SUSTAINABLE DEVELOPMENT GOALS

Shanghai Voluntary Local Review 2022

Annual Report

Green • Shared • Cooperation

Green · Shared · Cooperation

UN SDGs Shanghai Voluntary Local Review 2022

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滬濱之源

Shanghai - an international hub for economy, finance, trade, and shipping, as well as a global influential center for technological innovation

Shanghai has basically established a framework for an international hub for economy, finance, trade, and shipping, as well as a global influential center for technological innovation. In 2021, Shanghai's GDP ranked fourth among global cities. Currently in Shanghai, there are 831 multinational corporations headquartered in Shanghai, 506 foreign-funded R&D centers, and its total value of port trade continues to rank first among global cities, its container throughput has been the world's first for 12 consecutive years, and its airport cargo throughput ranks third globally; the proportion of total R&D expenditures to GDP exceeds 4%. Shanghai has been named "the most attractive Chinese city for foreign talents" for eight consecutive years as one of China's most internationalized cities. Looking ahead to 2035, Shanghai will be basically built into a desirable city of innovation, humanities, and ecology, becoming a modern socialist international metropolis with global influence.

Shanghai - an international cultural metropolis and one of famous historical and cultural cities in China

Shanghai is an international cultural metropolis and also a famous Chinese historical and cultural city with a history dating back to the Majiabang culture over 6,000 years ago, the Songze culture over 5,000 years ago, and the Liangzhu culture over 4,000 years ago, where the Red culture, Shanghai-style culture, and Jiangnan culture add radiance and beauty to each other, giving birth to great creative vitality. Currently, Shanghai is guided by the urban spirit of "embracing diversity, pursuing excellence, being open-minded and wise, and having a broad-minded and humble attitude", as well as the urban values of "openness, innovation, and inclusiveness", striving to enhance its soft power by expanding its influence in China to the Asia-Pacific regions and to the world, and become a model city that showcases Chinese ideas, spirit, and path to the world.

Shanghai - a core city of the world-class urban agglomeration in the Yangtze River Delta

Located in eastern China and at the mouth of the Yangtze River and facing the Pacific Ocean, Shanghai, together with its neighboring provinces of Zhejiang, Jiangsu, and Anhui, is part of the Yangtze River Delta, which is known as one of the most economically active, open, and innovative regions in China. As a core city of the world-class urban agglomeration in the Yangtze River Delta, Shanghai plays a leading role in driving regional development and quality growth in the Yangtze River Delta. Additionally, Shanghai is trying its best to actively serve and integrate itself into the new development pattern to accelerate its transformation into a central node of domestic circulation and promote strategic synergy from dual circulation of domestic and foreign markets.

Shanghai - a pioneer in implementing China's reform and opening-up policies and leader in innovation-driven development

Since 1978, Shanghai has taken the lead in pursuing a scientific path of development that is unique to a megacity. As a pioneer in implementing China's reform and opening-up policies and leader in innovation-driven development, it has established a modern industrial system based on the service industry, led by strategic emerging industries, and supported by advanced manufacturing. Currently, Shanghai is accelerating the construction of a new, higher-level open economic system to enhance its urban function and core competitiveness from all respects, becoming an innovative source and global hub for the integration of wisdom to lead the future.

1. Introduction

On September 25, 2015, at the United Nations Sustainable Development Summit, 193 countries officially signed the *Transforming Our World: the 2030 Agenda for Sustainable Development* (hereinafter referred to as the "2030 Agenda"), which is a framework document consistent with the *United Nations Millennium Declaration 2000* on global development process. This agenda clarifies 17 Sustainable Development Goals (SDGs), seeking to consolidate the Millennium Development Goals, ensure the rights of all people, and balance economic, social, and environmental development needs. China attaches great importance to the 2030 Agenda and was the first country to release *China's National Plan on Implementation of the 2030 Agenda for Sustainable Development* in September 2016, which provides guiding thoughts, general principles, and overall approaches for local governments at all levels to implement the 2030 Agenda according to their local realities.

Figure 1 17 SDGs of the 2030 Agenda

As one of the most international cities in China, Shanghai had a population of 24.8943 million residents living within an urban area of 6,340.5 square kilometers in 2021. Since the opening of its port for foreign trade in 1843, Shanghai has gradually developed into the largest financial, trade, and economic center in the Far East, a place where Eastern and Western civilizations converge, and also an important window for China's dialogue with the world. Since the founding of the People's Republic of China, Shanghai has related itself closer to other Chinese cities and provided better service for the economic and social development in China. And since the reform and opening up, Shanghai has played an active role in promoting innovation-driven and transformative development according to

national strategic plans, and kept trying to enhance its urban function and core competitiveness. In 2021, Shanghai's GDP ranked fourth globally, with a per capita GDP exceeding USD 26,000, reaching a level comparable to that of upper-middle-income developed countries and regions.

The pursuit of sustainable development is both a requirement from the central government to Shanghai and a goal that Shanghai always strives for. In 2010, the 41st World Expo with the theme of "Better City, Better Life" was hosted in Shanghai, dedicated to incorporating the concept of sustainable development into a "city for all". On the closing day of the 2010 World Expo (October 31), the *Shanghai Declaration*, which gathered the intellectual achievements of the Expo, was officially released, and the Chinese government initiated a proposal to designate October 31of each year as the "World Cities Day". This initiative was approved at the 68th Session of the United Nations General Assembly, and "World Cities Day" is the first international day proposed by China in the United Nations.

In 2018, Shanghai prepared a mid- and long-term development strategy document for 2035 - the *Shanghai Master Plan 2017-2035*, which describes the overall goal and vision of building Shanghai into "a modern socialist international metropolis with a global influence". Under this overall goal and vision, Shanghai also set three sub-goals: "a dynamic city of prosperous and innovation", "a charming city of happiness and humanity", and "a sustainable city that is green and resilient", in response to sustainable development goals from different perspectives.

Figure 2 Logical relations between SDGs and Shanghai's goal and vision

Under the goal framework of the 2030 Agenda, many cities around the world have initiated voluntary local reviews ("VLR") to periodically examine their progress and achievements towards the SDGs. At the invitation of UN-Habitat, Shanghai released the *UN SDGs Shanghai Voluntary Local Review 2021* ("*Shanghai VLR 2021*") at the 2021 China

Observance of World Cities Day & the First SDG Cities Global Conference, and based on this report joined the United Nations' flagship project for urban sustainable development goals, considering its participation in SDG projects as a regular task to push forward its sustainable development.

The year of 2022 is the second year of Shanghai voluntary local review, and also a crucial year for this work to be conducted in a mature and regular manner. The Shanghai VLR report for this year will put close focus on Shanghai's thematic practices in urban sustainable development and construction in recent years, further highlight its key achievements, and provide a continued, thematic and coordinated VLR.

Specifically, the 2022 report will continue to prioritize the review of the 17 SDGs and maintain the response to their logical framework, showing the structural continuity of Shanghai VRL 2021. The 2022 report will focus on the theme of "Green · Shared · Cooperation", evaluating what Shanghai has done to achieve "Clean Energy", "Fair Sharing", "Green Resilience", and "Cooperative Development" goals, and presenting Shanghai's key measures and typical cases for sustainable development. Moreover, from 2022, Shanghai will initiate an "1+X" VLR system of municipal and district achievements. In this system, "1" refers to the master report of municipal achievements, such as *Shanghai VLR 2022*, and "X" means sub-reports of district achievements, and in 2022, two districts, Songjiang and Fengxian, were selected to prepare sub-reports, achieving "municipality-district coordination".

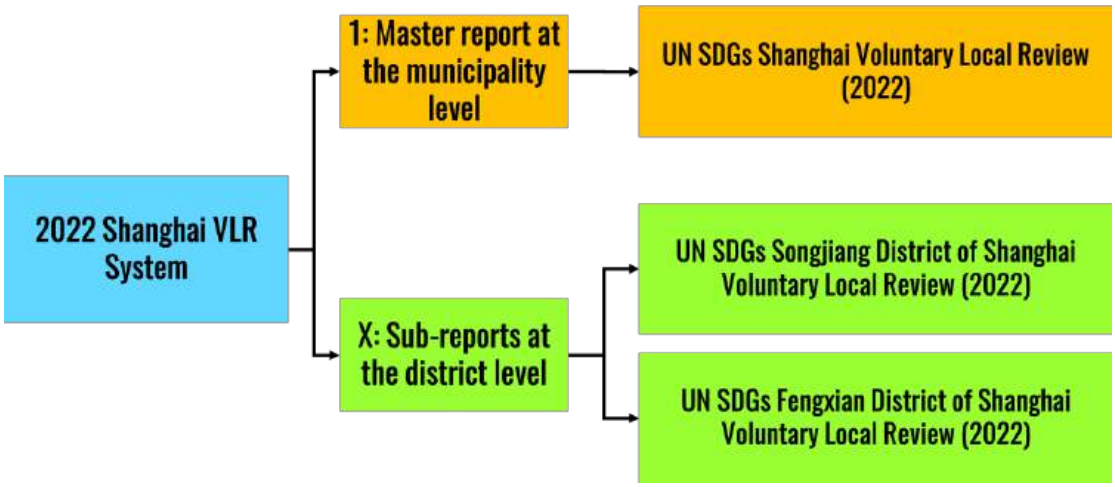


Figure 3 2022 Shanghai VLR result system

On October 31, 2022, the 2022 World Cities Day Global Observance and 2nd SDG Cities Global Conference, co-hosted by the Shanghai Municipal Government, the Ministry of Housing and Urban-Rural Development, and the UN-Habitat, was held in Shanghai, and *Shanghai VLR 2022* was released at the conference to share Shanghai's practices and experience in promoting megacity's sustainable development with the world.

2. Review Methods and Processes

The *Shanghai VLR 2022* was co-created by relevant departments of the Shanghai Municipal Government, professional research institutions, expert advisory committees and relevant social organizations. Multiple organizations worked together to prepare this report, with more than 20 government departments and social organizations invited to participate in specific assessments and to provide case studies that could demonstrate the latest practices and achievements; during the report preparation, many experts in different areas were consulted, forming an expert advisory committee composed of authoritative experts from different fields, such as energy and climate, planning and construction, ecological environment protection, and opening-up policies, responsible for the selection and discussion of priority review goals and related indicators; furthermore, emphasis was put on the analysis of multi-source data, leading to a comprehensive understanding of residents' satisfaction with urban development through various dimensions such as urban health check-up. The Preparation Team of the Shanghai VLR 2022 at the Shanghai Academy of Social Sciences is responsible for preparing this report.

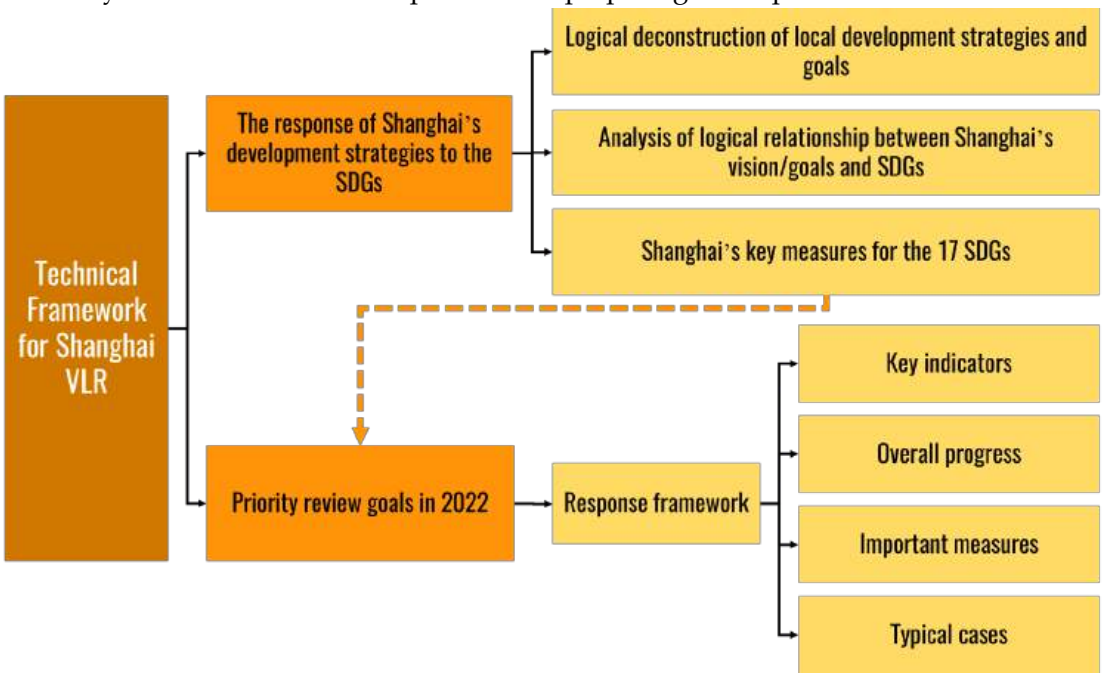


Figure 4 Technical framework for Shanghai VLR

The *Shanghai VLR 2022* was prepared with reference to the requirements in the *Handbook for the Preparation of Voluntary National Reviews* issued by UN DESA's Division

for Sustainable Development Goals and the *Guidelines for Voluntary Local Reviews* issued by UN-Habitat, as well as the *China's Voluntary National Review Report on Implementation of the 2030 Agenda for Sustainable Development* issued by the Ministry of Foreign Affairs of the People's Republic of China in June 2021, the *UN SDGs Shanghai Voluntary Local Review 2021* issued by the Shanghai Municipal Government, and evaluation results of other foreign cities related to the SDGs at the district level provided on the UN websites related to SDGs.

Figure 5 China's Voluntary National Review Report on Implementation of the 2030 Agenda for Sustainable Development (2021)

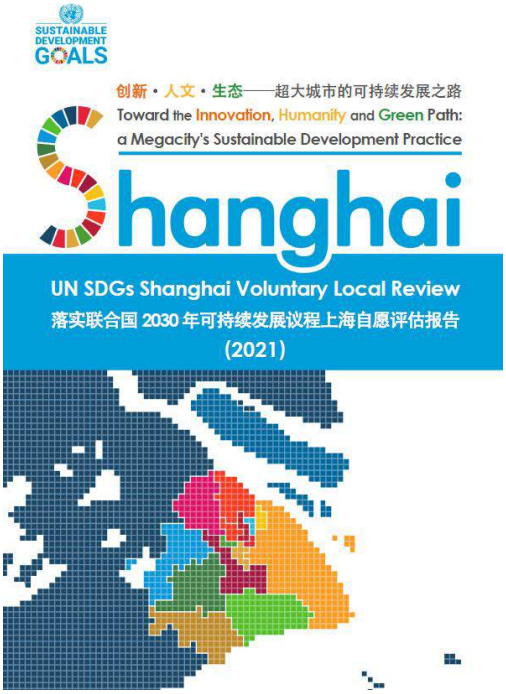


Figure 6 2021UN SDGs Shanghai Voluntary Local Review 2021

For review direction and indicator selection, the working group for Shanghai VLR 2022 built a framework for Shanghai VLR by referring to China's National Plan on Implementation of the 2030 Agenda for Sustainable Development, China's SDGs Indicator Establishment and Progress Report 2018, and local framework for Shanghai VLR 2022, as well as suggestions from government departments and relevant experts.

For what should be reviewed, the Shanghai VLR 2022 was prepared with reference to a series of existing research results, such as evaluations of the five-year plan for national economic and social development in Shanghai and the annual report of Shanghai's urban health check-up.

The 2022 VLR further reviewed the logical relationship between current development strategies and key measures of Shanghai and the 17 SDGs. Based on this, combined with the overall theme of the Shanghai VLR 2022, "Green · Shared · Cooperation", and considering the theme of World Cities Day 2022, "Act Local to Go Global", as well as Shanghai's recent key practices in sustainable development, it was determined that the 2022 VLR should be conducted from the following 4 perspectives: "Clean Energy", "Fair Sharing", "Green Resilience", and "Cooperative Development", which correspond to the four priority review goals, "SDG7 Affordable and Clean Energy", "SDG10 Reduced Inequalities", "SDG12 Responsible Consumption and Production", and "SDG17 Partnerships for the Goals", respectively.

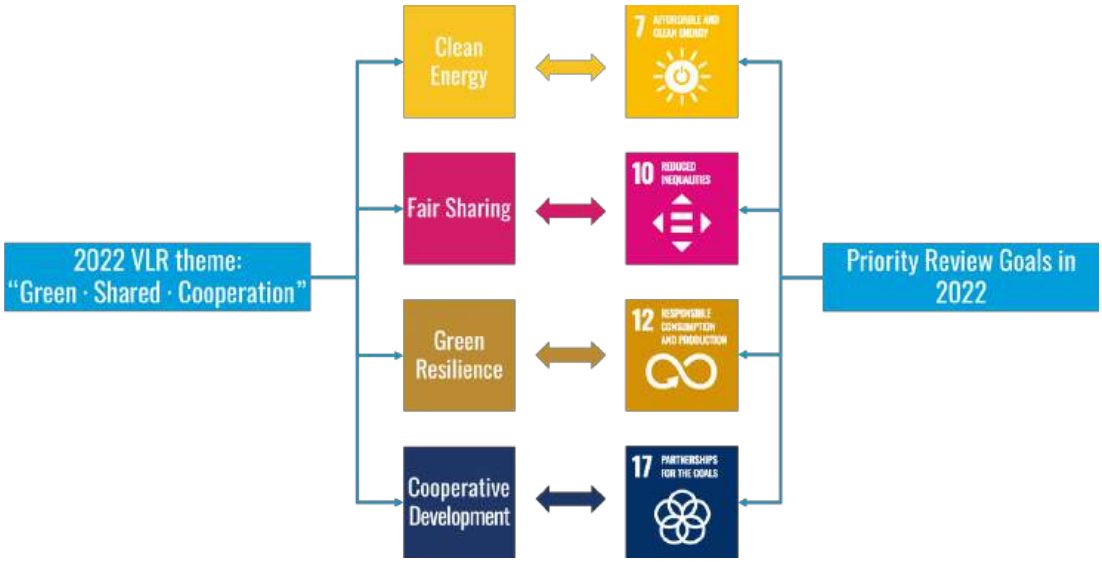


Figure 7 Relationship between 2022 VLR theme and priority review goals

Guided by the annual theme of "Green ·Shared ·Cooperation", the correspondence of SDG targets to the theme was examined, and highly relevant targets were selected as the priorities for review. See Table 1 below for details.

Table 1 The relationship between the annual report's theme of "Green ·Shared ·Cooperation" and SDG targets

Theme	SDG targets
Green★	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services.
Green★	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.
Green★	7.3 By 2030, double the global rate of improvement in energy efficiency.
Green★ Cooperation★	7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.
Green★ Cooperation★	7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support.
Shared★	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average.
Shared★	10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
Shared★	10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.
Shared★	10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies.
Green★	12.1 Implement the *10-Year Framework of Programmes on Sustainable Consumption and Production Patterns*, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.
Green★	12.2 By 2030, achieve the sustainable management and efficient use of natural resources.
Green★	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Green★	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
Cooperation★	17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda.
Cooperation★	17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access.
Cooperation★	17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development.
Cooperation★ Shared★	17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.
Cooperation★ Shared★	Target 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

3. Overview of Shanghai's Responses to SDGs

Shanghai's Responses to SDGs

In the *Shanghai Master Plan* (2017-2035), Shanghai aims to become "a dynamic city of prosperous and innovation", "a charming city of happiness and humanity", and "a sustainable city that is green and resilient" ("2035 Goals"). On the road towards its overall goal of "becoming a modern socialist international metropolis with world influence", Shanghai makes continued efforts for further development in its economy, society, environment, culture, and governance. Under a logical framework, Shanghai focuses on the following development goals: "a more dynamic prosperous innovation city" by emphasizing its economic, social and cultural development; "a more attractive happy humanistic city" by emphasizing its social, cultural development, and urban governance; and "a more sustainable resilient eco-city" by emphasizing its economic development, environment protection and urban governance.

The concept of sustainable development has always been integrated into Shanghai's practices to develop its economy, society, environment, culture, and urban governance. For economic development, Shanghai focuses on energy development, employment and economic growth, emerging industries, promoting common development, and responsible consumption and production; for social development, it focuses on poverty alleviation, food security, improving health levels, and promoting educational equity and gender equality; for environment protection, it focuses on ensuring water supply security, developing new energy resources, coping with climate change, protecting water environments and biodiversity, and protecting land environments and biodiversity; for cultural development, it focuses on the high-quality development of cultural education, creating a gender-equal cultural environment, technological innovation and cultural creativity, community building, and regional cooperation; and to improve its urban governance, Shanghai focuses on reducing regional development disparities, promoting community governance, developing circular production, ensuring fairness and justice, and promoting regional coordinated governance.

This report provides a logical correspondence between Shanghai's 2035 Goals and the 17 SDGs. The 2022 Shanghai VLR is carried out on the basis of this framework, and the reviewed indicators are closely related to Shanghai's achievements in economy, society, environment, culture and urban governance.

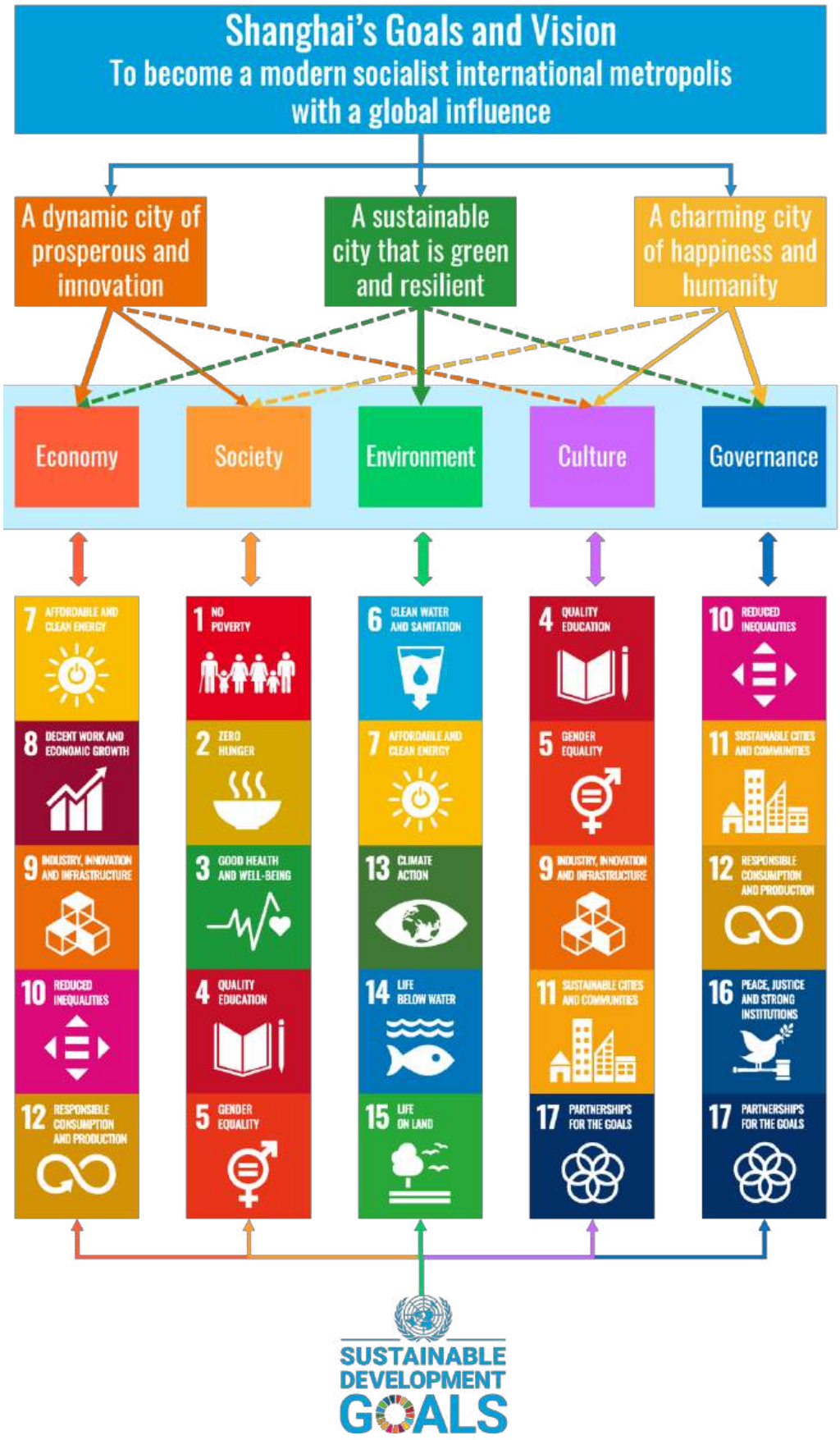


Figure 8 Logical correspondence between Shanghai's Goals and the SDGs

- **A dynamic city of prosperous and innovation**

To become a more dynamic prosperous innovation city, Shanghai makes the following efforts: enhance its core functions as a global resource allocator, source of technological innovation, leader in high-end industries, and gateway to openness, and consider technological innovation as the driving force to build a collaborative industrial system for coordinated development (SDG 9, SDG 12); develop a more open international hub by enhancing Shanghai' s international and domestic service radiating power and improving its capability in global resource allocation (SDG 17); strengthen the support by a comprehensive, convenient and efficient transportation and modern infrastructure system (SDG7, SDG9); create a more attractive environment for both employment and entrepreneurship (SDG 8); enable all residents to enjoy the fruits of development (SDG 1, SDG 2, SDG 10).

- **A charming city of happiness and humanity**

To become a more attractive happy humanistic city, Shanghai aims to meet the people's aspirations for a better life by: creating livable, business-friendly, educational, and tourist-friendly communities, perfecting the basic public service system that is fair, shared, flexible, and inclusive (SDG 3, SDG 4), and improving the housing supply system that is affordable and sustainable (SDG 11); stimulating its cultural vitality, protecting local historical and cultural heritage, highlighting urban and rural characteristics, and enhancing the city's cultural soft power (SDG 4); providing more support for vulnerable groups, and achieving social fairness and justice (SDG 5, SDG 10, SDG 16).

- **A sustainable city that is green and resilient**

To become a more sustainable resilient eco-city, Shanghai makes the following efforts: actively address global challenges such as climate change (SDG 13); transform production and lifestyle patterns (SDG 12); improve ecological quality from all respects and construct a multi-level, networked, and functionally integrated ecological space system (SDG 6, SDG 14, SDG 15); create an environmental governance system where the government works as a leader, enterprises as implementers, and social organizations and the public as participants (SDG 16, SDG 17); improve urban security and optimize the basic, functional, and networked urban infrastructure system (SDG 9); enhance the capacity and service quality of municipal infrastructure for urban operation, and improve the city's ability and resilience to combat disasters (SDG 11, SDG 12).

Shanghai's Important Measures to Drive SDGs

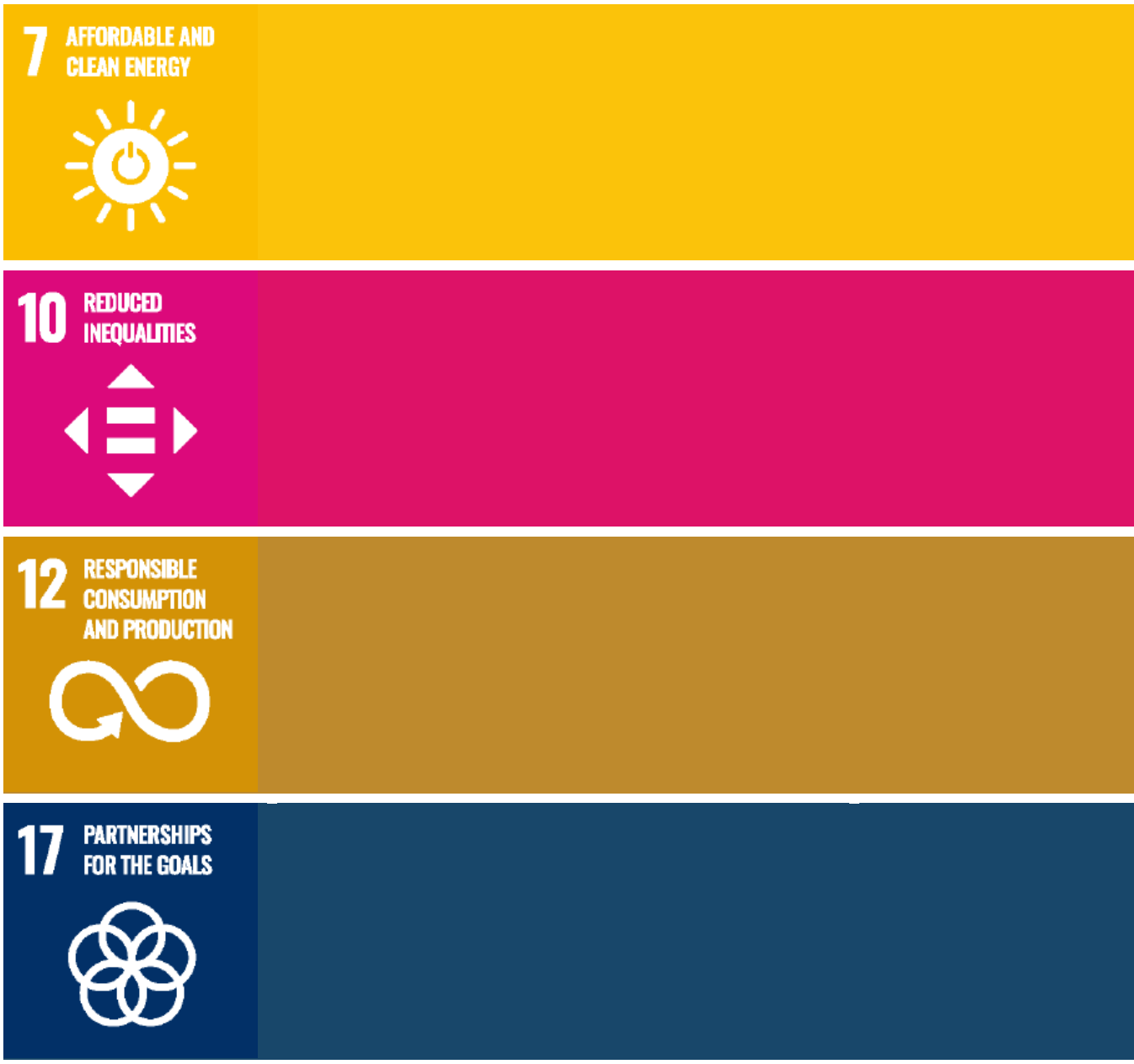
In comparison with the 17 SDGs, Shanghai has made significant progress in sustainable development in recent years and has taken important measures for each SDG (as shown in Table 2). The Shanghai VLR 2022 gives priority to the review of the 4 selected SDGs (SDG 7 Affordable and Clean Energy; SDG 10 Reduced Inequalities; SDG 12 Responsible Consumption and Production; and SDG 17 Partnerships for the Goals).

Table 2 Shanghai's important measures for the SDGs

SDGs	Shanghai's measures
1 NO POVERTY	● Improve the system of assistance for disadvantaged groups ● Scientifically elevate the level of social assistance and security ● Provide paired assistance to other regions in China to help them eliminate poverty
2 ZERO HUNGER	● Boost high-quality development of modern agriculture ● Develop germplasm technology and create a favorable environment for the seed industry ● Abide by the red line of arable land protection ● Stop food waste from both consumption and supply
3 GOOD HEALTH AND WELL-BEING	● Boost high-quality coverage of medical insurance ● Improve the public health emergency system ● Control pregnancy risks for pregnant women ● Implement clean air action plan ● Strictly control tobacco use ● Provide more effective prevention and control for potential traffic dangers
4 QUALITY EDUCATION	● Promote equal allocation of resources for compulsory education ● Provide better childcare services ● High-quality development of vocational education ● Targeted coverage of special education ● Build a network for community education ● Establish a lifelong education credit bank
5 GENDER EQUALITY	● Promote full coverage of maternal and infant facilities in public areas ● Help women obtain high-quality employment ● Provide comprehensive support for women's employment and entrepreneurship ● Set up a gender equality consulting and evaluation committee
6 CLEAN WATER AND SANITATION	● Strengthen ecological protection of drinking water sources ● Promote the renovation and transformation of water supply pipelines and secondary water supply facilities to make them endurable ● Strengthen the joint prevention and control of water pollution in the Yangtze River Delta region
7 AFFORDABLE AND CLEAN ENERGY	● Develop renewable green energy ● Develop clean energy-natural gas ● Optimize the energy structure ● Promote low-carbon and efficient use of energy
8 DECENT WORK AND ECONOMIC GROWTH	● Improve the vocational guidance service system ● Encourage innovation and entrepreneurship ● Facilitate employment of young people ● Strengthen employment security for vulnerable groups ● Promote stable development of enterprises

	● Accelerate urban digital transformation ● Optimize the sources of scientific and technological innovation ● Enhance the leading role of high-end industries ● Promote the construction of new infrastructure
	● Ensure that everyone enjoys a decent and dignified life ● Provide high-quality public services for all ● Create a wonderful rural life for all ● Build a happy city friendly to all
	● Continue to accelerate the transformation of old areas and old houses ● Build a city with high-quality public transportation ● Promote the construction of a sponge city from all respect ● Boost green buildings and their energy-saving development ● Improve the effectiveness of grassroots governance
	● Make more efforts to become a "zero-waste city" ● Develop an eco-friendly circular economy ● Boost economic restructuring and green production ● Make more efforts to become a safe and resilient city
	● Enhance the impact evaluation of climate change on the city ● Strengthen the capabilities in meteorological disaster prevention ● Accelerate the progress towards "carbon peak", and build a low-carbon and eco-friendly city ● Foster carbon trading platforms and markets ● Promote the use of new energy vehicles (NEVs)
	● Implement coastal ecosystem restoration projects ● Improve the capabilities in marine environment monitoring ● Impose strict restrictions on planned land reclamation and regional sea use management ● Improve the capabilities in emergency response to marine disasters
	● Yangtze River estuary wetland protection and governance ● Take actions for biodiversity protection ● Coordinate the construction of country parks across the city ● Risk management and remediation for soil pollution on construction land ● Promote the classification of domestic waste
	● Enhance urban governance through whole-process people's democracy ● Implement a negative list system for market access ● Build a "one-stop" smart government ● Allow overseas arbitration institutions to set up their offices in Lingang New Area
	● Establish closer international partnerships ● Facilitate smooth and close international economic and trade development ● Strengthen domestic cooperation to achieve joint development ● Create a platform for "World Cities Day"

4. 2022 Priority Review Goals



SDG7: Affordable and Clean Energy

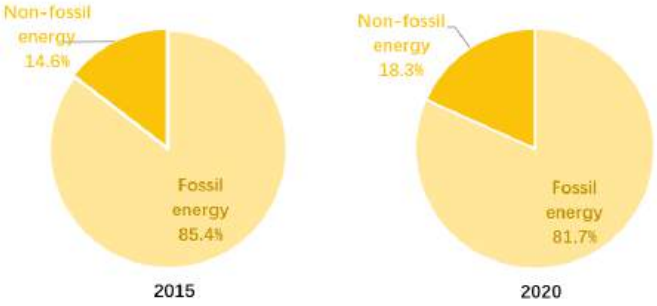
Under the goal of "Clean Energy", Shanghai strives to develop renewable green energy such as photovoltaics and wind power, gradually increases the proportion of utilized renewable energy, and continuously promotes the introduction of clean energy like natural gas and infrastructure construction. It aims to provide reliable and clean energy services for all, and uses scientific and technological innovation to boost the continuous optimization and adjustment to energy structure and the efficient use of low-carbon energy.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG7
Develop renewable green energy	Develop green photovoltaic energy	Fishery-Photovoltaic Complementary Project in Chenjia Town, Chongming District	► Cumulative installed capacity for green photovoltaic energy	7.2
	Construct offshore wind power projects	Offshore Wind Power Demonstration Project near Donghai Bridge, Shanghai		
Develop clean energy - natural gas	Lay out a network of natural gas pipelines from a regional perspective		► Number of natural gas users ► Supply volume from natural gas network	7.1
	Scientific and technological innovation empowers efficient and safe operation of pipeline networks.			
	Ensure the construction of natural gas terminals	LNG Terminal Project in Wuhaogou, Pudong New Area		
Optimize the energy structure	Reduce the consumption of fossil energy		► Proportion of non-fossil energy in total energy consumption ► Number of NEVs promoted	7.2
	Transform the energy use pattern and structure in key sectors	NEV Industry in Jiading District		
	Respond to energy demand change by meteorological and other technical means	Assessment of the Impact of Climate Change on Energy Consumption in Shanghai		
Promote low-carbon and efficient use of energy	Improve energy efficiency in industrial enterprises		► Energy consumption per unit of GDP ► Energy consumption per unit of industrial value-added ► Volume of spot transactions in carbon markets	7.3 7.a
	Improve energy efficiency with new technologies	Shanghai Hangzhou Bay Economic and Technological Development Zone Improves Energy Efficiency		
	Upgrade traditional high-energy-consumption industries to green ones			
	Develop green ultra-low energy buildings (ULEBs)	Permanent Site for the World Laureates Forum in Lingang New Area, China (Shanghai) Pilot Free Trade Zone		
	Launch a pilot carbon emissions trading program	Shanghai Explored and Built a Carbon Emission Trading Market		

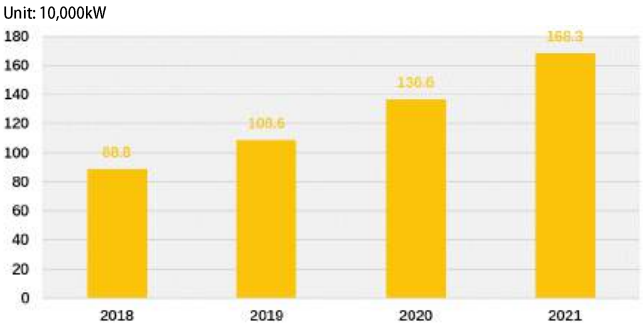
Key Indicators

Proportion of non-fossil energy in total energy consumption



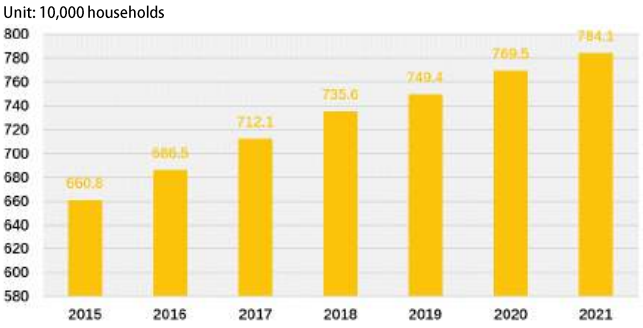
From 2015 to 2020, the proportion of non-fossil energy in total energy consumption increased by **3.7%** from 14.6% to **18.3%**.

Cumulative installed capacity for green photovoltaic energy



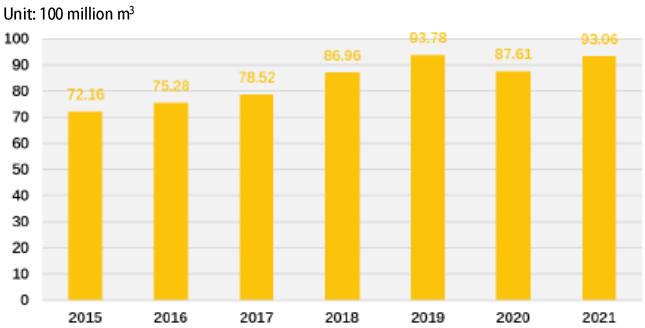
During the period of 2019-2021, Shanghai's annual average increase in installed capacity for green photovoltaic energy was **265,000 kW**.

Number of natural gas users



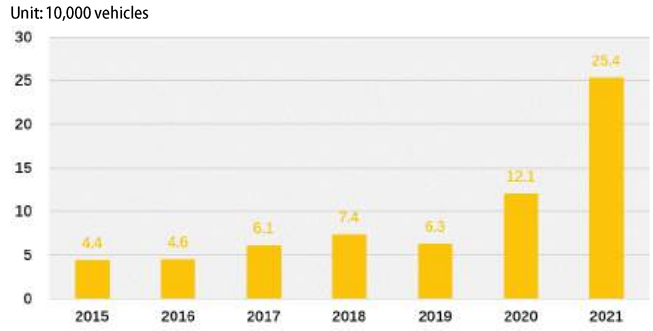
From 2015 to 2021, the number of natural gas users in Shanghai increased by **18.7%** from 6.608 million households to **7.841 million households**.

Supply volume from natural gas network



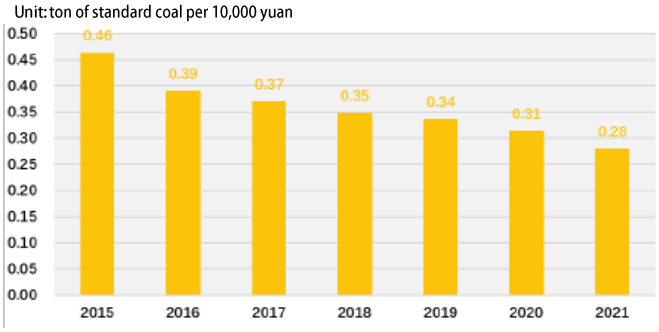
From 2015 to 2021, the supply volume from natural gas network increased by **29.0%** from 7.216 billion m^3 to **9.306 billion m^3**.

Number of NEVs promoted



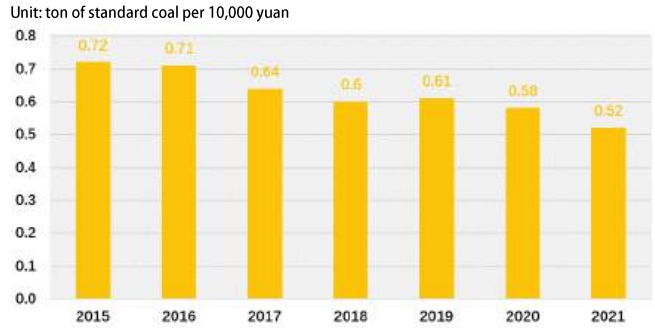
By the end of 2021, the cumulative total of NEVs promoted in Shanghai was **678,000**.

Energy consumption per unit of GDP



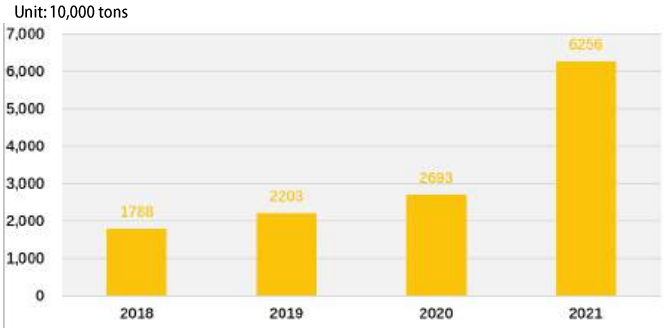
From 2015 to 2021, the energy consumption per unit of GDP in Shanghai decreased by **39%** from **0.46** tons of standard coal per 10,000 yuan to **0.28** tons of standard coal per 10,000 yuan.

Energy consumption per unit of industrial value-added



From 2015 to 2021, the energy consumption per unit of industrial value-added in Shanghai decreased by **28%** from **0.72** tons of standard coal per 10,000 yuan to **0.52** tons of standard coal per 10,000 yuan.

Volume of spot transactions in carbon market



In 2021, the total transaction volume of spot products in Shanghai carbon emission trading market was 62.5592 million tons, a year-on-year increase of **132.33%**; the total transaction amount was RMB 1.424 billion, a year-on-year increase of **230.39%**.

Major Progresses

- **Steadily growing installed capacity for new energy and continuously improved technology**

Shanghai works hard to develop photovoltaic power, wind power and other green energy. Given the realities of natural resources and built environment, it develops new energy based on an appropriate plan, completing many high-quality projects, including fishery-photovoltaic complementary, subway based photovoltaic, and water plant based photovoltaic projects, as well as the offshore wind power demonstration project near Donghai Bridge, Shanghai. As of the end of 2021, the cumulative installed capacity for photovoltaic energy in Shanghai was 1.683 million kW, an increase of nearly 465% compared to 2015. Thanks to its constantly improved technologies for new energy and independent innovation capability in key technologies, Shanghai has owned domestically leading technologies to prepare crystalline silicon cells and thin-film cells.

- **More reliable sources of natural gas and more resilient supply network**

Shanghai continues to build a reliable natural gas system. In 1999, natural gas was supplied from Pinghu Oil & Gas Field in the East China Sea to Pudong Shanghai, marking the beginning of Shanghai's natural gas development history. In 2004, the West-East Gas Pipeline provided natural gas for Shanghai, symbolizing a period of rapid development of natural gas in Shanghai, where all pipeline gases were replaced with natural gas in 2015. With more than 20 years of planning and hardwork, Shanghai has formed a safe and efficient urban gas network, which can receive natural gas from 7 sources at the same time. In Shanghai, the gas supply guarantee days exceed 20 days, the number of gas users is about 7.8 million households, the length of pipeline network is about 33,000 km, the gas supply reliability reaches a first-class level in China, and the proportion of natural gas in primary energy consumption is up to 12%.

- **Continuous adjustment to energy structure and notably increasing proportion of renewable energy**

Shanghai always seeks to optimize energy structure, reduce the consumption of coal and other fossil fuels, and increase the proportion of clean energy like natural gas, photovoltaic power, and wind power in total energy consumption. From 2015 to 2020, the proportion of coal consumption in Shanghai's primary energy consumption decreased from 37% to 31%, the proportion of natural gas increased from 10% to 12%, and the proportion of non-fossil energy increased from 14% to 18%.

- **Continuously improved industrial energy efficiency and significant results of energy-saving renovation**

In 2016-2020, Shanghai's total industrial energy consumption decreased by 3.56 million tons of standard coal, and the cumulative energy consumption per unit of

industrial value-added decreased by 16.9%; in Shanghai, 413 key energy-consuming units were encouraged to establish an energy management system, energy-saving potential of 1.1 million tons of standard coal was tapped into, 421 energy-saving renovation projects were implemented, and energy saving of 423,000 tons of standard coal was achieved; moreover, nearly 6,000 projects were completed to optimize industrial structure, and energy consumption was reduced by about 1.5 million tons of standard coal. Shanghai had witnessed a sustained decline in its energy consumption per industrial product, and played a leading role in China with respect to coal consumption for power generation, comprehensive energy consumption per ton of steel, energy consumption per chip, and energy consumption per passenger car.

- **Synergy of promoting new green buildings and renovating existing buildings**

All new buildings in Shanghai must meet the standards for green buildings, while old buildings are to be renovated into green and low-carbon houses; the public are provided with more small green spaces and vertical greening on streets and alleys, and energy-saving, water-saving, and intelligent renovation designs are encouraged for existing buildings. Shanghai has established an online energy consumption monitoring system which covers 900 key energy-consuming units, and an online monitoring platform for energy consumption covering 2,100 large public buildings. Since 2008, Shanghai has set up special funds in energy conservation and emission reduction, formulated over 50 documents containing implementation rules and over 200 energy management standards and guidelines, and established a closed-loop energy consumption management system from energy-saving review to acceptance inspection for new construction projects.

- **Gradually forming a sound energy standard system**

Shanghai is gradually improving its energy standard system, where more than 120 local standards have been prepared and revised, and these standards are related to energy-saving design and operation, online energy consumption monitoring, energy-saving renovation, energy-saving audit, restrictions on energy consumption per product, carbon emissions, and data center management, forming a relatively perfect local energy standard system. *Specification for Energy-saving Design of Data Center* and *Energy Consumption Limit for Data Center* are known as leading standards in China.

Important Measures

(1) Develop renewable green energy

- **Develop green photovoltaic energy**

Shanghai makes great efforts to develop green photovoltaic energy. Based on the available resources in each district, it sets reasonable development goals and gives priority to integrated development of photovoltaic facilities with new buildings in project approval and other processes. Since 2014, Shanghai has implemented stable and long-term support

policies for photovoltaic industry, making it an energy sector with the largest number of participating entities and projects in Shanghai. At the same time, power companies fully consider the need for a high proportion of distributed photovoltaic access to the grid and actively provide optimization, control, and operation management services for connection of photovoltaic projects to the grid. They take such measures as promoting typical designs, providing green channels, and accepting online applications, to accelerate photovoltaic connection to the grid. The State Grid's cloud platform for new energy is relied upon to monitor the construction progress and operation status of renewable energy projects in real-time.

Case 1 Fishery-Photovoltaic Complementary Project in Chenjia Town, Chongming District

Located in Chenjia Town, Chongming District, Shanghai, the Fishery-Photovoltaic Complementary Project covers a total area of about 3,180 mu (≈212 ha.), and has an installed capacity of 110 MW. It was connected to the grid on November 29, 2020. This project is China's first integrated demonstration project featuring fishery-photovoltaic complementarity, ecological aquaculture, sightseeing, leisure, and entertainment. It combines photovoltaic energy with innovative elements in production, education, and research to realize fish pond aquaculture, ground planting, and aerial power generation, making full use of land resources and increasing the economic value of land per unit area. High-efficiency monocrystalline solar PV modules are used in this project and it produces an average annual power generation of 132 million kWh after being put into operation. Compared with a coal-fired power plant with the same power generation capacity, it can save about 36,500 tons of standard coal annually. While generating green power, the project combines ecological aquaculture with photovoltaic power generation and uses photovoltaic power to regulate water temperature for high-end aquaculture, further improving economic benefits and achieving great fruits from "fishery, power generation, and environmental protection". The project contributes to increasing the proportion of clean energy in Shanghai's energy consumption and helping to build a world-class eco-island in Chongming.

Figure 9 A picture of Fishery-Photovoltaic Complementary Project in Chongming District

- **Construct offshore wind power projects**

Shanghai leverages its geographical and territorial advantages to develop offshore

wind power projects. It has established the theories and methods for optimizing the electrical systems for offshore wind farms, providing theoretical support for future offshore wind power plans with more turbines and larger scales. Currently, Shanghai has built and is still constructing large-scale offshore wind power bases, including those projects located near or in Donghai Bridge, Lingang, and Fengxian. One of these offshore wind farms is located in the vicinity of Donghai Bridge in the southeast of Shanghai. In this project, a high-pile bearing platform foundation is applied innovatively to overcome technical difficulties such as anti-collision of the pile foundation under navigation environment and low fatigue bearing capacity of concrete under dynamic operation environment.

Case 2 Offshore Wind Power Demonstration Project near Donghai Bridge, Shanghai

As the first Chinese self-designed offshore wind power project in Asia, this wind farm is located in Shanghai's offshore area, 1-4 km east of Donghai Bridge and 8-13 km south of the Pudong New Area shoreline, with a total installed capacity of 102 MW. As of the end of 2021, this project produced a total power generation of about 2.543 billion kWh for the grid, saved about 780,000 tons of standard coal, and reduced carbon dioxide emissions by about 2.13 million tons. This successfully implemented project is a technological breakthrough in China's offshore wind power exploration, establishing an independent offshore wind power industry chain in China, and laying a technical foundation for the development of large-scale offshore wind farms.

The project realized five innovations and obtained 44 patent authorizations, for which 102 papers were published and 14 standards were formulated. It also won several honors, including the Second Prize of National Science and Technology Progress, the First Prize of Chinese Electric Power Science and Technology Progress, the National Quality Engineering Award, and the First Prize of Shanghai Science and Technology Progress. Through exploration and verification of engineering technologies, a full set of technical plans for development design, construction organization and operation management were prepared for the project.

Figure 10 Offshore Wind Farm near Donghai Bridge, Shanghai

(2) Develop clean energy-natural gas

- **Lay out a network of natural gas pipelines from a regional perspective**

A master plan for natural gas trunk pipeline system across Shanghai and specific plans for gas pipelines in each district have been formulated as required, and will be evaluated and revised from time to time. They are deeply integrated with the Shanghai master plan and district-specific plans to lead the construction of a natural gas network in Shanghai. At the same time, for integrated development of the Yangtze River Delta, Shanghai has invested in constructing the natural gas pipelines interconnected with Zhejiang and Jiangsu provinces, so as to enhance the mutual assistance by providing natural gas resources. At present, Shanghai has prepared gas pipeline plans specific to Lingang New Area, Pudong New Area, five new cities (suburban districts of Jiading, Songjiang, Qingpu, Fengxian, and Nanhui), and the Yangtze River Delta demonstration zone, to accelerate the layout of natural gas pipelines and improve the supply capacity in key areas and lead to a balanced and coordinated supply of natural gas among different areas, achieving the supply reliability up to 99.99%.

- **Technological innovation empowers efficient and safe operation of pipeline networks**

Shanghai constantly innovates technological methods in planning, gas source construction, natural gas transmission and distribution, pipeline construction, safe operation, and information management to enhance safety and efficiency. It applies key achievements to related projects based on actual situation, and creates a local standard titled *Service Specification for Natural Gas Based Distributed Energy Systems and Projects* (2018) (DB31/T 1081-2018). In recent years, Shanghai has utilized IIoT technologies such as SCADA, GIS, BDS, and UAV inspections to build an intelligent pipeline network. Its main pipe network has a monitoring rate of 100%, and the transmission and distribution pipeline network over 80%, and 80% of intelligent terminal metering are covered, all of which contribute to more efficient operation of pipelines.

- **Ensure the construction of natural gas terminals**

Shanghai keeps trying to increase the necessary supply of natural gas and to optimize energy structure, resulting in a joint supply system supported by "6+1" gas sources and a C-shaped urban trunk pipeline. In the "6+1" gas sources based supply system, "6" includes West-East Gas Pipeline Line 1 and Line 2, Yangshan LNG terminal, Sichuan-East Gas Pipeline, East China Sea LNG terminal, and West-Chongming Gas Pipleline, and "1" means the backup LNG terminal in Wuhaogou. According to the national planning for natural gas pipeline construction, Shanghai provides support for the construction of West-East Gas Pipeline Line 1 and Line 2 as well as Sichuan-East Gas Pipeline, to ensure that natural gas terminals are installed in Shanghai. So far, 5 natural gas terminals have been completed, including West-East Gas Pipeline Line 1 and Line 2, Sichuan-East Gas Pipeline Natural Gas Terminal, and Shanghai LNG Terminal.

Case 3 LNG Terminal Project in Wuhaogou, Pudong New Area

In 1999, natural gas was supplied from Pinghu Oil & Gas Field in the East China Sea to Pudong Shanghai, marking the beginning of Shanghai's natural gas development history. Wuhaogou LNG Terminal was built to receive natural gas from Pinghu Oil & Gas Field in the East China Sea. Established in 1996, Wuhaogou LNG Terminal uses the natural gas from Pinghu Oil & Gas Field for emergency and peak shaving supply of natural gas in Shanghai, and it is the first LNG reserve station in China. This terminal is equipped with a 20,000 m^3 LNG storage tank, 2 vaporizers with an hourly gasification capacity of 70,000 Nm^3, and 2 BOG compressors. It covers a total area of 417 mu (≈28 ha.). The project was constructed and invested by Shanghai Gas and is managed by its subsidiary for natural gas pipeline management.

With the arrival of natural gas via the West-East Gas Pipeline and natural gas being applied more widely in Shanghai from 2003, Shanghai Gas expanded the Wuhaogou LNG Terminal in 2006 to ensure the safe and stable supply of natural gas in Shanghai. The first phase of this expansion project was completed and put into operation in 2008, increasing its LNG storage capacity by 100,000 m^3, hourly gasification capacity by 240,000 m^3, and installing a LNG dedicated terminal on the original basis. This project set a precedent for the unloading of liquefied natural gas at inland ports in China.

As natural gas was applied more and more widely in Shanghai, the conflicts regarding safety supply and emergency support of urban natural gas had become increasingly prominent. Therefore, the Wuhaogou LNG Terminal underwent its second expansion in 2014. The second phase was completed and put into operation in 2017, increasing its storage capacity to 320,000 m^3, hourly gasification capacity to 510,000 m^3, and natural gas emergency reserve capacity to 15 days.

Figure 11 LNG Terminal in Wuhaogou, Pudong New Area

(3) Optimize the energy structure

- **Reduce the consumption of fossil energy**

Shanghai actively responds to the national goal on "carbon peak" and continues to optimize energy structure. In recent years, Shanghai has strictly controlled the total consumption of coal, completed the replacement of clean energy for small and medium-sized coal-fired boilers and centralized heating coal-fired boilers, and reduced the total coal consumption from over 61 million tons in 2011 to 43 million tons in 2020. Currently, non-fossil energy accounts for about 18% of primary energy consumption in Shanghai. In 2021, Shanghai increased the installed capacity for wind and photovoltaic power by 560,000 kW, about twice the capacity added in 2020. For natural gas energy, Shanghai is accelerating the expansion of LNG terminals.

Figure 12 New energy taxis

- **Transform the energy use pattern and structure in key sectors**

In the industrial sector, Shanghai has formulated an implementation plan for peak carbon emissions in industry to promote the upgrading of traditional industrial production methods and improve the low-carbon utilization of energy and materials. In construction engineering, all newly-built buildings in Shanghai are required to meet green building standards, and new energy is promoted in building lighting and other aspects. In transportation, Shanghai has implemented a strategy for prioritizing public transportation, accelerated the replacement of fuel vehicles with new energy vehicles, and the city's first oil-hydrogen fueling station was put into operation in December 2021. As of the end of 2021, Shanghai had promoted more than 678,000 NEVs, nearly 16,000 new energy taxis, 14,700 new energy buses, 4,000 LNG container trucks, and 100 LNG inland ships.

Figure 13 First oil-hydrogen fueling station in Shanghai

Case 4 NEV Industry in Jiading District[1]

Since 2015, Jiading District has focused on the industrial cluster of NEVs and intelligent vehicles, aiming to become an international center for research, testing, marketing, and production of NEVs and a base for high-tech industrialization of key components, and striving is to further expand and strengthen its NEV industry. From 2016 to 2019, the output value of Jiading's NEVs and intelligent vehicles was RMB 5.53 billion, 8.13 billion, 11.14 billion, and 11.33 billion, respectively, with an average annual growth rate of 18.4%. In 2019, Jiading became the largest zone for NEV industry in Shanghai, accounting for nearly 50% of the city's total output value of NEVs.

