbon trading platforms to guide companies in reducing carbon emissions through hydrogen applications and explore market incentive mechanisms after national policy fallback.

FAVORABLE POLICIES

Encourage high-quality enterprises to settle in Jiading

Priority support for the introduction of large projects with both domestic and foreign investment, and rewards based on contributions.

Encourage the introduction of corporate headquarters

Functional headquarters such as corporate headquarters, research and development centers, sales centers, etc. are settled in Jiading, and a one-time reward of up to 1 million yuan is given upon recognition.

Support reducing the cost of land and housing for enterprises

Newly introduced key enterprises are rewarded and subsidized for purchasing land, purchasing buildings, and leasing buildings.

Support the cultivation and growth of enterprises

Priority support for enterprises that expand production and have useful land demand, and reward them for their contribution to the district's growth; a reward of 100,000 yuan is given to small and medium-sized enterprises that are first recognized as "specialized and innovative".

Support enterprise integration of upstream and downstream industries

Relevant industry funds in the district can jointly participate in or provide funds to support corporate mergers and acquisitions. Mergers and acquisitions of well-known domestic and foreign brands will be given 10% subsidies, up to 10 million yuan. Demonstrate the operation of hydrogen fuel cell buses with subsidies according to national and municipal standards.

Supporting enterprises to carry out industry-university-research cooperation

For carrying out industry-university-research cooperation and making significant breakthroughs in major common technologies, key core technologies, etc., a maximum reward of 1 million yuan shall be given after verification.

Support for enterprises to formulate industry standards

Enterprises and institutions that lead the formulation of international, national, and industry standards for related industries will be rewarded with a maximum of 1 million yuan.

Support for the creation and protection of corporate intellectual property

For enterprises that obtain invention patent authorization, a maximum subsidy of 50,000 yuan per case shall be granted. For successful litigation in enterprise patent rights protection, a maximum subsidy of 1 million yuan shall be granted.

Guide to establish a special fund for hydrogen fuel cell vehicles

Provide rewards and support in terms of fund investment in enterprises, attracting enterprises to settle in Jiading, and exit, etc. For equity investment enterprises related to investment in this area, if they meet the conditions, they will be given a maximum of 3 million yuan in support.

Support the sound financial service system

To subsidize the guarantor institutions, financing leasing companies, or leasing enterprises supporting the hydrogen fuel cell vehicle industry cluster. Support enterprise listing and public offering.

Full support for various levels of funding projects

For projects that receive financial support from both the national and municipal levels but do not require district-level funding, a supplementary reward of 10% to 30% of the national or municipal support funds will be given, up to a maximum of 10 million RMB.

Encourage enterprises and institutions to prioritize the purchase of products manufactured in this area

To provide certain support for the purchase of products or related services from local hydrogen fuel cell vehicle enterprises by enterprises and institutions.

Encourage companies to increase investment

If existing enterprises are rebuilt and expanded to increase the floor area ratio, the expropriated land transfer fee will be rewarded depending on their contribution to the district, with a maximum of 10 million yuan.

Support enterprises to increase research and development

For enterprises that carry out research and development of key materials and key technologies, and obtain national invention patents and sell them, a reward of up to 1 million yuan will be given. Different degrees of incentives will be given to enterprises for establishing district-level, municipal-level, and national-level technology research and development institutions.

Support enterprises to build functional platforms

For enterprises to establish functional platforms above the municipal level, financial support of up to 30 million yuan will be given.

Support the construction of hydrogen refueling stations

Subsidies will be given to hydrogen refueling stations that meet the relevant construction requirements and have both a hydrogen hazardous chemical business license and a hydrogen vehicle gas cylinder filling license.

Support shortage of talents and professional talents gathering

For the talents in short supply and professionals introduced by hydrogen fuel cell vehicle companies, they can enjoy the district talent service card policy first.

Support enterprises to hold major events and expand markets

Hydrogen fuel cell vehicle enterprises, as the main organizer or undertaker, carry out major forums, summits, exhibitions and other activities at or above the municipal level, and provide certain support after certification.

Support enterprises to establish industry alliances and industry organizations

Encourage hydrogen fuel cell vehicle companies to take the lead in establishing hydrogen fuel cell vehicle industry alliances and industry organizations in the region, including the Yangtze River Delta Industry Alliance and industry organizations. After registration and identification of associations, start-up subsidies can be given.