Jiading has fully tapped the potential of the automotive industry and accelerated its transformation and upgrading. It has made active preparations for electrification, intelligence, networking, and sharing of automobiles, bringing new drivers to its automotive industry. Jiading has taken the initiative to adapt to the trend of industrial transformation and promote the electrification of automobiles, becoming an "innovation center" for the NEV industry in Shanghai and even in China. In recent years, SAIC Group, Shanghai Hydrogen Propulsion Technology ("SHPT"), REFIRE Group and many other companies have successively released new-generation fuel cell stacks and vehicles, and this is one of the results of Jiading's hardwork as the innovation center.

Since 2016, Jiading has worked hard on the hydrogen fuel cell vehicle industry, attracting many industry-leading companies to settle in this district. Nowadays, a characteristic industrial cluster of fuel cell vehicles has been initially formed, gathering leading companies in the upstream and downstream of hydrogen energy. As of the end of July 2020, there were up to 1,400 hydrogen fuel cell vehicles promoted and applied in Shanghai, including 1,000 fuel cell cargo trucks at least and 350 fuel cell buses, as well as some fuel cell passenger cars and heavy-duty trucks, with a total mileage of more than 16 million km, and 80% of them were operated in Jiading as demonstrative

[1] Source: Official Account of Jiading Publicity Department

vehicles.

In addition to accelerating technological innovation, full use of big data has also become a driving force for the development of the NEV industry. Shanghai Electric Vehicle Public Data Collecting, Monitoring and Research Center, located in Shanghai International Automobile City, Jiading District is a local monitoring platform with the highest proportion of NEV access worldwide at the city level, currently covering more than 340,000 NEVs from 83 car manufacturers (related to 615 models).

- **Respond to energy demand change by meteorological and other technical means**

In 2021, the Ministry of Ecology and Environment of the PRC issued the *Work Plan for Pilot Carbon Monitoring and Evaluation*. Shanghai, as one of the 8 pilot cities for comprehensive carbon monitoring and evaluation in China, focused on monitoring the concentrations of major greenhouse gases in the ground-level atmosphere and explored top-down methods for carbon emission inversion, providing verification and reference for the calculation of urban carbon emissions. Since 2018, in response to climate change and to serve the integrated green and low-carbon development of the Yangtze River Delta, Shanghai has selected the Chongming Dongtan station to establish a greenhouse gas observation system and carry out high-precision real-time online monitoring of CO_2, CH_4, and N_2O in line with the technical requirements of China Meteorological Administration for regional atmospheric background observation stations. In January 2019, the Chongming Dongtan atmospheric observation station ("Chongming Dongtan station") in Shanghai started to observe greenhouse gas (CO_2, CH_4, N_2O), and in 2021, it was selected as a national-level applied meteorological observation station (for greenhouse gas). The greenhouse gas observation data from the Chongming Dongtan station will provide a foundation for CO_2 emission calculation, carbon sink investigation and reserve estimation, monitoring and evaluation of the effect of carbon sink on eco-environment protection and restoration, and it will also provide evaluation basis and basic data for regional greenhouse gas research and applications.

Case 5 Assessment of the Impact of Climate Change on Energy Consumption in Shanghai

Climate change has a significant impact on urban energy consumption, with weather events such as heavy rain and flooding, and freezing temperatures causing frequent equipment failures. Temperature fluctuations have a significant impact on urban electricity and gas consumption, and extreme weather events such as typhoons, heavy rain, cold waves, and thunderstorms will cause a significant adverse effect on power transmission and distribution, natural gas transportation and supply. This case study focuses on the electricity and gas consumption in Shanghai, assessing the impact of climate change on energy consumption and providing related strategies and suggestions.

Summer heatwaves and winter cold snaps in Shanghai result in a significant increase in electricity and gas consumption, respectively. Temperature has a significant impact on energy consumption in Shanghai either in summer or in winter, and there is a close correlation between electricity and gas consumption and temperature change during these seasons. In summer, Shanghai's electricity consumption is closely related to temperature; specifically, high temperatures result in increased consumption, while lower temperatures lead to decreased consumption. To

ensure urban energy supply, which is affected by climate change, relevant departments in Shanghai have joined forces to provide energy demand forecasting services. Energy consumption trends in Shanghai have been estimated on the basis of predicted future climate change, and a special energy plan has been included in the 14th Five-Year Plan. In response to extreme heatwaves, cold snaps, and excessive electricity loads, Shanghai has conducted emergency drills for electricity grids and gas supply, strengthening its organizational systems for emergency energy and material supply, supply guarantee frameworks, and information platforms.

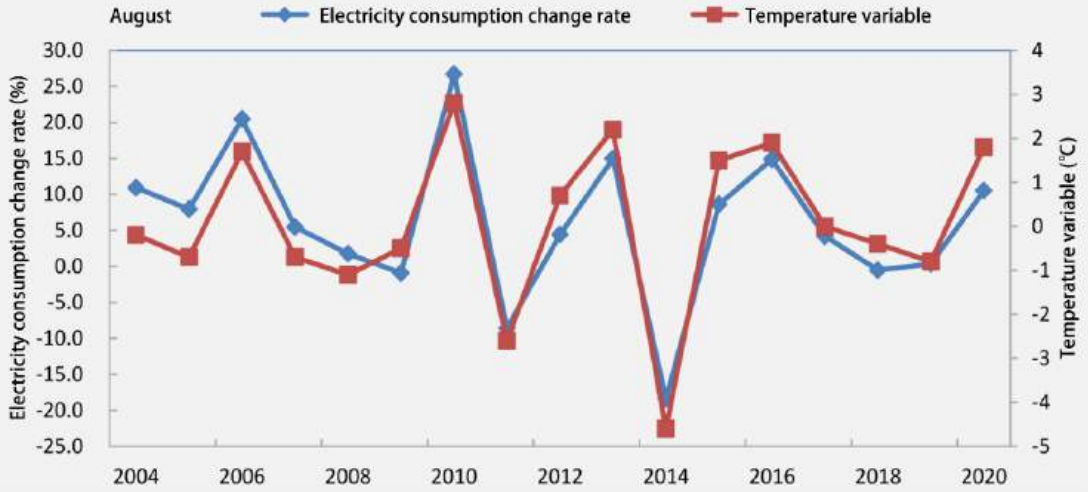


Figure 14 The relationship between monthly electricity consumption and average monthly temperature in Shanghai

(4) Promote low-carbon and efficient use of energy

- **Improve energy efficiency in industrial enterprises**

Shanghai continues to implement its "One Percent Plan" for industrial energy conservation, striving to save 1% of energy consumption on average each year. Energy audits are conducted for industrial and communication companies to diagnose energy-saving opportunities in production processes, heating/cooling systems, and electric motor systems such as fans, pumps, and compressors, and to enable energy-saving diagnosis to cover enterprises above designated size. Shanghai also increases efforts to promote green and low-carbon technologies, develops technology promotion plans, and encourages the application of advanced and applicable low-carbon new technologies, new processes, new equipment, and new materials, to upgrade and transform production and manufacturing processes for energy efficiency. In addition, it also accelerates technical innovation and application of energy-saving equipment in key energy-consuming industries, and keeps trying to improve energy efficiency of common equipment such as motors, fans, water pumps, air compressors, and air conditioning and chilled water systems.

- **Improve energy efficiency with new technologies**

Shanghai works hard to improve energy efficiency by applying new technologies. It encourages eligible companies to develop and utilize photovoltaic and wind power to promote the on-site consumption of renewable energy; accelerates the construction of

integrated energy supply and operation systems that feature distributed energy, renewable energy, diverse energy storage, and smart energy management; strengthens energy efficiency inspections for newly-built data centers, optimizes planning and layout to recycle surrounding waste heat/cold resources; accelerates the transformation of existing data centers to improve energy efficiency, and optimizes/abandons old, small or scattered machine rooms; promotes the application of advanced products such as intelligent servers, information systems, and thermal field management to create several green data centers.

Case 6 Shanghai Hangzhou Bay Economic and Technological Development Zone Improves Energy Efficiency

Shanghai Hangzhou Bay Economic and Technological Development Zone, covering a planned total area of 27.2 square kilometers, is located on the north bank of Hangzhou Bay in the southern part of Shanghai, and plays an importation part in Shanghai's coastal development strategy. With more than 20 years of construction and development, this zone has formed an industrial structure focused on new fine chemical materials, biomedicine, and strategic emerging industries. In 2019, the development zone launched a circular economy plan and has since become a nationally recognized "green park" that is resource-efficient and environmentally friendly.

1) Set-up of an energy efficiency monitoring platform for the zone. The development zone has set up an energy efficiency monitoring platform to establish a flat, centralized and dynamic monitoring and digital management system for the production, transmission, distribution, and consumption of energy by settled enterprises, using automated, information technology and centralized management mode.

2) Establishment and promotion of energy management systems. This involves the formation of a dedicated energy management organization, the development of feasible work plans, and the implementation of such measures as routine energy conservation monitoring, energy audits, energy measurement and testing, energy-saving technological improvements, and energy-saving assessments to improve the energy management system and guide the settled enterprises to carry out energy management system certification.

3) Construction of energy management centers. This project is initiated by the parent company of the development zone to supervise and encourage each enterprise in the zone to construct an energy management center, providing them with required services and assistance, and achieving flat and dynamic monitoring and digital management of their energy systems.

4) Utilization of renewable energy. The development zone promotes and advocates the use of renewable energy to the enterprises settled here. It establishes a renewable energy fund and encourages those enterprises with potential interest to install distributed photovoltaic power generation facilities, solar water heaters, and waste incineration power generators in their factories or office buildings. Solar street lamps, solar panels, and solar water heaters have been installed in the office areas and other parts of the zone, and in 2020, all public transportation buses were replaced by NEVs for energy saving.

- **Upgrade traditional high-energy-consumption industries to green ones**

Shanghai is committed to clean and efficient use of coal and sustained efficiency improving of coal-fired power generators. It has taken a series of measures to upgrade

such industries as steel, petrochemicals, and equipment manufacturing, to optimize industrial structure, to promote the exit of outdated production capacity, and to revitalize inefficient land resources. At the same time, Shanghai implements the management requirements for "high-energy-consuming" and "high-emission" projects, carries out a comprehensive investigation on the projects in progress, and implements project list management, classified disposal, and dynamic monitoring. For new projects, a city-level joint review mechanism is established, raising the access threshold and implementing energy-saving and environmental impact assessments.

- **Develop green ultra-low energy buildings (ULEBs)**

Shanghai has made great efforts in the development of ULEBs, and released an implementation plan to advance these efforts, committed to achieving the standardized, scaled, and serialized development of ULEBs. The main tasks include: 1) constructing demonstration projects, prioritizing the use of ultra-low energy buildings in key development areas, with each district and specific regional management committee implementing at least one or two ULEB projects each year; 2) formulating relevant technical standards, guidelines, and graphic collections, to establish a complete standard system for technical application of ULEBs; 3) strengthening ULEB technology research and integrated innovation, and enhancing self-reliance capability. Specific policy support includes: 1) fiscal subsidies - providing a subsidy of 300 yuan per square meter for ULEB demonstration projects that meet relevant requirements; 2) plot ratio incentives - the exterior wall area of ULEB projects that meet relevant requirements is allowed not to be included in the plot ratio calculation, but the maximum building area should not exceed 3% of the total planned building area; 3) encouraging transformation - for projects that have completed preliminary procedures but have not yet started construction, those that are to be transformed into ULEBs will enjoy the same relevant preferential policies, and resources planning and construction management departments will help handle the necessary changes.

Case 7 Permanent Site for the World Laureates Forum in Lingang New Area, China (Shanghai) Pilot Free Trade Zone

Located in the Lingang New Area, this project (LGNA No. PDC1-0401, Plot H01-01) is known as an international innovation collaboration zone within the China (Shanghai) Pilot Free Trade Zone. It is classified as commercial and cultural mixed-use land, with the building serving as a cultural complex that integrates a convention center, exhibition hall, theater, digital library, hotel, and hotel-style apartments. The hotel tower has 23 above-ground floors and 1 underground floor, with a height of 119.9 m, and the convention center has 2 above-ground floors and 1 underground floor, with a height of 23.9 m. This project covers a total building area of 228,000 m^2, including 168,000 m^2 above ground and 60,000 m^2 underground.

The project fully incorporates green building concepts from planning, design, construction to operation phases, following the green building evaluation standards. In this project, advanced technologies are used, and site-specific measures are implemented for each technology to create a focus on building it into a three-star green ULEB. The ULEB standards are implemented in the hotel section on the site, with a single building having a declared ultra-low-energy consumption area of

97,264.89 m², and the building's prefabrication rate is 57.5%. Certified green building materials and products are used, such as the sealant for curtain wall glass, fluorocarbon sprayed curtain wall panels, and aluminum alloy wood veneer panels. The overall window-to-wall ratio is controlled by considering the building's orientation, facade style, and virtual-to-real ratio; the combination of exterior shading and horizontal decorative aluminum plates effectively prevents direct sunlight and reduces energy consumption. The convention center's roof features large-scale photovoltaic glass splicing, with each photovoltaic panel positioned for optimal power generation efficiency. This roof is shaped like wings that intertwine with the roof greening, emphasizing the concept of the "Wings of Science". Leveraging Lingang's offshore wind resources, 30 wind turbines are installed on the tower's roof to provide clean energy and also to enhance the facade's dynamic form.

The project passed the ultra-low energy consumption program evaluation in Shanghai on August 4, 2021, becoming the first ultra-low energy public building project approved under the *Technical Guidelines of Shanghai for Ultra-Low Energy Buildings (Trial)*, and also known as the largest ultra-low energy public building project in China. This achievement represents a significant breakthrough in large-scale ultra-low energy public buildings and provides a model for the development of ULEBs.

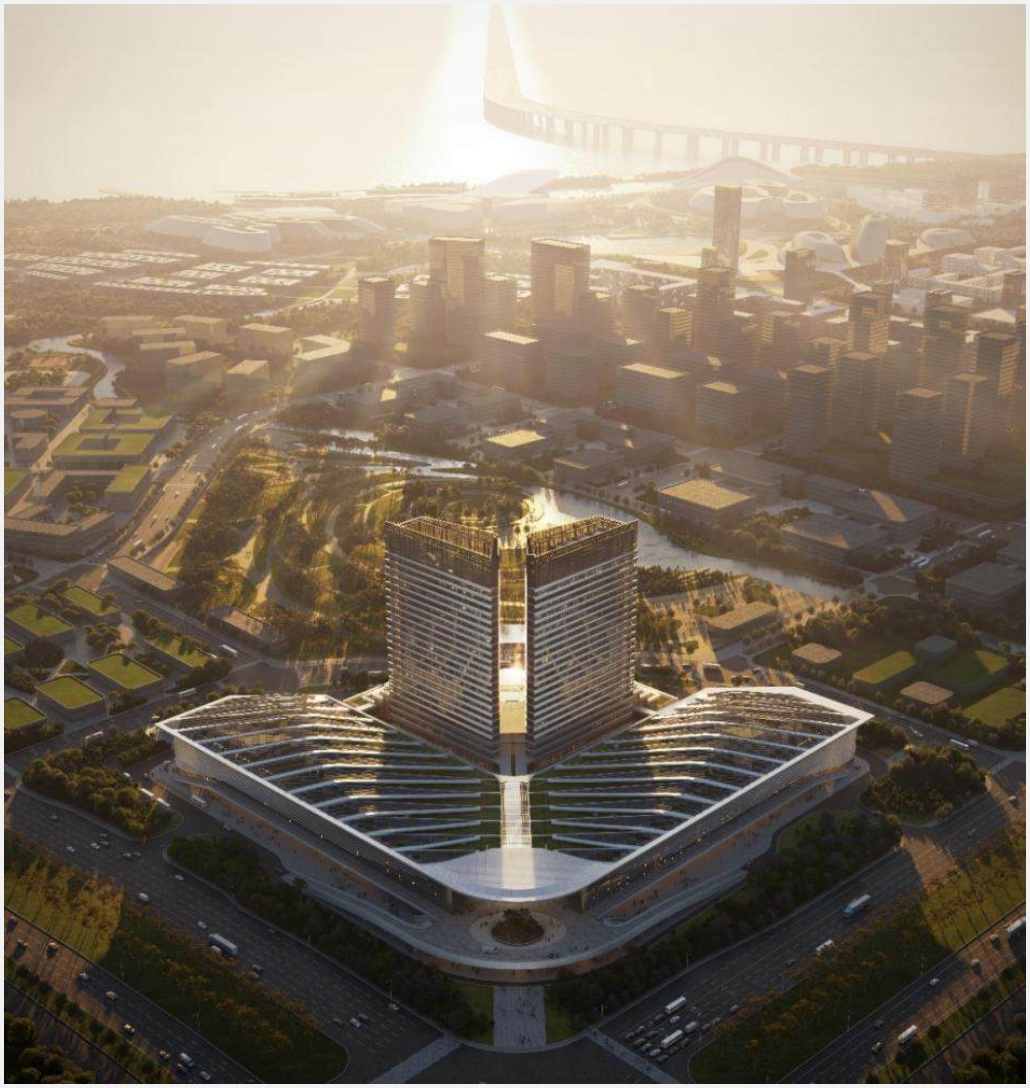


Figure 15 Rendering of the Permanent Site for the World Laureates Forum in Lingang New Area, China (Shanghai) Pilot Free Trade Zone

- **Launch a pilot carbon emissions trading program**

In November 2013, Shanghai officially launched a pilot carbon emissions trading program, and developed a series of appropriate regulations and policy documents, and the program achieved 100% compliance for eight consecutive years. On July 16, 2021, a national carbon emissions trading system was established and put into operation for trading. In addition, Shanghai has implemented a number of national and municipal pilot demonstration projects, such as the construction of energy-saving public institutions, low-carbon development practice bases, and low-carbon communities. It has also organized "Energy-saving Publicity Week", "National Low-carbon day", citizen's low-carbon actions and many other activities to popularize the concept of low-carbon development.

Case 8 Shanghai Explored and Built a Carbon Emission Trading Market

The carbon market is a major institutional innovation that uses market mechanisms to control and reduce greenhouse gas emissions, promote green and low-carbon development, and is an important policy tool to achieve the goals of "carbon peak" and the vision of "carbon neutrality". In 2011, Shanghai took the lead in launching a pilot trading system, promoting the construction of institutional systems, management systems, and platforms in all respects. In November 2013, the trading market was put into official operation, exploring the "Shanghai approach" to carbon market construction. With years of efforts, Shanghai has gradually established a carbon emission trading system featuring "clear regulations, standardized market, orderly management, and effective emission reduction", accumulating rich experience in local pilot programs for carbon market construction in China.

In Shanghai's carbon market, the main trading products include Shanghai Emission Allowance (SHEA), China Certified Emission Reduction (CCER), and Shanghai Emission Allowance Forward (SHEAF). Shanghai adheres to a market-oriented operation mode, and this mode has been widely recognized and highly evaluated by market participants. Currently, about 300 enterprises and more than 400 investment institutions from steel, electricity, chemical, aviation, water transportation, and construction industries have been included in the market, making it the only pilot zone in China which achieves a 100% compliance and clearance rate for enterprise for eight consecutive years. As of the end of December 2021, the cumulative trading volume of SHEA was 44.8134 million tons, with a trading amount of RMB 1.037 billion; the cumulative trading volume of CCER was 170.4119 million tons, with a trading amount of RMB 2.105 billion, and the cumulative transaction volume of SHEAF was 4.3708 million tons, with CCER transaction volume ranking first in China.

On July 16, 2021, Shanghai Environment and Energy Exchange officially launched a national carbon emissions trading system. So far, the cumulative trading volume of China Emission Allowances (CEA) is 190 million tons, with a cumulative trading amount of RMB 8.5 billion. Since its official listing, the National Carbon Market Capacity Building (Shanghai) Center has conducted training for more than 10,000 people in over 20 provinces and municipalities in China, providing training and exchanges for carbon emission trading management departments, regulated enterprises, industry organizations, and other entities to assist in accelerating carbon trading in each region, achieving good results.

SDG10: Reduced Inequalities

Under the goal of "Fair Sharing", Shanghai is committed to creating a better life for all residents, ensuring a decent and dignified life for everyone, providing high-quality public services for all, creating a wonderful rural life for all, narrowing the gap between urban and rural areas, and creating a more friendly built environment and social atmosphere for all age groups, including children, youth, and the elderly.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG10
Ensure that everyone enjoys a decent and dignified life	Ensure the living standards of disadvantaged groups	Yangpu District Explored and Built a Digital Platform for Targeted Service and Assistance Provision	►Minimum living standard for urban and rural residents ►Acquired area of residential housing in old areas for renovation	10.1 10.7
	Provide a sense of belonging for "new citizens"			
	Ensure everyone's right to adequate housing	Complete Renovation of Peng San Community in Jing'an District		
Provide high-quality public services for all	Create a 15-minute community living circle	Action Plan for Creating "15-minute Community Living Circles" in Xinhua Road Subdistrict, Changning District	►Number of public transportation vehicles per ten thousand people ►Per capita park and green space area	10.4
	Provide high-quality public services in "new cities"	Fengxian District Created a High-quality Public Service Cluster Centered around "Shanghai Fish"		
	Advance "micro-updates" of urban spaces			
	Connect public waterfronts along the Huangpu River and Suzhou Creek	Improved Landscape of Public Spaces in the Estuary of the Suzhou Creek in Huangpu District		
Create a wonderful rural life for all	Revitalize rural development	Luojing Town in Baoshan District Tries to Build Itself into a Rural Revitalization Demonstration Town in Northern Shanghai	►Growth rate of per capita disposable income for urban and rural residents ►Growth rate of per capita consumer spending for urban and rural residents	10.4
	Advance the construction of beautiful countryside demonstration villages			
	Improve the living environment in rural areas	Improvement of Rural Living Environment in Shuiku Village, Jinshan District		
Build a happy city friendly to all	Create an elderly-friendly city		►Number of day-care service facilities for the elderly ►Rate of health management for children under 7 years old	10.2
	Create a youth-friendly city			
	Create a children-friendly city	Children's Participation in Social Governance in Daning Road Subdistrict, Jing'an District		

Key Indicators

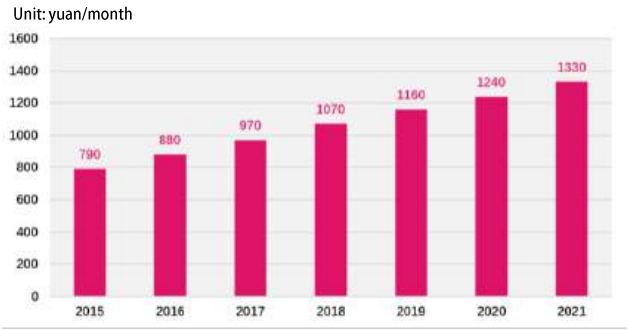
Growth rate of per capita disposable income for urban and rural residents

In 2015-2021, the average annual growth rate of per capita disposable income for permanent residents in rural areas of Shanghai was **8.9%**, **1.1%** higher than that of urban areas.

Growth rate of per capita consumer spending for urban and rural residents

In 2015-2021, the average annual growth rate of per capita consumer spending for permanent residents in rural areas of Shanghai was **9.3%**, **3.6%** higher than that of urban areas.

Minimum living standard for urban and rural residents

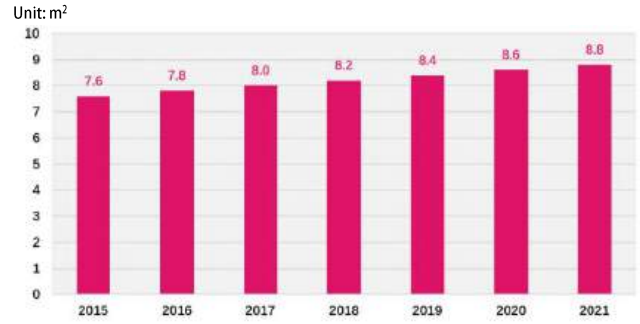


In 2015-2021, the guaranteed minimum living standard for urban and rural residents in Shanghai increased by **68.4%**, higher than the growth rate of per capita disposable income.

Acquired area of residential housing in old areas for renovation

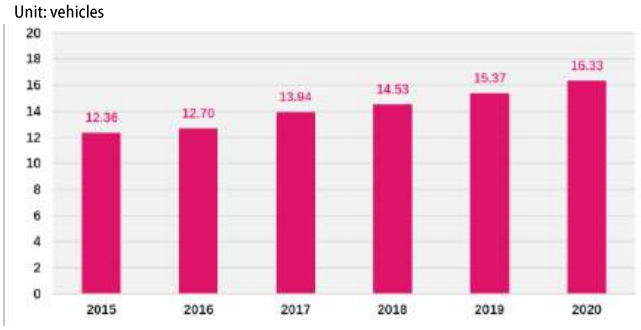
From 1991 to the first half of 2022, Shanghai completed the renovation of old neighborhoods more than **30 million m²**, benefiting approximately **1.3 million households**.

Per capita park and green space area



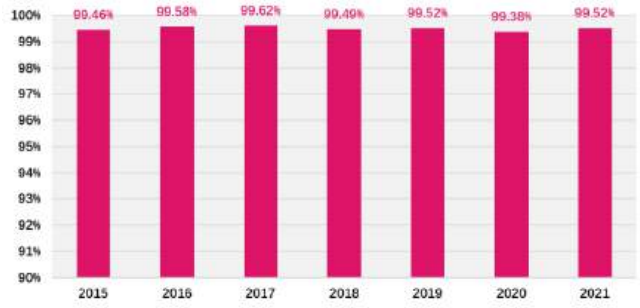
By the end of 2017, the core section of the Huangpu River, covering a length of **45 km**, had been connected as a continuous public waterfront space; by the end of 2020, the central urban section of the Suzhou Creek, covering a length of **42 km**, had been basically connected as a continuous public waterfront space.

Number of public transportation vehicles per ten thousand people



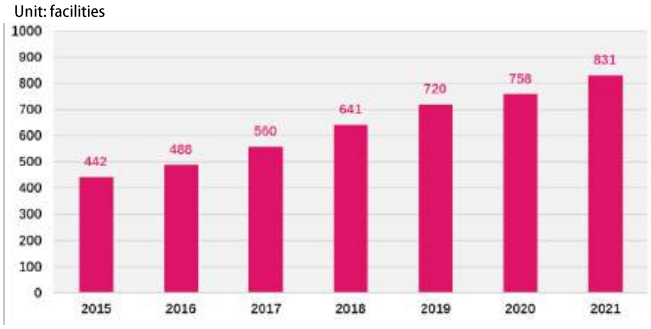
At the end of 2021, Shanghai had 20 operational rail transit lines with a total length of **831 km**, operating at 508 stations, and it was provided with **17,600 buses** for ground public transportation.

Rate of health management for children under 7 years old



In 2015-2021, the rate of health management for children under 7 years old in Shanghai remained stable at over **99%**.

Number of day-care service facilities for the elderly



By the end of 2021, Shanghai had established **371** comprehensive community service centers for the elderly, **1,433** meal service places for the elderly, and **730** elderly care institutions. In the past five years, necessary services were provided to more than **1.5 million** disabled elderly people.

Major Progresses

- **Continuous improvement in the guaranteed living standards of disadvantaged groups**

Shanghai has established a minimum living standard guarantee system for scientific classification and differentiated assistance. This system not only ensures the basic living needs of disadvantaged groups, but also provides special assistance to those citizens who face great difficulties in medical care, education, housing, or employment. Shanghai's urban and rural subsistence allowance standards have been continuously raised, and the assistance standards have been unified for urban and rural residents. Since the minimum living standard guarantee system was established, Shanghai has made 25 adjustments to its urban standards and 21 adjustments to its rural standards. In 2015, Shanghai became the first in China to achieve unified urban and rural subsistence allowance standards, which reached 1,330 yuan/person/month in 2021, an increase by ten times compared to the urban subsistence allowance standard in 1993.

- **Comprehensive completion of the transformation of houses below Level II in central urban areas**

Since the 1980s, Shanghai has been promoting and implementing the renewal and transformation of old houses in various forms to enable the people to live in higher-quality housing. From 2015 to 2021, Shanghai implemented various types of old house renewal and transformation projects, covering an area of more than 72 million m^2. Since 2017, Shanghai's measures for urban development have shifted from "demolition, modification and retention" to "retention, modification and demolition", coordinating the protection of its urban characteristics with the renovation of old neighborhoods. From 2017 to 2022, Shanghai transformed 3.324 million square meters of houses below Level II in old neighborhoods, benefiting 167,000 households of local residents. On July 24, 2022, Shanghai completed the transformation of houses below Level II in central urban areas, a historical solution to this longstanding people's livelihood issue.

- **Gradual promotion of equal coverage of basic public services throughout Shanghai**

By creating a "15-minute community living circle", Shanghai provides all citizens with equal access to basic public services such as comfortable living, nearby employment, safe travel, convenient community services, and multi-level public spaces, creating a better life for all of them. Based on its practices and experience, Shanghai worked with other 51 cities in China to jointly release the *Action Plan for Creating a "15-minute Community Living Circle" - Shanghai Initiative* and compile the *15-minute Community Living Circle Action Case Studies in China*, to further build consensus and create a collective force, and this initiative received positive responses and support from the national community and various sectors. In 2021, Shanghai took the lead in achieving 100% coverage of community elderly care services.

- **Public waterfronts of the Huangpu River and Suzhou Creek basically connected**

In recent years, Shanghai has focused on the connectivity of urban waterfronts to provide high-quality open and shared leisure spaces for all citizens. Along the Huangpu River, 45-km public waterfront space from the Yangpu Bridge to Xupu Bridge has been basically connected and made available for the public, with leisure paths for walking, running, and cycling totaling about 150 km and a total of 1,200 hectares of public waterfronts. The 42-km waterfronts along the Suzhou Creek in the central urban area (from the outer ring road to the estuary) have been basically connected, combining scattered public green spaces into an organic whole.

- **Gradually narrowed gap in urban-rural living environments**

Shanghai has been working to narrow the urban-rural gap by implementing the rural revitalization strategy. Currently, more than 1,500 administrative villages in Shanghai have completed the optimization of rural living environment, with a cumulative total of 215 villages being recognized as city-level beautiful countryside demonstration villages, and 88 villages being included in the demonstration village construction plan for rural revitalization; the fifth batch of demonstration villages are being selected and reviewed. In 2018-2020, Shanghai completed the three-year action plan for the renovation of rural living environment as scheduled, providing clean, orderly and tidy rural environment to rural residents; the overall appearance of villages has been improved, and rural infrastructure has been upgraded, narrowing the urban-rural gap. Shanghai follows the principle of government guidance and villager leadership, fully respects the housing needs of farmers, focuses on improving the quality of rural housing and creating a metropolitan rural landscape in Shanghai, takes multiple measures to effectively improve the living conditions and environment of farmers, and guides them to build livable houses that are functionally modern, structurally safe, cost-effective, environmentally friendly, and in harmony with the landscape.

- **Basically forming an urban development pattern that is friendly to all ages**

Shanghai has been striving to become a child-friendly, youth-friendly, and elderly-friendly city and to enable citizens of all ages to enjoy the benefits brought by urban development. To become a child-friendly city, Shanghai has completed two rounds of work for creating child-friendly communities, with over 70% of subdistricts and towns recognized as child-friendly demonstration communities in Shanghai, striving to achieve full coverage of child-friendly communities in all subdistricts and towns by the end of 2022. To become a youth-friendly city, Shanghai has launched a series of initiatives in recent years to provide a platform for young people to settle down and maximize their innovative abilities, allowing them to realize their own value. To become an elderly-friendly city, Shanghai has attached great importance to the needs of the elderly population and established a long-term care insurance system to further meet their demands for elderly care services. In 2019, it took the lead in launching a pilot program to create communities friendly to the elderly with cognitive impairments, significantly reducing the pressure and economic burden from elderly care.

Important Measures

(1) Ensure that everyone enjoys a decent and dignified life

● Ensure the living standards of disadvantaged groups

Shanghai has built a modern social assistance system framework, which includes basic living assistance (such as minimum living standard guarantee, assistance and support for extremely impoverished individuals, and expenditure-based poverty alleviation), specialized social assistance (such as medical, educational assistance, housing, employment, and disaster relief assistance), and emergency assistance (such as temporary assistance), and these three types of social assistance are provided to families with minimum subsistence guarantees, low-income families facing financial difficulties, families in poverty due to expenditures, people in exceptional poverty, disaster victims, and those in need of temporary assistance. Shanghai adjusts and increases assistance standards each year based on such factors as economic and social development, residents' living standards, and price increases, to enable vulnerable groups to share in the benefits of economic and social development. When the monthly year-on-year increase in the consumer price index (CPI) or food prices index reaches or exceeds 3.5% or 6%, respectively, temporary price subsidies will be provided to vulnerable groups and families, such as those receiving minimum livelihood guarantees, people in exceptional poverty, and the unemployed.

Case 9 Yangpu District Explored and Built a Digital Platform for Targeted Service and Assistance Provision[2]

In April 2021, the Civil Affairs Bureau of Yangpu District launched a pilot program in Wujiaochang Subdistrict to explore and build a big data platform for targeted service and assistance provision. With the support of digital technology, Wujiaochang Subdistrict has broken down data barriers between multiple departments, accurately targeted families in need, identified their specific needs, and matched them with social assistance resources in a timely manner.

Wujiaochang Subdistrict has established a management network based on large-screen displays, computers, and mobile phones, which are interconnected to include all application scenarios for paired assistance and service provision based on big data. Assistance advisers in each community are known as the "embroiderers" in this network. In this new model, a "find-analyze-aggregate-assist" mechanism has been formed to integrate social assistance policies into practice. Yangpu District has promoted such digital platforms and systems for the integration of assistance resources to other subdistricts based on this model.

To accelerate the digital transformation of social assistance and establish a smart assistance model, Yangpu District released the first "Warmth Index" in China on September 22, 2021, aiming to empower paired assistance through digital technology and make the city more people-oriented. The monitoring system for the Warmth Index was designed by the Civil Affairs Bureau of Yangpu District working with experts in social assistance, and is the first data-supported evaluation system for social assistance in China. The monitoring system for the Warmth Index includes three primary

[2] Source: https://www.jfdaily.com/news/detail?id=407854

indicators ("government work standards", "social entities recognition", and "significant work results"), 9 secondary indicators and 30 tertiary indicators, providing a visual representation of the standardization, innovation, and performance of social assistance work. "Government work standards" include 3 secondary indicators: complete policies, solid guarantees, and effective implementation; "social entities recognition" includes the participation and recognition of social organizations, market entities, and the general public; "significant work results" include three aspects: satisfaction, innovation, and assistance results.

- **Provide a sense of belonging for "new citizens"**

According to the results of the seventh national population census, as of November 1, 2020, Shanghai had more than 10.47 million permanent residents from other provinces and cities ("new citizens"), accounting for 42.1% of its permanent population. These "new citizens" are an important part of Shanghai's population and a driving force for sustainable development in Shanghai. In recent years, Shanghai has upheld the urban spirit of "embracing diversity, pursuing excellence, and being open-minded, wise, generous and modest", and has implemented a series of "new citizen" friendly policies in talent introduction, social security, entrepreneurship services, financial, medical, and education services, with an open, innovative, and inclusive attitude, aiming to help "new citizens" integrate into Shanghai as soon as possible and enhance their sense of belonging and identity.

Figure 16 Cultural and entertainment activities held in Hongkou District for "new citizens" who spent the Spring Festival in Shanghai[3]

- **Ensure everyone's right to adequate housing**

Shanghai has established a systematic mechanism for renovating old residential buildings to keep improving the living quality, conditions, and environment of residents in old neighborhoods. Shanghai has established a sound implementation mechanism, clarifying work measures such as renovation procedures, implementation models, and

[3] Source: http://sh.wenming.cn/YW/202101/t20210129_5934609.html

subsidies provision while improving the renovation standards, to organically combine the renovation and repair of the buildings with the improvement of public service facilities, infrastructure renovation, environmental improvement, and barrier-free facilities renovation within the community. In 2016-2020, Shanghai renovated and repaired 2.6 million square meters of preserved shikumen-style housing and 750,000 square meters of excellent historical buildings, extending the urban texture and inheriting historical and cultural heritage. By the end of July 2022, Shanghai had completed the renovation of all old houses below Level II in the central urban area. Now it is accelerating the renovation of old neighborhoods, old housing, and "urban villages", to further improve the living quality of residents facing housing difficulties.

Case 10 Complete Renovation of Peng San Community in Jing'an District

Peng San Community is a large residential area in Shanghai, where the buildings (4-6 storeys) were built in the 1950s and 1960s, with brick and concrete structures and shared kitchens and bathrooms. In 2007, a complete renovation project was initiated in this residential area, with the first phase focusing on renovation and expansion, and the second to fifth phases involving demolition and reconstruction as well as the installation of elevators. Moreover, the residential area was provided with green spaces, a canteen for senior citizens, and an underground garage. As a result, Peng San Community, which used to be dirty and messy, has been transformed into a high-end commodity housing with greatly improved living conditions for its residents.

Figure 17 Renovated Peng San Community in Jing'an District

(2) Provide high-quality public services for all

- **Create a 15-minute community living circle**

In recent years, Shanghai has been promoting the equal and undifferentiated

development of basic public services on a spatial basis by creating "15-minute community living circles". In 2016, Shanghai Municipal Bureau of Planning and Natural Resources issued China's first guideline for the planning of 15-minute community living circles: *Shanghai Planning Guidance of 15-Minute Community-Life Circle,* which set out basic standards and action guidelines. In 2022, Shanghai issued the *Guiding Opinions on Creating "15-Minute Community Living Circles" in Shanghai during the 14th Five-Year Plan Period*. Currently, Shanghai has developed a relatively mature model, where each subdistrict or town is regarded as a working unit. In this model, focus is put on the planning and construction of various public service facilities at the community and lower levels to meet residents' living, employment, leisure, learning, and health needs, and people from all walks of life are brought together to create governance mechanisms, discuss community needs, and draw up action plans, and they will plan and coordinate the implementation of relevant actions in a systematical manner.

Case 11 Action Plan for Creating "15-minute Community Living Circles" in Xinhua Road Subdistrict, Changning District

The action plan for creating "15-minute community living circles" in Xinhua Road Subdistrict, Changning District, is one of the first-batch pilot programs launched in 2019 by Shanghai Municipal Bureau of Planning and Natural Resources in conjunction with Changning District Government. In this action, with the support of its mass base and unique advantages in community governance, Xinhua Road Subdistrict firmly relied on the people, continuously benefited the people, and rooted itself deeply in the people, aiming to improve the entire community's functional vitality, environmental quality, and supporting facilities through joint construction, governance, and sharing to become a garden-like and humanistic subdistrict featuring higher living quality, more refined and targeted community services, and more benefits for its residents.

Figure 18 Blueprint for creating "15-minute community living circles" in Xinhua Road Subdistrict, Changning District

Xinhua Road Subdistrict in Changning District is a highly dynamic and comprehensive community that integrates residential and employment functions and fosters a strong atmosphere

of innovation and entrepreneurship. The community has a diverse population, with a prominent aging population and a large proportion of young white-collar workers, and it has limited space available for additional facilities. Leveraging its own characteristics and strengths, Xinhua Road Subdistrict mobilizes local enterprises and social organizations using a government-led and socially collaborative approach to jointly create an action plan, which details "One Vision" (a garden-like community that is livable, business-friendly, and humanistic), "Three Goals" (a prosperous community that is livable and business-friendly; a diverse, convenient and happy community; and a harmonious community that is vibrant and open-minded), and "Specific Actions" (for livable environment; for favorable employment; for learning activities; for well-being; and for leisure), aiming to improve the quality of this subdistrict and build it into a people-oriented community.

- **Provide high-quality public services in "new cities"**

In order to change the pattern of high-quality public services being overly concentrated in the central urban areas and enable more citizens to enjoy the happiness brought by high-quality public services nearby, Shanghai has placed special emphasis on introducing high-quality public services during the construction of five new cities. Recently, Shanghai has implemented a series of measures to guide the moderately advanced construction of public service facilities for education, health, culture, sports, leisure, and elderly care in new cities, which are encouraged to introduce and share city-level quality resources so as to provide a high-quality living standard and livable, business- and leisure-friendly environment. For example, Jiading New City is provided with quality education resources such as High School Affiliated to Shanghai Jiaotong University Jiading Branch School, quality medical resources such as Ruijin Hospital Northern Branch, and high-level cultural service facilities such as Poly Grand Theater.

Case 12 Fengxian District Created a High-quality Public Service Cluster Centered around "Shanghai Fish"

Fengxian District has created a core landscape around "Shanghai Fish" (also known as "Jinhai Lake") in the central location of Fengxian New City, which is also known as the "Central Park" in this new city. Given the location and ecological advantages of "Shanghai Fish", Fengxian has built a batch of high-quality public service clusters centered on this lake, allowing citizens to enjoy high-quality public services nearby.

These high-quality public services around "Shanghai Fish" include Nine Trees Public Buildings, Fengxian Museum, Nianfeng Park, and Paopao Park. Nine Trees Public Buildings, adjacent to the south of "Shanghai Fish", are home to Nine Trees Future Art Center, Yanzi Academy, and many other benchmark cultural and artistic projects, and thus known as a cultural and artistic service core of Fengxian New City, which provides citizens with leisure spaces with unique ecological and artistic features. Fengxian Museum is located in the core part of "Shanghai Fish", covering an area of about 2 hectares with a building area of about 36,000 m2. It was put into operation in May 2019 and plays an important role in collecting Fengxian's cultural heritage, displaying its historical and cultural characteristics, and researching its history and culture. Nianfeng Park is located at the entrance of "Shanghai Fish", covering an area of about 2.4 hectares, and it is equipped with theme walls, leisure lawns, lawn music theaters, leisure beaches, waterfront promenades, and other facilities.

Figure 19 "Shanghai Fish" in Fengxian District

- **Advance "micro-updates" of urban spaces**

Since 2016, Shanghai has been carrying out "micro-updates" of urban spaces, starting from neighborhoods most familiar to citizens. These updates involve making little-by-little improvements to street spaces, community gardens, and under-bridge spaces using micro designs, actions and costs. In 2016-2020, Shanghai launched the "Walking in Shanghai -- Urban Space Micro-Updates Program", and this pilot program covered 9 districts and 25 neighborhoods and implemented a community planner system in 7 districts and 105 neighborhoods. Relying on the accumulated experience in community micro-updates, Shanghai has further expanded its efforts, mobilized participation from various stakeholders, and launched four action plans to create "Shared Communities, Innovative Parks, Charming Cityscape, and Leisure Networks".

Figure 20 A micro-updated corner in Yuyuan Road Subdistrict, Jing'an District[4]

[4] Source: https://m.thepaper.cn/newsDetail_forward_13269155

- **Connect public waterfronts along the Huangpu River and Suzhou Creek**

Shanghai has made great efforts to connect the public waterfronts along the Huangpu River and Suzhou Creek to create a world-class waterfront space. Appropriate planning and guidance on such connection are provided through international scheme solicitation, optimized planning schemes, competitions for young designers, and surveys for public opinions. *Shanghai's Regulations on Public Waterfronts along the Huangpu River and Suzhou Creek* has been formulated to strengthen the construction standards of public spaces and ensure the characteristic representation of these public waterfront spaces in terms of overall and coordinated design, with the aim of achieving a better connection effect. When the public waterfronts along the Huangpu River and Suzhou Creek are connected and made available for the public, a shared space with a sense of gain, happiness, and security will be provided for all Shanghai citizens, creating a "showcase belt" with humanistic care.

Case 13 Improved Landscape of Public Spaces in the Estuary of the Suzhou Creek in Huangpu District

The Huangpu section of the Suzhou Creek, located on the south bank, stretches about 3 km from Waibaidu Bridge in the east to Chengdu Road Bridge in the west. It is an important gateway to the waterfronts along the Suzhou Creek, reflecting the cityscape, regional image, cultural information, and potential for public activities. Due to historical reasons, this waterfront section has long been in the "back of the city", facing problems such as narrow hinterland, many old residential areas and historical buildings along the river, low-end surrounding commercial formats, and poor environmental quality, and therefore, it was not smoothly connected, water-friendly or spatially vibrant, only functioning as a passage.

Since 2018, under the framework of overall planning for the Huangpu River and Suzhou Creek, Huangpu District has focused on two key points of "water-friendly" and "openness" and carried out waterfront improvement and transformation based on a site-specific design concept to create a "content-rich, memorable, and vibrant" exhibition belt of Shanghai style in the public spaces along the Suzhou Creek by blending natural and human landscapes. In the master design, this three-kilometer waterfront section is divided into three segments: the eastern segment (Waibaidu Bridge - Henan Road Bridge), highlighting the gateway image of the intersection of the Huangpu River and Suzhou Creek; the middle segment (Wuzhen Road Bridge - Henan Road Bridge), where someone can wander to see various urban scenes in Shanghai; the western segment (Wuzhen Road Bridge - Chengdu Road Bridge), where someone can enjoy a comfortable waterfront life. Positioned as exquisite and elegant spaces, these waterfronts have their own features and provide different experiences.

The eastern segment is 768 meters long and adopts the design strategy of "reconstructing historical buildings" and "making service facilities landscapes" to create a gateway-like, iconic landscape space at the intersection of the Huangpu River and Suzhou Creek. A steel-structure pavilion over 30 meters long is erected on the bridge piers left over from the demolition of Wusong Road Gate Bridge, with its axis facing the Oriental Pearl TV Tower, creating a rare viewing experience and a waterside panoramic view. The rowing club, one of original historical buildings, is restored and reconstructed to its original landscape features based on preserved architectural form and material texture; and it is provided with a modern lightweight and concise greening roof frame, which uses natural and modern elements to create a dialogue with historical buildings. The

existing facilities within the plot, such as gas stations, garbage compactors, riverside pumping stations, and public toilets, are integrated by function, re-planned and reconstructed, forming a series of service facilities centered around the "most beautiful gas station". This combines architecture and landscape to provide another highlight of quality life along the Suzhou Creek. In greening design, the main vegetation along the creek is retained, and some plants are added to improve the greening system and work with connected running tracks to form a functional landscape green belt. At the same time, using flowers as a medium, the rowing club is connected with Waibaidu Bridge, organically combining the long-standing boat culture history with the art of life and creating a romantic and colorful riverside public space known as the "most beautiful garden".

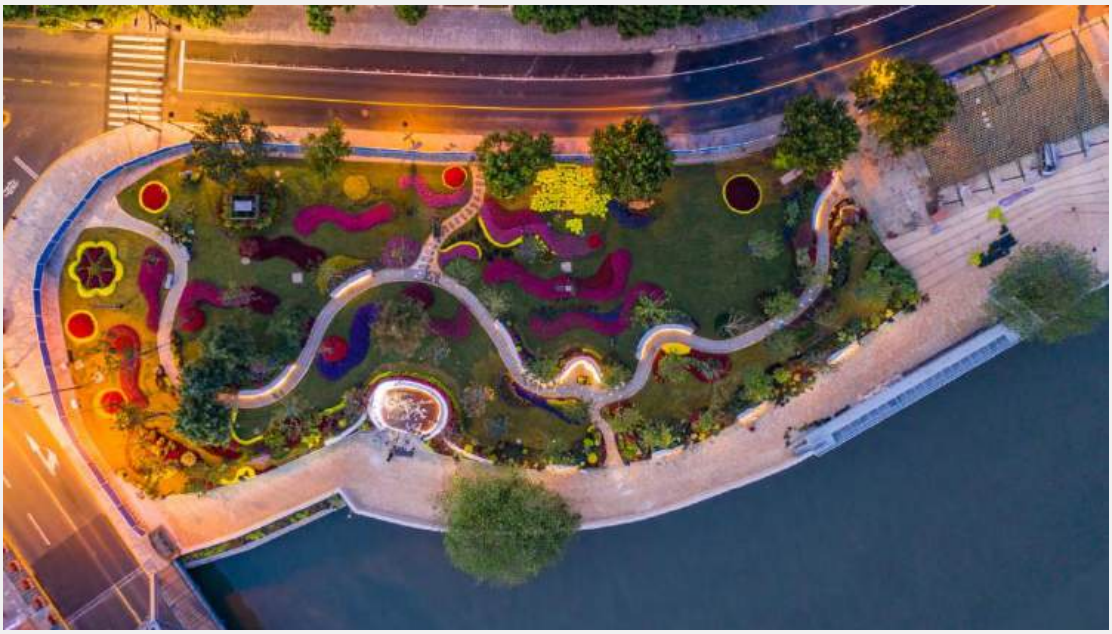


Figure 21 Landscape at the estuary of the Suzhou Creek in Huangpu District

(3) Create a wonderful rural life for all

- **Revitalize rural development**

Shanghai revitalizes the development in rural areas by focusing on key industries and cultivating new business models. Shanghai has formulated the *Several Measures for Further Enhancing the Construction of Rural Revitalization Demonstration Villages* and the *Guidelines for the Construction of Rural Revitalization Demonstration Villages* (DB31/T-1109-2022) to guide the construction of rural revitalization demonstration villages to a higher level and with better quality. In the process of rural revitalization, Shanghai pays particular attention to the following three aspects: 1) putting emphasis on shaping the rural landscape: follow the requirements for planning, design, and construction to showcase the charm of water towns in the Jiangnan region and the livable, business-friendly, and tourist-friendly rural style; 2) activating new developments of different industries: by guiding diversified social investment to strengthen the agricultural industry, extend the industrial chain, improve the industrial system, and expand rural business models, to promote industrial integration; 3) guiding the development of area-based zones: build demonstration zones in a

concentrated and contiguous manner with greater visibility and make demonstration villages connected into lines; take into account the leading industries, infrastructure, special landscape construction and development for resources sharing to create characteristic areas; play on the scale effect to turn "potted landscapes" into "scenic landscapes"; making public resource allocation more efficient.

Case 14 Luojing Town in Baoshan District Tries to Build Itself into a Rural Revitalization Demonstration Town in Northern Shanghai

Luojing Town in Baoshan District, is located in the north of Shanghai, bordered by Yangtze River on the east, Jiading on the west, and Taicang in Jiangsu Province on the north. It covers an area of 48 km² and has a population of about 60,000. In recent years, Luojing Town has upgraded its efforts in constructing rural revitalization demonstration villages and made industrial clusters a cornerstone of rural development. Also, they have broken down administrative barriers in rural development and built a network to linking the five demonstration villages at the mouth of Yangtze River. Based on the functional positioning of rural areas as "scarce resources of mega-cities, important carriers of urban core functions, and strategic spaces for urban core competitiveness", Luojing Town has aimed for overall development and proposed the concept of "five-village linkage and town-wide interaction". They have promoted spatial continuity and coordinated development through strengthened collaboration and complementary advantages to build a demonstration area for contiguous development of rural revitalization in the north of Shanghai, striving to achieve resource, cost and channel sharing, and mutual benefits, and truly leading to sustainable rural development.

Figure 22 Luojing Town in Baoshan District with distinctive Shanghai-style characteristics

The measures they have taken include: 1) prepare a master plan to promote complementary development of all villages step by step; 2) coordinate the efforts in landscaping and environmental protection to restore ecological environment and reshape cultural characteristics of each village; 3)

connect infrastructure by working with neighboring villages to optimize the allocation of traffic resources and public facilities; 4) coordinate governance and promote smart management by establishing a sound joint governance mechanism, implementing "thousand points assessment", "six governance and three principles" and using intelligent governance platforms of five villages.

Unified planning, management and operation have significantly improved the development quality and living standards of the five villages. 1) Industrial clustering is the result of industrial agglomeration; the coordinated townscape, including organized farmland, interconnected forests, water systems, circular roads, and picturesque residences, has attracted numerous well-known companies in the health and agricultural tourism industries represented by Xinyuehui, Pinshanfang, Shejishibuluo and Zhengdajingrui to settle in; the health and wellness industry has begun to operate; with its unique breeding practices, Haixing Village has become one of China's "One Village One Product" demonstration villages. 2) Intensive resources can be shared by neighboring villages, and administrative barriers between villages haven been broken down through a collaborative effort of five villages; they have achieved synergistic development; 3) Interconnected spaces have promoted "full-dimensional upgrading" and cooperative development of the villages; infrastructure, hardware and software have been improved to raise the overall intelligent level.

- **Advance the construction of beautiful countryside demonstration villages**

Shanghai continues to increase efforts in creating beautiful countryside demonstration villages, and releases its evaluation criteria for city-level beautiful countryside demonstration villages each year. As of the end of 2021, Shanghai evaluated and designated 215 city-level beautiful countryside demonstration villages. To create beautiful countryside demonstration villages, Shanghai puts emphasis on "ecological beauty, industrial wealth, and cultural root". "Ecological beauty" highlights beautiful rural landscape, waterway dredging, domestic wastewater treatment, and village renovation to gradually show the effectiveness of ecological governance and progress towards a more beautiful rural area. "Industrial wealth" requires innovative paths integrating industrial and rural development to enhance modern agriculture efficiency, and better combine beautiful villages with leisure tourism. "Cultural root" helps showcase local culture, promote positive values of the times, and inherit excellent traditional culture to make beautiful villages more elegant, attractive and civilized.

- **Improve the living environment in rural areas**

Shanghai keeps improving the living environment in rural areas with the aim of enhancing the residents' sense of gain. In 2018-2020, Shanghai completed a three-year action plan for improving the living environment in rural areas, and has since established a clean, tidy, and orderly rural environment. From 2021, Shanghai has included the optimization of rural living environment in the list of 16 projects in the public interest, aiming to further improve the living environment in rural areas. The measures it has taken include: 1) improve the architectural design in rural areas by selecting qualified architects to form the first batch of rural building designers (96 architects) and launching the rural architect residency program to provide design and consulting services for farmers who plan to construct houses; 2) establish a system for cultivating and certifying construction

craftsmen in rural areas to ensure the safety of built living environment in rural areas; 3) improve rural appearance and landscape by promoting the construction of beautiful courtyards, increasing the effort to place overhead wires in order, and strengthening the coordination between farmland and rural scenery; 4) upgrade rural infrastructure by advancing road transformation and upgrading, addressing safety hazards on roads, and consolidating the achievements of rural toilet revolution; 5) make more efforts in constructing infrastructure for garbage and domestic wastewater treatment, improve the allocation of environmental sanitation facilities, promote the classification and recycling of domestic waste, and improve the quality of water environments.

Case 15 Improvement of Rural Living Environment in Shuiku Village, Jinshan District

Shuiku Village has preserved its original water town style to create a residential community with multi-functional spaces. In this village, house designs emphasize a clear hierarchy of roof contours that highlights the broad waters of the central river; different house types are arranged in a staggered layout, creating a picturesque landscape. These designs aim to provide villagers with a comfortable new life that is equivalent to that of urban residents, and also consider the possible use for private or commercial purposes.

Figure 23 Living environment in Shuiku Village, Jinshan District

(4) Build a happy city friendly to all

● Create an elderly-friendly city

To create an elderly-friendly city, Shanghai has implemented various practices in creating elderly-friendly communities, piloting long-term care insurance, and providing psychological services to the elderly. In 2019, Shanghai became the first city in China to pilot the construction of elderly-friendly communities for individuals with cognitive impairments, including providing extensive publicity and education, risk assessment, early intervention, family support, resource link and platform on cognitive impairments of the elderly, establishing a professional care service system for the elderly with cognitive impairments in each community and creating a friendly environment for elderly people

who live at home. Shanghai has launched a pilot program for long-term care insurance for elderly people, covering disabled individuals who live at home or in nursing home, to provide them with basic living care and necessary medical and nursing services and provide better information services through the Internet and mobile applications". Funds are raised through adjusting medical insurance funds to reduce individual burdens. The personal share of home care fees and community-based day care or institutional care fees is 10% and 15%, respectively. Shanghai provides elderly people with professional free-charge psychological counseling and legal consulting services throughout each year. By cooperating with professional psychological consulting institutions, Shanghai has created its own service brand to provide relevant services to communities.

- **Create a youth-friendly city**

Young people are the driving force of urban development. In recent years, Shanghai has implemented a series of measures to enable young people to settle down, maximize their innovative ability, and provide them with platforms to realize their own value. Pudong New Area provides a full range of full-life-cycle services for young talents and creates a "comfort zone for innovation" for global youth who live or work in Pudong. Different youth alliances and talent training camps have been launched in such industries as artificial intelligence, biomedicine, integrated circuits, and finance, enabling young people who innovate and start businesses in Pudong to find a sense of presence and gain[5]. Jinshan District of Shanghai has been selected as a "National Pilot City for Youth Development" and is known as a "city of youth innovation" under a metropolitan model for rural revitalization. In this district, a "1+5+5" youth work pattern has been built, with "1" being the youth work joint conference mechanism and "5" being the five major policies and the the five projects serving youth development; they have developed a project list that revolves around youth ideology, employment and entrepreneurship, and social integration, to advance the implementation of listed projects[6].

- **Create a child-friendly city**

Shanghai aims to create a child-friendly city with the slogan "Child-Friendly and All-Friendly", and has been working on creating child-friendly communities. Shanghai has formulated a trial standard for the construction of child-friendly communities, determined indicators from five dimensions of safeguard measures, spatial facilities, service support, personnel and institutions, and social atmosphere, to standardize, regulate, and characterize child-friendly communities. Great efforts have made in the construction of child-friendly communities, including conducting research on key issues in child development, improving multi-departmental collaboration and social force co-construction, enhancing the professional level of child-friendly community builders, expanding funding channels, carrying out promotion and publicity activities, preparing child-friendly maps, and other specific measures. Shanghai has established a "one center

[5] Source: China Youth Daily, November 30, 2020
[6] Source: China Youth Daily, September 22, 2022

+ multiple sites" child service network relying on child service centers in each subdistrict and town as well as children's home provided by village committee and other service sites. It focuses on optimization, integration and planning of children's activity venues and service projects provided in each community through strengthening management, integrating resources, and optimizing services, to create a 15-minute community living circle with environment-friendly, well-equipped, and well-serviced facilities for children; it creates a "one center + multiple sites" child-friendly service network to provide nearby children with convenient services such as social practice, safety protection, and psychological counseling.

Figure 24 Science education activity for children in Tianlin Subdistrict, Xuhui District

In Shanghai, children are encouraged to participate in community development and governance, which ensures their right to participate in community affairs and helps cultivate their sense of ownership. For example, Jiading District launched an action plan themed "Listening to Children's Voices", established the rules of procedure, and set up 19 children's councils at the district, town, and community levels; Yangpu District piloted a one-stop support project themed "Chidren Good at Governance" for children's participation in community governance, providing resources and support for children's participation in social governance; Daning Road Subdistrict in Jing'an District established a children's council named "Xiaoningmeng Children's Council" to focus on cultivating children's ability to participate in social governance.

Shanghai is committed to improving the child health service system and enhancing children's health conditions. In 2016, Shanghai issued China's first provincial-level special plan for child health -- *Shanghai's Special Plan for Improving Child Health Service Capacity (2016-2020)*, to build children's specialized hospitals and priority hospitals, and construct National Children's Medical Center (Shanghai) and other major projects. Sustainable efforts are made to improve the child health network with respect to child healthcare, disease screening, diagnosis and intervention, and life-saving treatment, to optimize resource allocation and service supply, and to provide sufficient resources for the five new cities and suburbs. Better methods are used to prevent and control birth defects, to optimize the screening and diagnosis network for congenital heart disease in newborns,

and to increase the screening rate of genetic metabolic diseases, hearing disorder, and congenital heart diseases in newborns to over 98%. Great importance is attached to improving the quality of prenatal and postnatal care, and perfecting the policy support system such as parental leave, and establishing a scientific child-rearing guidance service network at the city, district, and subdistrict levels. Emphasis is put on strengthening children's food safety management to ensure the safe and orderly supply of student lunches.

Case 16 Children's Participation in Social Governance in Daning Road Subdistrict, Jing'an District

Since applying to become one of the first-batch Shanghai Child-Friendly Community demonstration sites in August 2019, Daning Road Subdistrict in Jing'an District has adopted a children-centered, families-based and communities-connected approach to resource optimization and integration, co-construction and shared governance. The district has been working hard to construct a child management and service system that is safe and friendly, beneficial to health, diverse in services, universal and equitable, and protects children's rights.

Early expert research and investigation indicated that the demand for children's participation was found to be particularly prominent. Daning Road Subdistrict made full use of its party-building alliance based on the feature of "the demand for student participation in social practice and the abundant service resources of jurisdictional units" in the "three lists" issued by the new-era civilization practice sub-center. The leading group for the sub-district's child-friendly community construction utilized local resource advantages to achieve resource synergy, and provide a platform for children to participate in social practice and community governance. Led by the women's federation and the working committee of the Communist Youth League, a series of activities were launched to cultivate children's practical and deliberative abilities, promote their participation in community affairs, ensure their participation rights, support their voice, and make them all-round little citizens.

As early as August 2019, Daning Road Subdistrict established a children's council to focus on cultivating the ability of child councillors. In 2020, through activities such as "Ningyi Salon·Council", "Re-election of Children's Council", and "Formulation of Children's Council Rules and Procedures", the child councillors were empowered to improve their ability to observe their communities and identify problems, enhance their expression and organizational abilities, and thus be able to keenly capture the community's "issues" and put forward their proposals.

Such children's council provides a good opportunity to enhance children's social participation and practical abilities, as well as their thinking and feedback abilities towards problems, and to further cultivate child representatives. The child-friendly community working group of Daning Road Subdistrict has integrated resources from jurisdictional units to provide a series of social practice activities such as "Summer Camp for Little Journalists", vocational experience camp -- "Flowers and Youth, Dreams and Growth", and "Little Volunteers' Creation Camp" for children, and to gradually develop their social observation ability and allow them to understand the process of participating in community affairs. Moreover, child representatives are able to participate in community governance by attending the community representative congress and speaking up for children.

SDG12: Responsible Consumption and Production

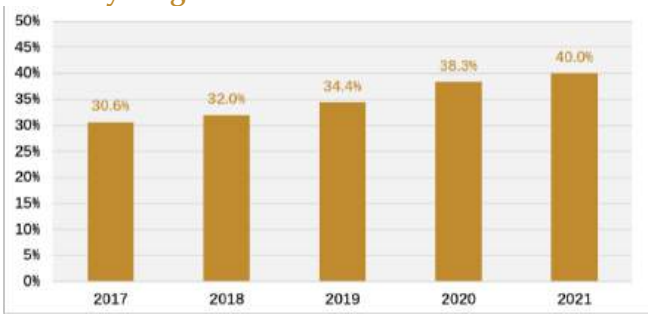
Under the goal of “Green Resilience”, Shanghai is committed to reducing waste generation and minimizing the impact of human activity on the environment and health through promoting the “Zero-Waste City” initiative. By developing a circular economy for resources, it aims to achieve sustainable management and efficient use of natural resources. Additionally, by promoting economic restructuring and green production methods, it aims to push forward sustainable production. At the same time, Shanghai strives to become a safe and resilient city to enhance the recovery and adaptability of its built environment.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG12
Make more efforts to become a "zero-waste city"	Carry out top-level designs for creating a "zero-waste city"	Priorities of Fengxian District for Creating a "Zero-Waste City"	► Recycling rate of domestic waste ► Harmless treatment rate of hazardous and medical waste	12.5 12.4
	Build zero-waste, low-carbon and eco-friendly industrial parks	Tianma Zero-waste Low-carbon Eco-friendly Industrial Park in Songjiang District		
	Classify and reduce domestic waste			
	Dispose of hazardous waste in a harmless manner			
	Advance comprehensive management of water environment			
Develop a circular economy for resources	Recycle industrial resources	Circular Transformation of Shanghai Comprehensive Industrial Development Zone (Fengpu Industrial Park)	► Output value of re-manufacturing industry ►Comprehensive utilization rate of industrial solid waste	12.2
	Improve industrial clean production			
	Take special actions for industrial water conservation			
Boost economic restructuring and green production	Make adjustment to industrial structure			12.1
	Use land resources properly and efficiently	High-quality Utilization of Inefficient Industrial Land in Minhang District		
	Establish a green manufacturing system			
	Build a green manufacturing standard system			
Make more efforts to become a safe and resilient city	Create a resilient structure for urban spaces		► Annual average concentration of PM2.5 ► Frequency of acid rain ► Forest coverage rate ► Proportion of Class III water quality sections to main river sections	12.2
	Promote top-level designs for creating a resilient new city through planning measures			
	Build a city-wide green ecological space network	Guangfulin Country Park in Songjiang District		
	Strengthen flood control and drainage engineering systems	Yunling West Drainage System in Putuo District		

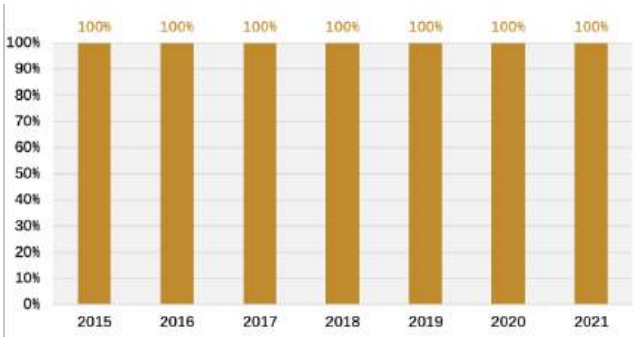
Key Indicators

Recycling rate of domestic waste



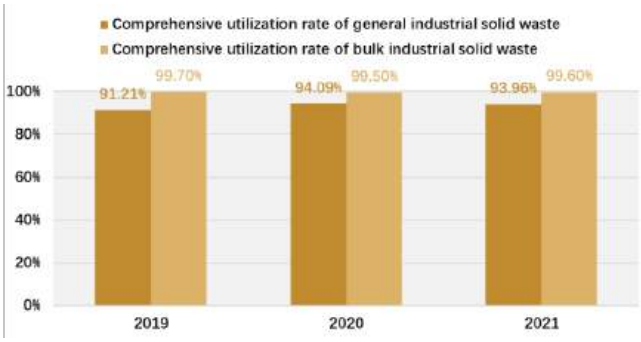
From 2017 to 2021, the recycling rate of domestic waste increased from **30.6%** to **40.0%**.

Harmless treatment rate of hazardous and medical waste



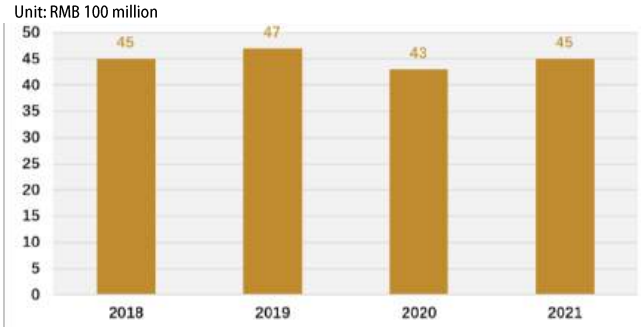
In 2015-2021, the harmless treatment rate of hazardous and medical waste reached **100%**.

Comprehensive utilization rate of industrial solid waste



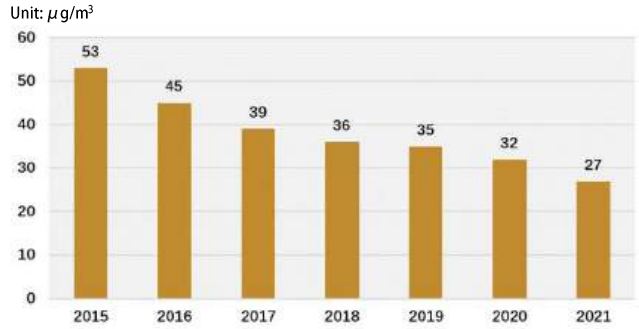
Since 2019, the comprehensive utilization rate of general industrial solid waste in Shanghai has been over 90%, and that of bulk industrial solid waste has remained stable at **over 99%**, a leading level in China.

Output value of re-manufacturing industry



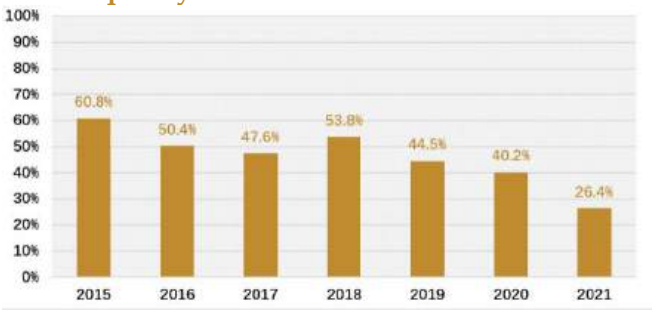
In 2018-2021, the annual output value of Shanghai's re-manufacturing industry averaged around RMB **4.5 billion**.

Annual average concentration of PM2.5



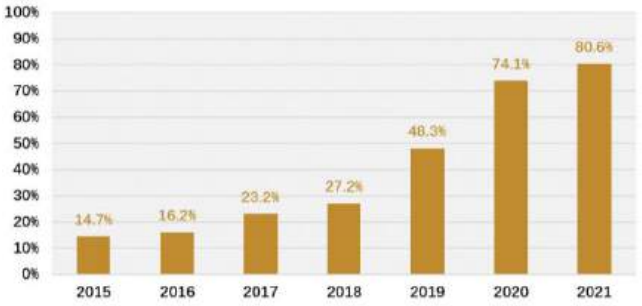
In 2021, the annual average concentration of fine particulate matter (PM2.5) in Shanghai decreased to **27 μg/m³** by **46.0%** compared with 2015.

Frequency of acid rain



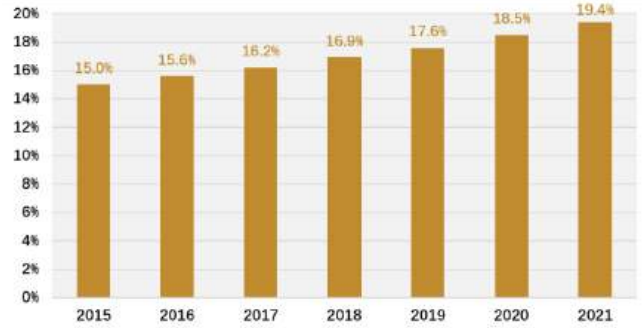
In 2015-2021, the frequency of acid rain in Shanghai continued to decrease from **60.8%** in 2015 to **26.4%** in 2021.

Proportion of Class III water quality sections to main river sections



By the end of 2021, the proportion of excellent and good waters to Shanghai's rivers and lakes increased to **80.6%** by **65.9%** compared with 2015.

Forest coverage rate



From 2015 to 2021, the forest coverage rate in Shanghai increased from **15.0%** to **19.4%**.

Major Progresses

- **Improved capabilities in waste classification and harmless treatment**

Shanghai is steadily improving its capabilities in waste reduction and treatment. From 2017 to 2021, the recycling rate of domestic waste increased from 30.6% to 40.0%. Currently, the recyclable materials are recycled at 7,206 tons per day; the classified amount of hazardous waste and wet waste is 2.2 tons per day and 10,539 tons per day, respectively; and the dry waste is disposed at 14,968 tons per day. Shanghai works hard to monitor the entire process of hazardous waste and medical waste using information technology. In 2015-2021, the harmless treatment rate of hazardous and medical waste reached 100%. In 2021, 1.504 million tons of hazardous waste were generated in Shanghai, of which 545,000 tons were disposed of by generators, 980,000 tons (including 50,000 tons left at the end of previous year) were disposed of by commissioned waste treatment plants, and 29,000 tons were safely stored.

- **Significant progress in production models for an eco-friendly circular economy**

Production models for an eco-friendly circular economy are encouraged in Shanghai. Industrial clean production is used more widely in Shanghai, by all enterprises above designated sizes in Jinshan Industrial Zone, Jinshan Second Industrial Zone, and Xinghuo Industrial Zone. Shanghai keeps trying to increase the recycling rate of industrial resources and accelerate the transformation of 14 national-level and 21 municipal-level industrial parks to create a circular economy for resources; industrial solid wastes are fully used, and the comprehensive utilization rate of bulk industrial solid waste remains above 98%; and active efforts are made to develop the re-manufacturing industry, achieving its output value up to RMB 21.75 billion, including 489 aircraft engines, 18,000 car engines, 162,000 car transmissions, and 37.71 million printer cartridges re-manufactured. There are 100 recognized city-level green factories in Shanghai, of which 56 have been awarded the title of Green Factory by the Ministry of Industry and Information Technology.

- **Improved environmental governance system and governance capability**

Shanghai adheres to the path of ecological priority and green development. The proportion of environmental protection investment in Shanghai's annual GDP has remained at around 3% for 18 consecutive years. The environmental infrastructure system is gradually improving; the environmental governance system and governance capability continue to improve; the green transformation and development in key areas have achieved initial results; the quality of ecological environment has improved significantly, and also the satisfaction and sense of gain of the public have significantly increased. The year of 2021 witnessed the best quality of overall ecological environment in recent years. In the central government's annual assessment of the effectiveness of pollution prevention and control measures taken by different provinces and cities, Shanghai was rated as excellent in both 2019 and 2020, and ranked first in 2020.

- **Significant improvement in water environment**

The transformation of production and consumption patterns leads to further improvement in the water environment in Shanghai, where inferior Class V waters have been eliminated as scheduled, the proportion of Class III or above rated rivers and lakes under the jurisdiction of townships and above have reached 70.7%, and the water surface rate of rivers and lakes accountsfor 10.24%. In recent years, Shanghai has continued to improve its flood control and drainage capacity. The embankments along the Huangpu River and Suzhou Creek have been completed as required. Shanghai has completed the safety appraisal of 197 first-line and provincial border water gates, and the drainage capacity of each water conservancy section has reached the level of a 15-year storm. Shanghai has built 359 rainwater drainage systems, with a drainage capacity of 4,378 m^3/sec., covering an area of 816 km^2. The built drainage systems meet the standard of a one-year storm (36 mm/h), and those for key areas such as airports and central business districts meet the drainage standard of a 3- to 5-year storm (50-56 mm/h).

- **Expanded green eco-space network**

In recent years, Shanghai has made rapid progress in green spaces, including parks, forests, and eco-corridors. By the end of 2017, a green belt surrounding the main urban area of Shanghai had been formed, with a total green area of approximately 4,038 hectares, creating a green necklace and a green barrier for the city. In 2021, Shanghai launched the construction of 7 parks along the city's ring green belt, with a total area of approximately 270 hectares, and initiated the study of plans for 10 parks with a total area of approximately 520 hectares. In that year, the project for constructing 3.7-km greenways and 6 greenway stations kicked off. In 2021, 30 additional forest parks were installed in Shanghai and made available for the public, providing citizens with green eco-paces for relaxation, fitness, and leisure without reducing the total amount of forest resources or the forest coverage rate. Shanghai also puts emphasis on the construction of suburban parks. Since the first country park was opened in 2016, many representative projects, such as Jiabei Country Park in Jiading District, Changxing Country Park in Chongming District, Pujiang Country Park in Minhang District, Songnan Country Park in Songjiang District, and Qingxi Country Park in Qingpu District, have been completed.

- **High starting point to create a resilient city**

The new round of land and space development in Shanghai has determined a major strategic deployment of a new spatial pattern for "new cities". Shanghai incorporates the concept of creating a resilient city in the planning and construction of the five new cities in Songjiang, Jiading, Fengxian, Qingpu, and Nanhui districts. The latest concepts and standards for creating a resilient city are implemented to build a multi-hazard defense engineering system, improve the emergency management system, and create a safe and resilient city that is adaptive, resistant to impacts, and capable of rapid recovery. Furthermore, Shanghai has concentrated its "lifeblood" such as electricity, communication, water, and gas in comprehensive pipe galleries, and through intensive construction and management, it has achieved comprehensive utilization and resource sharing of

underground spaces, thus improving its comprehensive carrying capacity, urban security and resilience. By the end of 2021, Shanghai had constructed underground comprehensive pipe galleries totaling about 153.6 km, of which about 118 km have been put into operation.

Important Measures

(1) Make more efforts to become a "zero-waste city"

● Carry out top-level designs for creating a "zero-waste city"

Following the central government's deployment, Shanghai has made great efforts to carry out top-level designs for creating a "zero-waste city" according to related high standards throughout the city, and put forward specific measures for reducing waste from the source, resource recycling, and pollution prevention and control. When formulating an action plan for creating a "zero-waste city", each district in Shanghai also fully considers its own characteristics and submits practical and feasible action plans. Lingang New Area has issued an action plan for creating a "zero-waste city", in which it is recommended to coordinate the collection, transportation, recycling, disposal, and management of various solid wastes from high-tech industries, living activities and, agricultural activities within the new area, so as to create a resilient, green, and shared "zero-waste new city". The issued action plan of Fengxian District for creating a "zero-waste city" gives priority to solid waste reduction and resource recycling as a Fengxian-specific approach to promote the development of "new areas, new cities, new villages, and new economy"; and the process is measured by five indicators: solid waste reduction at the source, resource recycling, final disposal, capacity guarantee, and public satisfaction.

Case 17 Priorities of Fengxian District for Creating a "Zero-Waste City"

In June 2022, Fengxian District issued the *Action Plan of Fengxian District Shanghai for Creating a "Zero-Waste City*, which describes its goals and indicators for creating a "zero-waste city" by 2025 as well as its priorities.

1) Establish an effective mechanism for normalized solid waste management. This requires setting up a leading group led by the district's ecological environment bureau, and composed of representatives from related departments such the district's development and reform commission, economic committee, treasury department, and other departments related to greening and urban environment, agriculture and rural areas, water affairs, construction management, urban management, government agencies, tourism, science and technology, and education. The leading group is responsible for organizing and coordinating the work for creating a "zero-waste city", ensuring the planning of solid waste-related industry land, planning and laying out special industrial land for resource recycling enterprises, and exploring the creation of a "zero-waste industrial demonstration park" in Fengxian District. A performance assessment and effectiveness evaluation mechanism will be established and improved during the creation of a "zero-waste city". The effectiveness of their efforts in creating a "zero-waste city" will be included in the performance assessment of government departments at the district and town level.

2) Accelerate industrial transformation for low-carbon goals and achieve fine management of

industrial solid waste. Specifically, this requires: implementing green production to accelerate the transformation and upgrading of traditional industries; strictly controlling high-energy-consuming and high-emission projects to orderly promote the transformation and upgrading of industrial parks; extending industries towards high-value and low-waste chains; encouraging enterprises to implement green production and improve the overall level of their clean production; constructing green factories, green parks, and low-carbon parks, promoting the closed-loop circulation of materials within and between park enterprises and industries to achieve the recycling of solid waste; piloting "zero-carbon and zero-waste" parks in Hangzhou Bay Economic and Technological Development Zone; standardizing the declaration, statistics, management, and downstream feedback mechanism for general industrial solid waste; and improving the recycling rate of local general industrial solid waste.

3) Develop a circular economy in agriculture and standardize the agricultural waste recycling system. This requires creating green agricultural bases, accelerating the green transformation of livestock, poultry and aquaculture industries, establishing a circular economy system for "turning livestock and poultry manure into organic fertilizer" in the breeding industry, and strengthening the certification of green food and organic agricultural products.

4) Promote a green lifestyle and create a pilot demonstration of "zero-waste cells". This requires: further implementing the responsibility system for classification of domestic waste at the source; disposing of domestic waste in a harmless and more effective way; encouraging green procurement and consumption of green and low-carbon products; further controlling plastic pollution and applying green packaging; creating pilot demonstrations of carbon peaking and carbon neutrality; creating "zero-waste cells" using various measures, such as resource-saving government agencies, green procurement, green hotels, green schools, green shopping malls, green express delivery points (distribution centers), and "zero-waste" scenic areas, to showcase their effects, and strengthening publicity and education to create a "zero-waste" atmosphere across the district.

5) Construct more green buildings, standardize the collection and transportation system of construction waste, and improve the recycling rate of construction waste.

6) Enhance risk prevention and control and strengthen the safety management and control of hazardous waste. This requires implementing graded and classified management of hazardous waste, perfecting the medical waste collection and transportation system, improving the comprehensive utilization rate of local hazardous wast, enhancing the information management for hazardous waste, and strengthening the risk prevention and control for hazardous waste.

7) Foster resource recycling enterprises and extend the recycling industry chain for recycled resources.

8) Enhance system support capacity and improve the environmental management system for solid waste as well as related technologies, markets, and regulatory systems.

- **Build zero-waste, low-carbon and eco-friendly industrial parks**

Shanghai strives to become a "zero-waste city" by focusing on upgrading comprehensive solid waste disposal parks in Tianma Songjiang, Laogang Pudong, and Chongming, and is committed to achieving resource sharing, mutual benefit in waste disposal, recycling, cost reduction and efficiency improvement, and has made great efforts in the transformation of the solid waste industry towards deep low carbon, ultra-low and

even net-zero emissions[7].

Case 18 Tianma Zero-waste Low-carbon Eco-friendly Industrial Park in Songjiang District

As a first-class modern comprehensive park, Tianma Zero-waste Low-carbon Eco-friendly Industrial Park is a multi-functional complex that integrates waste disposal and recycling, core technology research and development, environmental talent cultivation, science popularization and exhibition, and environmental-friendly experiences. It serves as an industrial park for the disposal of solid waste from Songjiang District and also as a demonstration and education base for resource recycling and regeneration.

Guided by the concept of green development, this industrial park aims to gather, scale and commercialize domestic waste from Songjiang and Qiangpu districts, construction waste, wet waste, municipal sludge, and general industrial solid waste from Songjiang, and establish a closed-loop economic model for urban solid waste disposal and recycling by strengthening mechanism innovation and modifying policies and measures. This industrial park has a domestic waste incineration power plant (3,500 t/d), a wet waste recycling plant (530 t/d), a construction waste recycling plant (1,800 t/d), and a sludge drying plant (240 t/d).

The park is designed with visitors' passages and an exhibition hall and VR experience area for science popularization of classified waste collection and disposal. Advanced technologies are used in the design of various application scenarios, allowing visitors to get fully aware of the entire process of domestic waste classification from placement, collection, transportation to disposal, and thus understand the true meaning of "lucid waters and lush mountains are invaluable assets". Visitors are also allowed to take a sightseeing elevator in the "chimney" to overlook the panoramic view of the park, beautiful Songjiang New City, and Sheshan National Tourist Resort, from a height of 75 m away from the ground. As of now, the park has received over 2,000 batches of domestic and overseas visiting teams, with a total of more than 50,000 visitors.

Figure 25 Incineration Plant in Tianma Zero-waste Low-carbon Eco-friendly Industrial Park in Songjiang District

[7] Source: The Paper (https://m.thepaper.cn/baijiahao_19929475)

This industrial park is equipped with a smart platform for intelligent energy, intelligent environmental protection, intelligent operation, and intelligent security, to dynamically display the environmental indicators, carbon emission reduction, waste disposal volume, energy output, and other indicators of the domestic waste incineration plant, wet waste plant, and construction waste plant; the platform is also used to monitor the environmental indicators of the park, including environment, smoke, exhaust pipe, sewage, and dust monitoring. The system adopts a front-end and back-end separated development mode, and current mainstream technology frameworks are used in the front-end to display to visitors cool design styles and impressive effects, including the plant area map specially designed for display effects. The intelligent energy module uses animation to show the flow of energy and material between plant areas; the intelligent process module presents the equipment of each plant in a 2.5D model and introduces and shows the process flow through animation; the intelligent security module interfaces with the existing monitoring system to display the pictures of each monitoring point.

- **Classify and reduce domestic waste**

Shanghai ensures the classification of domestic waste through local legislation and has built 10 collection and distribution centers, 201 transfer stations, and 15,000 recycling service points, which form a recycling system to cover all recyclables. By the end of 2021, Shanghai had basically achieved no landfill of raw domestic waste, with a recycling rate of 40%. Shanghai has relied on a "management + technology" model to incorporate waste classification into an integrated platform, utilized the Internet of Things, the Internet, and other technologies to integrate existing intelligent monitoring devices and transportation vehicle mounted GPS equipment, and established a three-level (city, district and subdistrict/town), "five-step" (classified waste placement, collection, transportation, transfer, and disposal), full-process supervision system, which features complete components, clear logistics, controllable quality and dynamic evaluation, and can be fully used to greatly improve the "intelligent governance" of waste classification. All classified wastes are properly placed, collected, transported/transferred, and disposed of. By the end of 2021, a number of waste disposal facilities, such as Phase II of Laogang Wet Waste Treatment Plant, Phase II of Jinshan Incineration Plant, and Phase II of Fengxian Incineration Plant, had been completed and put into operation; Shanghai had achieved its capacity in wet waste recycling and dry waste incineration up to 31,000 tons per day, as well as no landfill of raw domestic waste.

- **Dispose of hazardous waste in a harmless manner**

Shanghai has strengthened the control of hazardous waste from the source and improved the recycling and disposal of hazardous waste. It has built a number of high-quality hazardous waste disposal facilities, such as Laogang Medical Waste Disposal Center and Shengda Incineration Plant. Shanghai has included more than 4,000 auto repair enterprises in the waste collection system, achieving unified collection, transportation and disposal of major hazardous waste such as lead-acid batteries and mineral oil; it has strengthened the source management of laboratory hazardous waste, established a

hazardous waste service platform for industrial parks, and worked well in planning, constructing and operating environmental infrastructure for industrial solid waste collection and storage. In addition, Shanghai has built and applied a hazardous waste information management platform, incorporating the entire process of hazardous waste management into information management to enhance the precise harmless treatment of hazardous waste.

- **Advance comprehensive management of water environment**

Shanghai focuses on the comprehensive management of rivers and lakes and coordinates its efforts in water environment, water ecology, water resources, water safety, and water culture. Based on the main work on water system governance, it considers the overall situation of water systems, concentrates on key tasks, and improves the governance of rivers and lakes. For coordinated regional planning, it also collaborates with neighboring provinces and cities to jointly govern water systems. Shanghai has optimized the long-term mechanism for river and lake governance based on high standards, and strengthened the coordination and joint efforts among different departments so that they will work together to improve the governance of water systems.

(2) Develop an eco-friendly circular economy

- **Recycle industrial resources**

Shanghai attaches great importance to recycling of industrial solid waste and technological innovation in this aspect. It has taken the following measures: fully recycling all bulk industrial solid wastes such as smelting slag, desulfurized gypsum, and incineration ash; developing ultra-fine composite technology to manufacture high-performance building materials and products that meet market demand; coordinating the proposal of coal-fired power plants with municipal sludge, cement kilns with domestic waste; establishing a whole-industry-chain traceability, management and recycling system for power batteries; recycling waste steel and creating zero-waste enterprises; laying out facilities for the recycling of waste acid from the integrated circuit industry; conducting research on green design, production, and reuse of plastic products to reduce the pollution of discarded plastic products to the environment; encouraging related industries and enterprises to petrochemicals, chemicals, steel, food, and data centers to recycle waste heat (cold) and explore the shared mode of waste heat among enterprises in the region; and making full use of the cold energy power generation program based on the expanded project for LNG storage tanks at Yangshan Deep Water Port.

Case 19 Circular Transformation of Shanghai Comprehensive Industrial Development Zone (Fengpu Industrial Park)

Shanghai Comprehensive Industrial Development Zone (Fengpu Industrial Park), located in Fengxian New City in the south of Shanghai, covers an area of 20.8 m^2. Since 2016, the park has formulated a circular plan that is committed to consolidating and developing advanced manufacturing, promoting industrial restructuring, improving resource efficiency, and constructing a circular economy industrial chain. According to the *Action Plan for Circular Transformation of*

Shanghai Comprehensive Industrial Development Zone (Fengpu Industrial Park), priorities are given to the following tasks:

1) Optimizing the industrial structure and developing five major circular industrial chains, including industrial chains of circular economy for beauty and health, automobile parts, high-end equipment, new energy, and electronic information.

2) Making public infrastructure eco-friendly. This includes conserving and efficiently utilizing all resources, strengthening the management of mandatory indicators, improving infrastructure construction, perfecting pollution prevention and control plans, boosting low-carbon transportation, and implementing a new energy vehicle promotion plan.

3) Improving energy efficiency. This includes implementing five energy-saving and efficiency-improving projects, including graded use of energy and transformation of high-efficiency motors, equipment upgrading and transformation, waste heat and waste pressure recycling, and energy system optimization, green lighting and lighting system transformation.

4) Building a comprehensive resource utilization system in the park. This includes improving the centralized collection system of hazardous waste for small and medium-sized enterprises, recycling and reducing general waste, and implementing five water conservation projects including RO concentrated water reuse, reclaimed water reuse, water conservation during production process, unconventional water utilization, and domestic water conservation.

5) Strengthening pollution monitoring and governance. This includes implementing the environmental monitoring and law enforcement system, optimizing the treatment of wastewater, boiler exhaust gas, VOCS, and odor, and enhancing environmental quality.

6) Building a public service platform for the park. This includes establishing an energy management center for key energy-consuming enterprises, reporting related information to the park's energy efficiency monitoring platform, and building a display platform for exchange between enterprises.

- **Improve industrial clean production**

Shanghai has carried out a coordinated plan for waste control from the source and waste reduction in the process, encouraged developing and using pollution reduction technologies and equipment in key industries and processes with high pollutant emissions, and set an example in clean production. The city has implemented a clean production improvement project to reduce emissions of air, water, and soil pollutants, and achieve full coverage of clean production in chemical, pharmaceutical, integrated circuit and other industries. It also encourages performing clean production audits for 1,000 enterprises and focuses on the construction of clean production demonstration parks in Zhujiajiao Industrial Zone, in line with the goals of Yangtze River Delta Ecological Green Integrated Development Demonstration Zone.

- **Take special actions for industrial water conservation**

Shanghai has imposed stricter restrictions on planned water consumption, and encouraged key water-consuming enterprises and parks to establish a smart water management system. Key water-consuming industrial enterprises are encouraged to upgrade water-saving technologies, optimize processes and utilize recycled cooling water,

strengthen wastewater recycling, promote water resource sharing between enterprises and graded use of water, and improve the reuse efficiency of industrial water. Shanghai strives to cultivate water-saving service agencies and has launched a number of pilot programs in contractual water conservation, smart water saving, and unconventional water utilization. It has made great efforts to ensure that water-intensive industrial enterprises comply with the standards for water efficiency, so as to create a larger number of water-saving enterprises and industrial parks.

(3) Boost economic restructuring and green production

- **Make adjustment to industrial structure**

In recent years, Shanghai has striven to develop modern services and advanced manufacturing, and transform and upgrade traditional industries to high-end value chains and high-tech products of high value-added. The government has formulated *Shanghai's Industrial Structure Adjustment Guidance Catalogue (for Restricted and Eliminated Industries)* and will update it as appropriate, and has taken multiple measures related to differentiated electricity prices, environmental protection, quality control, and safety monitoring to eliminate outdated production capacity according to applicable laws and regulations. At the same time, it is prohibited to blindly develop any energy-intensive, high-emission and low-quality projects, and such projects should be subject to list management, classified disposal, and dynamic monitoring according to the issued *Shanghai's Action Plan against the Blind Development of Energy-intensive and High-emission Projects*.

Figure 26 Hongqiao Green Valley Plaza

- **Use land resources properly and efficiently**

Shanghai, with a population of more than 24 million permanent residents, has limited and extremely precious land resources. In the *Shanghai Master Plan (2017-2035)* issued in 2018, Shanghai has set a goal for zero growth in planned construction land, making high-quality utilization of land resources a must for its urban development. In 2018, the Shanghai Municipal Government issued the Opinions on High-Quality Utilization of Land Resources in Shanghai, detailing several practices such as: 1) coordinated planning of eco-spaces, agricultural land, and urban areas to improve the city's comprehensive carrying capacity; 2) reducing construction land, improving the management of land indicators, strengthening land reserves, and accelerating the disposal of approved but not yet used construction land; 3) revitalizing existing construction land, renovating old neighborhoods and urban villages, revitalizing existing industrial land, eliminating inefficient land, and properly disposing of idle land; 4) adhering to the control of development intensity in different layers and zones, differentiating development intensity and guiding the intensive and efficient use of industrial land, encouraging mixed land use, and properly using underground spaces; 5) adhering to quality and performance oriented principles, improving the economic density of land resources; 6) improving the efficiency of coordination between the municipal and district governments, and optimizing the allocation of land resources.

Case 20 High-quality Utilization of Inefficient Industrial Land in Minhang District[8]

Minhang District, as a suburban area of Shanghai, has played an important role in local manufacturing in its history. In recent years, with the urban development, most areas in Minhang have been incorporated into the main urban area of Shanghai, and this new spatial pattern has put higher requirements on the high-quality utilization of land in Minhang District. In this case, Minhang has worked hard to achieve high-quality utilization of industrial land, ensure high-quality development of industries, improve the mechanism for revitalizing inefficient industrial land, release low-efficiency industrial land, and effectively improve the performance of industrial land. It has taken the following actions:

1) Dealing with existing problems to achieve interconnection and mutual checking of land information. Since 2018, the Planning and Natural Resources Bureau of Minhang District has conducted an investigation of industrial land efficiency throughout the district in conjunction with the third national land survey. Based on development intensity, investment intensity, average tax revenue per *mu*, and other indicators, the structure, quantity, and distribution of low-efficiency industrial land in the entire district have been surveyed, and a database of low-efficiency industrial land has been established to achieve interconnection and mutual checking of land information among departments.

2) Introducing high-quality projects to low-efficiency land. For example, on the low-efficiency land covering an area of 81 *mu* in Pujiang Caohejing Development Zone in Minhang District, industrial production activities failed to be conducted as planned, for this plot is a typical inefficient industrial land. Minhang transferred this low-efficiency industrial land through industrial access review to revitalize it and incorporated it into full-life-cycle management. The proposed projects

[8] Source: Official website of Minhang Government (//www.shmh.gov.cn/shmh/zwdt-gtj/20200826/490978.html)

were positioned as intelligent manufacturing and life health industry, with no significant environmental impact and an expected annual output value of RMB 1.2 billion, meeting the industrial access requirements of Minhang District.

3) Tackling tough issues and making every effort to achieve high-quality utilization of industrial land. The Planning and Natural Resources Bureau of Minhang District plays an active role in guiding the revitalization and high-quality utilization of various types of low-efficiency industrial land, and uses such models as self-development of land by original use right holders, government-led overall development, and land acquisition and development by market players, and such methods as partial/overall transformation, land resumption through negotiation, acquisition reserve, and plot ratio increase, to revitalize existing inefficient industrial land.

- **Establish a green manufacturing system**

Shanghai continues to support green factories, green parks, green products, and green supply chains. It has taken the following measures: implementing dynamic management of the green manufacturers' list, strengthening effect evaluation, and establishing a dynamic adjustment mechanism for the list; building a basic database of industrial products in their full life cycle with respect to their resource consumption, energy consumption, pollutant emissions, and impacts on human health; promoting green product design that consider resource consumption and carbon emissions throughout the product's full life circle; promoting green factory design that emphasizes resource and energy efficiency, layout aggregation, green structure, and eco-linking in park design concepts; strengthening the green low-carbon upgrade of productive service industries such as e-commerce and information technology, research and development and design, inspection and testing, logistics and warehousing; developing green integrated comprehensive services to assist manufacturers in integrating upstream and downstream resources, and providing system solutions to design, procurement, manufacturing, engineering construction, and operation and management; providing individualized and customized services for enterprises related to energy conservation, water conservation, environmental protection, and resource recycling; building a green service platform for the integration of manufacturing and service industries.

- **Build a green manufacturing standard system**

Shanghai has built a standard system for green manufacturing to accelerate the formulation, revision, promotion and application of management standards for energy and water consumption, carbon emissions, and energy conservation. Based on its own industrial characteristics, Shanghai has formulated a municipal standard for green products and released a municipal catalog for green products. It has also formulated green park evaluation standards for characteristic industrial parks, productive service parks, and delicate micro-parks, and developed green supply chain management standards for productive services, supply chain management, and enterprises under group management.

(4) Make more efforts to become a safe and resilient city

● Create a resilient structure for urban spaces

Shanghai is committed to becoming a safe and resilient city that can adapt to global climate change and cope with disasters and risks. It aims to strengthen traditional and non-traditional security measures, enhance the city's functional, process, and system resilience, and establish a normalized control and emergency support system for urban safety, ensuring Shanghai remains among the safest cities in the world. To become a resilient city, Shanghai enhances its ability to respond to risks in the construction of urban spatial structures through spatial organization patterns, networked infrastructure, distributed layout of important functions, and innovative planning and design.

● Promote top-level designs for creating a resilient new city through planning measures

The "new cities" plan is a significant strategy for Shanghai to form a new spatial pattern. The latest concepts and standards for creating a resilient city are fully reflected in the planning and construction of the five new cities in Songjiang, Jiading, Fengxian, Qingpu, and Nanhui, and help to build a multi-hazard defense engineering system, improve the emergency management system, and create a safe and resilient city that is adaptive, resistant to impacts, and capable of rapid recovery. In March 2021, the municipal government issued the *Opinions on Accelerating the Planning and Construction of New Cities in Shanghai during the 14th Five-Year Plan*, which sets specific targets for building them into resilient cities: in drainage capacity, about 35% of areas in each new city can withstand a 3- to 5-year storm; a group of sponge city demonstration areas and projects should be constructed; these new cities should be more able to prevent and reduce disasters; underground comprehensive pipe galleries should be installed; the public health system and the emergency response system should be improved.

● Build a city-wide green ecological space network

Shanghai is working hard to create a city-wide green ecological space network, which consists of: ecological corridors around the main urban area, suburban ecological corridors, ecological conservation areas, wetlands in the Yangtze River estuary and near the sea, and country parks in different locations. Important ecological corridors include: the Huangpu River, Chongming, Jiabao, Jiaqing, Qingsong, Jinfeng, Pufeng, Dazhi River, and Jinhui Port ecological corridors. The planned land for these ecological corridors is generally controlled within 10% of total land area, and their planned forest coverage is above 50%, bot of which provide an important ecological foundation for Shanghai to become a resilient city. While striving to build green ecological spaces, Shanghai is also trying to provide more ecological value-added services for citizens and create open ecological spaces. Shanghai has built an "ecological park belt around the city" to enhance the overall function of the outer-ring green belt and fully leverage its overall benefits. Shanghai also builds open forest parks to provide citizens with green eco-paces for relaxation, fitness, and leisure without reducing the total amount of forest resources or the forest coverage rate. Furthermore, in recent

years, Shanghai has put great emphasis on the construction of country parks, and focused on urban recreation needs under the concept of ecological priority.

Case 21 Guangfulin Country Park in Songjiang District

In 2013, the construction of Guangfulin Country Park was commenced in Songjiang District, and the first phase was completed and opened to the public on December 28th, 2017. In the construction process, it was required to follow the concept of "focusing on recreational functions, highlighting countryside characteristics, optimizing spatial structure, and improving environmental quality", and based on existing ecological, humanistic, and natural resources such as rural fields, ecological forests, pond wetlands, and historical features, to protect farmland and ecological resources, restore ecological space, and create areas for agricultural cultivation, fruit picking, scenic orchards, and wetland fishing villages.

Figure 27 Guangfulin Country Park in Songjiang District

Guangfulin Country Park in Songjiang District not only improves local ecological environment and rural landscape, but also provides ecological leisure space for urban residents. Songjiang first carried out comprehensive land management for farmland, waters, roads, forests, villages, and factories within this country park, while revitalizing existing construction land and houses to achieve high-quality utilization of land resources. In the construction process, it adhered to the basic principles of "respecting, adapting to, and protecting nature", retained unique farmland, forests, rivers and lakes, and villages to emphasize natural elements over artificial ones, and made full use of various natural land elements such as "farmland, waters, roads, forests, and villages" to create a layout of connected and diverse landscapes and highlight the characteristics of an urban ecological corridor. Meanwhile, it fully tapped into local cultural elements, integrated material and non-material cultural resources, protected village texture, and utilized folk activities and agricultural landscapes to showcase local cultural characteristics and natural beauty. This construction project included land leveling, irrigation and drainage, field road engineering, farmland protection, and

ecological preservation. In total, 15 watercourses were dredged, two new water gates, a new 11.3-kilometer-long and 3-meter-wide greenway and a new 6.9-kilometer-long and 5-meter-wide greenway were installed.

- **Strengthen flood control and drainage engineering systems**

In recent years, Shanghai has completed a series of plans, including Shanghai's Plan for Flood Control and Drainage Plan (2020-2035), Shanghai's Special Plan for Safety Appraisal of Water Gates and Hydraulic Pump Stations (2021-2030), and Shanghai's Plan for Urban Rainwater Drainage Plan (2020-2035), focusing on strengthening flood control and drainage engineering systems. Currently, Shanghai is constructing a 74.6-km sea dike according to related standards, combined with the construction of a 42.7-km sea dike in Chongming Landscape Avenue Phase I and a 51.3-km sea dike in Landscape Avenue Phase II. It is also striving to reinforce and upgrade water gates against floods to improve regional flood control and drainage. With a focus on improving the drainage of low-lying polder areas in Songjiang, Jinshan, and Qingpu, water pumps and gates in these areas have been upgraded and the dikes have been raised and strengthened raised to enhance the ability of polder areas to resist floods. The drainage systems have been transformed and standardized to gradually meet the new design standards and requirements for regional drainage. In 2016-2020, 28 new drainage systems were installed in the central urban area, with a total investment of about RMB 6.8 billion.

Case 22 Yunling West Drainage System in Putuo District

"Inevitable waterlog during flood season" in Yunling West Area used to be one of the most difficult problems in Putuo District. Due to lack of proper solution to rainwater outflow, the rainwater in this area had to be collected through municipal rainwater pipes and discharged into the local river through temporary self-draining pipes. Therefore, during flood season, not only drainage safety in this area could not be guaranteed, but it also often had adverse effects on local water environment. In order to provide a thorough solution to both water safety and water environment in this area, "Yunling West Drainage System" was constructed in 2017, aiming to eliminate blind spots in drainage in the central urban area of Shanghai, connect the drainage network across the area, improve overall drainage capacity, and enhance flood control and drainage.

This project included the construction of external pipeline network and rainwater pumping stations. On May 29, 2020, the Yunling West Drainage System project was completed, and the rainwater and sewage pipelines, and pumping stations were put into operation, thus solving the problem of large-area waterlogging in the Yunling West area. In 2021, the Yunling West rainwater pumping station measured a cumulative rainfall of 1,527.1 mm and discharged a total of 2.937 million m^3 of water into the river, ensuring the flood control safety in the area; the total amount of sewage intercepted by the pumping station reached 1.993 million m^3 for the whole year, making a significant contribution to local water environment.

SDG17: Partnerships for the Goals

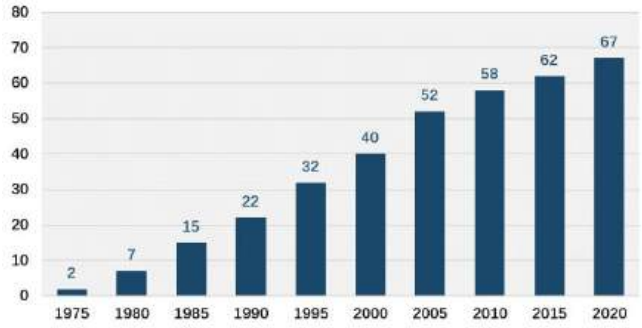
Under the goal of "common development", Shanghai has established closer international partnerships through expanding the circle of sister cities and promoting nongovernmental exchanges. It has taken many actions such as China International Import Expo (CIIE) to facilitate smooth and close international economic and trade development. Shanghai has played an active role in assisting and supporting relatively underdeveloped areas in China, led the high-quality integrated development of the Yangtze River Delta region, and created a platform for "World Cities Day" to share practices and experience in sustainable urban development with global partners.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG17
Establish closer international partnerships	Establish a global network of international sister cities		► Number of Shanghai's international sister cities	**17.16**
	Develop people-centered models for international communication	Magnolia Silver Award, Magnolia Gold Award and Honorary Citizenship of Shanghai		
	Create a "people-oriented" environment for international talents			
Facilitate smooth and close international economic and trade development	Continue to hold the China International Import Expo	CIIE Shanghai Sister Cities Cooperation Forum	► Intended transaction amount at CIIE ► Regional headquarters of multinational corporations ► Foreign-funded R&D centers ► Actual foreign investment amount ► Number of contracted FDI projects ► Total cross-border RMB settlement in China (Shanghai) Pilot Free Trade Zone	**17.12** **17.10**
	Establish a closely connected international trade network	"Sail of Shanghai" Economic and Trade Exhibition Committee Facilitating Foreign Trade and Economic Cooperation under the "Belt and Road" Initiative		
	Create an international business environment according to highest standards	Business Environment Reform in Engineering Construction		
Strengthen domestic cooperation to achieve common development	Provide paired assistance to inland areas to achieve poverty alleviation		► Projects for East-West cooperation and paired assistance	**17.15** **17.17**
	Lead peripheral cities to achieve integrated development	Hongqiao International Opening-up Hub		
	Build the Yangtze River Delta into an integrated development demonstration zone	Yuandang Cross-border River-Lake Joint Governance in the Yangtze River Delta Ecological Green Integrated Development Demonstration Zone		
	Build a "One-stop Network" for administrative services in the Yangtze River Delta			
Create a platform for "World Cities Day"	Establish a permanent institution for "World Cities Day"			**17.16** **17.17**
	Carry out routine work for "World Cities Day"			
	Create marked achievements in "Four Shanghais"			
	Host World Cities Day observance	2021 World Cities Day China Observance		

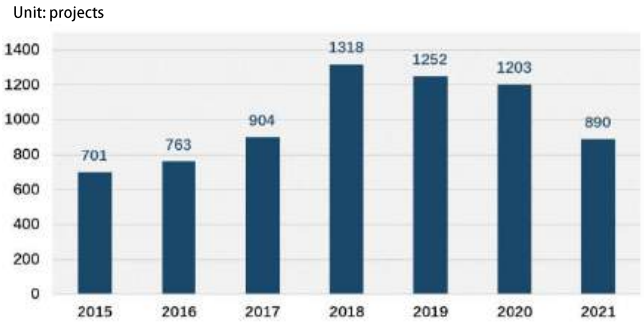
Key Indicators

Number of Shanghai's international sister cities



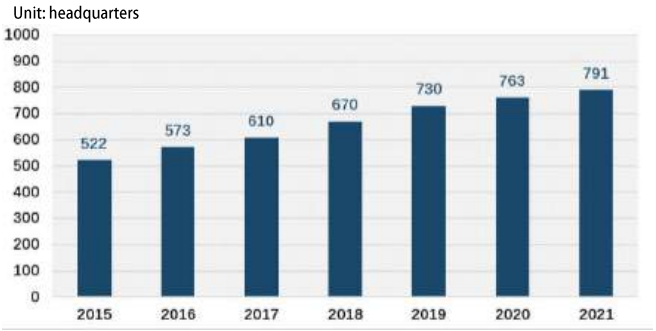
Since Shanghai established its first international sister city in 1973, the number of its sister cities had grown to **67** as of September 2021, including those located in Asia, Europe, Africa, America, and Oceania.

Projects for East-West cooperation and paired assistance



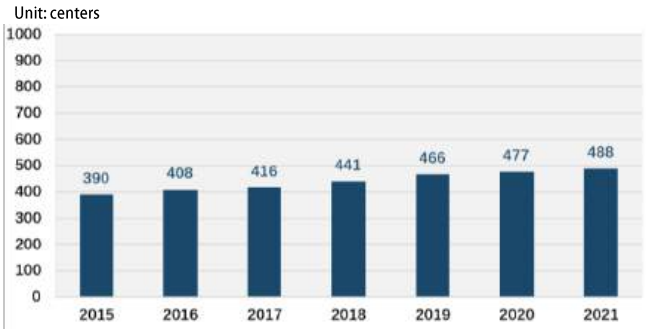
In 2015-2021, Shanghai maintained around **1000** projects per year for East-West cooperation and paired assistance in China, and signed **17** government-to-government framework agreements (memorandum) with other provinces (autonomous regions) or vice-provincial-level cities.

Regional headquarters of multinational corporations



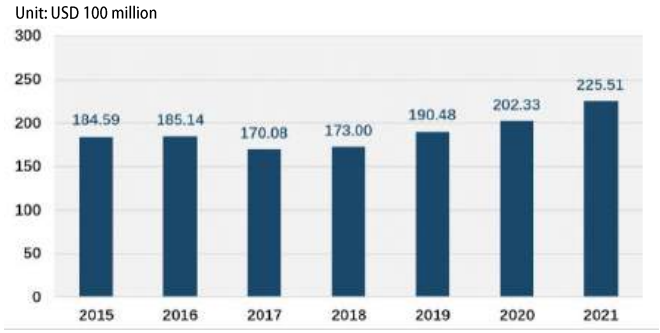
By the end of 2021, the number of multinational corporation headquarters in Shanghai increased to **791** by **52%** compared with 2015.

Foreign-funded R&D centers



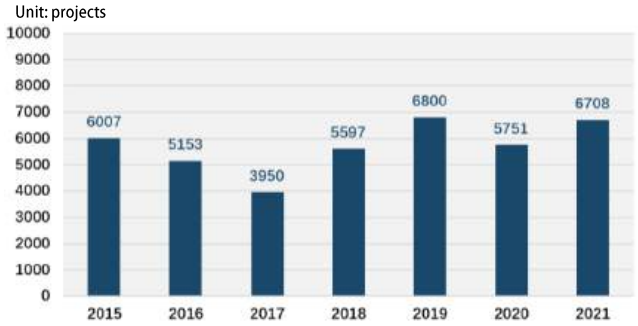
By the end of 2021, the number of foreign-funded R&D centers in Shanghai increased to **488** by **25%** compared with 2015.

Actual foreign investment amount



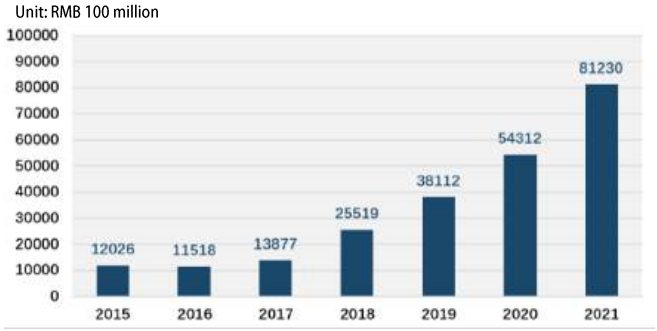
In 2015-2021, the average annual actual foreign investment amount of Shanghai was **USD 19.016 billion**.

Number of contracted FDI projects



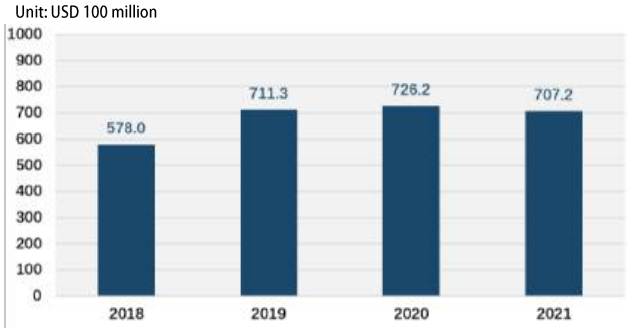
In 2015-2021, the average annual number of contracted FDI projects in Shanghai exceeded **5700**.

Total cross-border RMB settlement in China (Shanghai) Pilot Free Trade Zone



In 2021, the total cross-border RMB settlements in China (Shanghai) Pilot Free Trade Zone was **RMB 8,123 billion**, **6.8** times that of 2015.

Intended transaction amount at CIIE



In 2018-2021, China International Import Expo was held in Shanghai for four consecutive years, with an average intended transaction amount of **USD 68 billion** per session.

Major Progresses

- **An expanded circle of international sister cities**

Since Shanghai established its first international sister city relationship with Yokohama, Japan in 1973, it has exchanged with more international cities to expand its circle of sister cities. As of the end of 2020, Shanghai had established sister relationship with up to 67 international cities in Asia, Europe, Africa, America, and Oceania, and actively engaged in exchange and cooperation in politics, economy, science and technology, education, culture, and public health. Additionally, Shanghai has five city-level friendly exchange partner cities and 20 district-level (or town-level) international sister cities. Such city diplomacy has become an important brand and window for China's foreign relations.

- **Smoother and closer connections in international economy and trade**

Shanghai plays an important role in the "Belt and Road", RCEP, and other opportunities brought by "opening up", using CIIE and other platforms, and has established five international city networks: International Innovation Network, Shanghai International Sister Cities Network, Shanghai World Expo Green City Innovation Network, Transnational Corporation Shanghai Headquarters Network, and International Education and Technology Exchange Network. By collaborating with other international cities, it promotes global exchange and cooperation in politics, economy, science and technology, education, culture, and public health. Shanghai also strives to provide professional services and advanced manufacturing to more foreign countries, and to achieve high-quality opening up and participate in global competition and cooperation by attracting multinational companies to base themselves in Shanghai and bringing together domestic and overseas talents.

- **Remarkable achievements in creating a world-class business environment**

Shanghai is creating a world-class business environment based on highest standards and international trade and economic rules. It has issued a series of legal documents to improve the legal and regulatory environment for business and ensure institutional supply, and also established specialized intellectual property courts to strengthen enterprise property protection. Shanghai explores inclusive and prudent regulation and has launched five "no-penalty lists", totaling 61 no-penalty items in market supervision, cultural market, ecological environment, urban management, and civil defense, benefiting nearly 1,400 enterprises. An initial pattern of social co-constructing and sharing of the business environment has been formed in Shanghai, where the Advisory Council for Optimizing the Business Environment and the Law Guarantee Community for Optimizing the Business Environment were established. By benchmarking the World Bank's reform to create the highest-standard business environment, Shanghai and Beijing jointly assisted in further raising the national business environment ranking from 46th in 2018 to 31st in 2019. Shanghai has reduced the application procedures related to business registration, access

to electricity, construction permits, cross-border trade, and property registration, by an average of 41% and the average handling time by 59%, and the performance in executing contracts and obtaining electricity has reached the world's advanced level.

- **More open to the domestic market and exchange and collaboration with more provinces and cities in China**

Shanghai plays an active role in domestic opening-up and exchange and collaboration with other provinces and cities in China. It has signed government-to-government framework agreements with many sister provinces and cities in China for collaborative development, including 5 agreements signed in 2015 with Jilin, Yunman, Henan, Heilongjiang (re-signed), and Jiangxi, 2 agreements signed in 2016 with Guizhou and Anhui (re-signed), 4 agreements signed in 2018 with Jilin (re-signed), Qinghai, Hainan, and Dalian, 2 agreements signed in 2019 with Shandong and Anhui, 1 agreement signed in 2020 with Henan, 3 agreements signed in 2021 with Inner Mongolia, Anhui, and Hainan. Shanghai has implemented many projects for East-West cooperation and paired assistance in poverty alleviation, and has worked well and accumulated rich experience in providing consumption assistance, cultural and tourism assistance, and group education assistance, innovating financial poverty alleviation models, and mobilizing state-owned enterprises to provide paired assistance. Shanghai is one of important drivers to facilitate the integrated development of the Yangtze River Delta in industry, cluster construction, and environmental protection, and especially in building the Yangtze River Delta into an integrated development demonstration zone, it has fully exerted its capabilities in institutional innovation to bring about a series of innovations in ecological protection. Through exchange visits and cooperation with delegations from other regions, Shanghai focuses on collaborating with more Chinese provinces and cities in economy, culture, people's livelihood, and social undertakings.

- **Improvement in the "World Cities Day" platform to bring more benefits and opportunities**

Shanghai, relying on the only permanent institution for "World Cities Day" in China, strives to "make Shanghai a permanent home for World Cities Day" observance. Since the first World Cities Day Observance was hosted in 2014, Shanghai has held, under the overall theme of "Better City, Better Life", global observances and related exhibitions in seven cities at home and abroad. It has also created three theme activities, including "Global Cities Forum", "Shanghai Forum", and "Shanghai International City and Architecture Expo", as well as dozens of World Cities Day series event brands, with expanding influence and social participation.