Support the cultivation of various intermediary organizations

Encourage all kinds of professional intermediary organizations related to the hydrogen fuel cell vehicle industry to settle in Jiading, and those professional intermediary organizations with certain influence in the international, domestic or industry organizations will be given certain subsidies after being identified.

JIADING HYDROGEN PARK

In order to thoroughly implement General Secretary Xi Jinping's "four revolutions, one cooperation" energy security strategy and the goal of "2030 carbon peak, 2060 carbon neutrality", Jiading Hydrogen Energy Port is based on industrial scale, technological innovation, demonstration operation, park construction, and system Taking construction and application scenarios as the starting point, build a hydrogen energy and fuel cell vehicle industry system, create a world-class hydrogen energy and fuel cell vehicle industry development highland and a new landmark for the integrated development of industries and cities in the Yangtze River Delta.

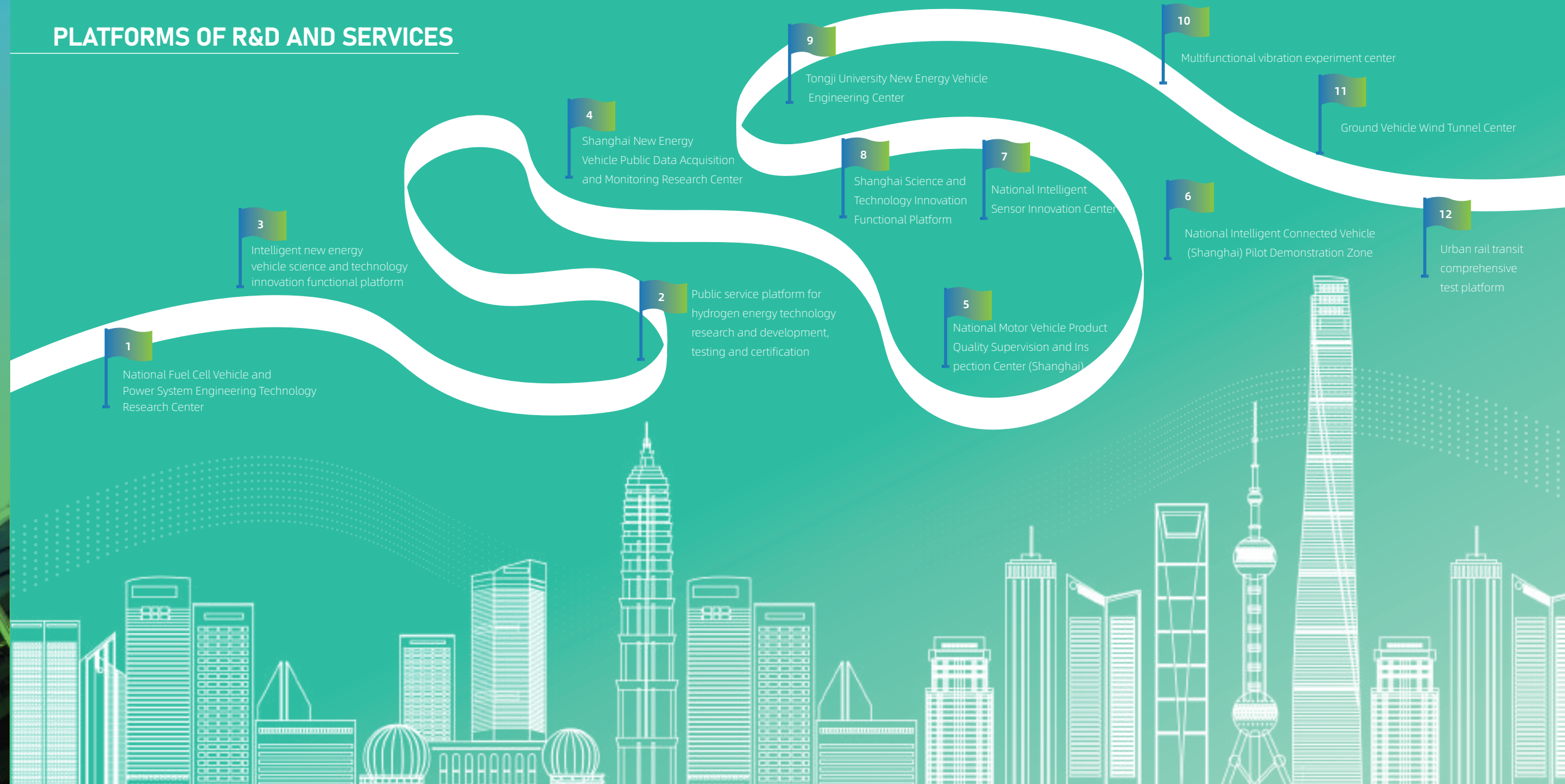
DEMONSTRATION OPERATION

- Build a hydrogen energy supply network
- Layout of hydrogenation infrastructure construction
- Explore the establishment of low-carbon parks or hydrogen energy demonstration application areas
- Fully promote the demonstration application of fuel cell vehicles

TECHNOLOGICAL INNOVATION

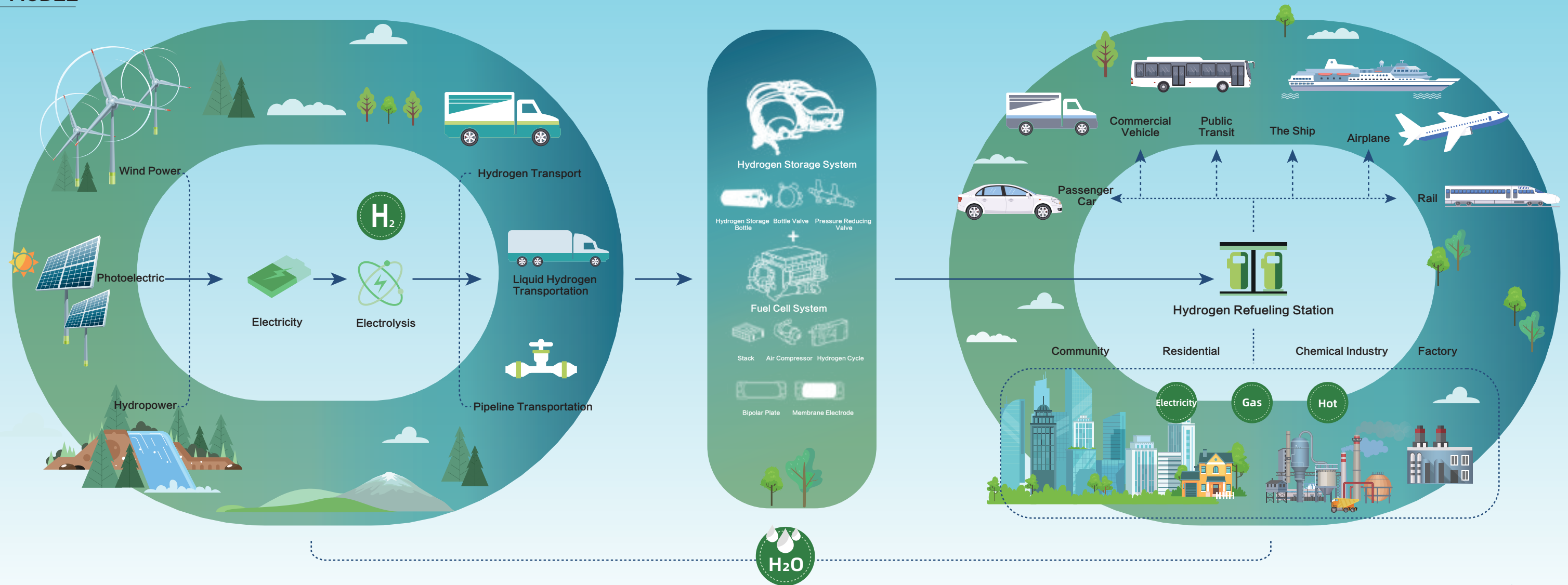
- Improve the level of core technology and accelerate the breakthrough of key parts industry
- Give full play to the advantages of vehicle development, optimize and strengthen the development of fuel cell vehicles
- Actively participate in major special research projects on the national fuel cell vehicle industry and hydrogen energy storage