Important Measures

(1) Establish closer international partnerships

Establish a global network of international sister cities

Shanghai International Sister City Network aims to maintain world peace, enhance mutual friendship, and promote common development. Shanghai actively engages in exchange and cooperation with its international sister cities worldwide in politics, economy, science and technology, education, culture, and public health. As of September 30th, 2021, Shanghai and its related districts had established sister city relationships or friendly exchange relationships with 92 cities (provinces, states, regions, prefectures, counties or districts) in 59 countries, including 72 city-level and 20 district-level (or town-level) international sister cities. Such city diplomacy has become an important brand and window for China's foreign relations.[9] Shanghai Cooperation Organization ("SCO"), previously known as "Shanghai Five", has enhanced mutual trust and cooperation, and after enlarging its membership, has further expanded the geographic scope for cooperation. It has also reached cooperation intentions with many international organizations such as the United Nations, the Eurasian Economic Union, and the Association of Southeast Asian Nations (ASEAN). Adhering to the principles of openness and transparency, it provides a good platform for dialogue among major countries in regional affairs.

Develop people-centered models for international communication

Shanghai has used folk diplomacy to facilitate its economic and social development and enhance its friendship with foreign cities. For example, the founding members of the International Business Leaders' Advisory Council for the Mayor of Shanghai (IBLAC) assisted Shanghai with its economic and social development construction, and IBLAC's members provided intellectual support and international assistance for Shanghai in its critical development stages. Shanghai People's Association for Friendship with Foreign Countries and Japan-China Friendship Association have also united friendly Japanese citizens and groups through the Magnolia Award, and in the face of difficulties in Sino-Japanese relations, they gradually increased the positive energy of Japanese society towards friendly relations with China through folk diplomacy. Shanghai has set up "Magnolia Silver Award", "Magnolia Gold Award", "Honorary Citizenship of Shanghai" to recognize foreign friends who have made outstanding contributions to China's foreign affairs and exchanges, and to promote Shanghai's foreign exchanges and enhance its international influence.

Case 23 Magnolia Silver Award, Magnolia Gold Award and "Honorary Citizenship of Shanghai"

The Shanghai Municipal Government has established the "Magnolia Silver Award", "Magnolia Gold Award", and "Honorary Citizenship of Shanghai" based on the city flower -- magnolia, to recognize foreign friends and non-local citizens who have made outstanding contributions to China's foreign affairs and exchanges.

The "Magnolia Silver Award", established in 1989, is awarded once a year to foreign nationals who have made outstanding contributions to Shanghai's economic and social development and foreign exchanges, and to date, 1,316 foreign nationals have received this honor. The "Magnolia

[9] Source: http://wsb.sh.gov.cn/node549/20200116/0018-13963.html

Gold Award" is awarded once a year to foreign friends who have made outstanding contributions to Shanghai's economic and social development. It has been awarded since 1993 and 352 people have received this honor over the past 28 years. The "Honorary Citizenship of Shanghai", established in 1997 and revised in 1998, is awarded to foreigners, overseas Chinese, and non-local citizens who have made outstanding contributions to Shanghai's economic and social development and international exchanges and cooperation.

Since the establishment of Magnolia Award series, entrepreneurs, scientific researchers, industry experts and leaders, and outstanding representatives from around the world have worked hard to be selected. These awards have also received a positive response from overseas institutions and organizations, and the Shanghai Japan Magnolia Association, which is closely related to this series of Magnolia Awards, has become a bridge for non-governmental exchanges between China and Japan.

Figure 28 Awarding Ceremony of 2021 Shanghai Magnolia Gold Award[10]

- **Create a "people-oriented" environment for international talents**

Shanghai is creating a friendly environment for international talents, such as providing convenient services for their medical, educational, and entry-exit needs. Specifically, this includes: improving foreign-related medical services, encouraging the introduction of internationally renowned medical service providers, and improving the international medical insurance settlement system for international residents seeking medical treatment in Shanghai; making local education more internationalized and supporting social forces to establish schools for foreign children; improving administrative services such as employment and residence permits for foreigners, and providing them with better language services in service windows and public areas to increase convenience; improving the ability of citizens to communicate with international residents; building high-quality public activity spaces and international communities and creating a diverse and inclusive cultural atmosphere; making efforts to attract outstanding talents from both at home and abroad; unblocking channels for attracting overseas talents, improving policies related to residence permits (Residence Card B), foreign expert certificates, and entry-exit facilitation for overseas talents, and increasing efforts to attract overseas high-caliber talents in short supply and high demand.

[10] Source: https://www.shine.cn/news/in-focus/2201241120/

(2) Facilitate smooth and close international economic and trade development

● Continue to hold the China International Import Expo

China International Import Expo (CIIE) is an important international event that integrates exhibitions, forums, and cultural activities. It is a perfect combination of governmental and non-governmental diplomacy and provides an excellent platform for changing China's relationship with other countries. Since its inception in 2018, the CIIE has been successfully held for four consecutive sessions in Shanghai. In 2021, 58 countries and 3 international organizations participated in the national exhibitions, and nearly 3,000 exhibitors from 127 countries and regions appeared in the enterprise exhibitions, creating a new record in the number of participating countries and enterprises. More than 80% of Fortune 500 companies and industry leading enterprises were repeat exhibitors, with a total of 281 exhibitors and an exhibition area gradually expanding from 270,000 m^2 in the first session to 366,000 m^2. Despite the COVID-19 pandemic in 2020, more than 3,600 companies from over 150 countries still appeared in the third session of the CIIE. In the four sessions of CIIE, the intended transactions totaled USD 57.83 billion, USD 71.13 billion, USD 72.62 billion, and USD 70.72 billion, respectively[11].

Case 24 CIIE Shanghai Sister Cities Cooperation Forum

China International Import Expo ("CIIE") is the world's first import-themed exhibition, held annually since 2018. It is an initiative by China to open up its market and expand imports, as well as a new platform that integrates government and folk diplomacy. It provides a systematic solution to the increasingly complex global trade issues and has great significance in promoting global trade liberalization and improving global trade governance.

Figure 29 2020 Shanghai Sister Cities Cooperation Forum[12]

CIIE Shanghai Sister Cities Cooperation Forum is one of supporting activities for CIIE and the largest forum event organized by Shanghai foreign affairs department in conjunction with CIIE. It is a cultural and ideological exchange event between China and foreign countries. At the 2019 second CIIE, senior delegations and guests from 18 countries and 22 cities in Europe, the Americas, Asia, and Africa spoke freely on the two major topics of "CIIE and new opportunities for world development" and "sister cities partnering to build a new open and win-win pattern". At the 2020 third CIIE, due to the impact of the pandemic, mayors and mayoral representatives of Shanghai and

[11] Source: CIIE website (https://www.ciie.org/zbh/index.html)
[12] Source: The Paper (https://www.thepaper.cn/newsDetail_forward_9932617)

its 12 sister cities in Asia, Europe, and the Americas had a virtual meeting to share their experiences in responding to the COVID-19 pandemic and resuming work and production. They discussed urban governance and cooperation under the pandemic context, and promoted Shanghai's collaboration with sister cities to meet challenges and create a better future.

- **Establish a closely connected international trade network**

Shanghai is creating a market-oriented, rule-of-law-based, and internationalized business environment to improve administrative efficiency, simplify business processes, provide convenience for foreign investors, and create a more open, convenient, and resilient environment for foreign trade. In 2017-2019, Shanghai issued a series of policies, including the *Several Opinions on Further Expanding Opening-up and Accelerating the Establishment of a New Open-economy System* ("Shanghai's 33 Measures for Building an Open Economy"), the *Action Plan of Shanghai Municipality for Implementing Major National Measures to Further Expand Opening-up and Accelerate the Establishment of a New Open-economy System* ("Shanghai's 100 Measures for Expanding Opening-up"), and the *Several Measures for Further Expanding the Opening-up of Shanghai's Service Industry* ("Shanghai's 40 measures for Further Expanding the Opening-up of the Service Industry"), to further expand the opening-up of professional service industries and advanced manufacturing. In 2020, Shanghai issued the *Regulations of Shanghai Municipality on Foreign Investment*, the first local regulation on foreign investment, to require itself to take the lead in implementing measures to expand the opening up of finance, telecommunication, Internet, medical, transportation, culture, education and other sectors. Shanghai is implementing the Regional Comprehensive Economic Partnership (RCEP) in a high-quality manner. It combines the "6+3" new industry system with new opportunities brought by the RCEP, supports multinational companies in the RCEP region to establish regional headquarters and foreign-funded R&D centers in Shanghai, encourages Shanghai-based enterprises to efficiently lay out their supply chains and industry chains in the region and seize opportunities for further opening up in foreign investment by RCEP member countries, and thus facilitates economic restructuring and industrial transformation and upgrading.

Case 25 "Sail of Shanghai" Economic and Trade Exhibition Committee Facilitating Foreign Trade and Economic Cooperation under the "Belt and Road" Initiative

Jointly organized by Shanghai Federation of Economic Organizations, Shanghai Federation of Industrial Economics, and "Shanghai Sail" Trade and Economic Exhibition Committee, "Sail of Shanghai" Economic and Trade Exhibition under the "Belt and Road" Initiative is one of the largest and most comprehensive exhibitions showcasing Shanghai's trade and economic brands. Since 2012, it has been held for nine consecutive sessions in countries including Albania, Serbia, Slovenia, the Baltic countries, Belarus, Ukraine, and Hungary, achieving good economic and social effects and receiving strong support and positive response from Chinese embassies and local governments.

The exhibits at the "Sail of Shanghai" Trade and Economic Exhibition may be daily consumer goods (food, gifts, textiles, light industrial products, household appliances, etc.), chemicals, non-ferrous metal products, electronic communication devices, mechanical equipment, LED optoelectronic products, medical equipment and health care products, building materials, and household goods. Every year, 150 Shanghai companies participate in the exhibition, making it a

well-known business card for Shanghai's efforts in facilitating foreign trade and economic cooperation under the "Belt and Road". "Sail of Shanghai" Trade and Economic Exhibition provides an essential platform for promoting trade and investment and more importantly for exchanging and cooperating with chambers of commerce in different countries.

Currently, the "Sail of Shanghai" has more than 25 foreign partners, including Albania's KLIK Group, the Genoa Municipal Government, and chambers of commerce and development agencies from various countries.[13] "Sail of Shanghai" Trade and Economic Exhibition Committee, together with Shanghai Federation of Economic Organizations and Shanghai Federation of Industrial Economics, has joined hands with 20 chambers of commerce and industry from different countries and regions to deeply integrate and apply O2O modes, develop a new commercial platform "Sail of Shanghai 365", rapidly integrate industrial resources, and create an optimal platform for brand promotion and development of sales networks for different associations and companies.

- **Create an international business environment according to highest standards**

Shanghai has based related procedures for business registration, access to electricity, construction permits, cross-border trade, and property registration on highest standards of the World Bank. In business registration, a "one-stop window" platform has been built for the entire process of starting a business, including all application procedures handled at each administrative service center. In construction permits, a full-process one-stop service supervision agency has been established along with a joint review platform for engineering construction projects to maximize the convenience of applying for construction permits. In access to electricity, a new one-stop service model has been created based on power service providers to greatly reduce handling time. In property registration, a "one-stop network" service system has been established, and a special service window has been provided for enterprises to register the transfer of their real estates, so as to enable one-stop service provision, online processing, and self-service inquiry of relevant information. In cross-border trade, a special service window for international trade integrating "clearance + logistics + payment" functions has been established, and a comprehensive reform for parallel processing of customs clearance, port operations, and logistics transportation has been promoted, including expanded coverage of "tariff guarantee insurance" and the establishment of a declaration error correction mechanism. In taxation, 60 reform measures such as electronic tax bureau, intelligent tax services, and comprehensive intelligent consultation have been taken, and a list of 318 tax-related matters for "one-stop" design has been released to minimize the need for multiple visits. In contract enforcement, electronic litigation files are recommended, and random automatic case allocation, electronic delivery and other mechanisms have been improved.

Case 26 Business Environment Reform in Engineering Construction

Shanghai regards the business environment reform in engineering construction as a top-priority project to create a world-class business environment. Since 2017, Shanghai has launched 5 rounds of iterative and updated series of reform policies and measures, focusing on creating a market-oriented, rule-of-law-based, and world-class business environment, and has achieved

[13] Source: http://www.shanghaifair365.com/jsp/web/pdf/zh-partner2.pdf?t=1

significant results. Shanghai has succeeded in creating a large number of major industrial reform samples represented by Sam's Club flagship stores in China and Tencent's Yangtze River Delta AI supercomputing center. As most enterprises put it, these reform policies have been implemented accurately and achieved significant effects. According to the *2020 Report on Approval and Evaluation of Engineering Construction Projects* released by the Leading Group Office for Engineering Construction Reform under the Ministry of Housing and Urban-Rural Development, Shanghai ranked first in the overall evaluation. According to the latest *2020 Evaluation Report for Business Environment in China* released by the National Development and Reform Commission, Shanghai scored full marks in the four indicators of time consumption, cost, building quality control index, and convenience related to the issuance of building permits.

It has taken the following measures: 1) focusing on full-coverage reforms, full-chain management, and full-process handling to deepen and solidify the reform policy system. 2) Streamlining and integrating approval items to improve efficiency and transparency. 3) Establishing a "one-stop system" for intelligent governance using digital technologies. This includes integrating the functions of all related departments to transform the "department-oriented" model into a "user-oriented" system and steadily facilitating "online processing and approval". 4) Establishing an engineering construction project approval and review center to deeply integrate online and offline services, using it as the only service window to approve and review engineering construction projects submitted by enterprises, and improving the operating mechanism of this center. 5) Carrying out targeted policies and innovative reforms to construction drawing review and comprehensive completion acceptance.

(3) Strengthen domestic cooperation to achieve common development

- **Provide paired assistance to inland areas to achieve poverty alleviation**

Shanghai adheres to the principle of combining "central requirements, local needs, and Shanghai's capabilities", and has established a sound working mechanism for "centralized management, division of responsibilities, coordination between different levels, and full participation of society". It follows the work policy of "putting people's livelihood first, focusing on industries, giving priority to planning, and putting emphasis on talents", and focuses on addressing prominent issues in rural areas to ensure no worries about food and clothing among impoverished population, guaranteed access to compulsory education, basic medical care, and housing security. It has made great efforts to promote cooperation in poverty alleviation between eastern and western regions and paired assistance to specific areas. By the end of 2020, Shanghai had helped lift out of poverty all the impoverished rural population below the current poverty line in 101 counties (districts), 20 cities (prefectures) of 7 provinces (regions/municipalities), and all 98 poverty-stricken counties had been lifted out of poverty. In 2017-2021, Shanghai ranked among the best for five consecutive years in the assessment of the effectiveness of China's poverty alleviation campaign. It has also created typical experiences in carrying out consumption assistance, cultural and tourism assistance, group education assistance, innovating financial poverty alleviation models, and mobilizing state-owned enterprises to participate in paired assistance.

Lead peripheral cities to achieve integrated development

Shanghai plays an active role in integrating with and leading the integrated development of the Yangtze River Delta, and accelerating the integration of industries, infrastructure, and environmental protection in the region. The membership of the Yangtze River Delta Urban Economic Coordination Committee ("YRDUECC") has continued to increase, with an increasing number of professional committees and cooperative alliances, and a series of thematic forums and events have been held. In recent years, four major leadership symposiums have been held in the Yangtze River Delta, especially the symposium held on June 1, 2018, at which the *Three-year Action Plan for Integrated Development of the Yangtze River Delta (2018-2020)* was discussed and approved to further improve the top-level framework for regional communication and cooperation in the Yangtze River Delta. The tourism committee under the "YRDUECC" issued the "Yangtze River Delta Tourism Passport" and established the "Yangtze River Delta Theme Park Alliance", while the creative economic cooperation committee held the "Shanghai World Creative Economy Summit", and the big data application committee held the "Yangtze River Delta Integration Index and Business Development Report Release Conference", all of which further pushed forward integrated and collaborative development in this region. Shanghai has also promoted the construction of three major national strategic sites for integrated development in the Yangtze River Delta: Lingang New Area of China (Shanghai) Pilot Free Trade Zone, Yangtze River Delta Ecological Green Integrated Development Demonstration Zone, and Hongqiao International Opening-up Hub.

Case 27 Hongqiao International Opening-up Hub

The construction of Hongqiao International Opening-up Hub is centered around Shanghai Hongqiao Business District. Shanghai Hongqiao Business District, located in the west of the central urban area of Shanghai, is a transportation, economic and geographical center of city clusters in the Yangtze River Delta, previously known as the world's largest comprehensive transportation hub. Here stands the world's largest single-structure exhibition center, the National Exhibition and Convention Center (NECC), which has successfully hosted three China International Import Expos (CIIE) and continues to expanded its influence, making Shanghai Hongqiao Business District an import and export commodity distribution hub that connects the Yangtze River Delta, serves the whole country, and radiates across the Asia-Pacific region.

In 2019, the Shanghai Municipal Government issued the Implementation Plan for Accelerating the Construction of Hongqiao Business District and Building It into an International Opening-up Hub to further accelerate the construction of this international central business district, an international trade center and comprehensive transportation hub, laying a solid foundation for Hongqiao International Opening-up Hub to assume given functions.

In February 2021, the State Council approved the *Master Plan for the Construction of Hongqiao International Opening-up Hub*, marking Hongqiao International Opening-up Hub, following China (Shanghai) Pilot Free Trade Zone Lingang New Area and Yangtze River Delta Ecological Green Integrated Development Demonstration Zone, as another important carrier for Shanghai to implement the national strategy for integrated development in the Yangtze River Delta.

Hongqiao International Opening-up Hub, as a comprehensive transportation hub and

exhibition and business center, strives to become a "key driver" to facilitate higher-quality integrated development in the Yangtze River Delta and domestic circulation, and to provide a "hub link" for the movement and convergence of resource elements for China's participation in international competition and cooperation and domestic-international dual circulation. It is a new form of openness that follows special economic zones, coastal open cities, national-level new areas, and free trade pilot zones, and will play a unique role in China's opening-up pattern.

- **Advancing the construction of Yangtze River Delta Ecological Green Integrated Development Demonstration Zone**

Shanghai plays an active role in advancing the construction of Yangtze River Delta Ecological Green Integrated Development Demonstration Zone ("Demonstration Zone") and has achieved fruitful results in ecological integration. Currently, Shanghai has led the implementation of innovative policies for integrated development, such as joint protection and governance mechanism for cross-border waters, unified planning, design and standard for ecological environment management, environmental goals and pollution prevention and control for "One River and Three Lakes", and innovative evaluation mechanisms. It is accelerating the replication and promotion of relevant innovative policies in the Yangtze River Delta and other key cooperation areas in China. The Executive Committee of the Demonstration Zone has established a consultation mechanism with ecological environment departments at all levels of Jiangsu, Zhejiang and Shanghai to jointly release an annual action plan for ecological environment in the Demonstration Zone on a regular basis to facilitate collaboration in integrated development. The Demonstration Zone has also innovatively built a third-party service platform for ecological environment governance, and relies on this platform to improve the cross-region market-oriented governance mechanism and make it standardized, efficient and favorable to fair competition. Shanghai has been promoting the integrated development of green finance, actively exploring how to use digital technologies to protect ecological environment, and coordinating efforts to facilitate cross-region ecological environment governance. It has focused on promoting more than 20 ecological environment governance projects, including the Taipu River joint protection and governance demonstration section, Yuandang Lake ecological restoration and governance and shoreline connectivity engineering, Dianshan Lake ecological shoreline restoration, Qingpu Blue Pearl Necklace, beautiful lake group around Yuandang, and governance of shallow-water lakes in the north of Jianshan County.

Case 28 Yuandang Cross-border River-Lake Joint Governance in the Yangtze River Delta Ecological Green Integrated Development Demonstration Zone

Yangtze River Delta Ecological Green Integrated Development Demonstration Zone ("Demonstration Zone") focuses on institutional innovation for integrated development, and has established a new effective mechanism for integrated development to create an eco-friendly sample in this aspect. It is a vanguard and breakthrough for implementing the strategy for integrated development in the Yangtze River Delta. The Demonstration Zone consists of Qingpu District of Shanghai, Wujiang District of Suzhou City, Jiangsu Province, and Jiashan County of Jiaxing City, Zhejiang Province, and covers an area of approximately 2,431 m^2, including about 350 m^2 of water

area. The joint governance of Yuandang Lake is the first cross-border river-lake co-governance project in the Demonstration Zone.

Yuandang is an important lake crossing the border of Shanghai and Jiangsu, with an area of 13 m² and a total shoreline of 23 km, including 6.2 km in Shanghai and 16.8 km in Jiangsu. It is connected to the Dianshan Lake system and is the third largest inter-provincial boundary lake in the Taihu Lake Basin. It is also a gateway to Shanghai for Shanghai-Suzhou-Huzhou High-speed Railway, Shanghai-Chongqing Expressway, and Yuandang Road. Great efforts, such as reinforcing the lake embankment based on relevant standards, enhancing comprehensive governance of the lake's water environment, and implementing ecological protection and restoration for the lake, inlet channels, and lakeside belts, have been make to create a high-quality cultural and ecological lake area that is safe, interconnected, eco-friendly, and pleasant.

To achieve cross-border joint governance of Yuandang Lake, Qingpu and Wujiang districts have established an innovative approval mechanism to coordinate planning, unify design concepts and standards, and give full play to the demonstration effect of integrated governance and joint protection. This mechanism fully absorbs and integrates the latest planning requirements of the Demonstration Zone, and produces effective plans for shoreline connectivity and ecological governance, achieving shoreline and footpath connection, and integrated flood control. In addition, new facilities such as pedestrian suspension bridges, walkways, and waterfront platforms have been built to provide citizens with leisure spaces and achieve the goal of returning the lake to the people.

Figure 30 Yuandang Cross-border River-Lake Joint Governance in the Yangtze River Delta Ecological Green Integrated Development Demonstration Zone

- **Build a "One-stop Network" for administrative services in the Yangtze River Delta**

Shanghai has taken the lead in implementing the "One-stop Network" reform in China, focusing on four aspects: platform, business, data, and system, to facilitate information sharing, process redesign, and break down departmental barriers to eliminate fragmented services. In this circumstance, Shanghai has collaborated with neighboring provinces and cities to create a special one-stop network for administrative services in the Yangtze River Delta, which is China's first regional one-stop "flagship store" providing administrative services. In 2019, major medical institutions in Jiangsu, Anhui, Zhejiang, and Shanghai ("three provinces and one city" in the Yangtze River Delta) allowed direct settlement of outpatient expenses within the medical insurance for the non-local insured,

with a total of 41 cities implementing a "one card" solution to medical insurance, covering over 5,000 medical institutions. In 2021, 30 types of electronic certificates and licenses were shared and recognized among "three provinces and one city"; 126 service items were allowed to be handled on a cross-province basis; 567 offline service windows were provided to form a one-stop service network in the Yangtze River Delta, handling over 5.37 million cases through online processing.

(4) Create a platform for "World Cities Day"

- **Establish a permanent institution for "World Cities Day"**

World Cities Day is the first international day initiated by the Chinese government and also the first international cities-themed day established by the United Nations. In December 2014, the only coordination center for World Cities City in China was established in Shanghai, which is responsible for coordinating and organizing activities related to World Cities Day, as well as research, training, publicity and promotion in urban management and sustainable development. Shanghai attaches great importance to the World Cities Day, which is also under the theme of "Better City, Better Life" as Shanghai World Expo. Through various theme activities, forums, training, and sharing of achievements related to World Cities Day, it aims to raise awareness among governments and society around the world on the importance of solving urban issues, especially the problems arising from rapid urbanization process in developing countries. It actively responds to the opportunities and challenges brought about by urbanization to all mankind, and contributes to the sustainable development of global cities.

- **Carry out routine work for "World Cities Day"**

Building on the success of the first World Cities Day event held in 2014, Shanghai actively organizes domestic and international activities related to World Cities Day. With the support of UN-Habitat and relevant city governments, the World Cities Day global observances and related exhibitions have been held in Italy's Milan (2015), Ecuador's Quito (2016), China's Guangzhou (2017), Liverpool in the United Kingdom (2018), Yekaterinburg in Russia (2019), Kenya's Nakuru (2020), and Egypt's Luxor (2021). Shanghai has also invited government and business delegations from domestic cities such as Xuzhou, Tangshan, and Fuzhou to hold brand activities such as "China Week", "Shanghai Night", "Xuzhou Day", "Tangshan Day", and "Fuzhou Day" in their local areas. Since 2016, Shanghai has hosted and participated in many special forums for World Cities Day, World Urban Forums, and other activities. In recent years, the organizers have established three major theme events, namely "Global Cities Forum", "Shanghai Forum", and "Shanghai International City and Architecture Expo", which are held in Shanghai every year. They have also created dozens of Cities Day event brands such as "Shanghai Summit on Global Urban Underground Space Development and Utilization", "Healthy Cities Forum", "World Cities Day Youth Series Activities", and "World Cities Public Welfare Race". They keep innovating and improving the themes, formats, and social participation of these activities, aiming to expand the audience size and social impact.

- **Create marked achievements in "Four Shanghais"**

In recent years, the "World Cities Day" platform has aimed to promote the spread of United Nations' sustainable development concepts, facilitate cooperation and communication in sustainable development practices, enhance Shanghai's role in sustainable development, and demonstrate Shanghai's achievements in sustainable development, and has helped create marked achievements in "Four Shanghais": "Shanghai Award", "Shanghai Index", "Shanghai Manual", and "Shanghai Report".

1) "Shanghai Award", also known as "Global Award for Sustainable Development in Cities (Shanghai Award)", is an international award jointly established by the UN-Habitat, the Ministry of Housing and Urban-Rural Development of China, and the Shanghai Municipal People's Government. This award honors outstanding cities worldwide that have made remarkable progress in sustainable development, with a special focus on the achievements of cities in developing countries. Every year, no more than five cities are selected globally and granted "Shanghai Award", and a special award will be set up as appropriate. On March 30, 2022, at the first session of the 2022 Executive Board Meeting, UN-Habitat announced the establishment of "Shanghai Award" with the support of the Chinese government, and the first award will be presented in 2023.

2) "Shanghai Index", also known as "Global Urban Monitoring Framework - Shanghai Application Index", is a set of indicators related to economy, society, environment, culture, and governance. Since 2021, the Ministry of Housing and Urban-Rural Development of the People's Republic of China, the Shanghai Municipal People's Government, and the UN-Habitat have jointly conducted research on "Shanghai Index", aiming to assist cities in evaluating and reflecting on their achievements and challenges in sustainable urbanization, thereby helping them determine or adjust their development priorities and leading the direction of global urban sustainable development. On October 31, 2021, Shanghai Mayor Gong Zheng officially released a comprehensive framework of Shanghai Index at the World Cities Day China Observance and 1st SDG Cities Global Conference held in Shanghai.

3) "Shanghai Manual", also known as "Shanghai Manual: A Guide for Sustainable Urban Development in the 21st Century", is co-edited by the UN-Habitat, the Bureau of International Expositions, and the Shanghai Municipal People's Government, with the support of the Ministry of Housing and Urban-Rural Development of the People's Republic of China. Since its first compilation in 2011, it has been determined that "Shanghai Manual" will be edited on an overall basis every five years and reported every year to analyze sustainable development case studies from around the world and propose relevant policy recommendations. On October 31, 2021, at the World Cities Day China Observance, Shanghai Mayor Gong Zheng introduced the main content of the 2021 edition of "Shanghai Manual", which was jointly released online by Shanghai Party Secretary Li Qiang and the Executive Director of UN-Habitat Maimunah Mohd Sharif.

4) "Shanghai Report", also known as "UN SDGs Shanghai Voluntary Local Review", is a voluntary local review aimed at implementing the United Nations 2030 Sustainable Development Agenda. On November 1, 2021, Shanghai released its first report during the World Cities Day China Observance. Since 2022, based on existing work achievements, Shanghai has further improved the unified framework of Shanghai 2035 Goals and SDGs

and established a "city-district coordinated" report preparation mode consisting of a master report at the municipal level and sub-reports at the district level.

- **Host World Cities Day observance events**

Since the First Word Cities Day Global Observance held in 2014, a total of 8 World Cities Day observance events have been hosted in Shanghai. These events focus on such themes as "leading urban transformations", "designed to live together", "inclusive cities, shared development", "innovative governance, open cities", "building sustainable and resilient cities", " innovations and better life for future generations", "valuing our communities and cities", and "adapting cities for climate resilience" to explore and discuss urban quality and ecological issues. From October 30 to November 1, 2021, the World Cities Day China Observance and SDG Cities Global Conference was held in Shanghai, with the highest specifications in history. The 2022 World Cities Day Global Observance and 2nd SDG Cities Global Conference was held in Shanghai, and significant achievements in "Four Shanghais" were announced during the event.

Case 29 2021 World Cities Day China Observance

World Cities Day lies in October 31 each year, and the 2021 China Observance of World Cities Day & the First SDG Cities Global Conference was held with the theme of "adapting cities for climate resilience" and aims to raise public awareness in adapting cities for climate resilience, encourage effective climate action at national and local levels by sharing solutions to making cities more resilient, and promote the implementation of the United Nations' *2030 Agenda for Sustainable Development* and the *New Urban Agenda* to facilitate global urban sustainable development.

The 2021 World Cities Day China Observance was held together with the First SDG Cities Global Conference. The event includes an opening and closing ceremony, five theme forums on low-carbon economy, urban history and culture preservation and inheritance, urban governance, ecological resilience, and new cities construction, three special forums on China's high-quality urban development, international cities and construction industry, and real estate valuation, case exhibition of China's urban development, as well as a series of supporting activities such as Shanghai International City and Architecture Expo. During this event, a series of important achievements in urban development and governance were displayed to share the experiences of Shanghai and other Chinese provinces and cities in sustainable development.

Figure 31 2021 World Cities Day China Observance

5. Prospects

Based on the framework of the 2030 Agenda for Sustainable Development, this report builds a logical framework for the urban strategic goals and vision system and SDGs system of Shanghai, and outlines the key measures taken by Shanghai to promote the achievements of 17 SDGs. According to the results of this review, Shanghai has further implemented the concept of sustainable development in such areas as SDG7 Affordable and Clean energy, SDG10 Reduced Inequalities, SDG12 Responsible Consumption and Production, and SDG17' s Partnerships for the Goals, making significant progress and accumulating rich practical experiences.

Looking to the future, Shanghai will continue to strive for sustainable development goals. Key tasks and critical measures for Shanghai to achieve its goals in different areas in the coming period were proposed at 12th Shanghai Municipal Congress of the Communist Party of China held in June 2022. To achieve its economic goals, Shanghai will promote reform and opening up in depth under the guidance of major national strategies, and build a modern economic system to facilitate high-quality economic development; to achieve its social goals, Shanghai will focus on creating a high-quality lifestyle to better meet the people's demand for a better life; to achieve its cultural goals, Shanghai will make more efforts to popularize its spirit and character and to build itself into an international cultural metropolis; to achieve its governance goals, Shanghai will rely on its characteristics and the law of development as a megacity to improve the modernization of urban governance from all respects, and create a base for best practices in people's democracy throughout the process; and to achieve its environmental goals, Shanghai will further lay a solid foundation for ecological civilization and create a beautiful home where humans and nature coexist harmoniously as soon as possible.

Guided by	Shanghai Municipal Commission of Housing, Urban-Rural Development and Management
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	Shanghai Municipal Bureau of Ecology and Environment
	Shanghai Municipal Transportation Commission
	Shanghai Municipal Commission of Agriculture and Rural Affairs
	Shanghai Water Authority
	Shanghai Municipal Health Commission
	Shanghai Emergency Management Bureau
	Foreign Affairs Office of Shanghai Municipality
	Shanghai Medical Security Bureau
	Shanghai Landscaping & City Appearance Administrative Bureau
	Office for Cooperation and Exchange Affairs of the Shanghai Municipal People's Government
	Shanghai Housing Management Bureau
	Management Committee of Lingang New Area of China (Shanghai) Pilot Free Trade Zone
	Executive Committee of Yangtze River Delta Ecological Green Integrated Development Demonstration Zone
	Shanghai Municipal Women & Children Committee
	Shanghai Women's Federation
	Shanghai Committee on Ageing
	Shanghai Meteorological Service
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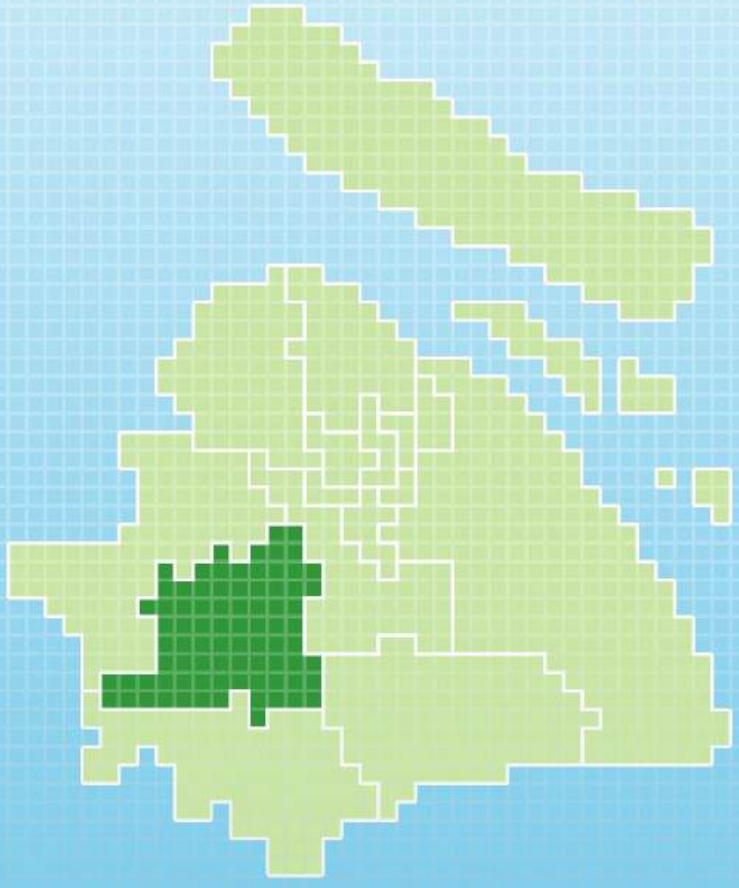
	(In no particular order)
Prepared by	Preparation Team of the Shanghai VLR 2022 under the Shanghai Academy of Social Sciences
	Shanghai Coordination Center for the World Cities City

Some of the pictures in this report are from Shanghai Pictorial on the website of Information Office of Shanghai Municipality.

Annex 1

Songjiang Voluntary Local Review 2022



Green · Shared · Cooperation

UN SDGs Songjiang District of Shanghai Voluntary Local Review 2022

CONTENTS

Songjiang—Cultural Root of Shanghai

Songjiang District is located in the southwest of Shanghai and the upstream of Huangpu River, one of the mother rivers of Shanghai. Songjiang, with a long history, prosperous culture, and developed economy, is known as the "Root of Shanghai, Head of Pujiang River and Peak of Shanghai". Songjiang District is one piece of land formed earliest within the scope of today's Shanghai, and also one of the historical and cultural birthplaces of Shanghai. Archaeological discoveries show that, a culture characterized by urban agglomeration lifestyle—the Guangfulin Culture—can date back to 4,000 years ago. In 219 AD, this place was called Huating; in 751 AD, Huating County was established. After more than 1,000 years of vicissitudes, Songjiang has always been a cultural hub on the land of Shanghai, where countless writers, artists, scientists, and revolutionary pioneers have emerged. In the process of its historical development, Songjiang people have forged the spirit of Songjiang culture, and also laid a foundation for the cultural root of Shanghai.

Songjiang—Dynamic City Driven by Innovation

Songjiang is also a young and dynamic city driven by innovation. In 1998, Songjiang County was upgraded to Songjiang District of Shanghai, becoming a municipal district of Shanghai. The Shanghai Master Plan 2035 released in 2018 positioned Songjiang as one of the five important new towns. Songjiang's technological innovation foundation and high-end industry development have prominent advantages in the suburbs of Shanghai. In the vision of local development strategy proposed by Songjiang, the district will rely on "science and technology innovation" to lead the development of the G60 S&T Innovation Valley, build an advanced manufacturing highland that may drive the economy of the Yangtze River Delta, and turn it into a major supporting area for Shanghai's globally influential science and technology innovation center. In 2021, Songjiang registered 1,041 hi-tech enterprises, ranking third in the whole city; the total number of hi-tech enterprises in Songjiang also ranked third in Shanghai. Now, Songjiang is accelerating the building of a number of major technological innovation platforms such as the G60 Brain Intelligence Science and Technology Innovation Base, taking a lead in the development of the suburban new towns of Shanghai, and realizing the high-quality development led by technological innovation.

Songjiang—Livable Place with Beautiful Landscape

Songjiang District covers an area of 604.64 km^2, with abundant natural resources such as green mountains, forests, rivers, and lakes. Songjiang is one of the few areas in Shanghai that possess both mountains and rivers. Sheshan Mountain, the highest peak of Shanghai, is located in Songjiang District; it is a mountain with rich ecological resources and an area with historical and cultural heritage. Moreover, Songjiang also boasts rich natural and cultural resources such as Tianma Mountain, Xiaokun Mountain, Chenshan Botanical Garden, Zuibai Pond, Fangta Garden, and Shanghai Film City. Songjiang District will fully utilize its advantageous natural resources to create an important inheritance site of Chinese excellent traditional culture and a livable place with natural landscape characteristics, to satisfy people's demand of seeing green mountains and waters and appreciating cultural heritages".

1. Introduction

Songjiang District is located in the southwest of Shanghai and the upstream of Huangpu River, one of the mother rivers of Shanghai. Known as the “Root of Shanghai, Head of Pujiang River, and Peak of Shanghai”, Songjiang has a long history, prosperous culture, and developed economy. It is one of the historical and cultural birthplaces of Shanghai, with a culture that can be traced back 4,000 years to the late Neolithic period when the "Guangfulin Culture" emerged. Throughout history, Songjiang has been a cultural hub that has produced many prominent writers, artists, scientists, and revolutionary pioneers. In the process of its historical development, Songjiang people have, through hard work, forged the spirit of Songjiang culture, and laid a strong cultural foundation for Shanghai.

Covering an area of 604.64 km^2 and with a permanent population of 1.9097 million, Songjiang is not only a cultural city with profound historical heritage but also one of the five important new cities identified by Shanghai’s new round of spatial development strategy. Songjiang is a dynamic new city driven by innovation.

Pursuing sustainable development has long been the core idea for Songjiang District in the course of its development. The “Overall Plan of Songjiang New City (2010-2020)” was based on the “Implementation Plan of Songjiang District for the Overall Regional Planning (2006-2020)”, which set up the goal of building a “Humanistic and Livable New City” surrounding the concept of “Innovation-Driven and Inclusive Development”. The Comprehensive Plan and General Land-Use Plan of Songjiang District (2017-2035) approved by the Shanghai Municipal People's Government in 2019 proposes a development goal for 2035, which is committed to building Songjiang into the southwest gateway of Shanghai, an important supporting area of Shanghai Technology Innovation Center, and an advanced manufacturing highland driving the development of the whole Yangtze River Delta, under the overall goal of building Shanghai into a socialist modern international metropolis with global influence, and a major inheritance site of excellent traditional Chinese culture and a livable place with characteristic natural landscape. The 14th Five-Year Plan of Songjiang District issued in 2021 proposes long-term goals and outlooks for 2035, including “comprehensive improvement of global influence with high-quality development in the center of G60 S&T Innovation Valley”, “comprehensive enhancement of soft power of humanistic Songjiang culture” and “green and healthy production and lifestyle in ecological Songjiang".

From the positioning changes in several important strategic plans of Songjiang District since the 21st century, it can be seen that in the process of practicing sustainable development, Songjiang paid great attention to innovation, humanity, green path, and other relevant directions. In terms of innovation, Songjiang regards innovation as the primary driving force for economic transformation and upgrading, and takes the building

of G60 S&T Innovation Valley as the main spatial carrier and strategic fulcrum to develop high-end and intelligent manufacturing. In terms of humanity, Songjiang, based on its profound historical heritage, adheres to a people-oriented urbanization path, and creates a modern and livable city that integrates traditions and modernity. In terms of green path, Songjiang fully demonstrates its unique natural landscape of green mountains and clear waters; it emphasizes the integrated development of green path, humanity, and industry, trying to create an attractive new pattern of ecological space development, while protecting the ecological bases.

Figure 1 Comprehensive Plan and General Land-Use Plan of Songjiang District (2017-2035) approved in 2019

Figure 2 17 SDGs of the 2030 Agenda

Based on the United Nations' Transforming Our World: the 2030 Agenda for Sustainable Development (hereinafter referred to as the "2030 Agenda"), Shanghai released the UN SDGs Shanghai Voluntary Local Review 2021 (hereinafter referred to as the "Shanghai VLR 2021") at the 2021 China Observance of World Cities Day & the First SDG Cities Global Conference, and based on this report joined the United Nations' flagship project for urban sustainable development goals, considering its participation in SDG projects as a regular task to push forward its sustainable development. Since 2022, Shanghai has prepared the voluntary local review report based on the 2030 Agenda at the district level for the first time, which was considered as both a separate report outcome and an integral part of the outcome of Shanghai VLR 2022. Songjiang District, as one of the first batch of municipal districts to participate in the voluntary local review at the district level in Shanghai, prepared the UN SDGs Songjiang District of Shanghai Voluntary Local Review 2022 (hereinafter referred to as the "Songjiang VLR 2022"), and released the report outcomes at the 2022 World City Day Global Observance and 2nd SDG Cities Global Conference held in Shanghai on October 31, 2022, and exchanged its practices and experience in promoting sustainable development as a modern new city of "Innovation, Humanity, and Green Path" with the world.

2. Review Methods and Processes

The Songjiang VLR was co-created by relevant departments of the People's Government of Songjiang District, Shanghai, professional research institutions, expert advisory committees and relevant social organizations. Multiple organizations worked together to prepare this report, with more than 20 government departments invited to participate in specific assessments and to provide case studies that could demonstrate the latest practices and achievements; during the report preparation, many experts in different areas were consulted, forming an expert advisory committee composed of authoritative experts from different fields, such as urban construction, economy, society, and opening-up policies, responsible for the selection and discussion of priority review goals and related indicators; furthermore, emphasis was put on the analysis of multi-source data, leading to a comprehensive understanding of residents' satisfaction with urban living environment through various dimensions such as urban health check-up. The Preparation Team of the Songjiang VLR 2022 under the Shanghai Academy of Social Sciences is responsible for preparing this report.

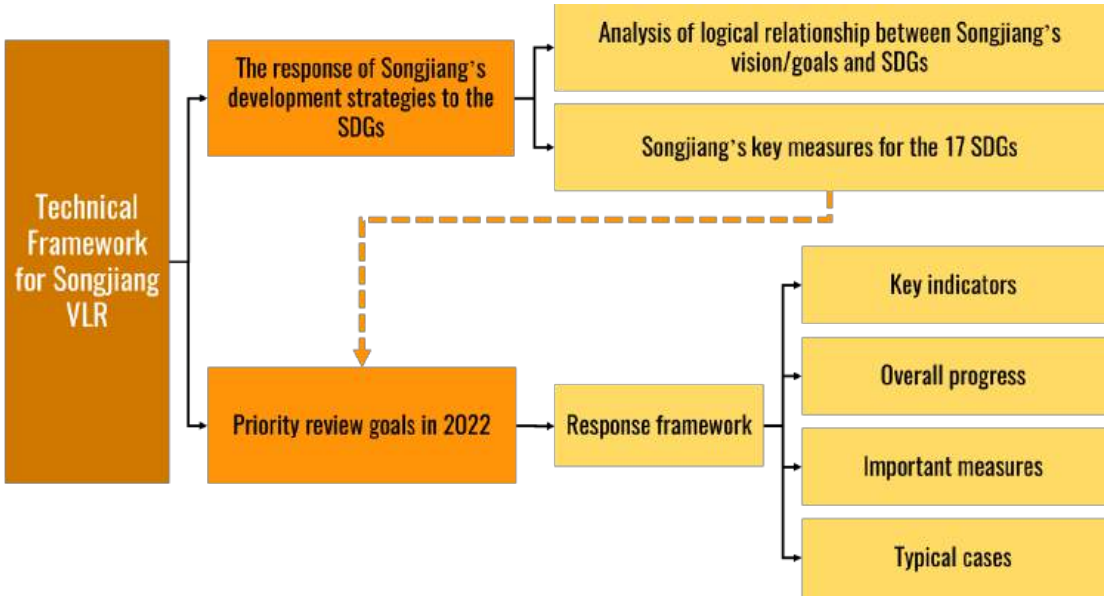


Figure 3 Technology Framework Diagram for Songjiang Voluntary Local Review

The Songjiang VLR was prepared with reference to the requirements in the Handbook for the Preparation of Voluntary National Reviews issued by UN DESA's Division for

Sustainable Development Goals and the Guidelines for Voluntary Local Reviews issued by UN-Habitat, as well as the China's Voluntary National Review Report on Implementation of the 2030 Agenda for Sustainable Development issued by the Ministry of Foreign Affairs of the People's Republic of China in June 2021, the UN SDGs Shanghai Voluntary Local Review 2021 issued by the Shanghai People's Municipal Government, and evaluation results of other foreign cities related to the SDGs at the district level based on the extensive information provided on the UN websites related to SDGs.

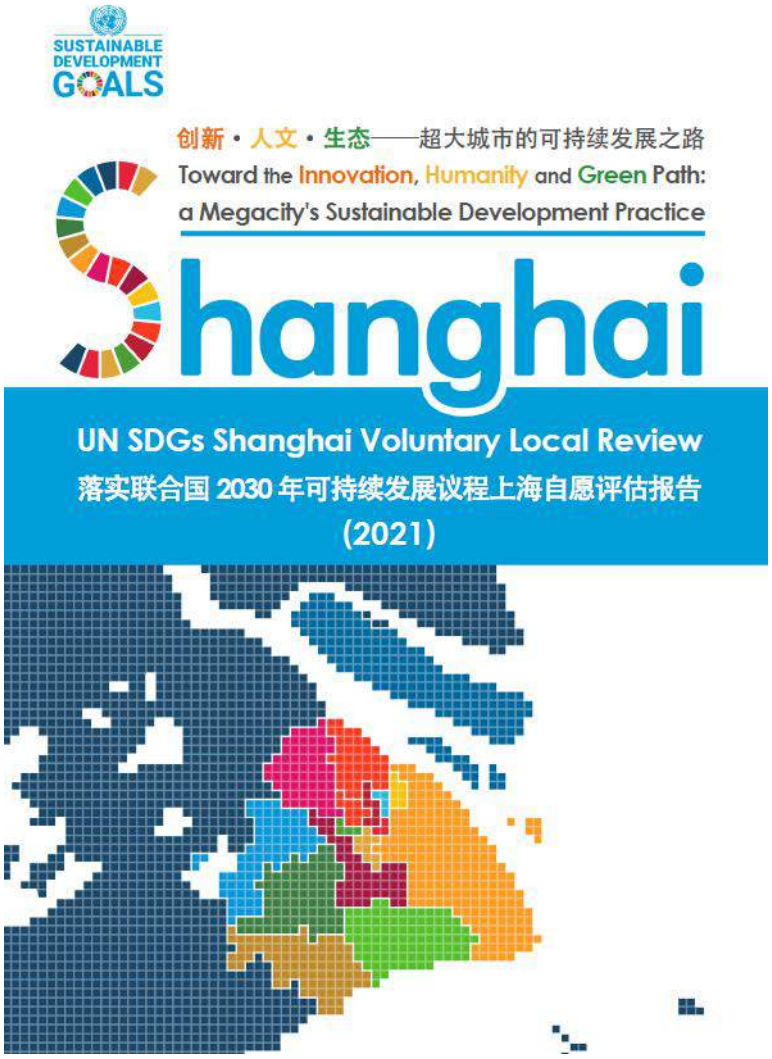


Figure 4 UN SDGs Shanghai Voluntary Local Review (2021)

In terms of review direction and indicator selection, the working team of the "Songjiang VLR" established a framework of Songjiang District for voluntary local review by reference to the "*China's National Plan on Implementation of the 2030 Agenda for Sustainable Development*", the "*2018 China SDGs Indicator Construction and Progress Review Report*", and the framework for voluntary local review for 2022 at the municipal level of Shanghai and in combination with the suggestions from government departments and relevant experts in Songjiang District.

For what should be reviewed, the Songjiang VLR 2022 was prepared with reference

to a series of existing research results, such as evaluations of the five-year plan for national economic and social development in Songjiang District, Shanghai and the urban health check-up report of Songjiang District, Shanghai.

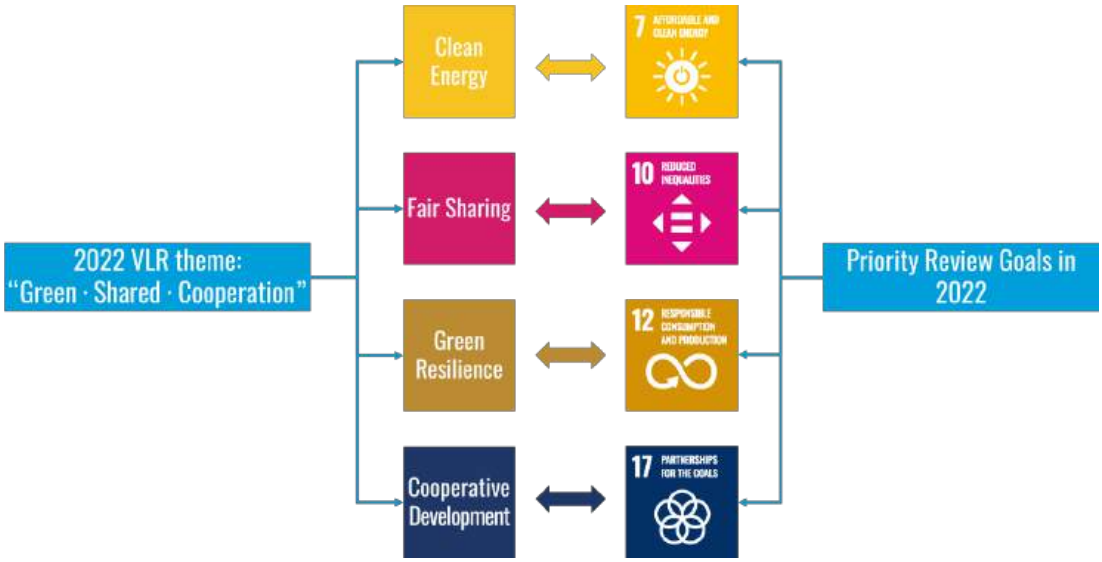


Figure 5 Relationship between 2022 VLR theme and priority review goals

3. Overview of Songjiang's Responses to SDGs

Songjiang's Responses to SDGs

Under the vision and goals of Shanghai's urban development strategy for 2035, Songjiang District formulated the Comprehensive Plan and General Land-Use Plan of Songjiang District (2017-2035) (hereinafter referred to as the "Songjiang 2035 Plan"), and put forward its own 2035 vision and goals of "basically building a modern Songjiang with 'Innovation, Humanity, and Green Path', becoming an important bearing area for Shanghai's technological innovation center with global influence by focusing on 'Created in Songjiang' and pursuing high-quality development, and becoming a modern and ecologically livable district that integrates industry and city by highlighting its cultural advantages, comprehensively improving environmental quality, and ensuring that its important development indicators take a lead in the city". Moreover, the Songjiang 2035 Plan also defines its own urban nature, that is, "to build Songjiang into the southwest gateway of Shanghai, an important supporting area of Shanghai's technological innovation center, and an advanced manufacturing highland driving the development of the whole Yangtze River Delta, a major inheritance site of excellent traditional Chinese culture, and a livable place with characteristic natural landscape". Songjiang's three specific goals, innovation, humanity and green path, have strong logical links with the SDGs target system: innovation mainly corresponds to the economy, society, and culture, humanity to the society, culture and governance, and green path to economy, environment and governance. The report establishes the logical relationships between the three sub-goals for urban development in Songjiang and the 17 SDGs. It is worth noting that, each SDG has a rich connotation, and the above logical relationships only reflect the most important response relationships.

- **Innovative Songjiang**

Songjiang 2035 Plan proposes that, innovation should drive the transformation and upgrading of Songjiang's economy from "Made in Songjiang" to "Created in Songjiang": "Innovation is the primary driving force for this transformation and upgrading. With the construction of G60 S&T Innovation Valley as the main carrier and strategic fulcrum, Songjiang will strengthen the leadership and driving functions of innovation, vigorously develop high-end manufacturing and intelligent manufacturing, improve the functional layout of innovation support, headquarters R&D, high-end manufacturing, intelligent

manufacturing, service integration, commercial business, and modern logistics to underpin and coordinate the development of each other, and achieve the objective of moving regional economic structure towards mid- to high-end, moving economic growth towards medium to high speed, and finding a new path for economic transformation and development. In the practice of this objective, Songjiang focuses on promoting innovative development (SDG9), facilitating economic growth and ensuring employment opportunities for all residents (SDG8), reducing regional inequalities (SDG10), and ensuring responsible consumption and production patterns (SDG12 and SDG7).

- **Humanistic Songjiang**

Songjiang 2035 Plan proposes a new urbanization path that adheres to the principle of "People Orientation": "To build a more charming and happy city of humanity, seize the opportunity of the national comprehensive pilot zone for new urbanization, uphold the development concept of 'People Orientation', discover problems, make up for areas of weakness, strengthen coordination between urban and rural development, optimize urban spatial layout, accelerate integration of industry and city and urban upgrading, promote the balance between employees and residents and the integration of production, life and ecological environment, intensify comprehensive rectification and ecological improvement of regional environment, upgrade urban and rural public service systems, speed up infrastructure construction, build a comprehensive transportation system integrating four networks (namely the national high-speed rail network, Shanghai rail transit network, Songjiang tram network, and ground transportation), promote the coordinated development of urban and rural areas in Pu'nan and Pubei, and advance the development of characteristic towns, modernize agriculture, and boost the equalization of basic public services in urban and rural areas". In the practice of sustainable development under this goal, Songjiang needs to focus on ensuring that the whole people enjoy better public services (SDG4 and SDG3), safeguarding fairness and justice (SDG5 and SDG16), improving people's living standards (SDG1 and SDG2), and building inclusive urban communities (SDG11).

- **Green Songjiang**

Songjiang 2035 Plan proposes to comprehensively promote the development of holistic tourism: "to fully utilize the unique mountain, water, and humanistic resources of Songjiang, grasp the trend of tourism development, try to reflect high quality in green path and humanity, and aim at the development of the whole district, try to turn the tourism industry into one of the strategic pillar industries for the new round of development of Songjiang, create an important functional area of a world-renowned tourism city, and form a new pattern of holistic tourism." In the practice of sustainable development under this goal, Songjiang needs to respond to the challenges of climate change (SDG13), protect the ecological space resources across the district (SDG14 and SDG15), ensure urban water and energy security (SDG6 and SDG7), and adopt sustainable consumption and production models (SDG12).

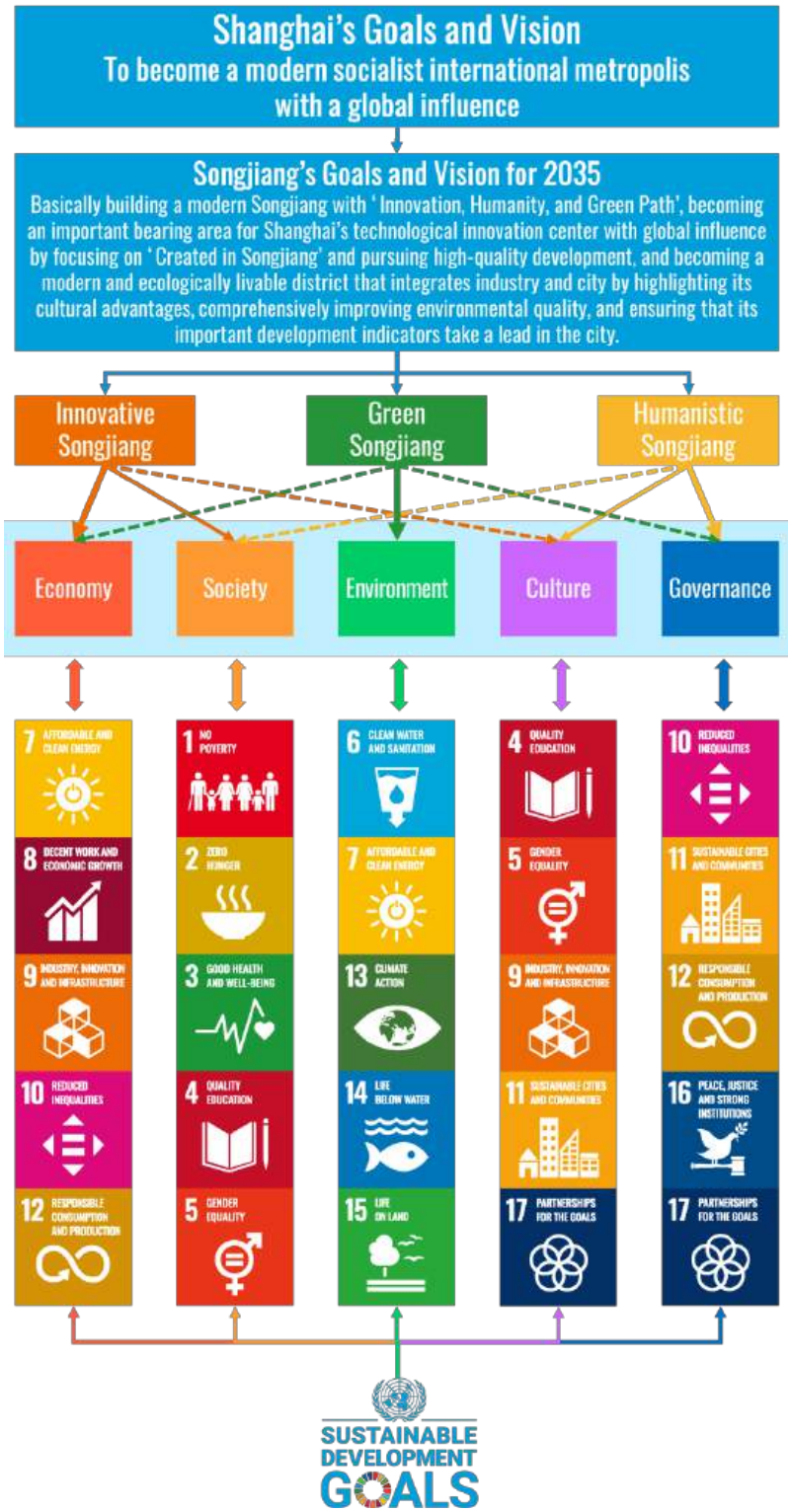


Figure 6 Logical Correspondence between Songjiang's Goals and SDGs

Songjiang's Key Measures to Drive SDGs

In comparison with the 17 SDGs, Songjiang has made significant progress in sustainable development in recent years and has taken creative measures. The Shanghai VLR Report 2022 gives priority to the review of the 4 selected SDGs (SDG 7 Affordable and

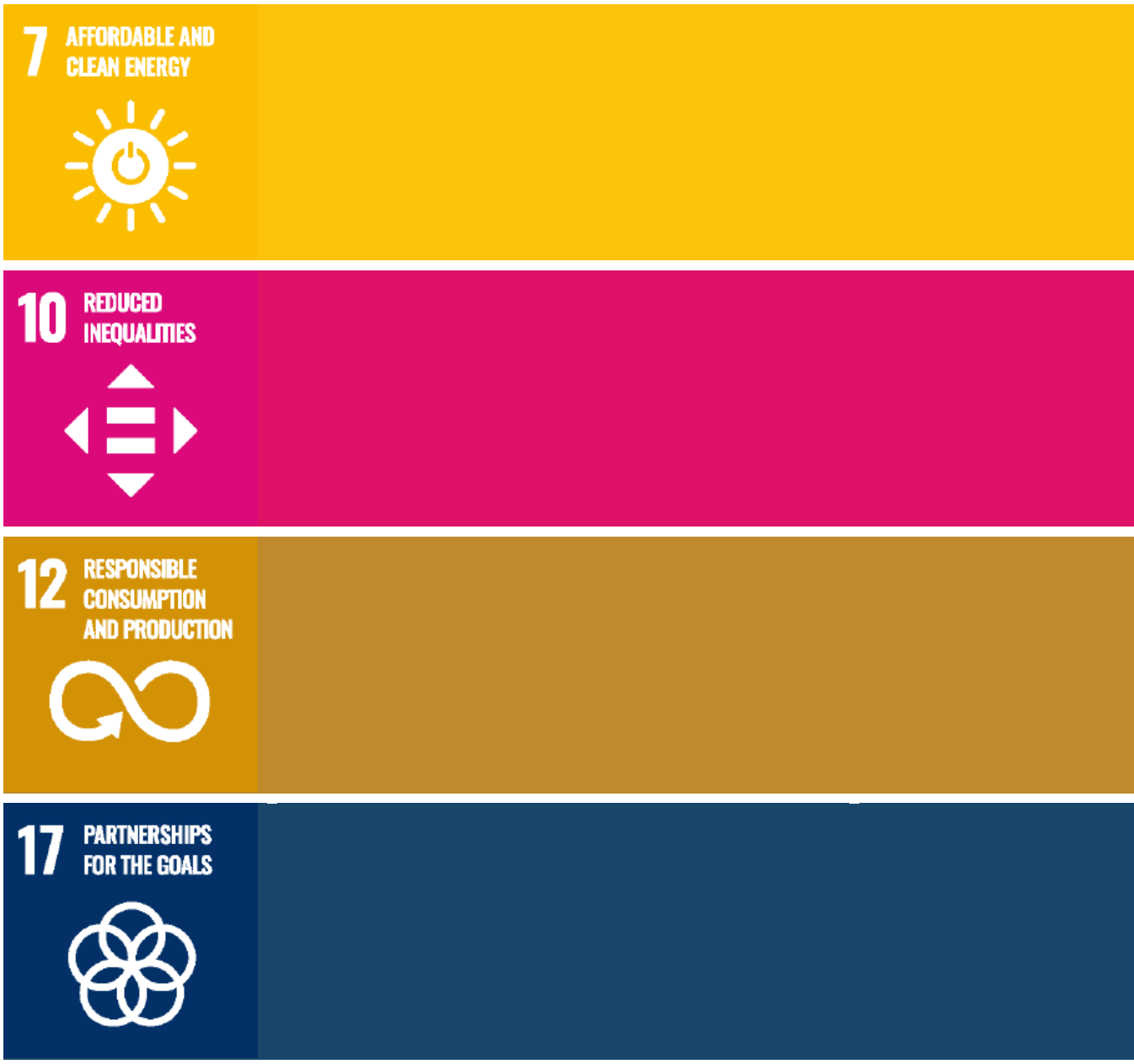
Clean Energy; SDG 10 Reduced Inequalities; SDG 12 Responsible Consumption and Production; and SDG 17 Partnerships for the Goals).

Table 1 Songjiang's Key Measures to Drive SDGs

SDGs	Songjiang's measures
	● Improve subsistence allowances ● Establish multi-level mechanisms for helping people in need ● Strengthen mechanism for supporting employment assistance ● Implement targeted assistance for special groups in need
	● Eliminate food waste ● Promote development of green agriculture and eco-cycle agriculture ● Advance the high-quality development of modern green agriculture ● Promote the application of scientific and technological advances in agriculture
	● Continue to improve deployment and layout of medical and health resources ● Advance the building of a Healthy Songjiang ● Improve the family doctor service system ● Improve the public health management system
	● Promote public beneficial and inclusive preschool education ● Promote "Joint Development Plan of Urban and Rural Schools" ● Improve service capability and level of vocational education ● Build a new highland for basic education around the Songjiang College Town ● Deepen the integration of information technology with education and teaching
	● Promote gender equality ● Ensure women's rights to participate in and discuss state affairs ● Create an atmosphere of caring children's growth by the entire society ● Establish a unique path for the healthy growth and development of young people that reflects the characteristics of Songjiang
	● Promote the protection of drinking water resources for Yangtze River Delta integration demonstration areas ● Improve water quality of Huangpu River and other rivers ● Improve the environment for the water source protection zones of upstream Huangpu River ● Build and update urban and rural water supply network facilities
	● Develop renewable energy ● Develop natural gas as clean energy ● Improve the layout of new energy industry ● Promote low-carbon development practices
	● Implement employment promotion plan for college graduates ● Implement rural revitalization employment assistance plan ● Implement skill improvement action plan ● Implement construction plan of "Craftsman Town" ● Implement the action of creating entrepreneurial urban areas

	● Build a G60 S&T Innovation Valley with international influence ● Improve the "1+7+N" industrial alliance system ● Promote the integrated development of industry and city ● Promote the construction of cross-region industries collaborative innovation centers ● Promote the construction of major strategic infrastructure such as smart cities
	● Provide high-quality public services shared by all ● Create a livable environment covering the entire district ● Build a child-friendly city ● Build an elderly friendly city
	● Focus on constructing a sustainable Songjiang New City ● Build modern livable urban areas such as Shanghai Film City ● Protect historical blocks such as Cangcheng Historical and Cultural District ● Build the core functional area of "Songjiang Hub"
	● Promote the building of a "zero-waste city" ● Build a multi-level sustainable transportation system ● Promote integrated development of culture and tourism across the district ● Build a resilient modern new city
	● Strengthen impact assessment on urban climate change ● Strengthen meteorological disaster prevention capabilities ● Promote "carbon peaking" and build low-carbon and green city ● Promote the construction of carbon trading platforms and markets
	● Promote the Clean Water Action ● Promote the construction of beautiful rivers and lakes ● Build a national ecological water conservancy scenic area ● Promote groundwater environmental protection and supervision management
	● Protect biodiversity ● Build a multi-functional "urban forest" with Songjiang characteristics ● Construct an "Urban Park—Community Park—Street Garden" system ● Actively carry out soil pollution control actions
	● Improve whole-process people's democracy and urban governance capabilities ● Strengthen a rule of law in Songjiang ● Build a smart government featuring one-website government services ● Guarantee urban security via management on one website
	● Provide paired assistance for inland regions for common development ● Promote collaborative development of G60 S&T Innovation Valley of Yangtze River Delta ● Create an attractive development environment ● Vigorously launch overseas publicity and marketing

4. 2022 Priority Review Goals



SDG7: Affordable and Clean Energy

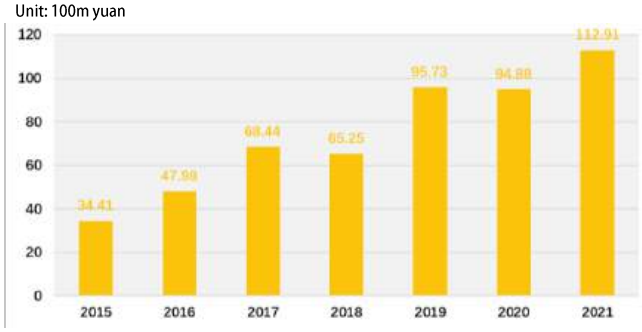
Under the goal of “Clean Energy”, Songjiang District vigorously develops renewable energy such as solar and wind power, continues to promote the infrastructure construction for natural gas as clean energy, dedicates to providing reliable clean energy services for all people, encourages to utilize technological innovation and other means to promote the layout and development of the energy industry, and pushes the intensive and efficient utilization of energy through practices such as construction of low-carbon communities.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG7
Develop renewable energy	Construction of photovoltaic power generation projects	Rooftop photovoltaic power plant project of Songjiang Stadium	▸Proportion of new and clean energy buses in the total number of buses ▸Total number of new and clean energy buses put into operation	7.2
	Construction of wind farm projects			
Develop natural gas as clean energy	Construction and coverage of natural gas pipelines	Construction of natural pipelines in Pu'nan area	▸Total number of natural gas users ▸Supply volume of the natural gas system	7.1 7.b
	Construction of natural gas gate stations			
Improve the layout of new energy industry	Development of new energy industry led by technological innovation		▸Output of new energy industry ▸Proportion of output of new energy industry in gross output of industrial enterprises above designated size	7.a
	Development of new energy automobile industry			
	Energy saving transformation of industrial enterprises	Construction of Forest Cabin "Carbon Neutrality Plant" in Songjiang		
Promote low-carbon development practices	Preparation of the scheme for "peak carbon dioxide emissions", and active participation of carbon emission trading		▸Power consumption per unit of regional GDP ▸Energy consumption per unit of GDP for industrial enterprises above designated size	7.3
	Promotion of ultra-low energy green buildings	The first thin-film BIPV project in Shanghai		
	Construction of low-carbon communities	Thames Town Low Carbon Community		
	Construction of low-carbon industrial areas	G60 S&T Innovation Valley in Lingang Songjiang Science and Technology City		

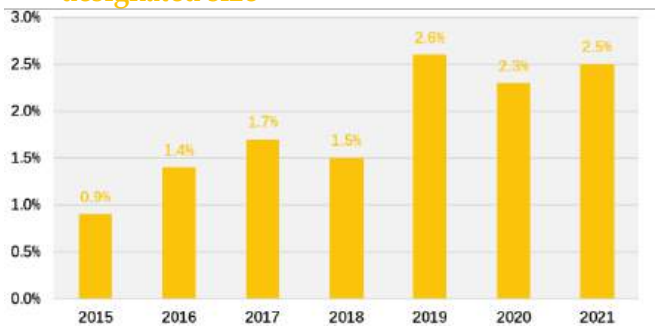
Key Indicators

Output of new energy



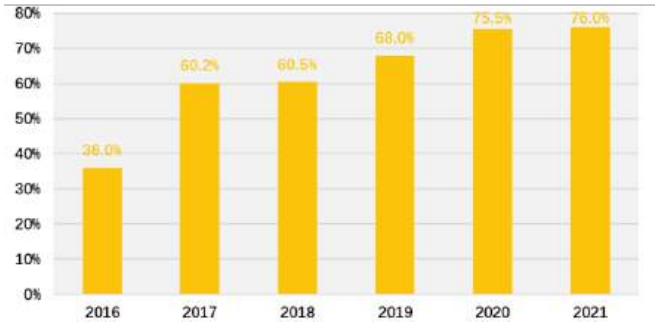
From 2015 to 2021, gross output of new energy industry in Songjiang District increased from 3.441 billion yuan to 11.291 billion yuan, with an average annual growth rate of **21.9%**.

Proportion of output of new energy industry in gross output of industrial enterprises above designated size



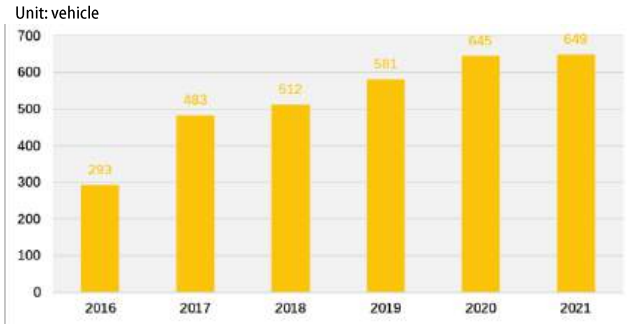
From 2015 to 2021, the proportion of output of new energy industry in the gross output of industrial enterprises above designated size increased from **0.9%** to **2.5%**.

Proportion of new and clean energy buses in the total number of buses



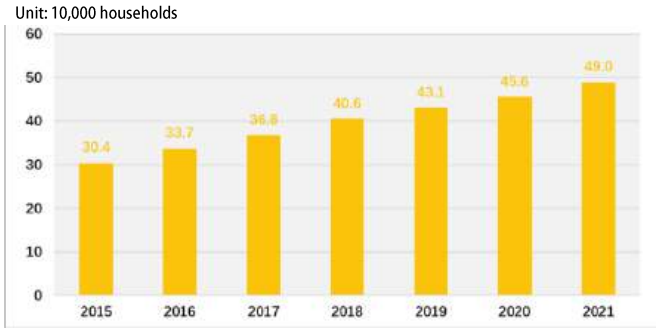
From 2016 to 2021, the total number of new and clean energy buses in Songjiang District increased from 293 to 649, with an average annual growth of **17.2%**. In 2021, the proportion of new and clean energy buses in the total number of buses reached **76.0%**.

Total number of new and clean energy buses put into service



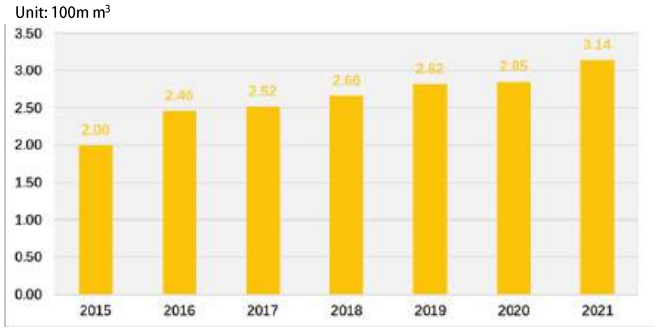
From 2016 to 2021, the total number of new and clean energy buses put into service by Songjiang District increased from 293 to 649, with a growth of **121.5%**.

Total number of natural gas users



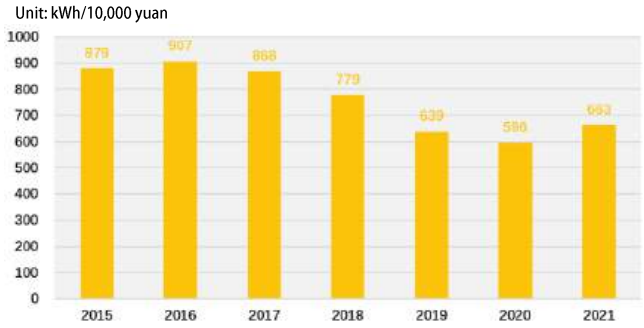
From 2015 to 2021, the total number of natural gas users increased from 304,000 to 490,000, with a growth of **61%**.

Supply volume of natural gas system



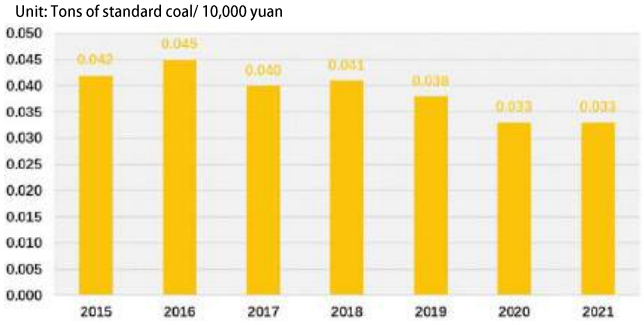
From 2015 to 2021, supply volume of natural gas increased from 200m cubic meters to **314m** cubic meters, with an average annual growth of **7.8%**.

Power consumption per unit of regional GDP



From 2015 to 2021, the Power consumption per unit of regional GDP in Songjiang District significantly decreased from 879 kWh/10,000 yuan to 663 kWh/10,000 yuan, with a decrease of **25%**.

Energy consumption of industrial enterprises above designated size



From 2015 to 2021, the energy consumption of industrial enterprises above designated size in Songjiang District significantly decreased from 0.042 tons of standard coal/10,000 yuan to 0.033 tons of standard coal/10,000 yuan, with a decrease of about **20%**.

Major Progresses

- **Rapid progress made in new energy power generation projects**

Songjiang District has actively developed photovoltaic new energy, with distributed photovoltaic power generation projects having achieved rapid development. From 2016 to 2020, Songjiang District added and installed capacity of 116.84 MW of photovoltaic power, including 212 enterprise investment projects with an installed capacity of 99.292 MW, and 2,301 individual photovoltaic power generation projects with an installed capacity of 17.548 MW. In 2020, photovoltaic power generation projects (including individual projects) in Songjiang District generated electricity by a total of 133.86 million kWh. Moreover, Songjiang District initiatively explored small and medium-sized distributed wind farm projects based on actual natural endowments. So far, Shihudang Town 2 × 5.96MW Distributed Wind Farm Demonstration Project is being advanced actively.

- **Significant progress made in clustered development of the new energy industry**

Songjiang District takes new energy industry as a strategic emerging industry. So far, the new energy industry in Songjiang District has gathered a group of excellent enterprises, covering the R&D, design, and production of smart grids, new energy automobiles, wind power, and other fields, which lays a solid foundation for its development. During the period from 2015 to 2021, the average annual growth rate of the output of new energy industry in Songjiang District reached 21.9%. In 2021, the output of new energy industry reached 11.291 billion yuan, accounting for 2.5% of the total output of the industry in Songjiang District.

- **Steady growth in the number of natural gas users**

Songjiang District has continuously advanced the construction of a natural gas system. From 2015 to 2021, the gas supply mix of Songjiang District was optimized continuously, with rapid growth in using volume of natural gas and steady growth in the total number of residential users. The construction of gas infrastructure was pushed at a steady pace, especially the completion of key projects including the construction of the second gate station and the natural gas main pipeline in Pu'nan area, which marked the achievement of "Natural Gas Connection to Every Town" in Songjiang District, and the effective improvement of the transmission capacity of the gas pipelines.

- **Abundant achievements made in technological innovation in the new energy field**

Songjiang District has aimed at new arenas, leveraged its foundation advantages in technological innovation, and set a new benchmark for the new energy industry. In 2021, a total of 23 new energy and efficient energy-saving research projects were approved by Shanghai and Songjiang District, with a total of 13.54 million yuan in funding. Among them 157 were hi-tech enterprises in the field of "new energy and energy-saving technology"; five projects were recognized as transformation projects of hi-tech achievements and enjoyed preferential taxation policies; and three giant technology enterprises (including cultivation) at the municipal level received funding support of 6 million yuan at the municipal and district levels.

- **Continuously decreased industrial energy consumption**

The total volume and intensity of industrial energy consumption in Songjiang District has decreased significantly, and the adjustment of industrial structure and energy conservation has achieved initial results. The energy consumption per unit of output of industrial enterprises above designated size decreased from 0.042 tons of standard coal/10,000 yuan in 2015 to 0.033 tons of standard coal/10,000 yuan in 2021. The energy consumption per unit of added value of industrial enterprises above designated size decreased from 0.277 tons of standard coal/10,000 yuan in 2015 to 0.191 tons of standard coal/10,000 yuan in 2020, with a decrease of 31.05%. The total energy consumption of industrial enterprises above designated size decreased from 1.438 million tons of standard coal in 2015 to 1.366 million tons of standard coal in 2020. Songjiang District has established a green manufacturing system cultivator, continuously tracking and guiding key enterprises and parks included in the cultivator, providing key cultivation support, and guiding enterprises to improve their green index.

- **Steady advances in green and low-carbon development practices**

Songjiang District has promoted the building of a number of green and low-carbon communities and development practice areas. Among them, low-carbon communities include the Thames Town community in Fangsong Sub-district, and the Guojialou Community in Zhongshan Sub-district. They have carried out low-carbon practices and constructions by advocating low-carbon concepts, cultivating low-carbon culture and lifestyle, exploring low-carbon management models, promoting low-carbon buildings, constructing low-carbon infrastructure, and creating a low-carbon environment, etc. The Low-carbon Development Practice Zone of Lingang Songjiang Science and Technology City cultivated emerging industry clusters with software and information service industries at the core, and built the park into a high-quality demonstration park for emerging low-carbon ecological industries, becoming a model for the construction of ecological low-carbon industrial parks in Shanghai and even across China. In January 2022, Shanghai Lingang Songjiang Science and Technology City was designated as a low-carbon demonstration and creation entity in Shanghai.

Important Measures

(1) Develop renewable energy

- **Construction of photovoltaic power generation projects**

Songjiang District regards the construction of photovoltaic power generation projects as a key task for the development of renewable energy every year. The annual construction goals of photovoltaic power generation projects were broken down to different towns, sub-districts, and parks, and the performance conditions of the indicators were an important part of the evaluation and assessment of various sub-districts and towns (parks). Moreover, Songjiang District has actively promoted policies related to renewable and new energy by utilizing opportunities such as Energy Conservation Promotion Week and the energy

conservation and carbon reduction promotion meetings of sub-districts / towns (parks) to spread renewable and new energy utilization technologies and related support policies to key energy consuming enterprises, continuously enhancing their awareness of energy conservation and carbon reduction, and encouraging enterprises to initiatively install photovoltaic power equipment.

Case 1 Rooftop Photovoltaic Power Generation Project of Songjiang Stadium

In October 2020, the Rooftop CIGS (copper indium gallium selenide) Thin-film Photovoltaic Project of Songjiang Stadium was connected to the power grid, which marked the official debut of the first photovoltaic stadium in Shanghai. The project adopted CIGS double glass-film photovoltaic modules, with a total installed capacity of 184 kW. It can save 72,000 kg of standard coal per year, reduce carbon dioxide emissions by about 180,000 kg in total, and sulfur dioxide emissions by about 5,400 kg. The stadium can achieve 100% absorption of photovoltaic power. It saves energy costs, and reduces the unit energy consumption of the venue, effectively improving the green and energy-saving effect of the building.

During the design phase of Songjiang Stadium, the concept of new energy conservation was already introduced. Its installation method integrated the aesthetic design of the rooftop of Songjiang Stadium, adopting the BIPV (Building Integrated Photovoltaic) method to integrate the photovoltaic design into the building structure. While ensuring power generation performance, its overlooking appearance also brought a new visual effect to the stadium.

Songjiang Stadium can host district-level comprehensive sports events and nation-level individual competitions, and serve for national fitness. It can also serve as a comprehensive venue for citizens integrating multiple functions after the competitions, for sports training, cultural performances, conferences, charity activities, exhibitions, etc. It will become an important place for citizens' sports and cultural activities.

Figure 7 Rooftop Photovoltaic Power Generation Project of Songjiang Stadium

- **Construction of wind farm projects**

Songjiang District is actively piloting distributed wind farm projects. The construction of distributed wind farm projects requires a certain area of land. From 2016 to 2020, Songjiang District actively explored the application of small and medium-sized distributed

wind farm projects based on its natural endowments, and sped up the construction of distributed wind farm demonstration projects. In order to boost the enthusiasm of enterprises in renewable energy projects, Songjiang District simplified corresponding approval procedures, and intensified publicity efforts for key energy consuming enterprises to accelerate the approval of related projects. Presently, Songjiang District is actively speeding up the construction of Shihudang Town 2 × 5.96MW Distributed Wind Farm Demonstration Project. The project is located in the area enclosed by Xietang River, Yuanxiejing Creek (Hongqitang Pond), and S32 Expressway, including four 2.98MW horizontal-axis, upwind, three-blade and variable-speed variable-pitch wind turbine generator systems (WTGS) under planning. After completion, the project will be connected to the public power grid, with an annual feed-in capacity of approximately 34.568 M kWh. The project has reached relevant agreements with Shihudang Town and is currently in the stage of environmental impact assessment.

(2) Develop natural gas as clean energy

- **Construction and coverage of natural gas pipelines**

Songjiang District has vigorously promoted the construction of pipeline networks. Since 2015, multiple major projects have been completed, including the construction of natural gas pipeline networks in the downtown of Xiaokunshan, the western area of Shihudang, and the Pu'nan area. At the end of 2019, Songjiang District completed the construction of the gas pipeline network in the Pu'nan area. The completion of this project not only addressed the gas consumption problem that had plagued residents and enterprises in the three towns of Pu'nan for many years, but also marked the achievement of "Natural Gas Connection to Every Town" in Songjiang District, realizing a development milestone. Songjiang District has also paid attention to improving the capacity of safe transportation, optimizing the construction of pipeline networks under Nanle Road, Xinrong Road, Minkang Road, and Jiujiang Road, achieving the connectivity of regional pipeline networks, balancing regional pressure stability, and further improving the safety and transportation capacity of pipeline networks.

Case 2 Construction of Natural Gas Pipelines in Pu'nan Area

The gas consumed by the three towns in Pu'nan area of Songjiang District was mainly bottled gas and compressed natural gas in the past. Due to transportation costs, raw material prices and other reasons, the cost of gas was high, and the supply was unstable, which caused inconvenience to the economic development and residents' lives of this area. The completion and putting into service of natural gas pipeline networks have received widespread praise from local residents and enterprises, and more and more users in Pu'nan area shifted to use natural gas as their main fuel. As at July 2022, a total of 8,777 new residential users and 32 non-residential users of natural gas have been added in Pu'nan area. Natural gas has become the main fuel for the three towns in Pu'nan, which has greatly improved the daily gas demand of local residents.

The main methods of the case include: 1) thoroughly investigating the gas consumption structure mix in the three towns of Pu'nan, and designing a rational pipeline route; 2) completing tasks of all links including planning, design, and construction in a relatively short period of time under the strong support and guidance of the government; 3) optimizing the design and

construction plan to closely connect all links of the project, and strictly following the requirements of safe and civilized construction. The construction was implemented strictly in accordance with the schedule, and the plan execution was regularly checked to ensure that the project would be completed as scheduled. Concealed works, key links, and key nodes were supervised by on-site supervisors to ensure construction quality.

Figure 8 Natural Gas Station of Pu'nan Area in Songjiang

- **Construction of natural gas gate stations**

Songjiang District built the "Second Gate Station" of natural gas, Huayang Gate Station, to enhance the supply guaranteeing capability of natural gas. Huayang Gate Station was officially completed and put into use in 2015. The operation of this station greatly balanced the pressure of gas pipelines in Songjiang District, which was high in the west and low in the east. It ensured the normal gas consumption of enterprises and of Xinqiao, Jiuting, and other sub-districts and towns in the eastern development zone, and achieved the circular connection of gas pipelines between Dagang Gate Station and Huayang Gate Station, reducing the risk of gas shutdowns caused by maintenance of gas facilities and equipment. Meanwhile, Songjiang District optimized and renovated some parts of the pipeline network, built a group of regional gate stations, including three new regional gate stations: Fangsi Road 4X1, Xiaokunshan 8X4, and Jiuting Niuchejing 4X1, which improved the problem of low gas supply pressure at the end of pipeline network, and better ensured the safe and stable gas supply in Sijing, Jiuting, and Xiaokunshan areas.

(3) Improve the layout of new energy industry

- **Development of new energy industry led by technology innovation**

In the layout of "6+X" strategic emerging industries, Songjiang has always pushed the new energy industry as a key industry by facilitating a number of enterprises to actively innovate in product types in enterprise R&D, accelerating transformation in development directions, and seeking new growth opportunities. The world's most advanced ALD photovoltaic machine tools and many other original achievements broke international monopolies, filled the blanks in China's domestic market, and changed from a "follower" to a "leader" in many fields, building a strategic fulcrum with independent, controllable, and sustainable innovation chains. When applying for approval of technology projects, Songjiang District paid special attention and gave priority to projects related to "new

energy and energy-saving technologies" in the "Key Hi-tech Fields Supported by the State", and encouraged technology enterprises to innovate in energy saving and emission reduction.

- **Development of new energy automobile industry**

The new energy automobile industry in Songjiang District has initially formed an industrial system integrating automobile manufacturing, three core electric systems (power system, motor system and control system), and charging facilities. In the field of automobile manufacturing, Songjiang District actively made plans for new arenas of new energy vehicles. For instance, Evergrande Vehicle's automobile production base has been completed, and Vientiane Automobile obtained the qualification to produce new energy vehicles. As for the three core electric systems, Songjiang District attracted key enterprises like BYD, Drive-inno New Energy, Dingyan Intelligent Technology, Exon Power, and Capenergy Technology. Regarding the field of charging facilities, Songjiang introduced high growth enterprises like Xundao New Energy and Consolida Shanghai Auto Technology.

- **Energy saving transformation of industrial enterprises**

Songjiang District has concentrated on such key industries as chemical engineering, non-ferrous metals, building materials, and four major adjustment processes (electroplating, casting, forging, and heat treatment), with a focus on energy-saving renovation of boilers, energy-saving of motor systems, utilization of residual heat and residual pressure, optimization of energy systems, green lighting renovation, and the construction of energy management centers. Songjiang has vigorously implemented energy-saving renovation projects to improve energy efficiency, and supported a total of 225 energy-saving renovation projects, realizing an annual energy saving of 37,600 tons of standard coal.

Case 3 Construction of Forest Cabin "Carbon Neutrality Plant" in Songjiang

In 2021, Shanghai's local beauty company, Forest Cabin, with the sustainability concept and practice of "making the skin of humans and the Earth more beautiful", was included in "Initiatives to Protect the Earth's Ecology" of the list of WWD "Sustain 100" sustainable fashion innovation products released by WWD China (Women's Wear Daily). In 2020 and 2021, Forest Cabin appeared in the Sustainable Fashion Area of the China International Import Expo Shanghai Pavilion. Forest Cabin is building a carbon neutrality scientific research and intelligent manufacturing base integrating digital technology, carbon neutrality and hi-tech research, with a total area of nearly 30 mu (20,000 m^2) and a total building area of 45,000 m^2, which will be put into operation in 2024. It is known as "the first carbon neutrality plant in China's cosmetics industry" and "the first carbon neutrality plant in Shanghai".

Forest Cabin's "carbon neutrality plant" will actively practice the carbon neutrality goal by avoiding, reducing and offsetting emissions: 1) adopting renewable energy to replace fossil fuels, utilizing distributed photovoltaic and solar power, etc., to avoid at source the "direct emissions" caused by the consumption of fossil energy in the operation of enterprise production facilities; 2) through the "carbon neutrality energy efficiency platform", monitoring the power consumption, energy mix, green power mix, carbon emissions and emission reduction of the whole plant in real

time, and reducing indirect emissions generated by the operation of enterprise production facilities by digital means; 3) achieving the goal of "offsetting emissions" through ecological restoration methods such as tree planting and afforestation. Adhering to the good vision of "making the skin of humans and the Earth more beautiful", Forest Cabin has built more than 10,000 mu (666,700m^2) of Chinese red camellia planting bases in Zhejiang, Jiangxi, and other places, and plans to grow 50 million red camellia trees globally in 25 years. Moreover, Forest Cabin hopes to lead the sustainable development of China's cosmetics industry under the "double carbon" goal (carbon peaking and carbon neutrality) by establishing the "carbon neutrality" standard, and build the "carbon neutrality plant" into a benchmark case of green plant in China's cosmetics industry.

(4) Promote low-carbon development practices

- **Preparation of "carbon peaking" scheme, and active participation of carbon emission trading**

According to national requirements and the overall layout of Shanghai, Songjiang District formulated a "carbon peaking" plan. It advanced the formation of special action plans in the fields of energy, industry, transportation, and construction, and clarified the goals, roadmaps, and main tasks for achieving the goal of peak carbon dioxide emissions in key fields. Songjiang refined the carbon peaking plans and measures for key industries and regions, and determined field-specific or industry-specific peaking action plans for key fields such as energy, electricity, industry, construction, transportation, and new infrastructure, as well as key industries such as petrochemicals, so as to lay a foundation for carbon peaking in Shanghai. According to the layout of Shanghai, Songjiang District actively carried out emission quota allocation and carbon emission verification for key enterprises included in the national carbon trading system. Songjiang District actively participated in carbon trading pilot projects, expanded and optimized the carbon trading market, strengthened the standardized management of enterprises included in carbon emission management and third-party verification institutions, and initiatively cultivated carbon trading consulting, carbon asset management, carbon financial service and other carbon trading service institutions.

- **Promotion of ultra-low energy green buildings**

Songjiang District actively advanced technological progress in green buildings, and initiatively promoted the use of green building materials such as high-strength steel, high-performance concrete, and building insulation materials with excellent fire prevention and insulation performance. Songjiang District positively implemented policy publicity and promotion of ultra-low energy buildings, encouraging more professionals and common people in the construction field to pay attention to and understand the advantages, policy measures, typical cases, and advanced experiences of ultra-low energy buildings. Shanghai attached great importance to the development of ultra-low energy buildings, and vigorously pushes the demonstration practice of ultra-low energy buildings through supporting policies like financial subsidies and plot ratio rewards. By fully leveraging the guiding role of municipal support policies, Songjiang District vigorously explored and strived for support policies at the district level to further speed up the development of

ultra-low energy buildings in Songjiang District.

Case 4 The First Thin-film Building Integrated Photovoltaic Project in Shanghai

The first thin-film Building Integrated Photovoltaic (BIPV) project in Shanghai, located on Sibo Road in Sijing Town, Songjiang, is a stylish, advanced building cluster composed of several factories and office buildings. This building cluster is Triumph Robot Intelligent Equipment R&D Center built and put into service based on business requirements by CNBM Triumph Robot (Shanghai) Co., Ltd., which is the only hi-tech enterprise under CNBM (China National Building Material Group Co., Ltd.) and which focuses on R&D and design of the industrial robot system integration solutions and intelligent equipment.

The project includes four factories properly connected by overhead corridors and an R&D center. It is responsible for the R&D and manufacturing of eight major business platforms: a robot intelligent loading system for bagged cement of CNBM, an automatic sorting and packaging production line for facility agriculture fruits and vegetables, a CIGS thin-film solar cell automation solution, complete automation equipment for the traditional glass industry, an overall solution for the information display field, and an automated production line for crystalline silicon photovoltaic modules, an automated solution for facility agriculture seedling cultivation and an intelligent solution for new materials (lithium film, medicine glass, and carbon fiber).

Figure 9 Shanghai's First Thin-film BIPV Building Triumph Robot Intelligent Equipment R&D Center

The project introduced evaluation standards for green buildings to guide the design and construction, organically integrating prefabricated building materials, thin-film solar power generation building materials, and highly insulated building materials. The project conducted many beneficial attempts and made breakthroughs in the application of thin-film solar power generation materials to achieve BIPV functions. The thin-film solar power generation curtain walls installed on the east, west, and south facades of this building have a total area of 3,053 m^2, and the installed power of the power generation glass reaches 397.5 kW.

The completion and putting into operation of the Triumph Robot Intelligent Equipment R&D Center have achieved a series of breakthroughs in BIPV field in Shanghai: 1) It is Shanghai's first engineering case using thin-film solar panels in enclosures of building curtain walls; 2) it is the first successful use of thin-film power generation glass module products in Shanghai; 3) it is the first time that the thin-film power generation glass curtain walls pass the safety assessment of curtain wall

building materials in Shanghai; 4) it is the BIPV single public building with the largest installed capacity in Shanghai to date; 5) it is the building with cadmium telluride thin-film power generation glass wall enclosure and with the largest installed capacity in China.

- **Construction of low-carbon communities**

Songjiang District constructed low-carbon communities in Thames Town in Fangsong Sub-district, and Guojialou in Zhongshan Sub-district. During the construction process, Songjiang District utilized the strength of professional institutions, drew on the experience in low-carbon development and construction in similar regions at home and abroad, considered the actual situation of the region, and clarified the creation ideas and positioning, formulated project implementation plans, put in place project funds, and broke down specific supporting measures. The sub-districts arranged funds to ensure the technical services and engineering facilities projects in the building of low-carbon communities. Efforts in low-carbon promotion were intensified through forums, technical exchanges, science popularization lectures, and other means, to stimulate the participation enthusiasm of enterprises and the public. In addition, multimedia publicity, special lectures, and science popularization interactions were employed to deepen the public's understanding of low-carbon communities through the exhibitions of low-carbon communities, encourage the public to develop a green and low-carbon lifestyle, initiatively reduce carbon footprint, and create a good atmosphere of low-carbon communities with public participation.

Case 5 Thames Town Low-carbon Community

The design of Thames Town community in Fangsong Sub-district, Songjiang District leveraged the favorable ecological environment of Songjiang, introduced the style and residential characteristics of the town beside Thames River in the UK, and perfectly combined the natural and smooth road system with the beautiful river channel, providing a framework for the development of the entire region.

The Thames Town community has three main characteristics in terms of low-carbon construction: beautiful landscapes, greenery, and watercourses. The community neighborhood committee attached great importance to low-carbon construction and continuously practiced the energy-saving and emission reduction goals of low energy consumption, low pollution, and low emissions, striving to build the community into a low-carbon and livable community. The community design concept of Thames Town fully drew on advanced, diversified and composite urban design concepts at home and abroad, to form the second low-carbon feature of the community—the "15-minute living circle". As a well-known tourist destination, the third characteristic of the Thames Town community is its strong foundation in creating activities, with experience in organizing activities; it recruits community residents and utilizes the resources from college town to build multiple volunteer teams.

Important measures for advancing the case include:

1) Continuously promoting the green transformation of the community. The project completed the construction planning based on the green and low-carbon requirements, and promoted green and low-carbon development in such aspects as community lifestyle, operation management, building construction, infrastructure, ecological environment, etc. The project also guided community residents in practicing low-carbon decoration in design, construction, and material

selection etc.

2) Expanding the greenery coverage of the community. The community greening constructed a landscape pattern themed "living, leisure, and creativity". The community is provided with scenic lakes, and the ratio of greenbelt in the community reaches 60%, with a per capita park greenbelt of 193.42 m2.

3) Collecting and utilizing rainwater. There are several artificial rivers and lakes in the Thames Town community. The construction concept of Thames Town is to implement the artificial river (rainwater collection and utilization) project in conjunction with the construction of landscape greening project. Through rainwater collection, storage, sedimentation, and utilization facilities, rainwater is used in irritating greenery flowers and trees, as well as in water replenishment of the artificial rivers. This forms an environmental protection cycle of "collection, storage, purification and utilization", thereby reducing the use of traditional water sources, and community residents have also developed good habits of water-saving.

4) Implementing garbage classification. The Thames Town community made reasonable use of solid waste resources, and placed, sorted, transported, and treated all garbage in the community based on rational classification. Targeted and effective treatment methods are adopted for different kinds of garbage, and garbage classification and recycling became the priority means to solve the garbage problem in the community.

5) Cultivating low-carbon transportation modes. The project rationally allocated public bicycle lanes, sidewalks, and vehicle lanes within the community, intensified the construction of a last-kilometer seamless connection system between the community and public transportation, and actively guided low-carbon transportation. The project added shared bicycle service sites and facilities in the community, and coordinated the planning of new energy vehicle supporting facilities such as charging poles and charging stations. Vacant land plots at the corners of the community were fully utilized, and green-shade parking lots were added. The community also improved accessibility facilities and road signs, crosswalks, deceleration signs, signal lights, and road lighting, and encouraged residents to use low-carbon transportation methods like walking, cycling, public transportation, carpooling, and hitchhiking.

Figure 10 Aerial View of the Thames Town

- **Construction of low-carbon industrial zones**

While building a low-carbon industrial zone, Songjiang District actively promoted green lighting for some plots and the low-carbon ecological transformation of building curtain walls, to maximize the low-carbon effects of buildings, and actively built a smart energy system with multiple functions to vigorously support the implementation of digital energy regulatory systems, energy center projects, and distributed photovoltaic power generation projects. In addition, it promoted industrial upgrading to prohibit at source the implementation of high pollution projects, continued to deepen the rectification of industrial enterprises with high pollution and high energy consumption in the park, and vigorously pushed the application of water-saving and environmental protection technologies.

Case 6 G60 S&T Innovation Valley in Lingang Songjiang Science and Technology City

The G60 S&T Innovation Valley in Lingang Songjiang Science and Technology City is a global and futuristic masterpiece that integrates the design principles of nature, environmental protection, and sustainable development. It is built synchronously with supporting photovoltaic power generation systems and energy storage systems (reserved), as well as a "power supply+ storage + loading" collaborative control system, to achieve the construction of a smart park platform.

The roof of the G60 S&T Innovation Valley is an undulating aluminum alloy grid shell system. On the aluminum structure roof, pieces of flexible solar films are attached, making it a super-large solar power generation cloud corridor. The solar cell packs in it are made with world-leading flexible CIGS (copper indium gallium selenium) film technology, whose photoelectric conversion efficiency is the highest among similar products in the world. The distributed photovoltaic power generation system built on the surface of the G60 S&T Innovation Valley covers an area of approximately 30,000 m^2, with a total photovoltaic panel area of 2,934 m^2, a total installed capacity of 366 kW, and an annual power output of approximately 380,000 kWh. Moreover, the super large curved grid on the rooftop of the G60 S&T Innovation Valley serves as a carrier for the integrated research and demonstration of aluminum alloy structures and solar photovoltaic products, and provides services for the research and demonstration project of the National Science and Technology Support Plan – "Research and Demonstration of Renewable Energy Utilization and Building Integration", providing reliable basis for the integrated design of photovoltaic products, and providing parameters through testing of product data.

The G60 S&T Innovation Valley "Ice Storage" Energy Center Project is the first energy center project using an ice storage system in Songjiang District, Shanghai. It fully utilized the policy advantages of differences between peak and off-peak electricity prices, significantly reducing the operating costs of the air conditioning system, and saving energy and resources. The energy center has three major innovation points: integrated IoT, AI applications, and value-added services. 1) The integrated deployment ensures the security and stability for the data transmission of the IOT devices, and provides solutions for edge computing of local data and local scheduling integration of could strategies. 2) AI is mainly used in user load forecasting. It is used in predicting changes in user load conditions, improving the accuracy of user demand declaration and energy storage economy model, seeking the energy storage and configuration scheme with the highest return on investment via algorithm, operating automatic diagnosis and maintenance for equipment, and

making the equipment diagnosis and maintenance more intelligent through data and platform driving. 3) Value-added services mainly refer to the mining of data value-added solutions. By accessing data through IoT and iteration of AI algorithms, sufficient analysis of data is realized, and the enormous value behind it is discovered. Therefore, G60 S&T Innovation Valley undertakes another research project of the State Grid Headquarters—"Research and Demonstration of Key Technologies for Collaborative Operation of Commerce Park Power Supply—Storage—Loading", aiming to realize the optimized configuration of different power supply methods under multiple business forms, and implement the integrated demonstration and technical verification of the park's cold and hot power hybrid energy system and battery energy storage system.

G60 S&T Innovation Valley has been highly recognized by the peer in areas such as green building design and technology application. In 2019, the G60 S&T Innovation Valley project was awarded the top-level platinum certification under the LEED Certification System by the US Green Building Council. In terms of operating costs, compared to the water consumption benchmark in LEED, the G60 S&T Innovation Valley project achieved an overall water saving rate of 35% by using water-saving devices and intelligent irrigation systems. In terms of energy consumption, compared to the energy consumption standard of ASHRAE90.1, the G60 S&T Innovation Valley project reduced the energy consumption cost by 21% by adopting a photovoltaic power generation system, as well as an efficient enclosing structure and air conditioning system.

Meanwhile, the G60 S&T Innovation Valley project also won the China Construction Engineering Luban Prize and was titled the Shanghai Observation Base. The project explored and practiced in such aspects as sponge city, BIM (Building Information Modeling) intelligent management, and the creation of civilized construction sites to improve building quality and practice the concept of excellent architecture.

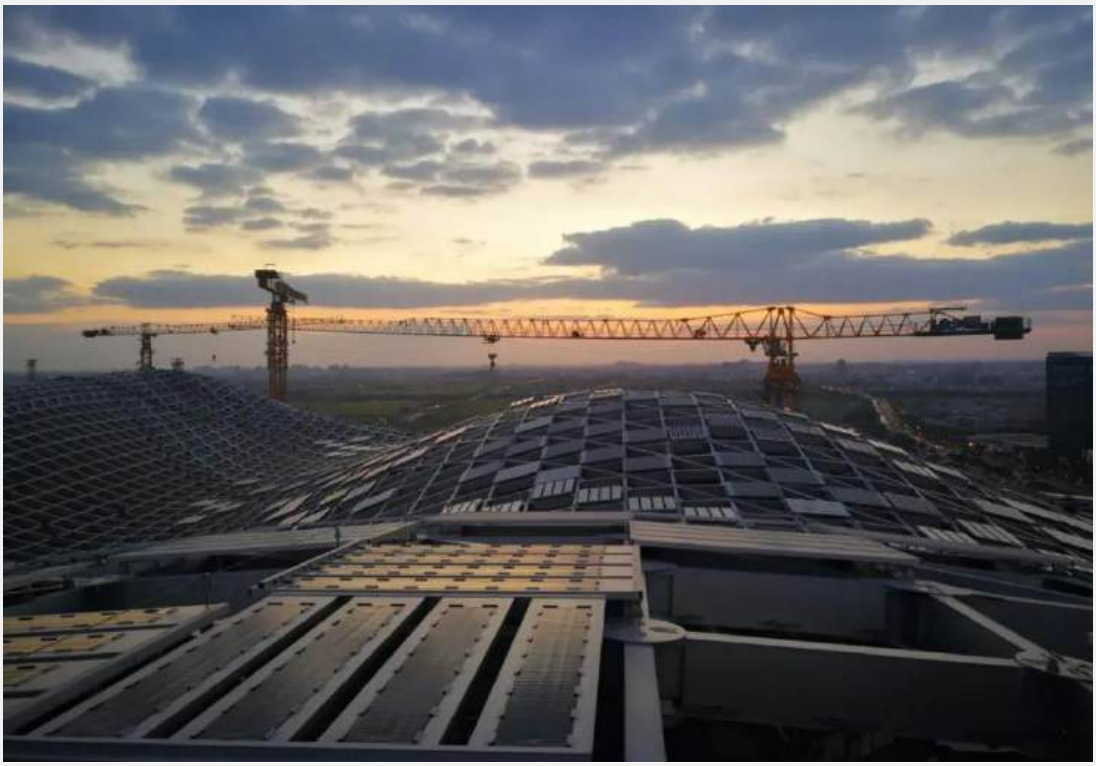


Figure 11 Rooftop of G60 S&T Innovation Valley

SDG10: Reduced Inequalities

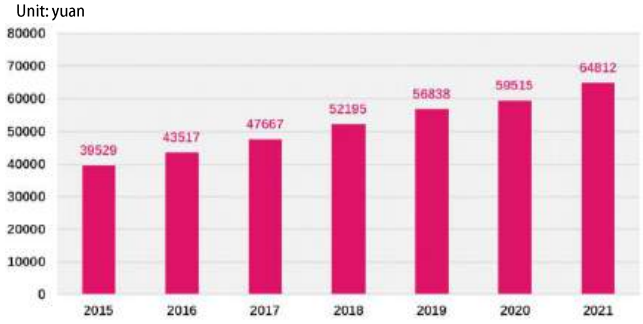
Under the goal of "Fair Sharing", Songjiang District is committed to creating a better life for all residents, providing high-quality public services for all people, promoting equal and full coverage of basic public services in education and culture etc., shaping a livable environment that covers all urban and rural areas, narrowing the gap between urban and rural areas, and creating a more friendly building environment and social atmosphere for all age groups including children, youth, and the elderly.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG10
Provide quality public service shared by all	Building a widely covered network of community public spaces	Open, shared, and diverse community public space of Jindi Fengshengdao	►Coverage rate for standardized construction of comprehensive culture activities center of neighborhood and villager committees	10.4
	Creating waterfront public spaces meeting the needs of high quality living	Construction of Tongbotang Waterfront Greenway		
	Urban and rural schools work hand in hand for common development			
	Construction of public cultural services for the entire district			
Shape a livable environment covering all residents	Repairing and renovation of old houses in urban areas		►Newly added public rental houses ►Construction area of social security houses ►Per capita disposable incomes of residents	10.1 10.4
	Renewal of the appearance of streets in old urban areas	Building of a demonstration street on Rongle Middle Road in Yueyang Block		
	Improvement of rural living environment	Construction of beautiful countryside in Huangqiao Village, Maogang Town		
Create a child-friendly city	Promoting the construction of child-friendly communities	Jiuting Town "Caring for Growth, Dandelion in Action" Project	▸Neonatal death rate ▸Health care management rate of children under 7 years old	10.2
	Weaving a dense protective network for minors			
	Improving the health of children	Early screening and intervention for children's health problems		
Build an elderly friendly city	Improving the health of the elderly	Community practices for health self-management of the elderly	▸Life expectancy of registered population ▸ Number of contracted family doctors	10.2
	Carrying out long-term care insurance			
	Promoting happy elderly caring	"Happy Elderly Village" in Yanjing Village, Yexie Town		

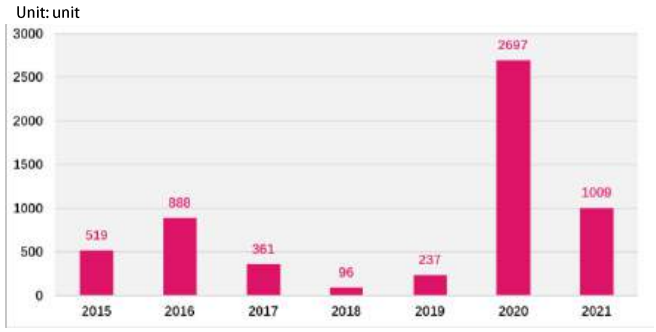
Key Indicators

Per capita disposable income



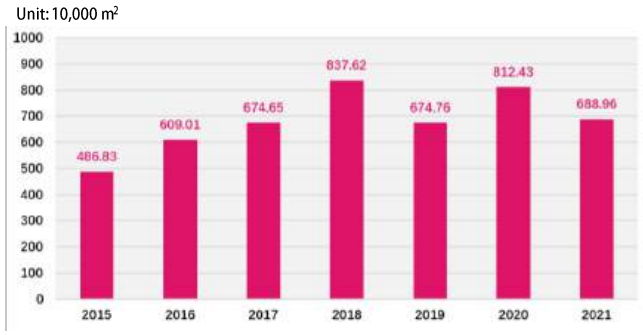
From 2015 to 2021, the per capita disposable income of residents in Songjiang District increased by **8.6%** annually on average.

Newly added public rental houses



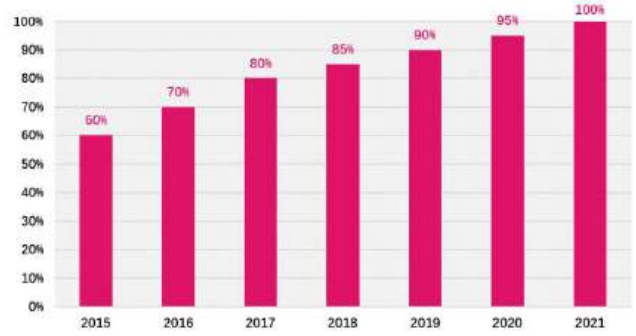
From 2015 to 2021, the number of new public rental houses in Songjiang District reached **5,807 units**.

Construction areas of social security houses



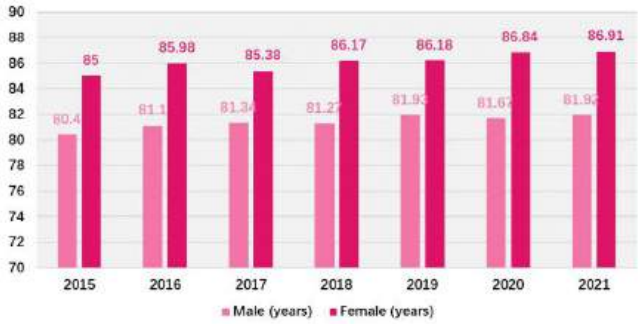
From 2015 to 2021, the construction areas of social security houses in Songjiang District reached **6.83 million m²** per year.

Coverage rate for standardized construction of comprehensive culture activities center of neighborhood and villager committees



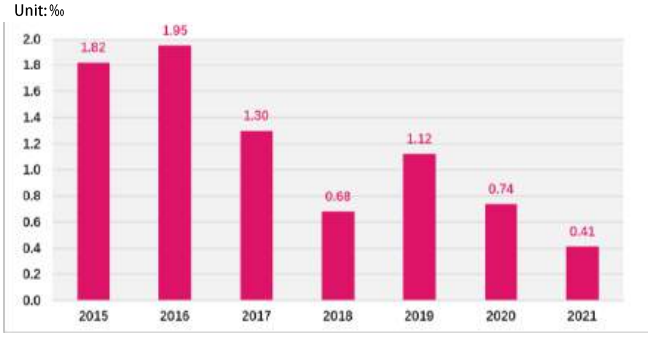
From 2015 to 2021, the coverage rate for standardized construction of comprehensive culture activities center of neighborhood and villager committees **increased from 60% to 100%**.

Life expectancy of registered population



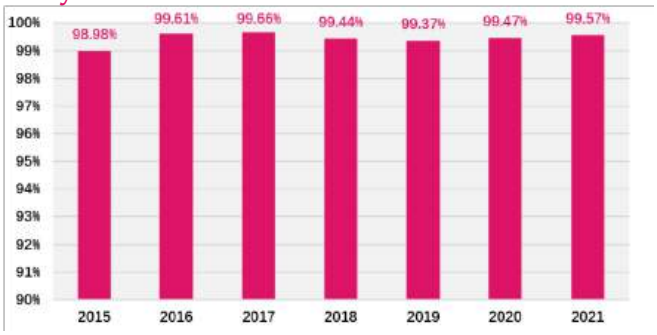
From 2015 to 2021, the life expectancy of registered population increased from **82.69 years to 84.37 years**.

Neonatal death rate



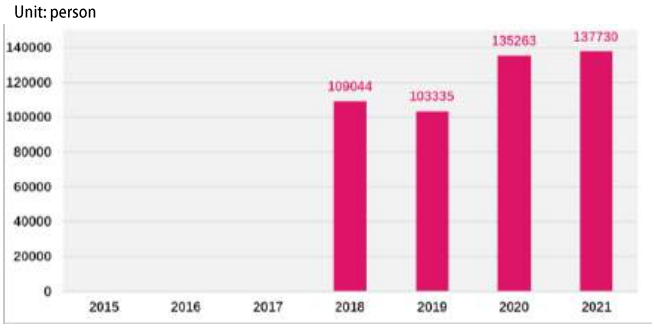
From 2015 to 2021, the neonatal death of Songjiang District decreased from **1.82‰** to **0.41‰**.

Health care management rate of children under 7 years old



Since 2015, health care management rate of children under 7 years old was stabilized at about **99%**.

Number of contracted family doctors



In 2021, the number of contracted family doctors reached **138,000**.

Major Progresses

- **Effective process in the equalization of basic public services across the district**

Basic public services for "clothing, food, housing, and transportation" needs of the people in Songjiang District were equalized, and a "15-minute community living circle" was built; the public service spaces at the community level were improved through the manner of "balanced layout, comprehensive setting, and centralized construction", which increased the community communication spaces, promoted community diversity and integration, and created a low-carbon and healthy lifestyle, convenient and shared spatial quality, and an open and intensive spatial pattern.

- **Quality humanistic services and environment accessible to all residents of the district**

Songjiang District has been committed to providing a high-quality humanistic environment for all residents in the district. From 2015 to 2021, Songjiang District took vigorous actions in key projects for building high-quality schools, vocational education group running schools, the new highland of education around the college town, and the competition for posts by all teachers, to create a comprehensive education system and form an education model with Songjiang characteristics. After nearly 10 years of efforts, Songjiang District has invested more than 20 million yuan in total in building functional spaces of "four rooms and one hall" (reading room, digital film room, elderly activity room, cultural and sports activity room, and performance hall) for 346 village committee cultural activity centers, basically forming a "one-stop" cultural service center.

- **Continuous expansion of high-quality public spaces based on natural landscape bases**

Songjiang District has been committed to creating higher quality public open spaces for all residents in the district. Based on its advantages in natural landscape bases, Songjiang has built a green road loop and created a batch of high-quality waterfront public landscape spaces, to meet functional needs in sports, leisure, and ecology, further improving various service functions of waterfront public spaces in Songjiang. From 2015 to 2021, a total of 37.6 km of waterfront greenways were completed in Songjiang District.

- **Significant results achieved in the renovation of old areas and effectively enhanced sense of gain and livability**

The urban renewal concept of Songjiang District, which emphasized preservation, renovation, and demolition in parallel, with preservation as the major work, and initiated the renovation of old neighborhoods, to improve the living conditions and quality of residents in old neighborhoods, and effectively enhance the sense of gain and happiness of the public. Since December 2016, Songjiang has comprehensively launched the overall renovation of 58 old neighborhoods, involving 1,223 buildings with a building area of 2.83 million m^2, benefiting 38,000 households and covering 8 sub-districts and towns. The total investment in the renovation reached 1.28 billion yuan. The area covered by this round of renovation exceeds the total repairing and renovation area of old houses in the past 8 years

in Songjiang District. It has been upgraded from urban beautification to functional reconstruction, with investment equivalent to 1.7 times the total amount of repairing and renovation in the past 14 years in Songjiang District. At the end of 2018, all 58 projects had passed the completion acceptance.