PLATFORMS OF R&D AND SERVICES



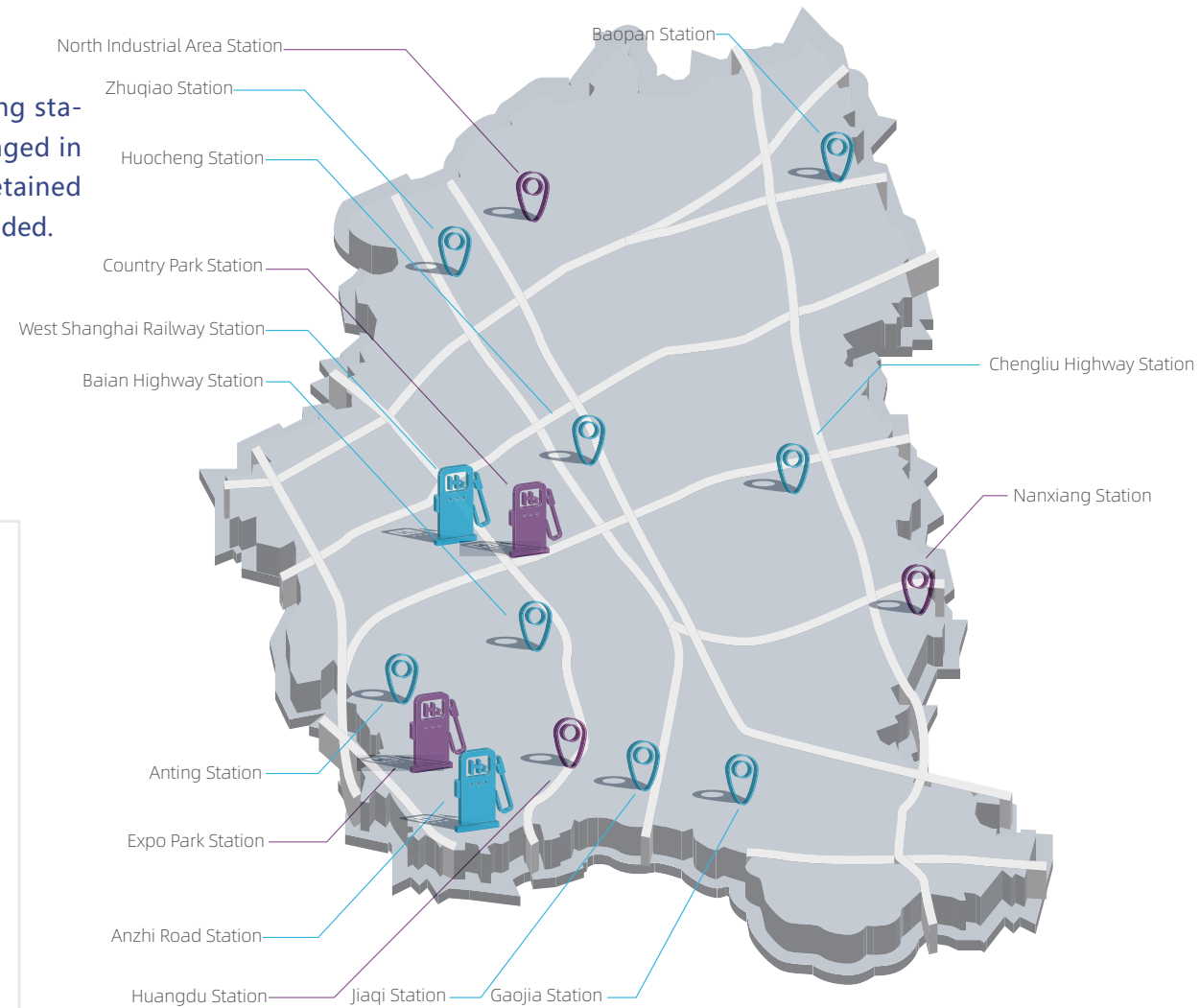
HYDROGEN ENERGY SOCIETY MODEL

Focusing on the future, we will start to lay out a hydrogen energy society demonstration area in the Jiading Hydrogen Energy Port Characteristic Park, and carry out special planning and implementation of carbon trading and hydrogen energy storage in major projects. Improve hydrogen self-sufficiency and increase the proportion of green hydrogen such as photovoltaics. Explore the pilot hydrogen energy storage strategic reserve mechanism.



DISTRIBUTION OF HYDROGEN STATIONS

A total of 15 public hydrogen refueling stations and 3 in-plant stations are arranged in the whole area. Among them, 4 are retained at present, and 14 are planned to be added.



嘉定氢能港
Jiading Hydrogen Park