- **Rectification of living environment in all rural areas, with the livability of rural areas significantly improved**

Songjiang District has improved the livability of rural residents by promoting rural environmental rectification and other work. Since the implementation of the work for relatively centralized residence of farmers in 2019, a total of 4,593 households signed the concentrated residence contracts by 2021. A number of projects in Jinglingqiao Village and Xuyao Village in Yexie Town are being advanced actively. Songjiang District focuses on planning and preserving rural areas and water resource protection areas, and completed the renovation of rural living environment in 2019 and 2020, ensuring the full coverage of rural living environment rectification, without any blind spots. Starting from 2021, we have been implementing the rural living environment optimization project within two years to strengthen the weakness in the rural living environment.

- **Positive exploration and practical results achieved in the construction of a child-friendly city**

Songjiang District has achieved some practical and exploration results in building a child-friendly city. Songjiang District actively promoted the project of "Children's Home in Cute-Child Paradise", and built 43 children's homes. Since 2020, Songjiang District has been piloting the building of child-friendly communities in sub-districts and towns. Facilities such as children's service centers have been established in the sub-districts and towns including Fangsong, Zhongshan, Jiuliting, Yueyang, and Guangfulin, creating a child-friendly service network with "one center and multiple sites". Moreover, Songjiang District attached great importance to improving the health of children and continuously optimizing their growth and development conditions. In 2019, Songjiang District established an early childhood development base, conducting multi-dimensional comprehensive services for early childhood development, including good health, sufficient nutrition, responsive care, early learning, and safety assurance, with an annual service volume of nearly 100,000 people.

- **Continuous construction of an elderly friendly city, with the medical and nursing service capacity effectively improved**

Songjiang District actively responds to the aging population, strives to improve the health of the elderly, and builds Songjiang into an elderly friendly city. Songjiang District has comprehensively conducted free health examinations for elderly residents aged 65 and above. The evaluation results are included in the health records and serve as one major basis for providing services by family doctors. Songjiang District has continued to promote the pneumonia vaccination for the elderly aged above 60 with registered permanent residence. Since 2013, 114,979 people have been vaccinated, with a population vaccination rate of 57.18%. Songjiang District has established Fangta Traditional Chinese Medicine Hospital to serve as a hospice care center, providing technical support and guidance to 16

community health service centers, effectively improving the medical and nursing service level of the region. Since the beginning of 2018, Songjiang District has been piloting long-term care insurance, to provide professional services for disabled individuals in need. In rural areas, Songjiang has built a "Happy Elderly Village" to provide care services for rural disabled elderly, elderly people living alone, and other elderly people in need.

Important Measures

(1) Provide high-quality public services shared by all

- **Building a widely covered network of community public spaces**

Songjiang District has built a widely covered network of community public spaces surrounding the goal of "building a 15-minute community living circle and livable and vibrant blocks". By full exploration in community public services, Songjiang District gave priority to improving the weakness of community public spaces and improving the conditions of regional public resources. In terms of spatial resources, Songjiang District sorted out plots that could be let and urban renewal plots in the communities, and discovered the spaces for planning and layout of newly added public places and facilities. In terms of project resources, Songjiang District understood and grasped the government's large urban construction projects to be implemented or projects planned by development entities during the promotion process, and combineed the implementation plan to create more community shared spaces on new projects or plots, making people's daily life more convenient. In terms of governance resources, Songjiang District fully leveraged the professional strength in the process of urban construction.

Case 7 Open, Shared and Diverse Community Public Space of Jindi Fengshengdao

Jindi Fengshengdao project, located in the core area of Zhongshan Ecological Business District in Songjiang New City, has mature surrounding residential communities and sufficient large-size commercial office resources, but insufficient community public service resources. The project has a land area of 105,800 m^2, a plot ratio of 2.0, and a building area of 216,800 m^2. The project is mainly used as commercial housing, and social security housing and supporting commercial and public service facilities have been constructed at the same time. In order to implement the community construction and management requirements of the "15-minute living circle" in Shanghai, the project adopted a design concept of "building a community suitable for living, working, traveling, learning and caring". In the design plan, the closed community was opened up, and the community life around the project was integrated into the overall planning, creating open, shared, and diverse high-quality community public spaces.

The case's major actions: 1) Determining indicators in advance. In the evaluation implemented for the land pre-transfer planning, in order to improve community public service facilities and optimize community public spaces, the planning department determined construction indicators from three aspects: facilities, channels, and spaces. 2) Overall consideration of the proposal. The planning and design proposal of this project combined the requirements of the upper level planning of the plot with the beautiful vision of reconstructing neighborhood relationships, and worked together with the community and the city to build a real community place that integrated "hustle

and bustle" and "spirituality".

The outcomes achieved by the case: 1) Focusing on public squares, and creating an open and shared "Big Tree Gathering Place". In terms of spatial design, the plan built streets and alleys with a reasonable and pleasant size in public squares. In terms of landscape layout, the plan combined the public square space to create a central landscape node - Big Tree Gathering Place, fully considering the functional mix of all age groups. 2) Considering public facilities and providing diverse and convenient supporting services. The architectural design of the sales office in the residential area was fully considered in conjunction with the space of public service facilities in the later stage of the community, becoming a public activity center for surrounding communities. 3) Connecting the neighboring streets and alleys of the city with public passages.The plan aimed to build the connecting spaces between public passages and activity squares into a community hall for receiving visitors, greatly improving the efficiency and safety of spaces. The combination of neighborhood streets and alleys with landscape axis layout created an experiential space that integrates community alleys and commercial blocks.

Figure 12 Neighborhood Streets and Alleys of Jindi Fengshengdao

- **Creating waterfront public spaces meeting the needs of high quality living**

Songjiang District initiated the preparation of a special plan for waterfront spaces. It took the "New Town Green Chain" as the starting point, relied on the integration and sharing of waterfront public space resources in Songjiang New City, and focused on creating a "New Town Green Chain" waterfront greenway loop enclosed by the Tongbotang Pond, Zhangjiabang River, Shenjingtang Pond, and Renmin River. Songjiang District utilized the greenway loop to connect various activity areas along the waterfront,

created high-quality waterfront public landscape spaces to meet sports, leisure, ecology and other functional needs, and further improved various service functions of waterfront public spaces in Songjiang District.

Case 8 Construction of Tongbotang Pond Waterfront Greenway

Tongbotang (Pond) Waterfront Greenway starts from the Renmin River in the south and ends at the G60 Shanghai-Kunming Expressway in the north. It is 6.5 km long in total on both east and west sides. The phase Ⅲ project was started in 2020, and completed in 2021. The greenway is themed "Joyful Greenway and Shared Garden". It fully integrated the historical and cultural elements of Songjiang River into the landscape renovation along the river, upgraded the greenery landscape, added facilities such as seats, racks, leisure squares, and landscape lighting, highlighted the leisure functions of citizens' lives, and formed a waterfront leisure space for both resting and viewing.

The entire waterfront landscape system of Tongbotang Pond mainly focused on improving the colony and hierarchy of vegetation, and beautifying the green landscape along Tongbotang Pond. Moreover, nighttime lighting was also improved by installing lighting fixtures on embankments, railings, trees, small squares, and other locations, to illuminate the banks of Tongbotang Pond, showcasing this garden style waterfront corridor and enhancing residents' night travel experience.

By upgrading the waterfront green landscape of Tongbotang Pond, more than 10 breakpoints (including spaces under the bridges) along the line (including Yunjian Granary, Rongdu Apartment, and some enterprise walls) have been connected, cascading 4 cultural relics protection sites, namely Yunjian Granary, Songjiang Tangjingzhuang, Shen's Mansion, and Yu's Mansion. Moreover, the greenway passes cultural memory points with Songjiang's cultural history characteristics along Beimen, Wazi Lane, and Laoshuichang, forming a livable environment integrating leisure, fitness and resting spaces, which has greatly enhanced the sense of happiness and satisfaction of the people, and is very popular with the people.

Figure 13 Garden Style Tongbotang Pond Waterfront Greenway

- **Promoting cooperation between urban and rural schools for common development**

Songjiang District has promoted the balanced development of education and reduced inequalities between urban and rural areas through the common development plan of urban and rural schools. In terms of building the rural teacher team, Songjiang has expanded channels to attract excellent teachers to participate in rural education, deepened personnel system reform, supported professional training for rural teachers, and provided a good environment for their long-term development. Songjiang District has upheld the principle of "one policy for one school", advanced the project of "building high-quality schools", focused on the schooling quality of 11 experimental schools, made overall layout, and implemented targeted policies, to improve schooling quality. Songjiang District has explored the connotative development path of schools within the education groups, fully utilized and shared quality educational resources from different schools, and steadily promoted the high-quality and balanced development of basic education in Songjiang District. In order to further push the balanced and high-quality development of compulsory education in Songjiang District, it has organized the implementation of targeted entrusted management of schools in the suburbs of Shanghai, amplifying the influences of high-quality education resources in the urban area.

- **Providing public cultural services for the entire district**

Songjiang District has paid great attention to top-level design and established a "Songjiang District Public Cultural Service Work Leading Group" and a "Songjiang District Pilot Working Group for Grassroots Comprehensive Cultural Service Center" to push the standardized construction of comprehensive cultural activity centers for village and neighborhood committees. Songjiang District has emphasized the guiding role of standards and promoted the standardization of basic public cultural services. It has formulated an operatable and quantitative "Construction Standards for Grassroots Comprehensive Cultural Service Centers in Songjiang District", forming corresponding construction models. Moreover, Songjiang has adapted measures to local conditions, carried out public culture services by stages, by batches and by "demonstration type", "standard type", and "functional improvement type" based on different basic conditions and different public demands. Songjiang District has built rural bookstores in rural areas to ensure the allocation of publications and the organization of reading activities. It has also provided effective services tailored to current population situation in rural areas and further creates a universal reading atmosphere.

(2) Create a livable environment covering the entire district

- **Repairing and renovating old houses in urban areas**

Songjiang District has united efforts to promote the overall renovation of old neighborhoods. The district tries to alleviate people's worries and meet their expectations for a livable environment through targeted design. Songjiang District insists on formulating design plans beforehand, ensuring a uniform and distinctive style within the district. Songjiang District takes advantage of the overall renovation of the old

neighborhood, fully investigates and understands the public's demands for renovation, incorporates people's opinions into the design plans, to ensure that the renovation projects are close to the actual living needs of residents.

- **Renewing the appearance of streets in old urban areas**

Songjiang District is promoting the renovation and updating of store signs, selecting several major road sections in the district, and planning and designing from historical and cultural perspectives and architectural characteristics, to continuously increase the rectification efforts of old signs, ensuring timely removal of safety hazards. Yueyang Sub-district in Songjiang District took the lead in carrying out pilot improvement projects on 72 advertising boxes along Rongle Middle Road, integrating different elements into different sections to effectively enhance the visual effect of the streets. Based on the updating of existing hardware, Songjiang District will focus on comprehensive rectification of the dynamic environment, promote the establishment of self-discipline and autonomy organizations for merchants, and mobilize social forces to participate in street environmental governance.

Case 9 Building of a Demonstration Street on Rongle Middle Road in Yueyang Sub-district

Rongle Middle Road (Tongbotang Pond—Shenjingtang Pond) in Yueyang Sub-district is a main road in the old city of Songjiang. There are over ten residential communities on both sides of Rongle Middle Road, with over 260 commercial stores along the street, as well as some commercial centers and hypermarkets. Tramcars can run on the whole Rongle Middle Road, which not only improves road utilization efficiency, but also exacerbated problems such as narrow sidewalks, lack of green space, increased congestion during morning and evening rush hours, and some height differences between some shops and residential areas along the street and current road elevation. Moreover, some shops along the street have outdated and damaged signs, and even have safety hazards. Therefore, Yueyang Sub-district has carefully pushed multiple renovation projects, to highlight contents such as signage advertising, landscape greening, parking standards, and water management, comprehensively improve the quality of the city's appearance and street scenery, and build a high-quality demonstration street on Rongle Middle Road from multiple perspectives, injecting new vitality into the main roads of the old city.

The main approach of the case: 1) focusing on the transformation of store signs, to make them standardized and personified; 2) focusing on green landscapes, add flower boxes and racks for greening; 3) focusing on advertising box beautification, to form orderly streets; 4) focusing on recreational spaces, to upgrade the street center gardens; 5) focusing on environmental renovation, give Baiyang Greenway a new appearance; 6) focusing on traffic congestion, to ensure a clear way by taking advantages of all conditions; 7) focusing on "return at designated points", to standardize the parking of shared bicycles; 8) focusing on sidewalk renovation, to eliminate safety hazards along the street; 9) focusing on the renovation of waterlogging points, to create a livable environment; and 10) focusing on the living needs of people, to make water cleaner by "rainwater and sewage treatment".

Renovation effects: The unified renovation and improvement of 260 store signs along Rongle Middle Road in Yueyang Sub-district, the beautification of 72 adverting boxes, the construction of three street center gardens and Baiyang Greenway, the management of driving order of motor

vehicles and non-motor vehicles, the renovation of waterlogging points and rainwater and sewage treatment at both sides of residential areas, have effectively improved the environment of Rongle Middle Road block, giving citizens more tangible, and more direct sense of gain and happiness.

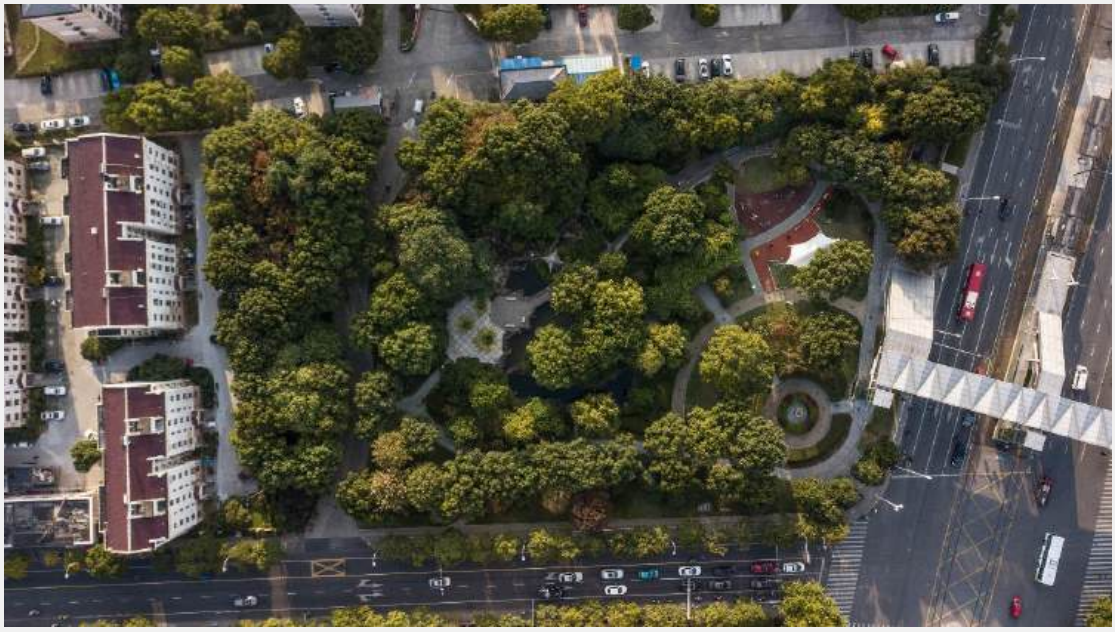


Figure 14 Lüzhouyuan, the Street Center Garden on Rongle Middle Road

- **Improving rural living environment**

Songjiang District has taken many measures to improve rural living environment. In terms of relatively centralized living for farmers, Songjiang District pays great attention to people's livelihood, focuses on appearance improvement, promotes the rural architect system, emphasizes architectural design, and enhances the attractiveness of rural living in Songjiang. In terms of building a demonstration village for rural revitalization, Songjiang District regards enhancing farmers' sense of gain as the starting point and foothold of rural revitalization, and promoting industrial prosperity as the purpose. In terms of promoting the construction of beautiful countryside through the rectification of rural living environment, Songjiang District gives priority to the implementation of targeted policies, insists on "one village, one plan", and implements the optimization and improvement of living environment through high-level planning.

Case 10 Construction of a Beautiful Huangqiao Village in Maogang Town

In 2018, Huangqiao Village in Maogang Town was listed as a municipal demonstration village for rural revitalization and a pilot village for rural homestead reform. 477 farmers' houses have all been completed, and 5 individual buildings including the village committee have all been put into use. The new village has taken on a new look. In the process of building a beautiful Huangqiao Village, land has been conserved and intensively utilized, and rural living environment has been improved.

Huangqiao Village in Maogang Town has explored a new model of rural governance, coordinated the construction of supporting urban and rural infrastructure, improved the utilization rate of spatial resources, and promoted the integration and development of spatial functions,

effectively promoting the integrated development of urban and rural economy and society, and creating a Songjiang model for activating the development vitality of rural areas in Shanghai's metropolis.

Figure 15 Village Appearance after Rectification

(3) Build a child-friendly city

- **Promoting the construction of child-friendly communities**

Songjiang District has planned the building of a child-friendly city from a high starting point, integrating child-friendly concepts into the entire process and all links of urban planning, construction, and governance, fully leveraging the functions of utilities planning, public resource allocation, and public service guarantee, and promoting the integration of the children-first concept into social policies and special plans of different fields. Songjiang District has established a children-first consciousness, created a children-friendly urban atmosphere, continuously promoted various themed advertising, and built a social atmosphere conducive to children's priority development. Songjiang District takes the construction of a child-friendly community as the starting point, improves the children's service network, delivers services such as parent-child activities and family education guidance, to serve 1800 households. Based on the actual needs of children in the district, all sub-districts and towns have formed the principle of "one sub-district/ town with one feature" in terms of spatial facilities, diversified service supply, and children's participation.

Case 11 Jiuting Town "Caring for Growth, Dandelion in Action" Project

Jiuting Town is located in the northeast of Songjiang District, near Minhang District in the east and bordering Qingpu District in the north, 18 km away from downtown Shanghai and 20 km away from Songjiang New City. It has become an area with a high concentration of migrant population in

Shanghai. The number of children in all age groups from other provinces and municipalities is higher than that of children with registered residence in Shanghai.

In response to the characteristics of having more children from other provinces and cities, Jiuting Town has unfolded innovative practices in the principles of "being child-friendly and everyone-friendly", providing broader activity spaces that integrate learning and entertainment for children from all over the world and at different ages. It has established a Jiuting Town Children Service Center and a Community Children's Home, forming a networked layout of "one center, multiple sites", and designed the "Care for Growth, Dandelion in Action" project. With the goal of being "child-friendly and everyone-friendly", the district strives to accelerate the building of child-friendly communities, allowing children to fully integrate into community building and development, fully enjoy the convenience and safety of the 15-minute living circle, and fully feel the happiness and warmth of the community family.

The "Caring for Growth, Dandelion in Action" project includes three themed activities: 1) Dandelion site "green" – carrying out green family activities; 2) Dandelion site "blue" – implementing a series of science popularization activities; 3) Dandelion site "orange" - Creating a Healthy Food Journey. The themed activities aim to create a diversified and innovative practice model of "exploration, learning, and entertainment" tailored to children at all ages in the community, to help children grow healthily. In 2021, the "Caring for Growth, Dandelion in Action" project carried out a total of 11 science popularization courses, benefiting 330 people directly and 990 people indirectly. The daily average pedestrian flow of the child-friendly technology trip was 288 people; 6 green family themed activities were launched, involving a total of 153 households and directly benefiting 306 people. The children's home service point in the Snack Museum received a total of 56 households per day, directly benefiting 112 people. The child-friendly gourmet route received a total of 372 people per day. All these improved children's participation and enhanced communication between parents and children.

- **Weaving a dense protective network for minors**

Songjiang District focuses on the "six major protections", namely family protection, school protection, social protection, network protection, government protection, and judicial protection, to weave a dense protective network for minors. So far, all 17 sub-districts and towns in Songjiang have established a joint meeting system for the protection, and set up a sub-district and town office for protection of minors. Songjiang District has established an "expert resource pool", "public welfare resource pool", "legal resource pool" and "social work source pool" for minors. In the future, a regular communication and dynamic management mechanism will be formed, to leverage the positive roles of various social resources, further forming a joint force for the protection of minors. Since 2019, Songjiang District has established Cloud Children Care Center, Temporary Shelter Center for Children with Insufficient Guardianship, Songjiang District Protection Center for Children in Difficulties, and Children Social Work Training Base. The "Three Centers and One Base" for the protection of children in difficulties in Songjiang District has been established, and temporary shelter centers for children in difficulty at the sub-district and town level have been built in Jiuting, Fangsong, Xiaokunshan, and Sheshan.

- **Improving the health of children**

Songjiang District has actively carried out integrated service management for early

childhood development, solidified the management of the child health system, and promoted pilot work on child mental health intervention. Songjiang District strengthens the awareness of family responsibility, promotes the concept that "the family is the first person responsible for early childhood development and health management", and widely disseminates scientific parenting knowledge. Songjiang District has improved the management service level of "Internet +" early childhood development, established a full-process and full-coverage early childhood development health archives, and strengthened online child health services. Songjiang District has established a multi departmental linkage mechanism to prevent and control birth defects, set up an integrated service model of screening, positive case recall, diagnosis, treatment, and follow-up, promoted early screening, early diagnosis, and early treatment, and strictly implemented immunization policies to strengthen the immunologic barrier.

Case 12 Early Screening and Intervention for Children's Health Problems

Fangsong Community Health Service Center has performed in-depth cooperation with the Rehabilitation Department of Pediatric Hospital Affiliated to Fudan University, and is the first to carry out GMs screening work. The so-called GMs (general movements) screening can predict early whether children have motor developmental disorders including cerebral palsy, and can also predict children with normal motor development.

In 2019, Songjiang established an early childhood development base, and Songjiang Maternal and Child Health Center fully took the professional advantages of some communities to establish a GMs screening mechanism for high-risk children within Songjiang District. Children who were initially screened for high-risk factors in the child care clinic will be advised to refer to the maternal and child center at district level and the health service center of Fangsong Sub-district for GMs (general movements evaluation), and intervention work will be conducted for those with abnormalities. Through this working mechanism, children with cerebral palsy and developmental deviation can be discovered early, and timely rehabilitation training can be unfolded. In the past two years, 419 initial screenings were performed, 215 individuals were screened for GMs, and 108 individuals underwent early intervention; 2,000 family guidance manuals were distributed, and 381 people received family guidance.

Songjiang District has also set up a "screening, referral, diagnosis, intervention" work model for children's psychological and behavioral development problems. The core of the work mode is to promote the use of the ASD early-warning sign screening table through strict training for professionals, and to conduct initial screening and re-screening by child care doctors for children at corresponding ages. Children with dysplasia sign will be referred to the pediatric hospital through the green channel for diagnosis; children with rehabilitation needs will be transferred from a pediatric hospital to a maternal and child clinic at district level for intervention treatment. Since the launch of this work, 15,351 people have been screened, with a screening rate of 98.3%. 123 people were initially screened as positive, with an early screening positive rate of 0.79%. Six positive children were discovered, and intervention work was performed on three children with autism problems.

(4) Build an elderly-friendly city

- **Improving the health of the elderly**

Songjiang District continues to promote elderly health management, and all community health service centers can provide health examination services. Songjiang District actively promotes colorectal cancer screening among residents at corresponding ages in view of the high incidence rate and mortality of colorectal cancer. The district will continue to improve immunization programs, take multiple measures and continue to promote pneumonia vaccination for the elderly aged over 60 with registered residence in Songjiang District, and do a good job in major public health service projects. Songjiang District has established health records for the elderly population, conducted health assessments, and strengthened health management and psychological health research interventions for the elderly in the communities of Songjiang District. The district has promoted contract signing services for family doctors, strengthened health management for the elderly, and explored home rehabilitation service models by establishing family beds. In 2021, Songjiang District has built 2,687 family hospital beds in total.

Case 13 Community Practices for Health Self-management of the Elderly

Songjiang Health Self-Management Group refers to a mass autonomous organization led by the government, guided by community organizations and professional health institutions, aiming at promoting health. With the goal of increasing the "popularity" of group activities and the "pleasure" of team members participating in activities, the group encourages "cultural and sports pairing" and "integration of sports and medicine", implements three-level management of group A, B, and C, continuously innovates activity forms, and explores sustainable development mechanisms for the group. At present, Songjiang is building more than 400 health self-management groups, covering all villages and neighborhoods, with over 30000 community residents participating in learning and training.

The measures taken for the construction of health self-management groups include: 1) Consolidate the foundation and strengthen group guarantee and support. 2) Integrate culture and sports to enrich group activities. 3) Integrate resources to meet the health needs of the group. In 2019, the group cooperated with the Sixth People's Hospital of Shanghai to carry out the diabetes peer group project. The project introduced the concept of "peer support", combined with the actual needs for diabetes prevention and treatment at the grassroots level in Shanghai, developed standardized courseware and appropriate tools for diabetes science popularization, invited expert teams to cooperate in training, and built a community diabetes self-management peer support network through training of community medical personnel, team leaders and backbones, let diabetics get standardized diagnosis and treatment management and health self-management support services at doorway. The effectiveness evaluation conducted one year later showed significant improvements in blood sugar levels, body mass index (BMI), and depression scores among many participating team members.

Figure 16 WHO Visits a Health Self-management Group of the Elderly in Songjiang District

- **Carrying out long-term care insurance**

In order to actively respond to the challenges of aging population, Songjiang District began the pilot work of long-term care insurance in January 2018. At the beginning of the pilot project, Songjiang District adopted a "1+1" long-term care insurance home-service region management model, where each sub-district and town designated one community elderly care service institution and one nursing station, and implemented classified management measures for different situations, to ensure a balance between supply and demand of long-term care insurance services in Songjiang District. Songjiang District focuses on people's health, improves management mechanisms, and steadily pushes pilot work. As at August 2022, a total of 26,300 disabled individuals have been provided with long-term care insurance care services, basically achieving full coverage.

- **Promoting happy elderly caring**

Songjiang District has promoted the construction of "Happy Elderly Village" and introduced a series of standards to guide and promote happy elderly care. Songjiang District carries out the construction of happy elderly care facilities by optimizing the planning layout. The district classifies and promotes the layout of elderly care facilities, creates a "15-minute elderly care service circle" in urbanized areas, and vigorously pushes mutual assistance elderly care services based on the happy elderly villages in pure agricultural areas. Songjiang District promotes the construction of "Happy Elderly Care" service facilities; while vigorously promoting the "Happy Elderly Village" model, it also actively speeds up the construction of "Happy Elderly Care Homes", "Happy Elderly Workshop", "Happy Courier Station", and "Happy Elderly Home".

Case 14 "Happy Elderly Village" in Yanjing Village, Yexie Town

Yanjing Elderly Care Home of Yexie Community is located in Yanjing Village, Yexie Town, Songjiang District, Shanghai. It is Shanghai's first professional elderly care service institution with the participation of social forces and operated by rural public welfare elderly care projects (covering an area of 8,400 m^2, a building area of 1,600 m^2, with 49 elderly care beds). It is committed to exploring a new elderly care model that meets the needs of Songjiang and even all rural areas in Shanghai. It introduced innovations in site selection, construction and operation, becoming a well-known rural elderly care brand in China.

Major actions of the case include:

1) "Revenue leasing + revenue renovation + supporting facilities" to determine the places for elderly care services. "Revenue leasing": Happy Elderly Village continuously leases 10 buildings on idle homestead land from 9 households to villagers, with a rent of 100,000 yuan per year. "Revenue renovation": The leased houses will be renovated for elderly care according to the standards of the Elderly Care Home, provided with three care areas: mild care area, moderate care area, and intensified care area based on functional services and nursing levels, to offer housing, supporting and caring services for elderly people with different needs. "Supporting facilities": In addition to maintenance services, supporting elderly meal aiding points, day service centers, elderly activity rooms and other functional areas to improve the quality of elderly care services.

2) "Social public welfare forces, starting businesses by local talents, and government guidance and support" to determine who provide elderly care. "Social public welfare forces": Happy Elderly Village is the first professional elderly care service institution with the participation of social forces and operated by rural public welfare elderly care projects. "Starting businesses by local talents": Jiang Qiuyan, one of the initiators of the Happy Elderly Village, is a native of Yexie Town. As a public welfare worker, she is familiar with and passionate about rural areas. "Government guidance and support": the Songjiang District Committee and the People's Government of Songjiang District, Shanghai strongly support the elderly care model of the Happy Elderly Village, actively coordinate and solve problems such as construction application, fire protection, and filing during the construction and operation process, and turn social independent innovations into a reality.

3) "Funds + Systems + Policies" to address the problem of sustainable elderly care. "Funds": Adopting the "four parts" approach, which means that the investor invests a part, the government subsidizes a part, the elderly provides a part, and the society aids a part. The Happy Elderly Village is mainly funded by social forces, with three partners investing 4.5 million yuan in the construction. Songjiang District government provides a construction subsidy of 2.182 million yuan in accordance with the construction standards of various elderly care service facilities, and bed fees and nursing fees will be charged to the elderly based on the service fee standards of basic elderly care institutions.

SDG12: Responsible Consumption and Production

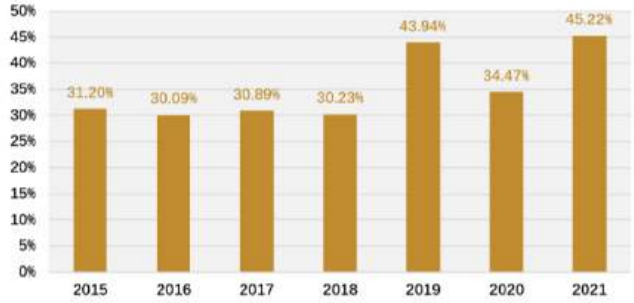
Under the goal of "green resilience", Songjiang District is promoting the building of a “zero-waste city”, committed to reducing the generation of waste, decreasing the impact of human activities on the environment and health, creating a sustainable multi-level transportation system, promoting the integrated development of culture and tourism in the entire district while protecting the natural ecological bases of green mountains and lucid waters, and building a resilient modern new city in combination with the blue and green ecological network system.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG12
Promoting the construction of "zero-waste cities"	Top-level design of a "zero-waste city"		►Number of households covered by household waste classification ► Domestic waste recycling rate ► Urban sewage treatment rate ►Daily recycling volume of recyclables	12.4 12.5
	Building a zero-waste and environmental protection industrial park	Songjiang Tianma Solid Waste Disposal Industrial Base		
	Waste classification and reduction treatment			
	Identification and rectification of sewage discharge outlets into rivers			
	Deep treatment of volatile organic compounds (VOCs)			
Building a sustainable multi-level transportation system	Construction of Songjiang Comprehensive Transportation Hub	Sustainable Construction of Songjiangnan Railway Station	‣Number of operational bus routes	12.1
	Construction of medium-capacity rail transit	Songjiang Modern Tram T1 and T2 Demonstration Line Project		
	Construction of intelligent regular public transportation systems			
Promoting the integrated development of culture and tourism across the region	Building a holistic tourism area with Sheshan at the core	Construction of Slow Traffic System in Shanghai Sheshan National Tourism Resort		12.b
	Building a culture and tourism space cluster based on Guangfulin Culture			
	Promoting the development of culture and tourism industry surrounding product supplies			
	Protecting shared historical memories			
	Building a brand for full time cultural festivals			
Building a resilient modern new city	Carrying out top-level design for building a resilient new city		► Forest coverage ► Environment Air Quality Index (AQI) Annual average concentration of fine particulate matter (PM2.5)	12.2
	Advancing the construction of comprehensive pipe galleries	Comprehensive Pipe Gallery Construction Project in Southern New Town		
	Promoting the construction of green urban areas	Songjiang New City International Ecological Business District		
	Creating an open green space system			
	Promoting the construction of resilient water systems	Songjiang Dianpu River connecting rivers and lakes		

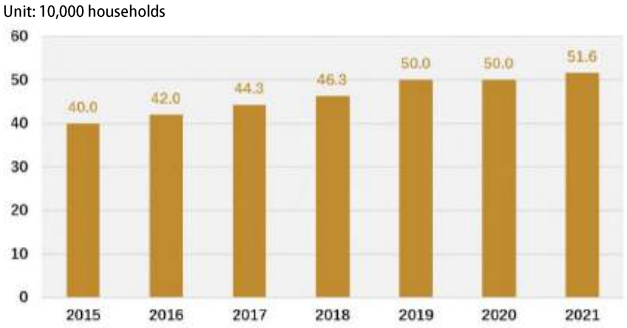
Key Indicators

Recycling rate of domestic wastes



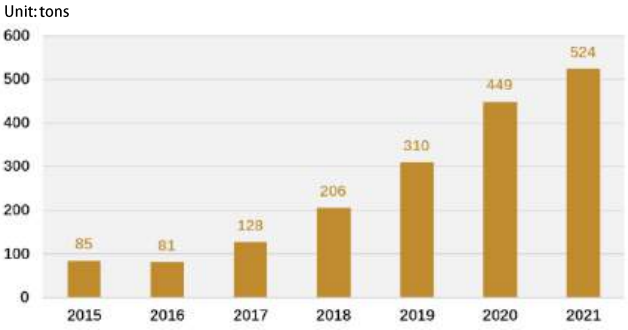
In 2021, the recycling rate of domestic wastes of Songjiang District reached **45.22%**.

Number of households covered by domestic waste classification



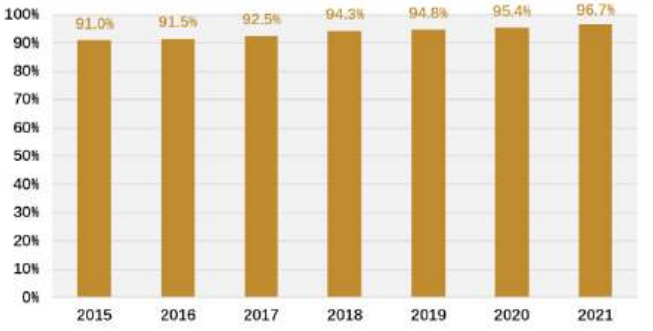
In 2021, the number of households covered by domestic waste classification in Songjiang District reached **516,000**, and harmless treatment rate reached **100%**.

Daily recycling volume of recyclables



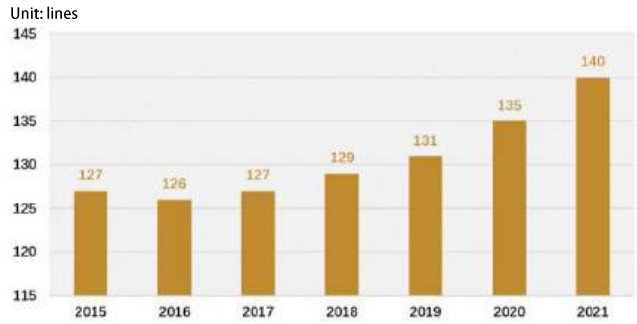
From 2015 to 2021, daily recycling volume of recyclables in Songjiang District increased from 85 tons to 524 tons, up by about **six times**.

Treatment rate of urban wastewater



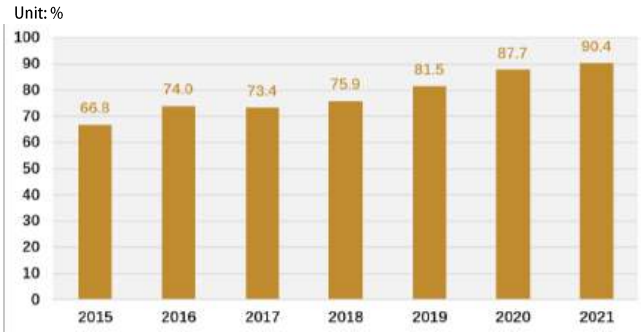
From 2015 to 2021, the urban sewage treatment rate in Songjiang District increased from **91.0%** to **96.7%**.

Number of operational bus routes



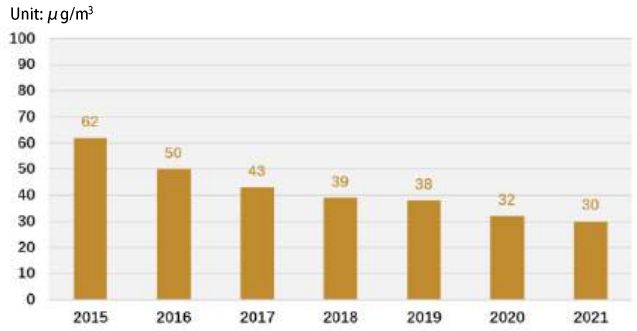
From 2015 to 2021, the number of operational bus routes in Songjiang District increased from **127** to **140**.

Environment air quality index (AQI)



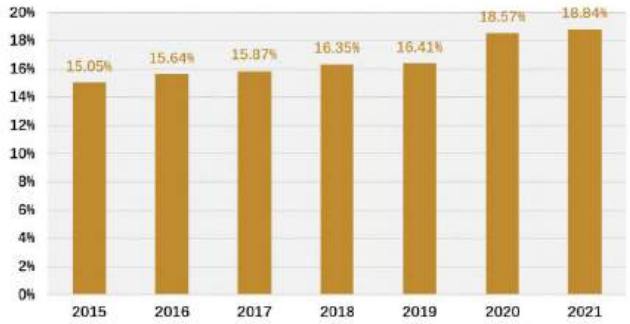
From 2015 to 2021, the environment air quality index (AQI) increased from **66.8%** to **90.4%**.

Fine particulate matter (PM2.5) annual average concentration



In 2021, the average annual concentration of fine particulate matter (PM2.5) in Songjiang District was **30 micrograms per cubic meter**, **down by 51.6%** compared to 2015.

Forest coverage



From 2015 to 2021, the forest coverage in Songjiang District **increased from 15.05% to 18.84%,** and **332.76** hectares of greenbelt construction was completed.

Major Progresses

- **Initial progress in the construction of "a zero-waste city"**

Songjiang District actively promotes the construction of "a zero-waste city" and was included in the list of cities to carry out "zero-waste city" building in the 14th Five Year Plan period of China in April. By the end of 2022, institutional systems related to the building of "a zero-waste city" will be established, and the construction of market system, technical system, and regulatory system will be initiated. Since the launch of a new round of domestic waste classification and reduction work in Shanghai in 2011, Songjiang District has sped up the improvement of the capacity and quality of the whole-process classification system construction, continuously enhancing the level of "reduction, recycling, and harmless treatment" of domestic wastes. The classified treatment of household waste in Songjiang District is good generally, and the compliance rate of residential areas (administrative villages) and enterprises and public institutions generally exceeds 95%. In May 2015, Songjiang was titled "National Demonstration City for Domestic Waste Classification". Since 2019, Songjiang has been awarded the honorary title of "Domestic Waste Classification Demonstration Zone in Shanghai" for three consecutive years, and all 17 sub-districts and towns have been awarded the title of "Domestic Waste Classification Demonstration Sub-district / Town". The comprehensive evaluation of the effectiveness of Songjiang's domestic waste classification has reached the "excellent" level.

- **Ecological environment was improved significantly**

Songjiang District actively promotes the protection and development of the ecological environment bases. By intensifying the battle for pollution prevention and control, as well as the defense of blue sky, lucid water, and clean land, and accelerating the strengthening of weak links in environmental infrastructure, the ecological environment quality in Songjiang District has been improved significantly, and the ecological environment governance system has been further strengthened. The water environment of rivercourse is constantly improving, and the water quality compliance rate of the national and municipal surface water examination sections reaches 100%. The overall quality of soil environment is stable, and the safe utilization rate of key construction land reaches 100%.

- **Continuous advancement of urban blue and green ecological space network construction**

Songjiang District vigorously promotes the construction of parks, greenbelts, forests, and other green ecological spaces, enhancing soft power and competitiveness to the urban development of Songjiang. From 2018 to 2020, Songjiang District completed the construction of 8,887 mu (5.924 million m^2) of ecological corridor in total. From 2015 to 2020, Songjiang District completed the construction of a total of 23,283 mu (15.522 million m^2) of ecological public welfare forest. In 2021, Songjiang District built 6 open leisure forests in Dongjing, Sheshan, Shihudang, Xinbang, Chedun, and Yexie, covering an area of 2,500 mu (1.667 million m^2). Among them, Baihuagang in Dongjing is a large open leisure forest with an area of 1,079 mu (719,333 m^2), creating a green ecological space that integrates leisure, rest, and activities for citizens and tourists. Songjiang District takes

strong measures to promote the construction of a resilient water system, completing the upgrading and expansion work of the sewage treatment plant. The water environment has been significantly improved, and the satisfaction degree of the public has increased continuously. Songjiang adopts the river chief and lake chief system to persistently push the comprehensive management of all water environment, strives to build a garden city with "green mountains and lucid waters from afar, and profound humanity atmosphere at close hand", and paints an ecological picture of clean water, green banks, and beautiful scenery.

- **Continuous publication of the brand of "Root of Shanghai in Humanistic Songjiang"**

Through the construction of a holistic tourism demonstration zone, Songjiang District aims to create a high-quality ecological and cultural environment that covers all respects and can be enjoyed and felt by all residents and visitors. Songjiang District was included in the first batch of national holistic tourism demonstration zones released by the Ministry of Culture and Tourism in 2019; the Culture and Tourism Bureau of Songjiang District was granted the "China Culture and Tourism Integration Demonstration Award" by the organizing committee of the World Leisure Development Summit Forum in October 2019. Currently, Mining Garden and Jiuke Oases have become the exemplary works of "Tourism + Ecological Restoration"; Zhongshuge Bookstore and Duoyun Book-Bar have become new landmarks for cultural tourism in Shanghai; Sheshan Shimao Intercontinental Hotel (Deep Pit Hotel) and Guangfulin Cultural Relics have become important tourist destinations; Chenshan Grassland Music Festival has become a well-known tourism festival brand at home and abroad.

- **Gradual improvement of multi-level green intelligent transportation systems**

Songjiang District has actively built a green transportation system integrating five transportation networks. In the comprehensive promotion of the construction of a smart transportation system, a comprehensive public transportation platform has been built, and the construction of electronic channel maps has been improved. While vigorously advocating for the priority development of public transportation, a "grid + radial" form of multi-level multifunctional public transportation network, as well as a green and resilient transportation system have been basically formed. Currently, Songjiang has 127 public transportation routes (excluding branch routes) in operation, with a total length of 1,927 km and 854 public transportation vehicles, among which, 76% are new energy vehicles; and 95.8% of public transportation stops in urban areas have a stop-to-stop distance equal to or less than 500 meters. Songjiang District has taken the lead in constructing and operating a medium-capacity rail transit network in Shanghai. Songjiang Modern Tram T1T2 Demonstration Line project has a total length of 31.24km, and the entire route was completed and put into initial operation on December 30, 2019.

- **Continuous progress in building a resilient modern city**

Songjiang District tries to promote the construction of a safe and resilient modern new city. Songjiang New City International Ecological Business District, with a green ecological orientation, pushes the interdependent, integrated and shared development of the

planning area and provides people with high-quality production, living and ecological spaces through green ecological strategies such as multiple composite functions, green healthy building, shared ecological spaces, comfortable and convenient transportation, low-carbon resource utilization, and fine intelligent management. Songjiang District has made some achievements in flood control and drainage, achieved steady progress in the diversion of rainwater and sewage, as well as sewage collection and management work, through the interception and renovation project of the flood control rainwater pump stations, and solved the problem of mixed flowing of rainwater and sewage in some areas. Songjiang District actively promotes the construction of comprehensive pipe galleries and enhances the resilience of urban infrastructure pipeline networks. The phase I of the comprehensive pipe gallery project has a total length of 7.425km and has been fully connected, including some gas, water, and electricity pipelines in operation.

Important Measures

(1) Promote the building of a "zero-waste city"

- **Top design of a "zero-waste city"**

Songjiang has taken active steps in the building of a "zero-waste city" by setting up a leading group for the building of a "zero-waste city" in Songjiang District, preparing and distributing the implementation plan for the building of a "zero-waste city" in Songjiang District, establishing a cooperation platform to fully carry out collaborative management and resource sharing, as well as intensifying policy incentives and strengthening financial support. In April 2022, Songjiang District was included in the list of cities to build "zero-waste cities" during the 14th Five Year Plan period.

- **Building a zero-waste environmental protection industrial park**

Recently, Songjiang District has focused on building Tianma Waste-Free Low-Carbon Environmental Protection Industrial Park, which is a multi-functional modern comprehensive park built by Shanghai Municipal Bureau of Ecology and Environment, integrating waste disposal and recycling, core technology R&D, operation talent training, science popularization and exhibition, and environment friendly experience. The park has fully conducted collaborative management and resource sharing, integrated the energy flow, material flow and information flow in the park, and established a green and low-carbon environmental protection industry including office facilities sharing, steam sharing, biogas sharing, leachate treatment facilities sharing, combustible residue incineration sharing, and management and information data sharing.

Case 15 Tianma Solid-Waste Disposal Industrial Base in Songjiang

Tianma Zero-waste Low Carbon Environmental Protection Industrial Park is a multi-functional and first-class modern comprehensive park that integrates disposal and recycling, core technology R&D, environmental talent cultivation, science popularization and publicity exhibition, and environment friendly experience. It is a base of low-carbon environmental protection industrial park for terminal solid waste disposal in Songjiang District.

1) Technology linkage to assist in intelligent supervision of terminal disposal. The park has adopted a "management and terminal linkage" and "technology+" management method for incoming waste to facilitate the waste classification work. The "management and terminal linkage" mechanism refers to a garbage classification linkage supervision mechanism between the industrial regulatory department of the park and various terminal disposal plants. Each garbage truck entering the park is inspected and recorded by a special person. Through the information technology construction of waste disposal plants, "technology +" grasps the quality of vehicles entering and exiting the plant and the quality of various types of waste. The park has first installed a wet waste quality monitoring system in the wet waste treatment plant, built a whole-process waste classification and supervision system, and covered the entire process of domestic waste classification, placement, collection, transportation, and treatment with the intelligent supervision concept, and incorporated the waste classification and identification of the terminal disposal plant into the intelligent supervision platform for the whole-process classification of domestic waste. The terminal disposal facilities of the park are of great significance in improving the whole-process garbage classification system and connecting the whole-process classification chain. In the process of classification and disposal of various types of household waste, innovation has also been made in the supervision and management of garbage classification work.

2) Upgrading standards and promoting the construction of ecological and environmental protection parks. The park is constantly upgrading and renovating its equipment. When equipment is updated, no high energy consuming equipment explicitly prohibited by the state shall be purchased, and energy-saving equipment for promotion; advanced process technology in the industry will be followed up actively, and its own processes will be evaluated and optimized; system management will be improved to ensure the stable operation of facilities and meet safety and environmental standards; with all these efforts, a resource-saving, environment friendly, and efficiency value-added smart ecological park will be built.

Figure 17 Wet Waste Incineration Plant of Tianma Zero-waste Low-carbon Environmental Protection Industrial Park

3) Circular sharing to form a closed-loop disposal model for solid waste. The park has realized sufficient collaborative sharing in energy, resources, and management. The steam required for the

initial commissioning of wet waste treatment plants and the gap of self-produced steam in winter will be made up by steam from the incineration plant. The combustible materials separated from construction waste and the residues separated from wet waste are directly transported to the incineration plant for unified incineration. The leachate from Tianma Incineration Plant Phase II and the flushing wastewater from the construction waste workshop are fed into the wet waste biogas pre-treatment system, and will finally be utilized by a biogas generator for power generation. The high concentration odor generated by the wet waste disposal process is directed to phase II waste pit of the incineration plant for incineration. The original on-site deodorization system serves as an emergency backup device. All plants in the park can realize the sharing of personnel office space, logistics, management, and information data.

- **Waste classification and reduction treatment**

Songjiang District attaches great importance to waste classification work and puts forward rigid requirements for waste reduction and facility renovation in all sub-districts and towns. Songjiang District has completed the upgrading and renovation of domestic waste rooms and residential areas' placement points; standardized the configuration of wet garbage trucks, and upgraded all wet garbage trucks to enclosed type. Songjiang District has built and put into operation Tianma Incineration Plant, Wet Waste Resource Treatment Plant, and Construction Waste Resource Treatment Plant; apply standards to waste classification and placement in residential areas at the source, finely and reasonably set timing and mistimed placement points, and comprehensively improve the placement environment; and promoted the construction of a comprehensive management platform for district level city greening, and explored the application of digital scenes in household waste classification management.

- **Identification and reification of river discharge outlets**

Songjiang District took the lead in 2021 in launching the rectification of river discharge outlets, by starting from four aspects: identification, monitoring, tracing, and rectification: 1) identify the base number of river discharge outlets and establish a list of river discharge outlets; 2) Understand and master the emission conditions of pollutants from discharge outlets; 3) Determine the source of pollutants entering the river taking the discharge outlet as the reference point; 4) Develop a classification and rectification plan for river discharge outlets, standardize and control river discharge outlets. As of July 2022, Songjiang District has completed the identification and tracing of 343 km of river course and completed the identification of 100 km of river course.

- **Deep treatment of volatile organic compounds (VOCs)**

Through the deep treatment of volatile organic compounds (VOCs) from 2020 to 2022, Songjiang District has urged 338 enterprises to improve the VOCs pollution prevention and control management system, strengthen source prevention and control, implement full process management, and collaborate in pushing high-quality development of the ecological environment and social economy. Songjiang District has organized comprehensive self-inspections and reviews on enterprises in key industries related to VOCs emissions, finalized VOCs governance projects, formulated comprehensive VOCs governance tasks by industry, and required them to implement one by one as scheduled.

Songjiang District has adopted a three-stage progressive technical route of "plan development + technical evaluation + tracking and promotion", and the enterprises have prepared the plans and organize their implementation based on the outlined requirements of "one factory, one plan (2.0)" for VOCs comprehensive governance. The ecological and environmental department has organized industry experts to perform technical assessments on key enterprises, to ensure scientific, targeted, and effective governance measures of enterprises. The technical support team has conducted comprehensive governance technical training and tracks the results of VOCs governance in key industry enterprises.

(2) Build a sustainable multi-level transportation system

- **Construction of Songjiang comprehensive transportation hub**

Songjiangnan Railway Station (a hub station in Songjiang) is one of the important railway hub stations in Shanghai, and also a comprehensive transportation hub integrating urban rail transit and other transportation modes. It is a key project at the district level in Songjiang District, and also the core of the concept of building a station integrating into the city for the future Songjiang New City. The project includes the reconstruction work of the old station and some new construction work, including the main service center of the station building, the South Square, North Square and their supporting works, the connecting channel between the new and old stations, and the canopy project of the existing station square. The scale of the station will be expanded to 9 units and 23 lines, and the scale of the station building will reach 60,000 m^2, which will greatly facilitate the connection between Songjiang and other major hubs of Shanghai, as well as the places in the directions of Huzhou, Suzhou, Hangzhou, etc. in the Yangtze River Delta.

Case 16 Sustainable Construction of Songjiangnan Railway Station

Songjiangnan Railway Station is located in Songjiang District, Shanghai, China. On December 16, 2019, the Shanghai-Suzhou-Huzhou Express Railway Project commenced, and Songjiangnan Railway Station expanded from 2 stations and 4 lines to 9 stations and 23 lines. In the process of renovation and expansion, attention will be paid to the practice of sustainable construction in resource utilization and other aspects.

1) Building a photovoltaic power generation system. A photovoltaic power generation system will be installed on the rooftop, with an area of approximately 14,500m^2 and an installed capacity of approximately 1.4MWp. The photovoltaic panels are coordinated with the roof building form, and the electricity is generated for self-use. The system utilizes the photoelectric effect of semiconductor materials to directly convert solar radiation into electricity. It mainly consists of three parts: solar panels (module), a controller, and an inverter. A solar cell array can generate direct current under lighting conditions, and the direct current can be converted into alternating current with an inverter and fed into the power grid of this project to provide auxiliary energy, to realize energy conservation, low-carbon environmental protection, and create good social and economic benefits.

2) Building an air source heat pump system for air conditioning. Both semi-centralized and decentralized air conditioning systems have an air source heat pump unit; considering the project land, ground heat exchangers will be laid under the baseboards of basement floors, and a geothermal heat pump system will be set, to satisfy part of the central air-conditioning load. The

centralized domestic hot water system is prepared by an air source heat unit.

3) Promoting electrical energy saving. The power supply design will try to ensure safety and reliability, reasonable scheme, and advanced technology, to realize the goal of reasonable power consumption and effective energy conservation. In the principle of ensuring safe and reliable power supply, the external power supply should be connected as close as possible, and the substation and distribution station should be as close as possible to the load center, to decrease energy consumption. An automated monitoring system should be set to effectively save energy; lighting sources and corresponding transformers should be chosen reasonably based on the characteristics of the electricity load, to avoid unnecessary power loss during the power supply process due to the selection of excessive transformer capacity.

4) Implementing energy-saving design for water supply and drainage. Energy-saving and efficient water supply and drainage equipment and accessories should be selected, to ensure that the energy efficiency indicators of major energy consuming equipment meet the provisions of the "Energy Efficiency Design Standard for Public Buildings" (GB50189). All water consuming buildings and equipment should be provided with measuring and control instruments, to meet the provisions of the General Rules for Equipping and Managing of the Water Measuring Instrument in Water-Use Organization (GB24789).

5) Implementing energy-saving design for HVAC. Variable frequency speed regulation technology, energy-saving and efficient air conditioner, ventilation equipment and accessories should be selected. The energy efficiency of air conditioner cold and heat source equipment, water pumps, and fans should meet China's first level energy efficiency requirements, and the delivery coefficient of the air and water system should also meet China's national standards. Novel high-performance insulation materials should be adopted, and buildings and equipment with energy and water demand should be provided with metering and control instruments.

- **Construction of medium-capacity rail transit**

Songjiang District has systematically proposed the "Four Network Integration" concept, to construct a network that integrates the national high-speed rail network, Shanghai rail transit network, Songjiang tram network, and ground transportation. Among them, Songjiang tram network bears the function of a medium-capacity rail system, which is a solid foundation for the integration of the four transportation networks. Since its operation at the end of 2018, tramcars have become a landmark green mode of transportation in Songjiang, characterized by energy conservation, environmental protection, comfort and safety, flexible operation, and affordable costs. Songjiang tramcars utilize many energy-saving and environment friendly new technologies and materials: the lightweight design of aluminum alloys and FRP plates can reduce the traction energy consumption of the train by more than 15%; environment friendly paints coated on the interior of the car, Fleece insulation cotton, polyester floor cloth and etc., are all flame retardant and non-toxic; the variable frequency heat pump design of air conditioner can save more than 50% energy compared to common air conditioning; elastic shock absorbing fasteners equipped to the track can reduce train noise by more than 30%; photovoltaic power generation equipment has been installed on the rooftops of Xinqiao Base and A9 Substation; time switches and photo switches on the platform reduces the power consumption of platform lighting by more than 50%.

Case 17 Songjiang Modern Tram T1 and T2 Demonstration Line Project

Songjiang tram system is an important medium-capacity rail transit in the "Five Network Integration" concept of Songjiang District, which can fill the gap between the subway and conventional public transportation, improve the Songjiang District public transportation system, optimize the citizens' traveling conditions, and enhance the level of public transportation services. Songjiang tram network is the first medium-capacity rail transit and the first networked modern tram system in Shanghai, and also the best practice of the "systematic transportation network" in the suburbs of Shanghai. The construction of Songjiang tram transit is of epoch-making significance.

Songjiang Modern Tram T1 and T2 Demonstration Line project is 31.24 km in length, with 45 stations. Songjiang Tram Line T1 has a total operating mileage of 15.1 km and 23 stations. It runs through the old city of Songjiang from east to west and extends eastward to Songjiang Industrial Zone and Xinqiao Town, and can be transferred to and from Rail Transit Line 9, Jinshan Railway, and Tram Line T2. Songjiang Tram Line T2 runs on a loop line, with a total operating mileage of 24.9 km and 36 stations. It connects Songjiang Old City, Songjiang New City, Songjiang college town, and Songjiang Industrial Zone, passes through important commercial districts, and can be transferred to and from Rail Transit Line 9 and Songjiang Tram Line 1.

Figure 18 Tramcars in Songjiang District

Modern tram T1 and T2 demonstration lines will be opened in three stages. In the first stage, Canghua Road to Zhongchen Road section of Line 2 will begin initial operation on December 26, 2018. In the second stage, Line 1 (Sanxinbeilu Station to Xinmiaosanlu Station) and Line 2 (Zhongchenlu Station to Jinxilu Station) will be put into operation on August 10, 2019. In the third stage, Line 1 Xinmiaosanlu Station to Xinqiao Station will be put into operation on December 30, 2019. The entire line was put into operation for the initial period on December 30, 2019. As of the end of the 13th Five Year Plan, a total of 195,288 runs were operated in Songjiang, achieving safe driving for 737 days. The average daily passenger flow of Songjiang Tram is about 25,000 trips, with a peak passenger flow of 32,000 trips during holidays and a maximum daily passenger flow of 38,500 trips.

In order to further improve passenger satisfaction, a "Planning and Design Proposal for Transfer Guidance Signs for Trams and Ground Buses" and a "Tram Operation Tracking

Evaluation" have been developed. In May 2020, the capacity of Tram Line T1 increased, after which the departure interval of Line T1 was shortened to 15 minutes, while the peak time departure interval of Line T2 remained at 12 minutes. The average interval on the shared section of Line T1 and Line T2 was about 6 minutes and 40 seconds. In 2021, a more detailed improvement was made to the Songjiang tram guidance and identification system, which comprehensively designed and optimized important elements concerned by passengers such as the directions of the inner and outer circles, the next arriving stations, and the running directions of train. The system received unanimous praise in the annual passenger satisfaction survey, with a passenger satisfaction score of 92 in 2021.

- **Construction of intelligent regular public transportation systems**

All buses in Songjiang District are equipped with integrated on-board terminals, which can realize all-round, timely, and reliable collection of bus operating data (locations, speeds, safety conditions). Moreover, Songjiang District has installed driver dynamic monitoring equipment on 691 bus vehicles, accounting for over 80% of all bus vehicles. Public transportation vehicles are equipped with an intelligent operation and scheduling management system, which integrates GPS, GIS, mobile communication, and sensor technology to transmit real-time vehicle status information back to the scheduling platform. Drivers can respond to the instructions of the scheduling platform for automatic vehicle scheduling and monitoring. All Songjiang bus routes are provided with the inquiring function of bus arrivals, and citizens can inquire through the internet in real time. Meanwhile, since 2016, Songjiang District has built a total of 483 electronic bus stop signs (including pole type and waiting hall type), allowing residents to view real-time arrival forecast information of passing buses while waiting.

(3) Promote integrated development of culture and tourism in the entire district

- **Building a holistic tourism area with Sheshan at the core**

Songjiang District has formed a holistic tourism development model led by Sheshan National Tourism Resort. Songjiang District is promoting the construction plan of "green mountains and lucid waters from afar, and profound humanity atmosphere at close hand". With the concept of "returning to nature and leisure vacation", and focusing on the major development line of combining culture and tourism development with ecological environment protection, combining new business forms with new technologies, Sheshan Resort will be built into an international urban leisure destination, a leading national level tourism resort, and the preferred tourism and leisure base for citizens.

Case 18 Construction of Slow Traffic System in Shanghai Sheshan National Tourism Resort

Shanghai Sheshan National Tourism Resort located in Songjiang District, under the guidance of the concept of "fast transportation and slow travel", is committed to building a continuous, safe, comfortable, convenient, and beautiful "ride and enjoy" slow transportation system, connecting the major tourist attractions within the resort.

The slow traffic system of Sheshan Resort forms a graded and continuous slow traffic network,

seamlessly connecting the starting and ending points of slow traffic within the resort. The capacity of slow traffic facilities can support the core area of Sheshan National Tourism Resort with a slow traffic proportion of over 80%, creating "20-minute, 30-minute and 60-minute" slow traffic experience sections.

Phase I of the slow traffic system project in Shanghai Sheshan National Tourism Resort (Linyin New Road Section) was completed in 2018, with a total length of 8 km. Jiasong Highway and Shenzhuan Highway sections were completed and put into use in 2019, with a total length of 4.7 km, forming a loop of 12.7 km together with the section of Linyin New Road. The greening area along the greenway is 10,140 m^2, with four supporting service facilities being added. Sheshan Resort greenway slow traffic system around the mountain was completed and put into use in 2020, with a total length of 6.2 km. At present, the greenways in the core area of Shanghai Sheshan National Tourism Resort are 18.9 km in total length, connecting Shanghai Sheshan National Forest Park, Shanghai Yuehu Sculpture Park, Shimao Tribute Portfolio Hotel, Sheshan Golf Club, Shanghai Maya Beach Water Park, Shanghai Happy Valley and other scenic spots, passing by Sheshan Station of Rail Transit Line 9, and shuttling in the leisure greenbelt on the north side of Shenzhuan Highway, becoming the preferred tourist route for urban eco-tourism and healthy exercise.

- **Building a culture and tourism space cluster based on Guangfulin Culture**

Songjiang District has integrated the available cultural resources, cultural heritage and cultural traditions into the development of tourism products and service designs, promoted the integration of high-quality tourism activities and in-deep cultural connotation, and expanded the development of new areas for tourism consumption and new tourism culture markets. Guangfulin Culture of 4000 years ago is the "root of Shanghai and the source of Shanghai Style". While fully protecting the Guangfulin Ancient Cultural Relics, Songjiang District has also constructed a number of iconic culture and tourism spaces such as Guangfulin Suburb Park and Chenshan Botanical Garden, enhancing the urban leisure tourism features with local cultural characteristics.

Figure 19 Guangfulin Cultural Relics

- **Advancing progress of culture and tourism industries surrounding product supplies**

In the process of building holistic tourism, Songjiang District has paid great attention to the important role of project and product system construction in promoting the development of cultural tourism industry. Songjiang District has adhered to the integration and innovation of market entities, continuously enriched the effective supply of tourism products, and built rural tourism "Maotian Valley", industrial tourism "Innovation Valley", cultural tourism "Humanities Valley", conference tourism "Meeting Affairs Valley", and themed tourism "Happy Valley", to cultivate a holistic tourism product system of "A Bumper Grain Harvest". Songjiang has also actively embraced new tourism consumption models such as "cultural tourism + sports" and digital smart tourism. Meanwhile, Songjiang has also created a batch of distinctive, experiential, and participatory high-quality vacation hotels, to better play the positive role of tourism in improving the living quality, and creating an important carrier for showcasing and experiencing Shanghai's high-quality development and life.

Figure 20 Sheshan Deep Pit Hotel

- **Protecting shared historical memories**

As a highland of historical and cultural resources, Songjiang District has paid special attention to protecting the historical memory shared by all residents from both tangible and intangible perspectives. Songjiang District regards the protection and renewal of cultural relics in scenic areas as a key project pushed by the government, and implements and coordinates the protection and renewal of scenic areas step by step. Moreover, Songjiang District adheres to the dominant role of the market, strengthens the activation and utilization, encourages to employ all kinds of projects to carry out various cultural salons, exhibitions, and other activities, helps excellent projects shape their own brands, and makes citizens be closer to the history. Songjiang District insists on people orientation, takes improving residents' lives and increasing happiness index as the target, adheres to

the differentiated principles, and taps into the unique cultural connotations and residential values of the scenic area.

- **Building a brand of full time cultural festivals**

"Promoting tourism with cultural festivals and celebrations" is one of the important paths for speeding up the development of holistic tourism in Songjiang District. Songjiang District has been committed to creating a full-time cultural festivals and celebrations brand, launching a four-season festivals and celebrations brand called "Climbing Mountains in Spring, Playing Water in Summer, Seeking Root in Autumn, and Blessing in Winter", continuously improving the holistic humanities environment and atmosphere in terms of space and time. In recent years, Songjiang District has launched a number of influential festivals and celebrations such as Chenshan Botanical Garden Grassland Music Festival, Sheshan New Year's Day Climbing, and Xinbang Lotus Festival.

Figure 21 Grassland Music Festival of Chenshan Botanical Garden

(4) Build a resilient modern new city

- **Carrying out top-level design for building a resilient modern new city**

As one of the five new cities in Shanghai, Songjiang District has attached great importance to guiding the whole-process planning and construction of new cities with resilient thinking, and been committed to becoming a pioneer in building resilient cities. Songjiang District has gradually moved from passive emergency response to a new urban risk management model of proactive prevention, guiding the layout optimization of new city space and major infrastructure, and forming a comprehensive disaster prevention spatial structure of "reasonable layout, complete coverage, and prominent focus", to strengthen the construction of comprehensive disaster prevention and reduction

infrastructure and the configuration of electricity and gas safety facilities etc., and improve the life passage system. Songjiang District has been building a sponge city, increases artificial "sponge bodies" through low impact development and construction means, to achieve "increased infiltration and reduced emission" and the control of source runoff, thus enhancing the drainage capacity of pipeline networks. Songjiang District has strengthened the comprehensive utilization of underground spaces, coordinated the planning and construction of municipal infrastructure such as water, electricity, gas, and communication facilities, and orderly promoted the construction of comprehensive pipe galleries; it has improved the whole-process risk management mechanism, and built a public health risk prevention and control system, to boost emergency response capabilities, and comprehensively elevate the emergency management level.

- **Advancing the construction of comprehensive pipe galleries**

The construction of comprehensive pipe galleries of Songjiangnan Railway Station is a pilot project in Shanghai and one of the 30 key tasks in the national pilot project for new urbanization in Songjiang District. To push the project construction, Songjiang has established a coordination leadership group for pipe gallery construction to coordinate the construction of comprehensive pipe galleries. Songjiang has formulated a special plan for Daju Underground Comprehensive Pipe Galleries of Songjiangnan Railway Station (Daju refers to large residential communities), which has been examined and approved by Shanghai municipal planning department, providing a planning basis for the construction of Nanzhan Daju Comprehensive Pipe Galleries. The project has adopted an EPC (engineering, procurement and construction) bidding model, which accelerated the handling of various procedures and made the comprehensive pipe galleries commenced at the time specified by the superiors. The project has also strengthened the progress management of on-site construction image nodes with the help of drones and monitoring facilities, and adopted BIM technology in the construction management of certain bid sections.

Case 19 Comprehensive Pipe Gallery Construction Project in Southern New Town

The planned pipe galleries of Songjiang Southern New Town are the largest comprehensive pipe gallery pilot project in Shanghai, with a total length of 21.7 km and a total investment of approximately 3.5 billion yuan. The phase I project consists of Qiting Road Comprehensive Pipe Gallery, Bailiang Road Comprehensive Pipe Gallery, and Yuyang Avenue Comprehensive Pipe Gallery. The project is an important infrastructure in the large residential communities of Songjiangnan Railway Station. To ensure that all kinds of water, electricity and gas can enter the houses on time, the gas, water supply and power pipelines have been laid in the galleries and put into use successively. While fighting against Typhoon "In-fa" in the summer of 2021, the comprehensive pipe galleries to some extent accommodated the ponding water generated by excessive rainfall. The pipe galleries played their dredging functions through the diversion facilities and automated drainage equipment inside them, ensuring that there was no large-scale water logging in corresponding areas, which reflected the sponge city concept of the pipe gallery design.

The comprehensive pipe gallery project for the large residential communities in southern Songjiang has adopted many innovative concepts during the design phase.

1) Incorporating all pipelines into the gallery. The project includes all pipelines under roads

such as power, communication, water supply, rainwater, sewage, and natural gas pipelines on Yuyang Avenue into the comprehensive pipe gallery based on local conditions, effectively releasing the space under the road and achieving the goal of centralized construction and intensive management of pipelines.

2) Adopting the concept of sponge city. A rainwater tank has been designed on Yuyang Avenue to intercept initial rainwater, municipal flushing wastewater, mixed sewage, etc., and send them to a sewage treatment plant, improving the water environment of the area. When encountering heavy rainfall, the initial rainwater tank can also serve as a rainwater storage tank, to alleviate rivercourse pressure, discharge water at off-peak hours, and prevent waterlogging of the area.

3) Comprehensively utilizing underground space. Fully considering the demand for high-quality development along the northern coast of Huayang Lake, the project combines the comprehensive pipe gallery with the utilization of underground space, to achieve the best balance between functions and economy. In order to take the best advantage of underground spaces, save land resources, and comprehensively take into account the needs of urban public facilities, the design leverages the cabins of the comprehensive pipe gallery to design a public underground space that is integrated with the urban landscape and can better serve residents.

4) Applying the BIM technology. BIM technology is applied in the engineering, construction, and operation stages of the phase I project. With the application of BIM including 3D modeling, pipeline collision inspection, and functional analysis, the project management level is enhanced in a digital, information technology, and visual manner, achieving refined management, and improving the design and construction quality of the pipe gallery project. Moreover, the information about engineering, construction, procurement, installation, and other processes of BIM models are utilized, to provide information sources for management work during the operational phase.

- **Advancing the building of a green urban area**

In recent years, Songjiang District has striven to promote the construction of Songjiang New City International Ecological Business District and Shanghai Film City (the central urban area of Huayang Lake region), as the practical exploration for the building of a green ecological urban area. Songjiang New City International Ecological Business District has gathered productive service industries, fully utilized the cultural, transportation, ecological, and industrial resources of the business district, and developed into a composite and comprehensive urban area with "ecological commerce" as the leading function, integrating cultural entertainment, commercial services, living and other functions. In order to accelerate the construction of green ecological urban area, Songjiang District has selected Shanghai Film City (the downtown of Huayang Lake region) as the pilot zone for the second round of construction of a green ecological urban area. The initial draft of ecological planning has been completed and solicited for opinions, and the declaration will be completed by the end of 2022.

Case 20 Songjiang New City International Ecological Business District

Songjiang New City International Ecological Business District (core area) was awarded the title of "Shanghai Green Ecological City Pilot" in 2020. Presently, the coverage rate of public open spaces within 300m is 100%, the coverage rate of kindergarten service within specified radius is 100%, the coverage rate of primary school service within specified radius is 83.17%, and the coverage rate of secondary school service with specified radius is 100%. Greenway systems of ⩾ 3km have been

achieved (approximately 1.96km of Wulonghu Pedestrian Greenway and 2.2km of Huanhe Pedestrian Greenway have been built) through municipal construction, and the surface water environmental quality meets the requirements of corresponding water quality categories specified in "Shanghai Water Function Zoning". The harmless treatment rate of domestic waste reaches 100%. Energy consumption monitoring for large public buildings has been included in the energy consumption monitoring information platform for national office buildings and large public buildings in Songjiang District.

Figure 22 Songjiang New City International Ecological Business District

Songjiang New City International Ecological Business District (core area) takes "international ecological business district" as its green ecological positioning, pushes the interdependent, integrated and shared development of the planning area and provides people with high-quality production, living and ecological spaces through green ecological strategies such as multiple composite functions, green healthy building, shared ecological spaces, comfortable and convenient transportation, low-carbon resource utilization, and fine intelligent management. The business district further enhances its ecological construction standards, formulates and completes the implementation plan for sponge city construction in the business district. Meanwhile, new projects strictly adhere to the indicator requirement of controlling no less than 77% of annual total runoff, and the green ecological urban area standards are implemented in 100% of the core area. The measures of sponge cities are applied according to local conditions, to enhance the level of resilient cities, and the construction of green ecological urban areas is controlled properly.

Songjiang New City International Ecological Business District has developed a digital control tool—Songjiang New City International Ecological Business District (core area) green ecological

control system. The system is used to ensure the implementation of green ecological indicators in ecological urban areas, and can show the implementation conditions of indicators on the platform in real-time. The system realizes timely entry of the process and result data of ecological city construction into the basic database, and achieves the calculating and display of indicator data, which helps various units and departments to carry out business work in an orderly manner.

- **Creating an open green spatial system**

Songjiang District has created an open green space system through the construction of park greenbelts, ecological corridors, ecological forests, and rural parks. Songjiang District has established an assessment mechanism, formulated detailed rules for daily maintenance and management of greenbelts, park management, and service quality assessment, intensified training for technical personnel, clarified construction technical requirements, and implemented whole-process supervision and inspection. Based on the concept of "greening + culture" construction, Songjiang District leverages its local resource advantages, to develop, tap into and expand the historical stories, cultural values, and public space functions of Songjiang's urban parks including cultural parks and themed parks. Songjiang takes the construction of open leisure forests and other areas as a systematic project, tries to intensify measures for the benefit of the people, such as afforestation and greening, to meet the growing leisure and health needs of the people.

- **Advancing the construction of a resilient water system**

Songjiang District strives to improve the water environment of rivers and lakes, implements a "river chief system" with hierarchical responsibilities, a "receiving control system" with full coverage of sewage interception, receiving and management, and a "grid system" for implementing daily regulatory responsibilities. Songjiang has completed the upgrading and renovation of sewage treatment plants, i.e., Xinbang, Songxi, Songshen, and Songdong sewage treatment plants, which vigorously improve the treatment capacity of the sewage treatment plants. The renovation and expansion of the sewage treatment plant has been completed, and the Standing Committee of the District Committee has decided to invest a total of 3.772 billion yuan for the renovation and expansion work of the four district-owned sewage treatment plants. Songjiang District has taken strong steps to promote the mixed transformation of rainwater and sewage in residential areas, which substantially improves the water quality of the river channels in corresponding areas, updates the appearance of old residential areas, and further improves the supporting facilities. Songjiang District has carried out the treatment of rural domestic sewage and agricultural non-point pollution sources, comprehensively completed the construction, upgrading and renovation of rural domestic sewage treatment facilities for over 28,000 households, and basically realized full coverage of domestic sewage treatment in preserved villages in Songjiang rural areas. Songjiang District continuously strengthens the flood control and drainage engineering system. Since 2017, Songjiang has successively renovated the interception facilities for 19 flood control pumping stations under its jurisdiction, and all of them have been completed and put into operation.

Case 21 Songjiang Dianpu River Connecting Rivers and Lakes

Dianpu River spans the three districts of Qingpu, Songjiang, and Minhang, with a total length of 46.4 km. It is a city level backbone river that was manually excavated in the Spring of 1977. It starts from Dianshan Lake in the west and enters Huangpu River in the east. The section of Dianpu River in Songjiang District flows through Sheshan Town, Sijing Town, and Jiuting Town. Dianpu River not only plays a major role in the diversion, drainage, regulation and storage, and scheduling of water resources within the control areas of Qingpu and Songjiang, but also serves as an east-west shipping artery, allowing 100-ton ships from Jiangsu and Anhui to directly sail to Shanghai.

In recent years, Dianpu River has been affected by the rainstorm in the region and the drainage of water from the north to the south, which can no longer meet the 20-year-return drainage standard. In 2017, phase I of Dianpu River Training Project in Songjiang District began construction and was completed in 2019. In the phase I of the project, more than 120 million yuan was allocated by the municipal and district governments to renovate over 4 km of the river, involving two areas, Sheshan Town and Jiuting Town. The project builds approximately 5.2 km of revetment, 12,000 km^2 of flood control channels, 5 bridges, and 56,000 km^2 of planting and greening.

Figure 23 Dianpu River in Songjiang District

In 2020, the phase II project began, with a total investment of approximately 360 million yuan. It will renovate 9.3 km of the river and was divided into two sections: the west section is located in Sheshan Town, and the east section Sijing Town and Jiuting Town. The project will build 12.6 km of revetment, approximately 59,000 km² of flood control channels, one new pump gate in the western section, 14 new bridges in the eastern section, and over 89,000 km² of greenery. In the section from Huting Road to Minhang Boundary of Dianpu River, the construction of three node parks has been completed, that is the park on Qiujing Road till its end, the park to the southeast of Huting South Road, and the park to the southwest of Laiting North Road. The park is densely planted with trees and shrubs, as well as flowers, lawns, and fitness facilities, showing a harmonious scene of clear waters, green banks, and pretty scenery, becoming a new destination for nearby residents to walk and relax.

The 5.6 km long waterfront landscape belt (the section from Shenyang-Haikou Expressway to Huting South Road) is constructed with a "two belts and multi points" layout in the principle of function priority and ecological restoration. Supporting facilities such as riverside landscape walkways, landscape section bike lanes, waterfront platforms, landscape greenbelts, landscape corridors, and leisure seat frames are newly constructed. The naturally curved greenbelt continues to be upgraded in terms of functionality and landscape, with ornamental ground cover plants like snowscape flowers and Jasminum mesnyi, as well as saplings of magnolia, crabapple, and red maple, etc., creating a landscape effect of "three seasons of flowers and four seasons of greenery". The pedestrian walkway is arranged in a straight line along the revetment in the estuary; bicycle lanes wind their way along both sides. Riding all the way, Dianpu River meanders and flows, with a beautiful riverbank environment, swaying willows and fragrant petals.

SDG17: Partnerships for the Goals

Under the goal of "common development", Songjiang District actively responds to the development strategic tasks of the country and Shanghai City, establishes closer international and domestic friendly exchanges and cooperation, strengthens regional coordinated development through the construction of G60 S&T Innovation Valley of Yangtze River Delta, and achieves common development through paired assistance to underdeveloped regions. Moreover, special attention is paid to creating an attractive development environment, actively carrying out overseas publicity and marketing to promote further communication and cooperation.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG17
Provide paired assistance to inland regions for common development	Supporting sustainable development of the entire industrial chain		‣Major regions for exchanges and cooperation in domestic paired assistance in recent years	**17.15 17.17**
	Connecting production bases and consumer markets	Songjiang assists the development of the whole industrial chain of Menghai Fragrant Rice in South Yunnan Granary		
	Technological innovation supporting high quality development			
	Actively promoting talent exchange and cooperation	Assistance plan for Dingri County, Shigatse		
Promote collaborative development of G60 S&T Innovation Valley of Yangtze River Delta	Joint building of G60 S&T Innovation Valley by nine cities in the Yangtze River Delta		‣Data for results of G60 S&T Innovation Valley construction	**17.17**
	Promoting cross-regional collaborative cooperation in the industrial chain by leading enterprises			
	Building a "1+7+N" industrial alliance system			
	Establishing science and technology achievement transformation fund for G60 S&T Innovation Valley of Yangtze River Delta			
	Building a comprehensive financial service ecosystem			
Create an an attractive development environment	Continuously optimizing the business environment		► Foreign investment from foreign investment contracts ►Number of newly approved foreign investment projects ►Amount of imported products ►Amount of exported products ►Composition of the number of foreign and Hong Kong, Macao, and Taiwan investment projects during the past years	**17.10**
	Implementing targeted investment attraction surrounding the new arena			
	Stimulating the vitality of independent innovation			
	Accelerating construction approval centering on projects	Tencent Yangtze River Delta AI Advanced Computing Center		
Vigorously launch overseas publicity and marketing	Actively promoting and marketing Songjiang globally	Themed promotion activity "Entering the Root of Shanghai"	‣Annual tourist reception volume	**17.16**
	Assisting cooperation between enterprises in Shanghai and Hong Kong			
	Participating in Shanghai International City and Architecture Expo			

Key Indicators

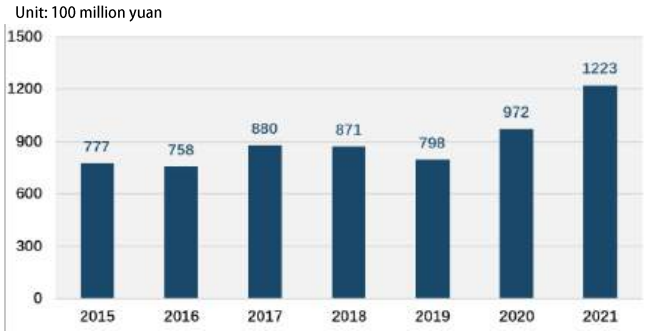
➘ Major regions for exchanges and cooperation in domestic paired assistance in recent years

In recent years, Songjiang District has launched paired assistance construction to **2** counties in Xishuangbanna, **1** district and **3** counties in Zhaotong City, **1** county in Shigatse City of Tibet Autonomous Region.

➘ Joint building of G60 S&T Innovation Valley by nine cities in the Yangtze River Delta

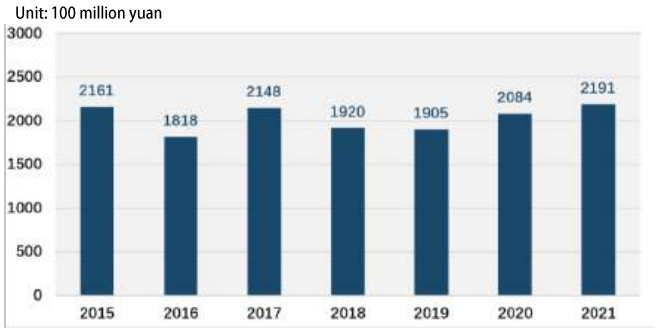
The GDP of the nine cities in G60 S&T Innovation Valley accounts for **1/15** of the national total; the proportion of high-tech enterprises in G60 S&T Innovation Valley accounts for **1/10** of the national total; the number of companies listed on STAR Market exceeds **1/5** of the total number in China.

➘ Values of imported goods



From 2015 to 2021, the annual average import value in Songjiang District was **89.7 billion yuan**.

➘ Values of exported goods

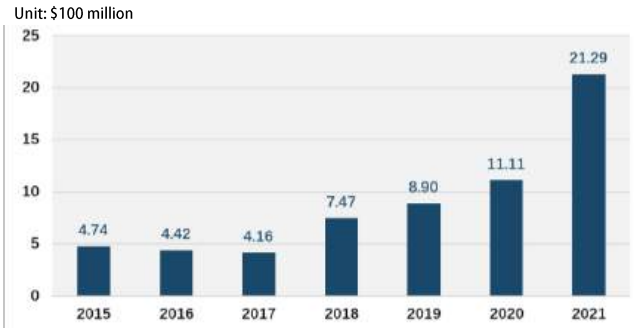


From 2015 to 2021, the annual average export value in Songjiang District was **203.2 billion yuan**.

➘ Composition of the numbers of foreign and Hong Kong, Macao, and Taiwan investment projects during the past years

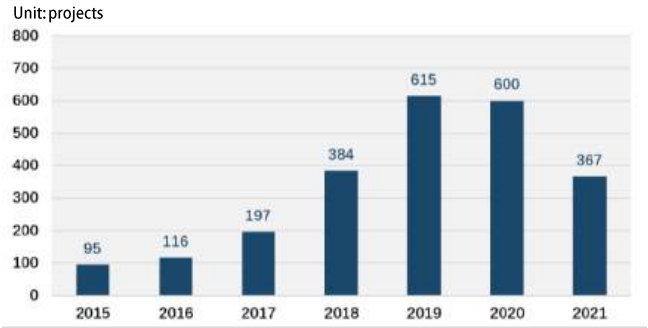
From 1992 to 2021, among the number of investment projects in Songjiang from Hong Kong (China), Taiwan (China) and foreign countries and regions, Hong Kong (China), Taiwan (China) and Japan ranked the top three places, accounting for **20%, 15% and 12%** of total number respectively.

➘ Foreign investments from foreign investment contracts



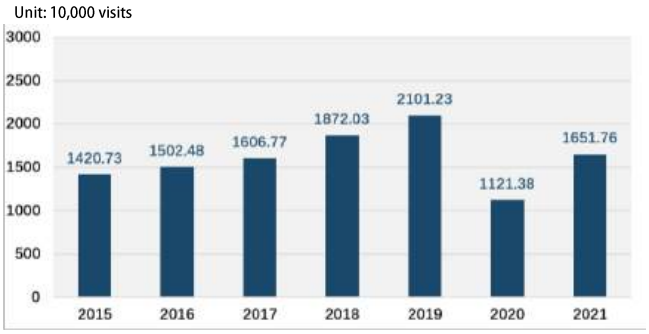
From 2015 to 2021, the outbound investment actually in use from outbound direct investment contracts in Songjiang District increased from $474 million to $2.129 billion, with an average annual growth of **28.5%**.

➘ Number of newly approved foreign investment projects



From 2015 to 2021, the average annual number of newly approved foreign investment projects in Songjiang District was **339**.

➘ Annual tourist reception



From 2015 to 2021, the average annual tourist reception in Songjiang District was **16.11 million visits**.

Major Progresses

- **Outstanding achievements in poverty alleviation cooperation in the western China**

Songjiang District actively implements the national and Shanghai municipal work deployment for domestic paired assistance. In recent years, it has performed paired assistance and construction work for 2 counties in Xishuangbanna, Yunnan Province, 1 district and 3 counties in Zhaotong City, Yunnan Province, and 1 county in Shigatse City, Tibet. After continuous assistance in recent years, Songjiang District has successfully helped lift Mengla County and Menghai County in Xishuangbanna Prefecture, Yunnan Province out of poverty. Songjiang District ranked second place in the assessment of 2018 Shanghai East-West Poverty Alleviation Cooperation and Paired Assistance, and ranked first place in 2019 and 2020 for two consecutive years.

- **G60 S&T Innovation Valley Becoming a National Science and Technology Innovation Highland**

In recent years, Songjiang District has strengthened scientific and technological innovation cooperation with cities in Yangtze River Delta relying on the G60 S&T Innovation Valley. The G60 S&T Innovation Valley has created a cross-regional collaboration model led by leading enterprises in the industrial chain, built a regional industrial alliance system, and realized the development results of technological innovation and high-end industry upgrading and iteration. So far, the total GDP of 9 cities, Songjiang, Suzhou, Jiaxing, Huzhou, Hangzhou, Jinhua, Xuancheng, Wuhu, and Hefei, accounts for 1/15 of the total GDP of China mainland, high-tech enterprises account for 1/10 of the national total, and the number of enterprises listed on the STAR Market exceeds 1/5 of the national total, making it a true high-tech highland in China.

- **Significant achievements in building a business environment**

Songjiang District has continuously promoted the building of a good business environment, to create an attractive development environment in recent years. Songjiang District has created the best service chain for enterprises throughout their entire life cycle from start-up to exit. Its precise institutional innovation in land use, planning, plot ratio, evaluation indicators, and other aspects of social investment projects has attracted major projects including new energy vehicles and large aircraft industries. The Tencent Supercomputing Center project has created a new miracle of "G60 speed". Songjiang District has been designated by the State Council as a pilot area for the one-website government services in Yangtze River Delta, received the World Bank's business environment evaluation on behalf of Shanghai for consecutive two years, pushing China's business environment ranking from the 78th place to the 31st place globally, and getting into the top ten economies with the fastest pace of reform in the world. In the field of business environment reform in engineering construction, Songjiang, as the only representative of Shanghai, participated in the World Bank's on-site verification in Shanghai with a full sample, and has gained the excellent rating of Shanghai's business environment reform evaluation in the field of engineering construction for two

consecutive years since 2020.

- **Continuously innovating investment promotion ideas**

Songjiang District pursues investment attraction work through innovative work ideas and measures. Songjiang District has followed up on key projects that have been approached and in progress, and promoted the approval of projects in consultation as soon as possible. The district has tracked the projects that have been approved to take root in Songjiang, and recommended new projects. Songjiang has promoted the introduction of new projects with existing projects, negotiated on cooperation and resource exchange with institutional platforms, and got in touch with many potential physical enterprises through recommendation. At present, Songjiang District has approached a total of 375 batches of businessmen in the district level, and 29 enterprises for 26 projects have been registered, with a registered capital of 789 million yuan, and planned total investment of over 10 billion yuan.

- **Initial results showed from external promotion and recommendation activities**

Songjiang District actively launches various forms of overseas publicity and recommendation activities. The 2022 Shanghai Global Investment Promotion Conference and the launch ceremony of the "Tide Pujiang" Investment Shanghai Global Sharing Season have brought a total investment of 26.5 billion yuan and 26 project contracts signed in Songjiang District, after that, at the phase I of Yangtze River Delta G60 Sci-tech Innovation Eye Project and Songjiang District Industrial Project Centralized Signing Ceremony, another 51 major industrial projects were signed together, with a total investment of over 33.6 billion yuan. On July 18, at Foreign Investment Promotion Conference in Songjiang District and the signing ceremony of Lingang Songjiang Science and Technology City - Hexagon Double Smart Empowerment Center, the Double Smart Empowerment Center of Hexagon, one of the world's top 500 enterprises and the world's leading enterprise in the field of industrial internet, was officially signed. Based on the "World City Day" activity platform, Songjiang organized a project of relatively centralized residential demonstration area for rural revitalization in Huangqiao Village, Maogang Town to participate in the exhibition in 2020, and organized a comprehensive pipe gallery project for the southern new town of Songjiang to participate in the exhibition in 2021, showcasing the construction achievements of Songjiang New City to all circles of society, enhancing the urban image of Songjiang City and expanding its social influence.

Important Measures

(1) Provide paired assistance for inland regions for common development

- **Supporting sustainable development of the entire industrial chain**

While supporting the common development of inland areas through paired assistance, Songjiang District has stimulated the development of the entire industrial chain of the assistance targets. Based on the local natural resource endowments, Songjiang District has further extended the industrial chain while refining and strengthening existing industries,

and facilitated villagers' income growth through such measures as technological innovation, experimental promotion, and market expansion. Moreover, measures such as communicating with sales terminal platforms to promote sales, enterprise negotiation in capital investment to spur employment, tracing the entire process from the origin to the consumption terminal, and providing technical guidance by well-known enterprises to enhance added value, have been adopted, to guide social forces to accurately engage in paired assistance, stimulate the vitality of market entities and the endogenous power of impoverished households, and adhere to the equal emphasis on "blood transfusion" and "hematopoiesis", the balance between governmental and social forces, to realize a comprehensive and win-win situation.

- **Connecting production bases and consumer markets**

In the process of paired assistance, it is particularly important to connect production bases and consumer markets. Before pairing up for assistance, the rice of Xishuangbanna granary in southern Yunnan was mainly sold within Yunnan Province, and rarely sold out of Yunnan. In 2019, Shanghai Cooperation and Exchange Office pushed the application of "One Hundred Counties and One Hundred Products" in Shanghai's paired assistance areas. The eleventh batch of Shanghai aid cadres to Yunnan took the initiative to communicate with and assist enterprises in successfully applying for the first batch of selected "One Hundred Counties and One Hundred Products" in Xishuangbanna Prefecture, thus starting the sales process of high-quality rice from the southern Yunnan granary in Shanghai markets and establishing a firm foothold in the fierce rice market in Shanghai, entering well-known offline and online sales platforms in Shanghai.

Case 22 Songjiang Promoted the Development of the Whole Industrial Chain of Menghai Fragrant Rice in South Yunnan Granary

Xishuangbanna Dai Autonomous Prefecture is located in the southwest border of China, with rich minority culture. It is the only tropical rainforest area near 21 degrees north latitude in China Mainland, and one of the typical areas of biodiversity. However, due to traditional farming and seed source limitations, rice cultivation in Menghai has encountered certain difficulties in extending and strengthening the industrial chain during the fight against poverty, especially in the development and growth of local governments and rural collective economies.

The Xishuangbanna groups of two batches of Shanghai's Yunnan Aid Cadres have made continuous efforts, introducing high-quality seed sources to Menghai for trial planting in 2017. After five years of scientific experiments, they continuously summarized and improved planting techniques, achieving success in both scientific research and actual production, which have added a series of quality rice to the southern Yunnan granary, laying a foundation for farmers to increase production and income. Xishuangbanna groups of Shanghai Yunnan Aid Cadres attached special importance to and promoted the characteristic cooperation between Shanghai and Yunnan, gradually strengthening the Songjiang imprint and sci-tech innovation color in Xishuangbanna's rural revitalization, actively guiding the application of the achievements of Songjiang high-tech enterprises in Xishuangbanna's agricultural development, which helped the local agriculture take off with technology.

In the traditional rice planting process, farmers grow rice with their experience, with excessive fertilization and medication, which may easily cause environmental, water and soil pollution, and

is not conducive to the improvement of rice quality. The high-quality seed source of Songjiang, "Songxiang Jing 1018", has been grown and spread in Mengpeng for two consecutive years, covering an area of 1,200 mu (80,000 m^2), making a contribution to Shanghai-Yunnan industrial cooperation for increasing farmers' income and production. In response to the problem of low profits from selling rice after growing and harvesting high-quality rice, Shanghai Yunnan Aid Cadre Xishuangbanna Group actively intervened in the refining and processing links of the entire rice industrial chain, and arranged for the assistance project to build a refined rice processing plant in Mengpeng Town, increasing both production and income of farmers.

According to incomplete statistics, as at early October 2021, the project had sold 950.7 tons of rice in the Shanghai markets, with a sales amount of 8.7319 million yuan. Driven by branded enterprises, other small- and medium-sized rice production enterprises and cooperatives in Xishuangbanna have achieved annual growth in sales in Shanghai markets. Against the backdrop of the cooperation between Shanghai and Yunnan, the consumption assistance from Shanghai and Songjiang has strongly supported the sales of high-end branded rice from Diannan granary on the market side, laying a solid foundation for exploring Shanghai markets. The industrial cooperation between Songjiang and Xishuangbanna has contributed to consolidating the achievements of the fight against poverty and achieving effective connection in rural revitalization.

- **Supporting high quality development with technological innovation**

Songjiang is the birthplace of G60 S&T Innovation Valley of Yangtze River Delta, and has attracted thousands of high-tech enterprises and national research platforms in recent years. After years of continuous construction, the achievements of Sci-tech Innovation Corridor have generated increasingly apparent spillover results, which have spread to the areas assisted by Songjiang. In response to the actual needs of assisted regions, Songjiang actively leverages its technological innovation advantages to help introduce technological resources into local industrial construction and promote the quality and efficiency improvement of traditional industries. For example, in June 2018, the Market Supervision and Administration Bureau of Songjiang District, Shanghai, and the Quality and Technical Supervision Bureau of Xishuangbanna Prefecture signed the "Agreement on Assistance in the Construction of Pu'er Tea Traceability System", which determined that the traceability system would be piloted from two dimensions: famous mountains and famous teas, as well as poverty-stricken villages, and the Jiusai villager group of Nuanhuo Village in Xiding Township was selected as the poverty-stricken village pilot area of the Pu'er tea traceability system. In July 2018, after widely mobilizing social forces to participate in assistance, Shanghai Chachong Cultural Communication Co., Ltd. participated in the construction of Nuanhuo Village Pilot Project of the Pu'er Tea Traceability System. Relying on the "Internet of Things" technology, by installing cameras and IoT equipment for tea mountains, picking processes, logistics, processing points, and tea merchants, the entire chain including tea growing, picking, processing, and sales was tracked and recorded in real-time.

- **Actively promoting talent exchange and cooperation**

Songjiang District actively launched talent exchange and cooperation for targeted assistance areas, including selecting support cadres and professional technical talents. In the aids provided to Xishuangbanna, by the end of 2021, Songjiang has sent a total of 14

cadres and 235 professional talents to assist Yunnan. In the paired assistance to Zhaotong City in Yunnan, Songjiang District designated 15 three-year aid cadres, 10 teachers, and 8 doctors to provide local support in 2021. In the paired assistance to Dingri County in Shigatse, Tibet, Songjiang District has dispatched 32 aid cadres in 9 batches since June 1995. The medical and education systems of Songjiang have sent group-aid teachers totaling 42 people in 4 batches, group-aid doctors totaling 16 people in 5 batches, 2 aid cadres from the procuratorate of Songjiang District, and 1 aid officer from the postal office of Songjiang.

Case 23 Assistance Plan for Dingri County, Shigatse

In July 1994, the central government held the third symposium on Tibet work, and Shanghai began to aid Tibet. According to the work deployment of Shanghai Municipal People's Government, and in accordance with the policy of "segmented responsibility, targeted assistance, and regular rotation" to assist Tibet, Songjiang has been providing targeted support to Dingri County in Shigatse, Tibet since 1995. In the first batch of aid to Tibet in May 1995, the then Songjiang County, Chongming County, Luwan District, and Putuo District began to provide paired assistance to Dingri County, Shigatse Prefecture of Tibet. In the second batch of aid to Tibet in 1998, Songjiang District, Luwan District, and Putuo District provided paired assistance to Dingri County. In the fourth batch of aid to Tibet in 2004, Songjiang District, Luwan District, and Jing'an District provided paired assistance to Dingri County. In the sixth batch of aid to Tibet in 2010, Songjiang District, Fengxian District, and Luwan District provided paired assistance to Dingri County. In the seventh batch of aid to Tibet in 2013, a single district, Songjiang District provided paired assistance to Dingri County.

From June 1995 to 2021, Songjiang District offered 81.62322 million yuan of unplanned district-level funds (including equipment) to Dingri County under the aid program. Totally 32 Tibetan aid cadres in 9 batches have been sent to support Dingri County in Tibet. In the first six batches of aid to Tibet, two aid cadres were dispatched for each batch, and rotated every three years. In the seventh batch of aid to Tibet in 2013, totally 8 aid cadres were dispatched. In the eighth batch of aid to Tibet in 2016, 6 aid cadres were dispatched. In the ninth batch of aid to Tibet in 2019, 6 aid cadres were dispatched. Moreover, the medical and education systems have increased their efforts in dispatching cadres, and 4 batches of group-aid teachers, totaling 42 people, 5 batches of group-aid doctors, totaling 16 people, 2 aid cadres from the procuratorate of Songjiang District and 1 aid officer from the postal office of Songjiang have been dispatched.

(2) Pursue collaborative development of G60 S&T Innovation Valley of Yangtze River Delta

- **Jointly building G60 S&T Innovation Valley by nine cities**

The G60 S&T Innovation Valley of Yangtze River Delta includes nine cities (districts) along the G60 National Expressway, Shanghai-Suzhou-Huzhou High-speed Railway, and Shangqiu-Hefei-Hangzhou High-speed Railway: Songjiang District in Shanghai, Suzhou City in Jiangsu Province, Hangzhou City, Huzhou City, Jiaxing City, Jinhua City in Zhejiang Province, and Hefei City, Wuhu City, and Xuancheng City in Anhui Province, with a total area of 76,200 km^2. Since its launch, nine cities along the G60 S&T Innovation Valley have always adhered to the two key principles of "integration" and "high quality", with market orientation and rule of law as guidance, with "innovation + industry + finance" as the starting point, and with the construction of high standard innovation capabilities as

the support, to promote grassroots cooperation and cross-administrative-regional coordination and linkage in Yangtze River Delta, striving to build a birthplace of scientific and technological innovation, world-class industrial clusters, industry and city integration models, and a first-class business environment. It has become a coordinated innovation community with joint investment of funds, joint transformation of technology results, and shared interests, and tried every effort to turn itself into an advanced corridor for China's manufacturing to move towards China's creation, a pilot corridor driven by both technological and institutional innovations, and a pilot corridor for integrated development of industry and city.

- **Promoting cross-regional collaborative cooperation in the industrial chain by leading enterprises**

Yangtze River Delta has taken strong steps to promote cross-regional collaborative cooperation in the industrial chain with leading enterprises taking the lead, with Songjiang, the birthplace, fully playing a demonstration and driving role, and further emphasized the precise docking of elements. Songjiang has facilitated the improvement of enterprise project libraries and data resource libraries that match the industrial chain cooperation needs of leading enterprises, continuously singling out powerful and promising supporting enterprises from the supply chain "inventories" of the nine cities for leading enterprises, and establishing corresponding mechanisms. For example, in the field of special process materials for large aircraft, nearly 1,000 excellent enterprises including Shanghai Success Hydraulics Co., Ltd., Zhejiang Xizi Aviation, and Smart Science & Technology Co. (CSG) have been included in the reserve of large aircraft suppliers; 25 enterprises in the field of industrial materials have completed the supply docking of 70 products, realizing breakthroughs "from 0 to 1" and "from 1 to N" in the nine cities. The G60 Corridor has established more than 400 enterprise libraries for Tencent, and launched "Tencent G60 Tour" activity, with element linking activities in Songjiang (the first station), Suzhou, and Hefei unfolded successively, and more and more enterprises in the nine cities became "Tencent partners".

- **Building a "1+7+N" industrial alliance system**

The G60 S&T Innovation Valley of Yangtze River Delta tries every effort to build a "1+7+N" industrial alliance system ("1" refers to the establishment of an industrial park alliance based in Suzhou Industrial Park; "7" refers to nine cities giving play to their respective industrial advantages to establish industrial alliances surrounding seven strategic emerging industries, namely integrated circuit, AI, biomedicine, high-end equipment, new energy, new materials, and new energy vehicles; "N" refers to several branch alliances). Songjiang and 8 other cities jointly formulated the "14th Five Year Plan for Coordinated Development of Advanced Manufacturing in G60 S&T Innovation Valley of Yangtze River Delta", to strengthen the coordinated and staggered development of advantageous industries in various regions, break administrative division constraints, focus on strategic emerging industries and "specialized, fine, distinctive and novel" SMEs, and establish 16 industrial (park) alliances and 11 industrial cooperation demonstration parks. Among the 16 G60 industrial alliances, those led by Songjiang include AI industry alliance, smart security industry alliance, and specialized, fine, distinctive and novel small

and SMEs collaboration alliances.

Figure 24 G60 S&T Innovation Valley

- **Establishing a science and technology transformation fund for G60 S&T Innovation Valley of Yangtze River Delta**

Under the guidance of the Ministry of Science and Technology, Songjiang, together with the people's governments of other eight cities, jointly established the first cross-regional scientific and technological transformation fund in Yangtze River Delta, that is the Science and Technology Transformation Fund for G60 S&T Innovation Valley of Yangtze River Delta, in a market-oriented and legal manner. The fund was established with the participation of China's industrial guidance fund, jointly funded by the governments of the nine cities, and jointly invested by social capital. Its first installment of subscribed funds has been paid, 500 project libraries have been founded, and project research and planned investment project roadshows are progressed continuously. So far, more than 200 companies have been surveyed and communicated, nearly 90 companies have been surveyed on site, and 28 companies have participated in online roadshows.

- **Building a comprehensive financial service ecology**

The G60 S&T Innovation Valley of Yangtze River Delta will further implement the central bank's "15+1" financial support policies, launch exclusive technology and financial products such as "G60 Sci-Tech Innovation Loans" and batch packages, and pilot cross-regional joint credit. The physical operation of Shanghai Stock Exchange Capital Market has provided services for G60 S&T Innovation Valley Base, regular and accurate diagnosis training has been provided to over 300 enterprises planning to join the STAR Market

reserve in the nine cities. Since its operation in December 2019, the base has held 260 online and offline activities, covering 1.215 million people from enterprises and parks in the nine cities. The STAR Market has accepted 153 enterprises from the nine cities and issued 100 public offerings. The base and the Shanghai Stock Exchange jointly have issued SSE G60 Sci-tech Innovation Comprehensive Index and SSE G60 Strategic Emerging Industry Component Index, and launched ETF products and enhanced funds, to provide precise and effective financial support for science and technology innovation enterprises in G60 S&T Innovation Valley of Yangtze River Delta, creating a "wind vane" for the capital market for supporting the high-quality development of advanced manufacturing. G60 S&T Innovation Valley of Yangtze River Delta has established G60 Financial Services Alliance, with the number of member units expanding to 432. It has achieved a total of 6 urban online platforms, with a total credit and financing amount of 1.97 trillion yuan.

(3) Create an attractive development environment

- **Continuously optimizing the business environment**

Songjiang District has reached a consensus to improve the overall promotion mechanism and to continuously promote the optimization of business environment. Songjiang District has dared to demonstrate and take the lead, taken bigger, bolder steps as a trailblazer, and actively promoted the overall improvement of the business environment of G60 S&T Innovation Valley of Yangtze River Delta. Songjiang District is the first in the city to incorporate the first registration of real estate and deed tax into the Project Approval and Review Center for handling in one single counter, and has introduced preferential measures and specific implementation rules for low-risk projects, and created a new model of "government + park + guarantee + bank" policy financing guarantee for urban cooperation. Songjiang District is also the first in Shanghai to approve the city's first "inter-provincial government services" full electronic and registered business licenses, to formulate local standards for the management of the "one-website government services" window of G60 S&T Innovation Valley of Yangtze River Delta, to connect the red map of nine cities in G60 S&T Innovation Valley of Yangtze River Delta to the "Sui Shen Ban" ("Handy Handling") Songjiang flagship store, and to launch the application of personal electronic certificates and licenses in 15 cultural and tourism venues and 5 law enforcement scenarios in the three provinces and one municipality (Jiangsu, Anhui, Zhejiang and Shanghai) of the Yangtze River Delta.

- **Implementing targeted investment promotion surrounding new arenas**

Songjiang District closely integrates investment promotion with urban development strategy, focuses on G60 S&T Innovation Valley of Yangtze River Delta, to create an advanced manufacturing highland; it focuses on the construction of Songjiang New City and creating a cluster area for productive service industries, and also focuses on the leading industries of Songjiang New City and targets at leading enterprises in the manufacturing and service industries. Songjiang District focuses on such new arenas as digital economy, green and low-carbon industries, and metaverse, to attract headquarters institutions, leading enterprises, and high-end industrial projects. The first measure is to

focus on the "6+X" industry and organize and plan a series of investment promotion activities themed "Intelligent Future Manufacturing ·Focusing on 6+X Industrial Chain Investment Attraction". The second is to focus on the "new arena" and implement a series of investment promotion activities to connect the elements of "New City Empowerment ·100 Industry Associations Entering Songjiang New City". The third is to focus on "open economy" and launch a series of investment promotion activities of "sharing and joint construction, foreign enterprises looking at Songjiang". The fourth is to focus on "new business forms and models" and carry out a series of investment promotion activities "Cloud Convergence ·Sci-tech Innovation New City".

- **Stimulating the vitality of independent innovation**

Songjiang District vigorously cultivates technology giant enterprises, dynamically manages the high-tech enterprise cultivator, and forms a cultivation and development mechanism by an efficient manner of "discovering, serving, launching, and recognizing". Songjiang District supports the cooperation between higher education institutions, research institutes, and enterprises in the district to carry out scientific and technological research projects; launches recognition and support work for district level innovation clusters; and pushes the enhancement of enterprise innovation capability and competitive strength, and supports enterprises in applying for key laboratories and engineering technology research centers. In 2021, there were a total of 156 municipal level technology giant enterprises (including cultivation) in Songjiang, among which four small giant enterprises including Haohai Biological Technology were successfully listed by the STAR Market. The R&D investment intensity of the entire society in Songjiang District increased to 4.59% in 2021, with enterprise R&D funding accounting for 88.6% of the total investment. Innovation entities, mainly private enterprises, have maintained strong momentum in R&D activities.

- **Accelerating construction approval centering on projects**

Songjiang District takes project settlement as the target, tries to realize full lifecycle management of the project. The district centralized 89 administrative approvals, municipal public services, and intermediary service matters that were originally scattered into an approval and review center, and scientifically and reasonably set up the front and back offices. Songjiang District uses institutional innovation as a means to promote market entities to handle affairs with only one department, reducing and compressing the approval process to the greatest extent. Songjiang District tries to increase speed and efficiency, to further accelerate the approvals of major projects, makes the most of policy dividends for major projects and key industrial projects, explores and pilots the process of "filling left-behind items of minor materials after the examination and approval", and the items of minor evaluations are "left behind". A large number of projects such as G60 Sci-tech Innovation Eye, Tencent Supercomputing Center, and Shanghai Super Silicon Semiconductor AST project have benefited from these measures.

Case 24 Tencent Yangtze River Delta AI Advanced Computing Center

The Tencent Yangtze River Delta AI Advanced Computing Center has acquired its project land on May 27, 2020 and obtained a construction permit on May 29, creating a Songjiang speed of

acquiring project land within 58 days and starting construction within 72 hours. After acquiring the land for the original industrial project, it usually takes about 45 days to start construction. The Tencent project has been awarded a separate contract for pile foundation engineering and allowed for a lack of pile foundation planning permit. The pile foundation construction permit was issued and the project was started within 72 hours after obtaining the land, making it the first major project in Shanghai to enjoy the policy of giving priority to pile foundation construction during Covid-19 period. The experience of this Tencent project provided practical experience and a Songjiang sample for the policy document (Document No. 16) issued by Shanghai Municipal People's Government in July 2020 to accelerate the construction of major projects.

Figure 25 Tencent Yangtze River Delta AI Advanced Computing Center[1]

(4) Vigorously launch overseas publicity and marketing

- **Actively promoting and marketing Songjiang globally**

"Innovation, Humanity, and Green Path" are the key words for social and economic development of Songjiang. In recent years, Songjiang has focused on this theme and actively held international themed activities to publicize Songjiang's achievements in building G60 S&T Innovation Valley of Yangtze River Delta, pushing the integrated development of culture and tourism in the entire district, and creating quality life. For example, on December 9, 2019, on the occasion of the 40th anniversary of sister city relationship between Shanghai and Milan, Songjiang District News Office, together with Shanghai Daily, held a "Meeting Shanghai" Gu Embroidery Exhibition at Milan Contemporary Art Center in Italy, to exchange and showcase the intangible heritage culture of Songjiang; on December 9, 2020, Shanghai Foreign Affairs Office and Songjiang District jointly held the themed promotion event "Internationalized Shanghai: Entering the "Root of Shanghai"—Beautiful Songjiang with Innovation, Humanity, and Green Path", which was participated in by more than 200 people from the Consulates General in

[1] Picture source: https://www.thepaper.cn/newsDetail_forward_19824595

Shanghai, Chinese and foreign media, and foreign institutions in Shanghai.

Case 25 Themed promotion activity "Entering the Root of Shanghai"[2]

After years of development, Songjiang has become one of the most export-oriented places in Shanghai. There are over 2,300 foreign-funded enterprises from nearly 120 countries and regions in Songjiang District, among which nearly 50 Fortune 500 companies have investment projects in Songjiang. Songjiang's total import and export volume and the industrial output above designated size rank second in Shanghai, with a strong momentum in economic development. The G60 S&T Innovation Valley located in the Lingang Songjiang Technology Town also provides a broad stage for Songjiang to expand its opening up and deepen cooperation.

In December 2020, more than 200 people from Consulates General in Shanghai, Chinese and foreign media, and foreign institutions in Shanghai entered Songjiang to participate in the themed promotion event "Internationalized Shanghai: Entering the "Root of Shanghai"—a Beautiful Songjiang with Innovation, Humanity, and Green Path". Focusing on the seven themes of "Innovation, Humanity, and Green Path", this themed promotion event not only comprehensively displayed the efforts and significant achievements made by Songjiang in building the G60 S&T Innovation Valley of Yangtze River Delta, promoting high-quality development, and creating a quality life, but also provided a broad platform for guests at home and abroad to communicate with each other.

- **Assisting cooperation between enterprises in Shanghai and Hong Kong**

Hong Kong, China is an important source of investment for Songjiang. During the period from 1992 and 2020, Hong Kong, China ranked first in the total investment in Songjiang's outbound investment, reaching 29%. Based on this fact, Songjiang has attached particular importance to strengthening cooperation and exchanges with Hong Kong, China. On the afternoon of August 18, 2020, Shanghai Hong Kong and Macao Affairs Office, in collaboration with Songjiang District People's Government, Hong Kong Trade and Development Council, and Hong Kong Chamber of Commerce in Shanghai, held the "Cooperation between Shanghai and Hong Kong for Win-wing Development—Hong Kong Entrepreneurs Entering Songjiang" event, and representatives of nearly 30 Hong Kong enterprises participated in the research and communication. Songjiang is the historical and cultural root of Shanghai, and G60 S&T Innovation Valley of Yangtze River Delta is in line with the industrial characteristics of Hong Kong. Hong Kong's strong modern service industry is also the next key development direction of Songjiang's industry. Songjiang hopes to establish a normal working mechanism with Hong Kong Trade and Development Council and Hong Kong Chamber of Commerce in Shanghai to further clarify the direction and areas of cooperation between Songjiang and Hong Kong. The Joint Conference Office of G60 S&T Innovation Valley of Yangtze River Delta and Hong Kong Chamber of Commerce in China signed a memorandum of cooperation in this event. The two sides will proactively explore in-depth communication and cooperation as strategic partners in areas such as technological innovation and industrial development. [3]

[2] Source: https://sghexport.shobserver.com/html/baijiahao/2020/12/09/311775.html
[3] Source: http://wsb.sh.gov.cn/n923/20200827/3d92cc8c27de42de80fb19ab1929ef86.html

- **Participating in Shanghai International City and Architecture Expos**

Songjiang District has actively participated in international exchange platforms, including the "World City Day" themed activities, to showcase and exchange Songjiang's practical experience under the new development concept to the world. At the 2020 Shanghai International City and Architectural Expo, Songjiang displayed a relatively centralized residential project for farmers in Huangqiao Village, Maogang Town, which demonstrated the project's appearance through a planned model, establishing a good image of Songjiang's beautiful countryside. At the 2021 Shanghai International City and Architecture Expo, Songjiang showcased the comprehensive pipe gallery project of Songjiang Southern New Town; a professional exhibiting entity was commissioned to design and demonstrate the Overall Plan of Songjiang New City, the layout of one corridor, one axis, two cores, and three areas, to generally introduce the comprehensive pipe gallery project of Songjiang Southern New Town, and fully showcase the status quo and future of the construction of Songjiang New Town.

5. Prospects

Songjiang has integrated the concept of sustainable development into the urban strategic planning. The Comprehensive Plan and General Land-Use Plan of Songjiang District (2017-2035) released in 2019 has fully responded to the sustainable development concept from three aspects: Innovation, Humanity, and Green Path. Based on the framework of the 2030 Agenda for Sustainable Development, this report builds a logical framework for the urban strategic goals and vision system and SDGs system of Songjiang, and outlines the key measures taken by Songjiang to promote the achievements of 17 SDGs. According to the results of this review, Songjiang has further implemented the concept of sustainable development in such areas as SDG7 Affordable and Clean energy, SDG10 Reduced Inequalities, SDG12 Responsible Consumption and Production, and SDG17's Partnerships for the Goals, making significant progress and accumulating rich practical experiences.

Looking to the future, Songjiang will continue to motivate high-quality development under the concept of sustainable development, take stronger measures to build a city of sci-tech innovation led by high-end industries, a city of humanity that blends rich history and new era civilization, and a city of green path where human and nature coexist harmoniously, to better satisfy the aspirations of the people of Songjiang for a better life. After the release of this report, Songjiang will further push the integration of sustainable development strategies into the implementation and implementation of local development strategies.

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	Agriculture and Rural Affairs Committee of Songjiang District, Shanghai
	Shanghai Songjiang District Economic Committee
	Shanghai Songjiang District Health Commission
	Science and Technology Committee of Songjiang District, Shanghai
	Shanghai Songjiang District Transportation Committee
	Science and Technology Innovation Development Office of Songjiang District, Shanghai
	Shanghai Songjiang District Planning and Natural Resources Bureau
	Shanghai Songjiang District Housing Management Bureau
	Shanghai Songjiang District Education Bureau
	Greening and City Appearance Management Bureau of Songjiang District, Shanghai
	Shanghai Songjiang District Civil Affairs Bureau
	Shanghai Songjiang District Ecological Environment Bureau
	Shanghai Songjiang District Water Affairs Bureau
	Shanghai Songjiang District Bureau of Statistics
	Shanghai Songjiang District Culture and Tourism Bureau
	Shanghai Songjiang District Medical Security Bureau
	Shanghai Songjiang District Emergency Management Bureau
	Shanghai Songjiang District Meteorological Bureau
	Shanghai Songjiang District Women's Federation
	Shanghai Songjiang District Disabled Persons' Federation
	Shanghai Songjiang District Command Office for Major Project Construction
	Shanghai Lingang Songjiang Science and Technology City
	Songjiang Economic and Technological Development Zone
	Yongfeng Sub-district Office of Songjiang District, Shanghai
	Fangsong Sub-district Office of Songjiang District, Shanghai
	Yueyang Sub-district Office of Songjiang District, Shanghai
	Zhongshan Sub-district Office of Songjiang District, Shanghai
	People's Government of Shihudang Town, Songjiang District, Shanghai
	People's Government of Jiuting Town, Songjiang District, Shanghai
	Shanghai Sheshan National Tourism Resort
	Shanghai Songjiang New City Construction and Development Co., Ltd
	(in no particular order)
Prepared by	Preparation Team of Songjiang VLR · 2022 of the Shanghai Academy of Social Sciences
	Shanghai Coordination Center for the World Cities City

Annex 2

Fengxian Voluntary Local Review 2022

Green · Shared · Cooperation

UN SDGs Fengxian District of Shanghai Voluntary Local Review 2022

CONTENTS

Fengxian - A humanistic highland of millennium inheritance

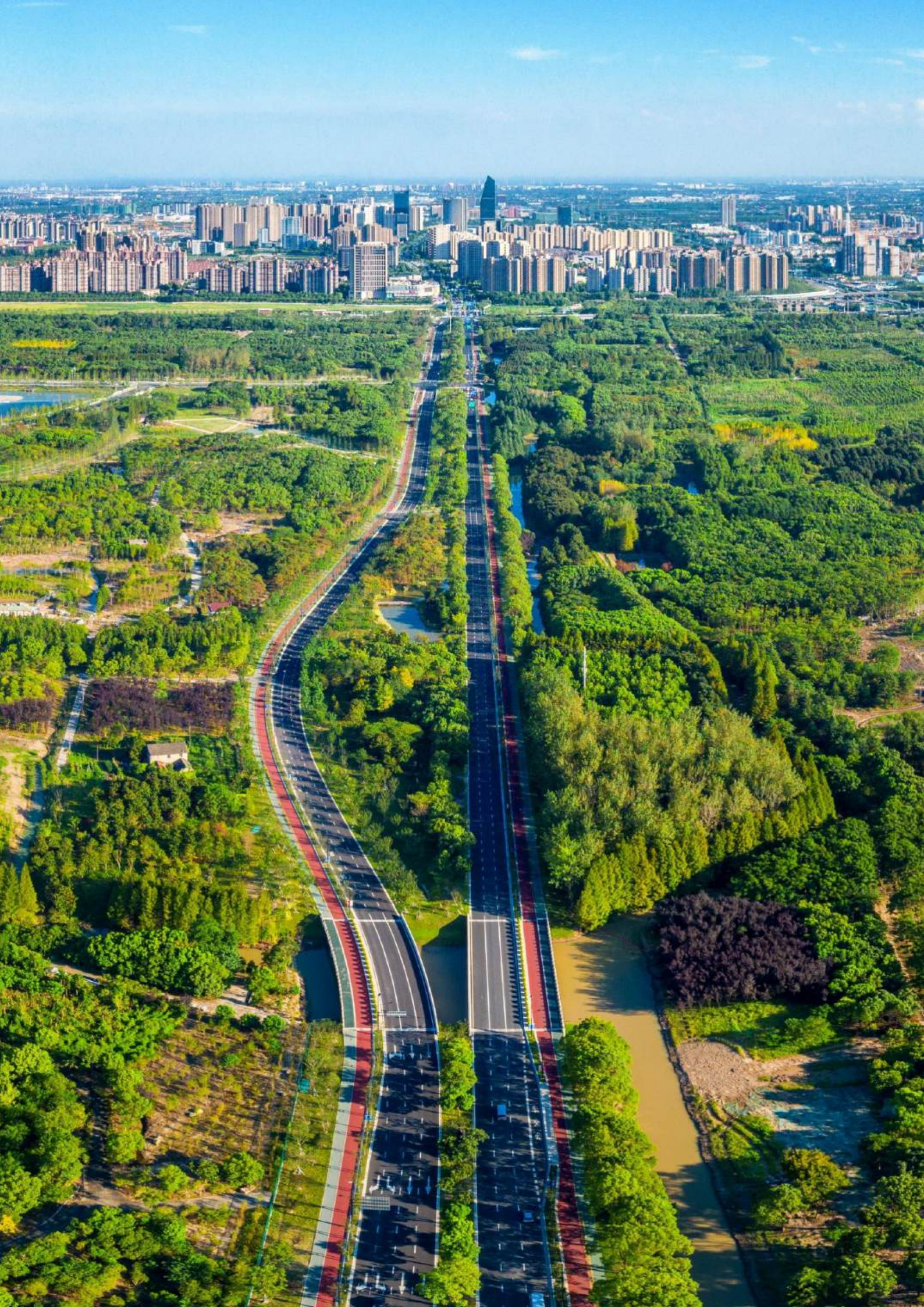
Over 2,500 years ago, Yan Yan, Confucius' only disciple from southern China traveled to Fengxian to spread Confucian culture. In this ocean corner, the Confucius' culture is spread everywhere. In memory of this philosopher, the ancestors named this place "Fengxian", embodying the city spirit of "worshiping the wise and emulating the virtuous". For more than two thousand years, the people of Fengxian have always valued cultural inheritance and development, respected the wise, and built "a city worshiping the saint" and a cultural highland in the south areas of the Yangtze River.

Fengxian - A new coastal town with unlimited charm

Fengxian is located in the south of Huangpu River, the north bank of Hangzhou Bay, and south of Shanghai. Covering a land area of 733 square kilometers and sea area of more than 400 square kilometers, this district is home to 1.14 million population (2020). The 31.6 km coastline of Hangzhou Bay endows Fengxian with unique and abundant coastal resources. Being one of the five important new cities determined by the new round of spatial development strategy in Shanghai, Fengxian is now committed to strengthening its urban functions, developing emerging industries, improving human settlement environment, and building itself into a new coastal town of unique charm.

Fengxian - A glamorous city of the future

Centered on "human-oriented urbanization", Fengxian District sees the "the aspirations of the people to live a better life" as its striving goal and value pursuit. Fengxian aims to build itself into "a city of future" by embracing new development ideas. Based on this positioning, the district is gradually becoming the pilot area for incorporating future city functions, a hot spot for settling future buildings, an incubator for future industry cultivation and a pioneer experimental area for building future lifestyle.



1. Introduction

Fengxian is a municipal district in the south of Shanghai, and is located at the south of Huangpu River and the north bank of Hangzhou Bay. People of this land have valued cultural inheritance and development over the years. More than 2,500 years ago, Yan Yan, Confucius' disciple, came to this place to spread Confucian culture, making it a cultural highland in the south areas of the Yangtze River that truly lives up to its name, which means "a city worshiping the saint". The city's spirit of 'worshiping the wise and emulating the virtuous' is not only embodied but also reflected in its name. Covering a land area of 733 square kilometers and sea area of more than 400 square kilometers, Fengxian District is home to 1.14 million population. It is also among the five important new cities identified by Shanghai's new round of spatial development strategy, and a new coastal town of unique charm.

Pursuing sustainable development has long been the core idea for Fengxian District in the course of its development. The *Implementation Plan of General Plan of Fengxian District (2003-2020)* highlights the function positioning of "a coastal ecological residential area characterized by forest water system, coastal landscape, history and humanity". The *Regional Planning of Fengxian District (2010 Summarized Version)* further proposes the functional orientation of "a modern coastal area with unique humanistic charm and scientific and technological innovation that radiates and serves the Yangtze River Delta". According to the latest version of the spatial development strategic plan, that is, the *Comprehensive Plan and General Land-Use Plan of Fengxian District (2017-2035)* approved by the Shanghai Municipal People's Government in 2019, Fengxian District is committed to implementing the requirements of regional cooperation on the north bank of Hangzhou Bay, and strengthening the city-wide coastal development corridor and focusing on the construction of Fengxian New City under the overall goal of building Shanghai into a socialist modern international metropolis with global influence. In addition, Fengxian strives to build itself into a coastal urban area in the south of Shanghai, a comprehensive service urban area in the north bank of Hangzhou Bay, a central city in the south of Shanghai, an oriental beauty valley suitable for living and working, and a coastal virtuous city.

From the positioning changes of several important strategic planning in Fengxian District since the 21st century, it can be seen that the district has paid more attention on the development of ecology, humanity and vitality in the process of practicing sustainable development. In terms of ecology, Fengxian focuses on the protection of its own coastal, riverside, forest, pastoral and other natural ecological bases, and highlights its own relatively unique natural and regional resource characteristics as a Hangzhou Bay coastal area within the scope of Shanghai. In terms of humanities, Fengxian adheres to the spirit of "worshiping the saint" for more than two thousand years, values the protection and

inheritance of historical humanistic characteristics, and builds a modern livable new city with unique local cultural charm centered on "human-based urbanization". As to vitality, Fengxian attaches great importance to the cultivation and development of characteristic industries with scientific and technological innovation capacity, and the collaborative development of industries from a regional perspective to build itself into a dynamic city of the future. Now, Fengxian is gradually becoming the pilot area for importing future city functions, an incubator and land of growth for future industry cultivation, and a pioneer experimental area for building future lifestyle.

Figure 1 Comprehensive Plan and General Land-Use Plan of Fengxian District (2017-2035) approved in 2019

Figure 2 17 SDGs of the 2030 Agenda

Based on the United Nations' *Transforming Our World: the 2030 Agenda for Sustainable Development* (hereinafter referred to as the "2030 Agenda"), Shanghai released the *UN SDGs Shanghai Voluntary Local Review 2021* (hereinafter referred to as the "*Shanghai VLR 2021*") at the 2021 China Observance of World Cities Day & the First SDG Cities Global Conference, and based on this report joined the United Nations' flagship project for urban sustainable development goals, considering its participation in SDG projects as a regular task to push forward its sustainable development. Since 2022, Shanghai has prepared the voluntary local review report based on the 2030 Agenda at the district level for the first time, which was considered as both a separate report outcome and an integral part of the outcome of *Shanghai VLR 2022*. Fengxian District, as one of the first batch of municipal districts to participate in the voluntary local review at the district level in Shanghai, prepared the *UN SDGs Fengxian District of Shanghai Voluntary Local Review 2022* (hereinafter referenced to as "*Fengxian VLR 2022*"), and released the report outcomes at the 2022 World City Day Global Observance and 2nd SDG Cities Global Conference held in Shanghai on October 31, 2022, and exchanged its practices and experience in promoting sustainable development as a modern new city with the world.

2. Review Methods and Processes

The Fengxian VLR 2022 was co-created by district government departments, relevant social organizations and expert advisory committees under the guidance of the Shanghai Municipal Commission of Housing, Urban-Rural Development and Management (SMCHURDM), and the People's Government of Fengxian District, Shanghai. Multiple organizations worked together to prepare this report, with more than 20 government departments invited to participate in specific assessments and to provide case studies that could demonstrate the latest practices and achievements. During the report preparation, many experts in different areas were consulted, forming an expert advisory committee composed of authoritative experts from different fields, such as urban construction, economy, society, and opening-up policies, responsible for the selection and discussion of priority review goals and related indicators. Furthermore, emphasis was put on the analysis of multi-source data, leading to a comprehensive understanding of residents' satisfaction with urban living environment through various dimensions such as urban health check-up. The Preparation Team of the *Fengxian VLR 2022* under the Shanghai Academy of Social Sciences is responsible for preparing this report.

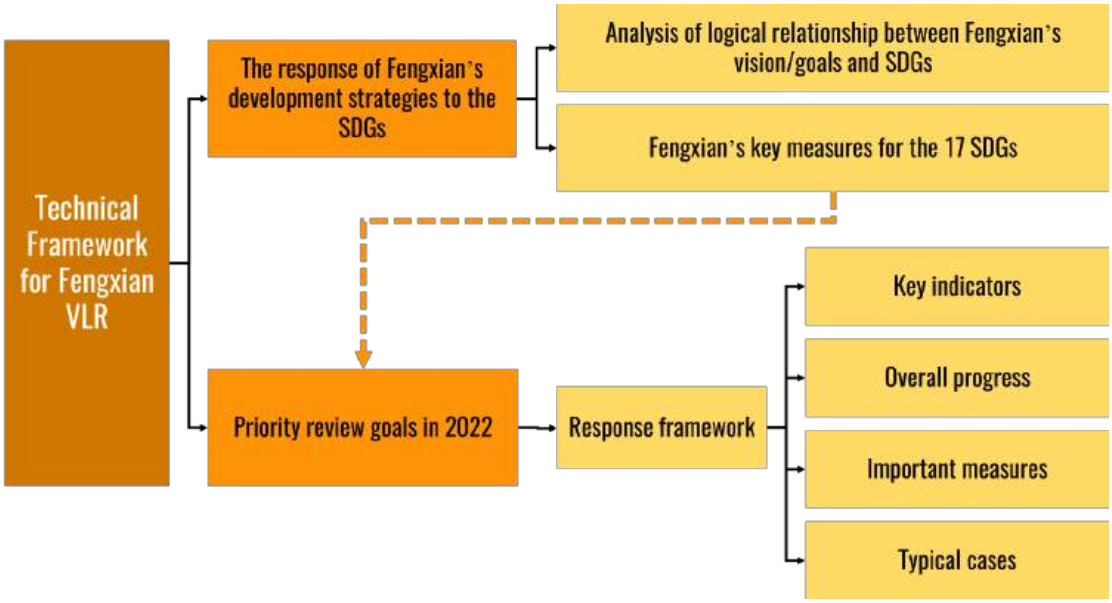


Figure 3 Technology Framework Diagram for Fengxian Voluntary Local Revie

For preparation format, *Fengxian VLR 2022* is an organic part of Shanghai VLR and uses the preparation structure of the latter as the main reference. Meanwhile, during the preparation process, *Fengxian VLR 2022* also fully responds to the requirements in the *Handbook for the Preparation of Voluntary National Reviews* issued by UN DESA's Division for Sustainable Development Goals and the *Guidelines for Voluntary Local Reviews* issued by UN-Habitat, as well as the evaluation results of foreign cities and urban areas in local practice of sustainable development goals based on the information provided on the UN websites related to SDGs.

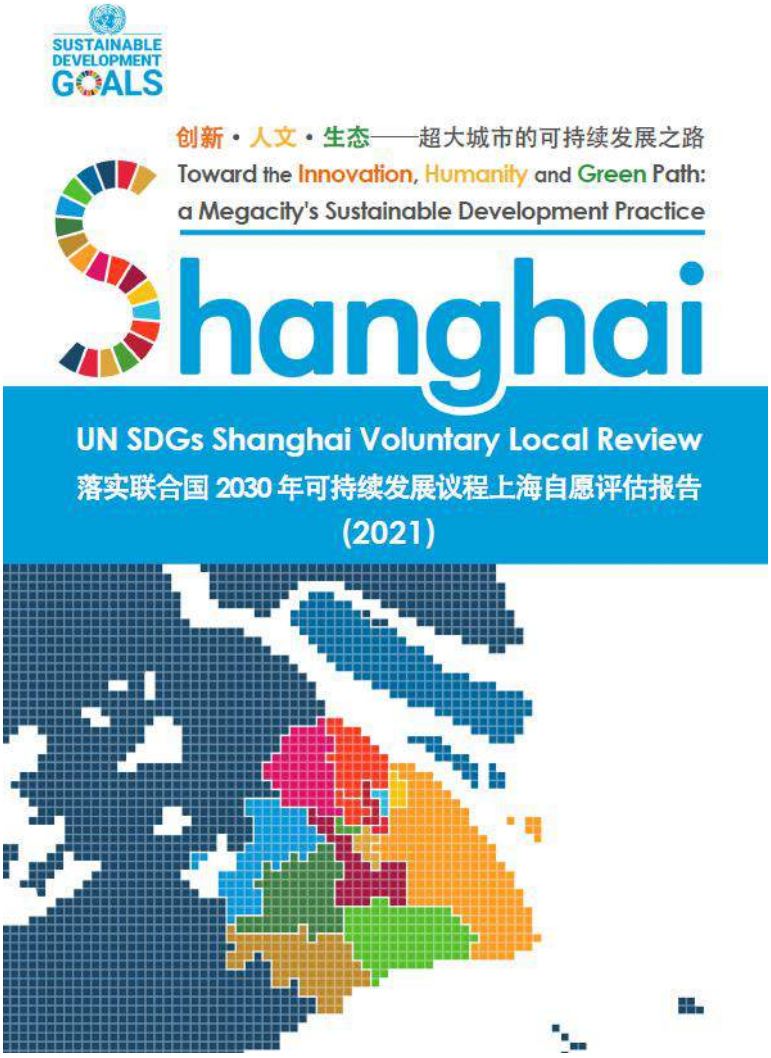


Figure 4 UN SDGs Shanghai Voluntary Local Review 2021

For review direction and indicator selection, *Fengxian VLR 2022* is mainly based on the indicator system in the Shanghai VLR by comprehensive reference to *China's National Plan on Implementation of the 2030 Agenda for Sustainable Development* and *2018 SDGs Target Building and Process Evaluation Report*. In addition, combined with suggestions from the Fengxian District government departments and relevant experts, the local voluntary review evaluation framework for Fengxian District was established.

For what should be reviewed, the *Fengxian VLR 2022* was prepared with reference to

a series of existing research results, such as evaluations of the five-year plan for national economic and social development in Fengxian District, Shanghai and the urban health check-up report of Fengxian District, Shanghai.

During the first voluntary local review in 2022, Fengxian District reviewed the logical relationship between the vision and goals of the current urban development strategy and 17 SDGs. After that, based on the overall theme "Green · Shared · Cooperation" and four specific review directions "Clean Energy", "Fair Sharing", "Green Resilience", and "Cooperative Development" of the *Shanghai VLR 2022*, four priority review goals of the *Fengxian VLR 2022* have been determined: SDG7 Affordable and Clean Energy; SDG10 Reduced Inequalities; SDG12 Responsible Consumption and Production; and SDG17 Partnerships for the Goals. The results of this year's report include Introduction, Review Methods and Processes, Fengxian's Responses to SDGs, 2022 Priority Review Goals, and Prospects.

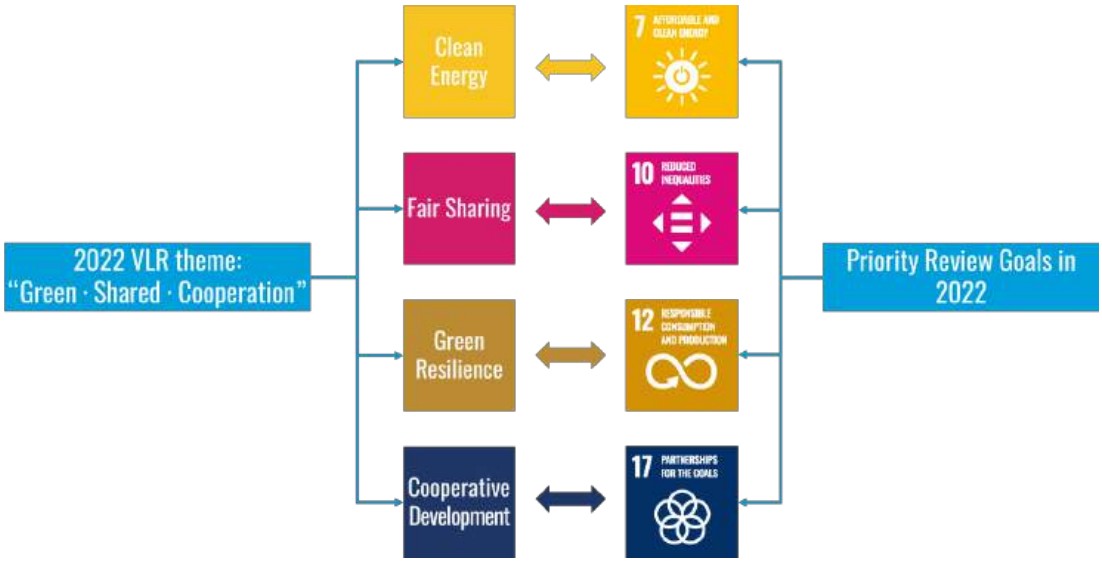


Figure 5 Relationship between 2022 VLR theme and priority review goals

3. Overview of Fengxian's Responses to SDGs

Fengxian's Responses to SDGs

Under the vision and goals of Shanghai's urban development strategy for 2035, Fengxian District formulated the *Comprehensive Plan and General Land-Use Plan of Fengxian District (2017-2035)* (hereinafter referred to as "*Fengxian 2035 Plan*"), and put forward its own 2035 vision and goals of "being a coastal urban area in the south of Shanghai and a comprehensive service urban area in the north bank of Hangzhou Bay", and the vision and goals of Fengxian New City of "being a central city in the south of Shanghai, an oriental beauty valley suitable for living and working and a coastal virtuous city".

Under the overall target vision, Fengxian implements its urban development strategy under two sub-goals: "oriental beauty valley" and "coastal virtuous city".

- **Oriental Beauty Valley**

The practice under the "oriental beauty valley" sub-goal mainly focuses on economy, environment and other fields, and the response relationship with UN's 17 SDGs for 2030.

In the economic field, Fengxian gathers innovative elements and resources surrounding the foundation and characteristics of health and beauty industry to stimulate the economic growth potential, and builds an important supporting region of Shanghai's advanced manufacturing industry with distinctive characteristics and competitiveness and an active zone of innovation for small and medium-sized enterprises. Meanwhile, Fengxian attracts innovative talents by building itself into a city sub-center that serves southern area of Shanghai and radiates the north bank of Hangzhou Bay, and builds a city suitable for working, growth, and starting business by talents.

As to environmental and governance field, Fengxian gives full play to its natural ecological advantages along the coastal area of Hangzhou Bay and Huangpu River, shapes the ecological spatial structure of connecting the river to the sea, explores the characteristics of water system, and builds a regional spatial pattern in line with its local context. Relying on the unique resources of "Cross Water Street and Square Lattice Green Gallery", Fengxian New City builds an ecological city with unique charm by creating an ecological network having landscape intersected across the city and establishing a harmonious relationship with urban spatial layout. Fengxian also initiates the building of a national ecological garden city and national forest city by creating an overall atmosphere

of "living in the garden" with delightful water and sky scenery, having the city intersected in the ecological space to enhance the sense of ecological value acquisition among all citizens.

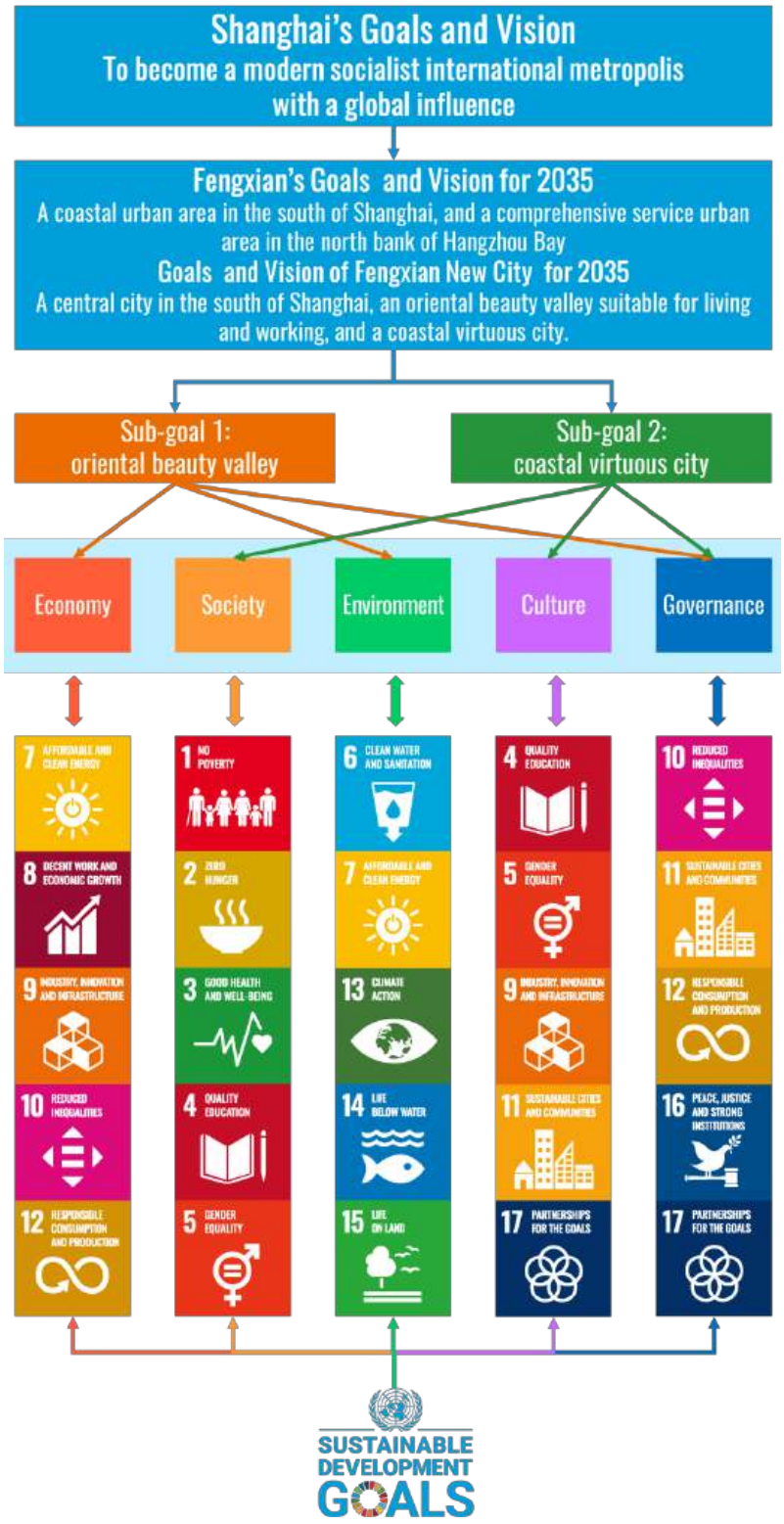


Figure 6 Logical correspondence between Fengxian's Goals and SDGs

- **Coastal Virtuous City**

The practice under the "coastal virtuous city" sub-goal mainly focuses on social, cultural, and governance, and other fields, and the response relationship with UN's 17 SDGs for 2030 is as shown in Figure 6.

In social field, Fengxian adheres to the "human-oriented" development concept, builds urban and rural space shared by all, and promotes the balanced development between different areas as well as urban and rural development to reduce the spatial inequality of resource distribution. The social and livelihood service level is vigorously improved in the whole region, and a 15-minute living circle covering basic public services is created across the region to build a "city for all to feel happiness".

In cultural field, by fully manifesting the local spirit of "worshiping the wise and emulating the virtual", Fengxian protects the traditional cultural habit, continues the local characteristic context, and creates a cultural atmosphere of respecting and valuing talents. Meanwhile, Fengxian attaches importance to the creative development in the cultural field, cultivates and shapes high-quality cultural leisure and tourism service functions, and builds a cultural landmark group in the south of Shanghai.

In terms of governance, it focuses on coping with the diversified risks of megacity, and strengthens the urban governance level from such directions as spatial planning, resilience construction and transportation. As to spatial planning, the district adheres to the bottom line of ecological base space, strictly controls the urban development boundary, and shapes an intensive and compact global spatial pattern. In terms of resilience construction, Fengxian strives for guaranteeing the safety of urban lifeline system, improving the intelligent operation level, enhancing its ability to resist risks and building a resilient city. When it comes to transportation, Fengxian pays attention to the guidance of green transportation system to urban space, encourages the development of new energy transportation, and builds a transit-oriented city and optimizes the quality of slow traffic.

On this basis, this report establishes the logical response relationship between Fengxian urban development sub-goals and 17 SDGs. It is worth noting that this logical relationship only reflects the most important response relationship considering the rich connotation of SDGs.

Fengxian's Key Measures to Drive SDGs

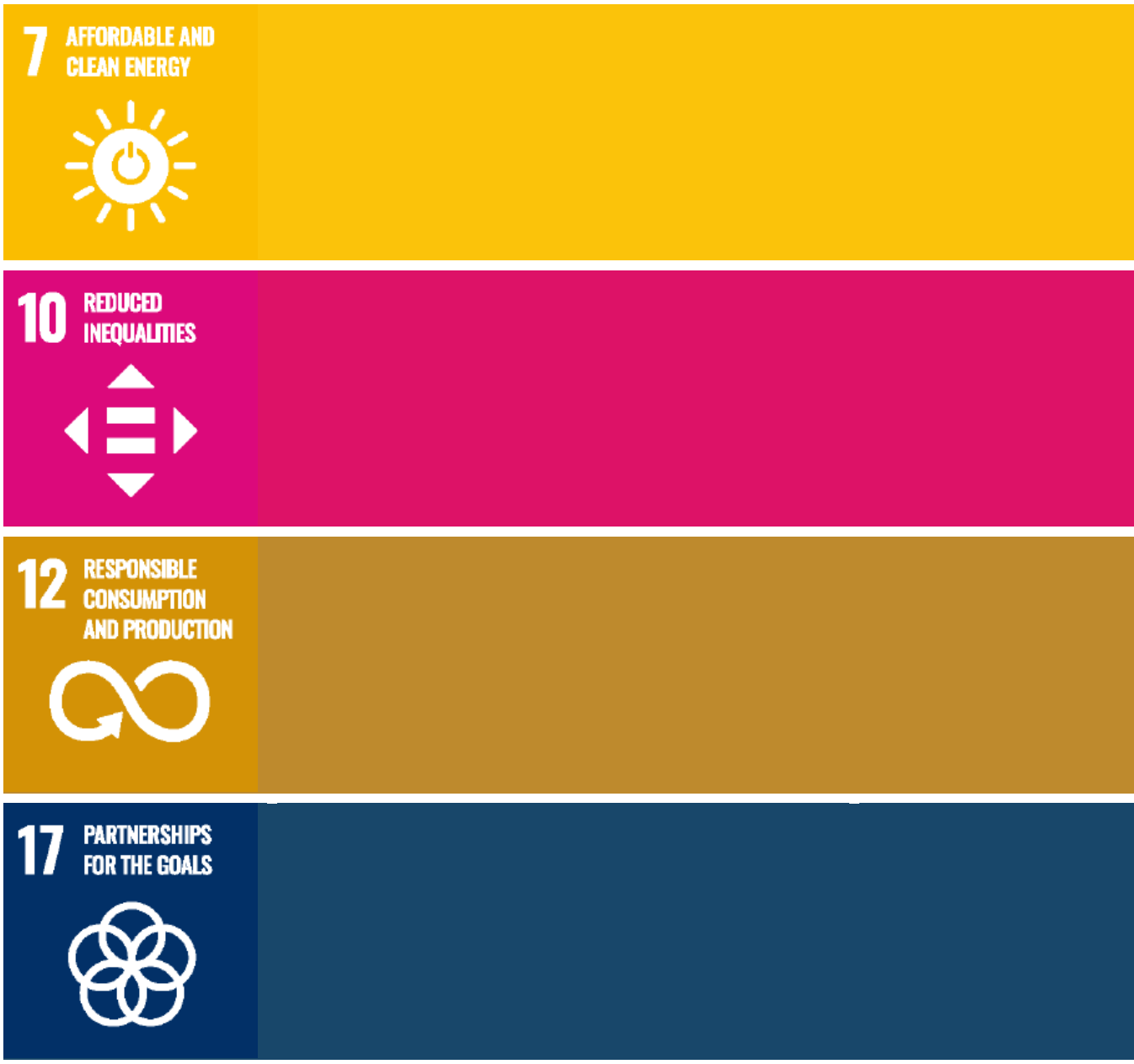
In comparison with the 17 SDGs, Fengxian has made significant progress in sustainable development in recent years and has taken key measures. The Shanghai VLR Report 2022 gives priority to the review of the 4 selected SDGs (SDG 7 Affordable and Clean Energy; SDG 10 Reduced Inequalities; SDG 12 Responsible Consumption and Production; and SDG 17 Partnerships for the Goals).

Table 1 Fengxian's Key Measures to Drive SDGs

SDGs	Fengxian's measures
	● Conduct comprehensive assessment of relief needs of people living in poverty ● Carry out information construction of employment service ● Build vocational guidance teams at district, town and village levels ● Broaden the channels for increasing incomes of farmers and enhance the villages' capability to achieve self-driven development ● Raise public rental housing sources in various ways
	● Promote green food certification of agricultural products ● Construct green standardized production bases of vegetables ● Build beautiful pastorals, and control pastoral environment ● Refine the implementation of the concept of saving food ● Integrate the digital resources and build smart agriculture demonstration sites
	● Promote equitable delivery of basic public health services ● Introduce and cultivate high-quality medical service resources ● Upgrade the health management services for all ● Promote the construction of professional health and medical care team ● Develop the Shanghai health industrial zone in Oriental Beauty Valley
	● Create a zone with high-quality and balanced development of compulsory education ● Expand the supply of inclusive childcare services for infants under 3 years old ● Improve the internationalization level of education ● Create an off-campus education brand of "Virtuous culture and new growth" ● Improve the special talent incentive for full-time teachers in schools at sub-district
	● Promote women's participation in political, social and economic construction at an all-round way ● Promote the construction of high-quality social rights and interests system for children ● Build public facilities such as women and children activity centers ● Promote full coverage of maternal and child rooms in public places
	● Carry out digital monitoring and public release of water quality for public water supply ● Upgrade and renovate old water supply networks ● Continuously deepen the river/lake chief system and improve long-term management of watercourses
	● Develop green and clean energy system ● Promote intensive and efficient use of energy ● Enhance the scientific innovation ability in the new energy field ● Promote the practice of green and low-carbon development.
	● Build an entrepreneurial chain of "entrepreneurial nursery + incubator + accelerator" ● Create a highland of innovative talents in the south of Shanghai ● Promote the employment of university graduates and other groups ● Optimize the service capacity for public employment and entrepreneurship in grassroots ● Issue "Employment Voucher to Realize Well-off Dream" to ensure the employment of vulnerable groups

	● Promote urban digital transformation in an all-round way ● Create an intelligent manufacturing service platform ● Promote the development of strategic emerging industries such as intelligent networked vehicles ● Promote the on-demand sharing and opening of public data to the society ● Establish an intelligent disaster prevention and emergency command platform
	● Provide high-quality public services shared by all ● Promote the improvement of livable quality in old urban areas ● Let rural areas fully enjoy the fruits of development ● Create a child-friendly city ● Build an age-friendly city
	● Build the Fengxian New City into a practice zone for future cities ● Create the fishing city of Shanghai, central woodland, and the central woodland ● Create an urban public cultural landmark group with high quality ● Promote the global coverage of basic public services ● Improve the governance efficiency of grass-roots communities
	● Promote the construction of a "zero-waste city" ● Promote the development of cyclic economy model. ● Promote the economic transformation and upgrading development ● Build a modern new city with resilience
	● Strengthen the assessment of urban climate change impact ● Strengthen the ability to prevent meteorological disaster ● Boost "carbon peak" and build green and low-carbon new city ● Reduce energy consumption of industry and building
	● Promote marine ecological protection and restoration ● Create a beach wetland on the north bank of Hangzhou Bay ● Continuously improve the smart water platform function ● Improve the connectivity of river and lake water network system
	● Optimize the spatial system of the global ecological corridor ● Build the forests along Hangzhou Bay and Huangpu River ● Promote biodiversity conservation ● Build the urban pilot area of the park ● Risk control and restoration of soil pollution in construction land
	● Improve urban governance capacity in people's democracy throughout the process ● Release the environmental evaluation indicator of law-based business environment ● Promote the integrated online government service platform (integrated online platform) ● Improve the legal aid system and the judicial assistance system
	● Actively promote international friendly exchanges and cooperation ● Actively carry out mutual assistance and coordinated development with other areas in China ● Create an attractive development environment. ● Deeply participate in "World Cities Day" activities

4. 2022 Priority Review Goals



SDG7: Affordable and Clean Energy

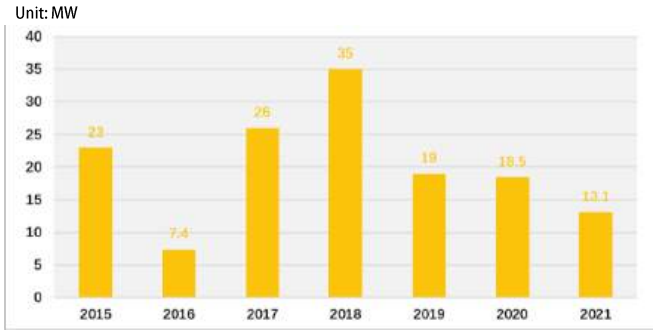
Under the goal of "Clean Energy", Fengxian gives full play to its advantages of natural geographical conditions, actively develops and builds renewable green energy such as photovoltaic power generation and offshore and onshore wind power generation, promotes the coverage of natural gas clean energy, and vigorously introduces new energy industry agglomeration. In addition, it promotes the upgrading of energy technologies in transportation, manufacturing, commerce and other fields, and continuously improves the level of energy diversification, low-carbon and intensive utilization in combination with green and low-carbon development practice.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG7
Develop green and clean energy system	Advance the construction of PV generation projects		► PV installed capacity ► Proportion of new energy buses in all buses ► Length of natural gas pipeline ► Number of households with natural gas ► Number of households involved in natural gas reconstruction	7.1 7.2
	Promote the construction of onshore and offshore wind power projects	Bay wind farm		
	Promote the reconstruction project of natural gas system	Natural gas reconstruction in Liaoyuan Yiju community in Haiwan Town		
	Boost the construction of new energy automobile infrastructure	Advance new energy vehicle upgrading in public traffic system in Fengxian		
Promote intensive and efficient use of energy	Promote the energy efficiency improvement in the industrial field		► Energy consumption per unit of GDP ► Energy consumption per unit of value added of industry	7.3
	Promote the application of energy-saving technology in the commercial field	"Zero carbon model" for enterprise headquarters in Jinhui Town, Fengxian District		
	Carry out energy-saving publicity activities through multiple channels			
Enhance the scientific innovation ability in the new energy field	Introduce the settlement and development of leading enterprises related to new energy		► Industrial output value above designated size in new energy industry	7.a
	Construct gradient cultivation system for innovation subjects in the new energy industry	Technical breakthrough for new energy fuel cell technology based on enterprises		
	Advance new energy industry agglomeration through school-enterprise cooperation in the district			
	Form popular science brand characteristics in the field of new energy			
Promote the practice of green and low-carbon development	Carry out meteorological three-dimensional monitoring and impact assessment	Evaluation and analysis of heat island effect intensity based on satellite remote sensing		7.a
	Promote the development of green and low-energy buildings	Green construction technology of Fengxian District museum project		
	Promote the integrated application and energy-saving transformation of building renewable energy			
	Promote the construction of green and low-carbon pilot zones	Construction of Digital River and Sea Green and Low-carbon Pilot Zone		

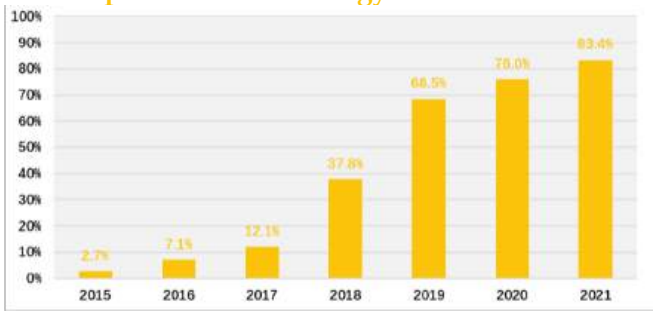
Key Indicators

PV installed capacity



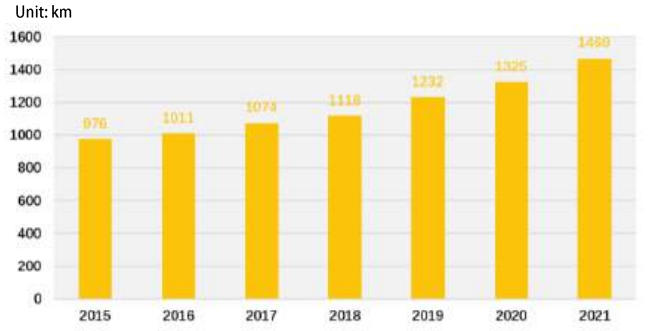
During 2015-2021, the PV installed capacity in Fengxian District increased by an average of **20.3 MV**.

Proportion of new energy buses in all buses



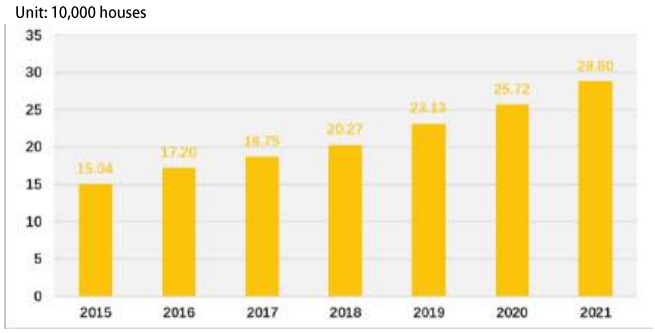
From 2015 to 2021, the proportion of new energy buses in all buses in Fengxian District soared from **2.7%** to **83.4%**.

Length of natural gas pipeline



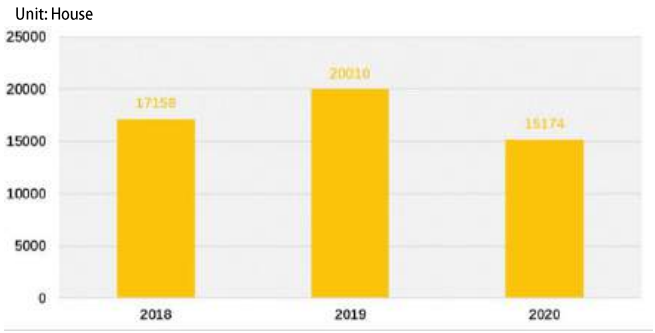
From 2015 to 2021, the length of natural gas pipeline in Fengxian District increased from **976 km** to **1,469 km**.

Number of households with natural gas



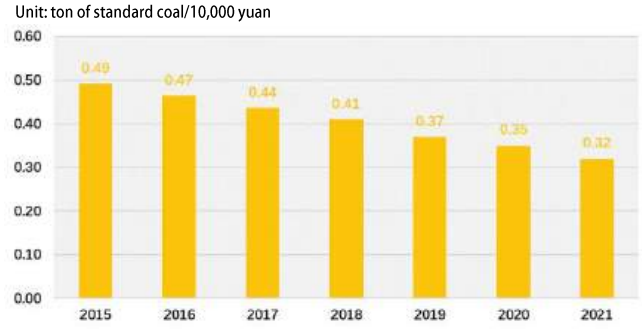
During 2015-2021, the number of houses with natural gas in Fengxian District hit **288,000,** increasing from150,400 by **91.5%**.

Number of households involved in the Three-year Natural Gas Reconstruction Project in Old Residential Areas



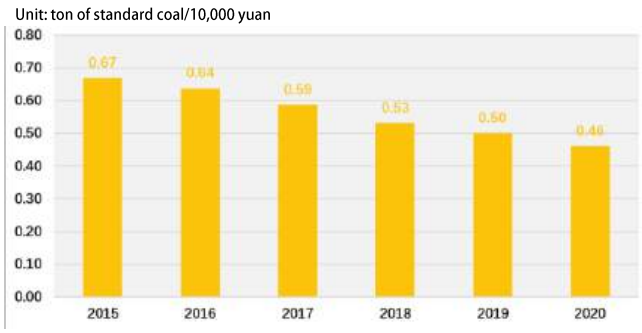
From 2018 to 2020, the Three-year Natural Gas Reconstruction Project in Old Residential Areas in Fengxian District involved **520,000**, with a total building area of about **4.48 million square meters** and a total investment of about **750 million yuan**.

Energy consumption per unit of GDP



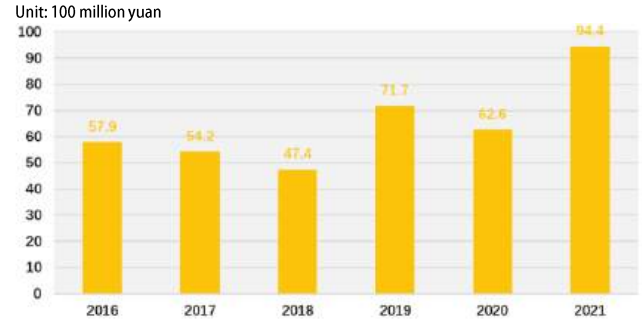
From 2015 to 2021, the energy consumption per unit of GDP in Fengxian District continued to slump from 0.49 ton of standard coal/10,000 yuan to 0.32 ton of standard coal/10,000 yuan by **35%**.

Energy consumption per unit of GDP



From 2015 to 2020, the energy consumption per unit of value added of industry in Fengxian District continued to decrease from 0.67 ton of standard coal/10,000 yuan to 0.46 ton of standard coal/10,000 yuan by **31%**.

Energy consumption per unit of value added of industry



Industrial output value above designated size of new energy industry of Fengxian District in 2016-2021 rose by **63%**.

Major Progresses

- **Green regenerative energy layout has been expanding**

Surrounding the strategic goal of "carbon peaking and carbon neutrality goals", Fengxian District continuously optimizes the energy structure, and vigorously advances the development and utilization of green energy while accelerating the clean and efficient utilization of traditional fossil energy. By the end of June 2022, there were 17 enterprises with industrial output value above designated size in new energy industry. Driven by the government and market, the district optimizes the development layout of renewable energy, and strives to develop a batch of "PV+" projects. In 2021, the installed capacity of renewable energy power generation hit 13,138.49 kW.

- **The coverage rate of natural gas clean energy pipe network has been increased continuously**

Fengxian District makes a major push to develop clean energy and completes the Three-year Natural Gas Reconstruction Project in Old Residential Areas (2017-2020). The number of natural gas users has steadily increased, with a cumulative increase of 101,057 natural gas users in three years, with a cumulative increase rate of about 27.5%. The coverage rate of natural gas pipe network has seen steady increase, and the total length of natural gas pipeline has increased from 1,074.05 km to 1,325 km in three years, with overall coverage of towns, sub-districts and development zones across the district. In 2020, gas accidents have been effectively reduced by about 40% compared with those in 2017, and the renovation project has been highly appraised by people.

- **Development and application of green new energy vehicles has been advanced constantly**

Fengxian District accelerates its development pace of new energy vehicles. The overall proportion of new energy buses in the district has increased year by year. By the end of 2021, there were 714 new energy buses, including 173 PHEV vehicles and 542 pure electric vehicles. The proportion of new energy buses in the district raised sharply from 2.74% in 2015 to 83.4% in 2021, and hydrogen fuel cell buses have been popularized. When it comes to taxis, the upgrading to new energy pure electric taxis was officially launched in 2022, and 82 pure electric taxis have been put into operation.

- **The scientific innovation in the green new energy field has seen constant improvement**

Fengxian District sees scientific innovation as the primary power to lead the development of new energy field, and establishes a gradient training system of science and technology enterprise to propel agglomeration of new energy industry. At present, 65 new energy enterprises in the district have been approved as high-tech enterprises. There are 11 new energy enterprises in the municipal-level science and technology giants (including

cultivation). In addition, the district has five municipal-level enterprise technology centers, and eight new energy enterprises (with independent intellectual property rights and huge development potential) have been included into "Three One-Hundreds" project gradient cultivation system and major strategic emerging industry system in Fengxian District. Sino Fuel Cell won the first prize of Shanghai Science and Technology Award in 2020.

- **The energy efficiency has been increasing while environmental impact has been decreasing**

Fengxian District actively promotes the energy intensification level and reduces carbon emissions in the energy use through technology application. In 2021, a total of 16 financial subsidies were provided for energy-saving and emission-reduction production projects in the district, including two municipal-level energy-saving technological transformation projects, four energy management system projects, and 10 projects of green manufacturing systems (including seven green factories and three green parks), with a total district-level financial allocation of 2.6 million yuan; the special support subsidies at district level were provided for upgrading 98 small and medium-sized gas (oil) boilers in 61 enterprises through bidding, with the total allocation of 9.43 million yuan; and 48 enterprises voluntarily applied for cleaner production audit.

- **Energy-saving and low-carbon technology has been promoted contiguously in the urban construction field**

Fengxian District takes active steps to respond to challenges from global climate change, urban heat island effect and other trends to the development of low carbon cities. In recent years, the district has constructed systematic green economic space system to realize grid coverage of smart meteorological services. The heat island ratio indicator in summer dropped from 0.27 to 0.09 in the corresponding period. In 2021, Fengxian won 23 and 8 green building design logo projects with 2 stars and 3 stars respectively. In addition, Fengxian District has long promoted the prefabricated buildings and the upgrading of energy consumption monitoring platforms for office buildings of national organs and large public buildings. By now, six projects have been connected to the platform. What's more, Fengxian has made progress in the construction of green and low-carbon pilot zones in "Digital River and Sea" and "Shanghai Fish" according to the *Guideline for the Construction of Green Low-carbon Pilot Areas in the New City*. Among them, the "Shanghai Fish" project was awarded a three-star project in Shanghai green ecologic city in 2021.

Important Measures

(1) Develop green and clean energy system

- **Advance the construction of PV generation projects**

Based on the Shanghai requirements that the ratio of PV-installed area on the roofs of the newly-built buildings of government institutions, schools and industrial plants should

not be less than 50%, and that of other types of public buildings should not be less than 30% from 2022, Fengxian guides enterprise to plan and build PV generation projects in the energy saving review link for project access by means of early intervention and planning reservation to ensure that the PV projects are established for newly built industrial plants as much as possible. The Yangwang Economic Park in Jinhui Town and Nanqiao Town is rich in roof resources in Fengxian District, and has been approved by the National Energy Administration as a pilot project for roof distributed photovoltaic development for the whole county (city, district). Now, Fengxian District is joining hands with enterprise such as China Huadian Shanghai Branch and Datang (Shanghai) Power Energy Co., Ltd. to promote the construction of the above-mentioned roof distributed photovoltaic development pilot projects.

- **Promote the construction of onshore and offshore wind power projects**

Fengxian District develops onshore and offshore wind power projects respectively by making full use of coastal natural and geographical advantages. In terms of onshore wind power generation, the district has built an onshore wind farm in the bay area with a total installed capacity of 18.15 MW, which will be built in two phases. For offshore wind power generation, the district has built Fengxian Offshore Wind Power Project in the northern sea of Hangzhou Bay. It is the third large-scale offshore wind power base after Donghai Bridge and Lingang, and the first offshore wind power project with competitive configurations in China.

Case 1 Bay Wind Farm

Located in the Fengxian bay area, the Bay Wind Farm was built in two phases with a total installed capacity of 18.15 MW. During Phase I project from 2005 to 2006, four wind turbine sets with a single capacity of 850 kW were installed on the east side of Fengxian Bay Tourist Area and outside the flood control embankment, and the power is sent to the Xing substation of Fengxian Electricity Company nearby through a 10 kV cable.

Figure 7 Wind power generation in Fengxian Bay

From 2012 to 2013, the capacity was expanded for the wind farm in accordance the spirit of the H.F.G.N.Y No. 076 approved document (2009). Ten wind turbines were installed from east to west in the east of Tuanjie Pond in Fengxian District and inside the current Hangzhou Bay levee, with an expanded installed capacity of 14.75 MW (9×1.5 kW + 1×1.25 kW), and the power is sent to the Ganxiao substation of Fengxian Electricity Company through a 35 kV transmission line. After the capacity expansion, the average annual power generation is about 27 million kWh, and the power generation income is about 15 million yuan.

- **Promote the reconstruction project of natural gas system**

Fengxian District promotes the natural gas reconstruction project, improves the natural gas supply infrastructure and pipe network system, and increases the user coverage rate of natural gas. From 2018 to 2020, the district implemented the Three-year Natural Gas Reconstruction Project in Old Residential Areas, covering more than 52,000 residents in old residence areas within the district, with a total building area of about 4.48 million square meters and a total investment of about 750 million yuan. The renovation funds were rationally arranged by means of enterprise investment and government subsidy, that is, Shanghai Fengxian Transportation Energy (Group) Co., Ltd. contributed and the government provided subsidies based on the ratio of 8:2 between districts and towns to promote the rapid implementation of the renovation project.

Case 2 Natural Gas Reconstruction in Liaoyuan Yiju Community, Haiwan Town

The Liaoyuan Yiju community is under the administration of Liaoyuan Neighborhood Committee of Haiwan Town, and the renovation involved 72 building buildings and 1,545 users. The community has been built for a long time and the actual situation on site was complex.

The main practices of the case are as follows: 1) before the renovation, professional designers conducted field survey several times to confirm the design scheme and technical feasibility and continuously optimize the design scheme; 2) preliminary opinion survey was conducted among users through property company and neighborhood committee to avoid damage to residents' rights and interests due to omissions; 3) after field construction in mid-August 2019, the construction unit reasonably arranged the construction period in combination with the housing maintenance projects, secondary water supply renovation projects and rainwater and sewage diversion projects in various towns; 4) noisy works such as road cutting, pipeline welding and road excavation were conducted in holidays to achieve civilized construction.

In order to provide residents with natural gas as soon as possible, the natural gas was supplied by batch based on different regions, which lasted for more than three months. On the afternoon of November 26, 2019, the first natural gas meter was installed in the home of Aunt Zhou in Liaoyuan Yiju community of Haiwan Town this year. Aunt Zhou said that she has been looking forward to natural gas access since she moved into the community in 2007. Due to many reasons, she and her husband began to use induction cookers frequently in the past two years, and natural gas reconstruction brought them convenience in life. With great efforts of different parties, Liaoyuan Yiju community has set a record for the fastest delivery in the renovation project of old residence areas.

- **Boost the construction of new energy automobile infrastructure**

While stepping up efforts to replacing traditional fuel vehicles with low-carbon vehicles, Fengxian District has actively promoted the construction of charging infrastructure, provided environmental support for the promotion of new energy vehicles, and encouraged the application and development of new energy vehicles. By the end of 2021, a total of 6,571 charging piles have been built in the district, including 3,067 public charging piles and 3,504 special charging piles; among them, 982 new charging piles have been installed in 2021 alone, including 652 public charging piles and 330 special charging piles. On September 23, 2022, Fengxian hydrogen refueling station for hydrogen fuel cell buses was officially put into operation, being the first hydrogen refueling station among Shanghai bus stations.

Figure 8 Fengxian hydrogen refueling station for hydrogen fuel cell buses

Case 3 New Energy Vehicle Upgrading in Public Traffic System of Fengxian District

Fengxian District formulates the annual new energy bus development plan according to the optimization and adjustment of bus network and the needs of bus renewal in the district to steadily advance the application of new energy bus.

In 2022, the proportion of new energy buses is planned to hit 95.5% to effectively save energy and reduce consumption. The energy-saving awareness among drivers has been further enhanced through the energy-saving operation technology training related to pure electric vehicles.

Given the charging demands of new energy taxis in the district, Fengxian has advanced the layout of demonstration charging stations for new energy taxi, and completed the construction of two demonstration stations: Xianli Yunhe North Road Demonstration Station and Fengxian Dazhong Chenzhang Demonstration Station in September 2021 for fast charging service of new energy taxis. What's more, the fast charging service is also available for social vehicles to benefit the

majority of new energy car owners.

Figure 9 New energy bus

(2) Promote intensive and efficient use of energy

- **Promote the energy efficiency improvement in the industrial field**

Fengxian District incorporates energy-saving objectives into the performance assessment of management departments, strengthens the energy-saving management of key energy-consumption enterprises, and actively promotes energy saving and consumption reducing of industrial enterprises in the district. Enterprises with high energy consumption in the district are encouraged to actively implement new energy transformation. In July, 2021, the "Fengxian Industrial Green Development Training Meeting" was held to achieve 100% promotion of new policies such as the establishment of green manufacturing system and the special project of industrial green development. Various key energy-saving projects have been further promoted to enrich the reservation and cultivation library of "Four Green" (including green factory, green park, green product and green supply chain), and guide and encourage enterprise to implement cleaner production.

- **Promote the application of energy-saving technology in the commercial field**

Fengxian District further strengthens the construction of commercial technical transformation projects in combination with the experience in green and low-carbon market and the establishment of large-scale comprehensive supermarkets of energy saving and environmental protection. In 2021, three commercial energy-saving technical transformation projects were completed with an average energy consumption reduction rate of 35.26%, covering a building area of 81,600 square meters. Centralized energy-saving training and special exchange training on energy conservation and consumption reduction

were conducted among key enterprises and all commercial formats in district to guide enterprises to attach importance to energy conservation and emission reduction. Commercial energy-saving promotion activities were conducted relying on Low-carbon Day, Car-free Day and other promotion days to create a green and low-carbon consumption atmosphere, and guide consumers to practice Clean Plate Campaign and green consumption.

Case 4 "Zero Carbon Model" for Enterprise Headquarters in Jinhui Town, Fengxian District

A "Zero carbon model" for enterprise headquarters has been created in Jinhui Town, Fengxian District through enterprise investment and equity participation by collective land use rights of villages. Through this initiative, high-quality commercial office buildings have been built with passive building technology with near-zero energy consumption for enterprise headquarters.

Figure 10 "Zero carbon model" for carbon neutral headquarters community

The firstly-constructed headquarters town of Great Manor is located in the northern eco-business district and covers a total building area of 7,688.55 square meters. Aiming at ultra-low energy consumption building and net zero energy consumption building, the project comprehensively adopts the technical path of "passive + active + renewable energy". The building exterior wall is designed with a plate-to-plate external insulation system integrating insulation and decoration with a heat transfer coefficient ≤ 0.2 W/(m2k), roof heat transfer coefficient ≤ 0.3 W/(m2k) and external window heat transfer coefficient ≤ 1.0 W/(m2k); in addition, electrically adjustable external shading measures are adopted with moderate thermal bridge treatment on canopy, parapet and other parts. The overall air tightness of building is improved by such measures as improving the air tightness of external windows and sealing treatment of through-wall openings. The optimization of external window design provides good natural lighting and ventilation conditions, and creates excellent energy-saving conditions for building body of the project. At the same time, electromechanical energy-saving measures are implemented such as high-performance air-conditioning equipment and lighting fixtures, and solar photovoltaic power generation system is implemented, which greatly reduces the energy consumption of building. The annual reduction

of CO_2 emission hits 112.7 tons, thus building a true carbon-neutral headquarters community that blends with rural ecological beauty.

- **Carry out energy-saving publicity activities through multiple channels**

During the annual National Energy Conservation Publicity Week, National Low-carbon Day and other themed activities, Fengxian District carries out promotion by means of energy conservation publicity manual and flash animation through TV stations and in parks, business districts and communities to guide the social public for participation in energy conservation and consumption reduction actions.

(3) Enhance the scientific innovation ability in the new energy field

- **Introduce the settlement and development of leading enterprises related to new energy**

Fengxian District speeds up the pace for the settlement of enterprises related to new energy industry, and builds a highland for the development of new energy industry. In 2021, Fengxian District Government and Shenergy Group signed an agreement on the settlement of Shenergy Hydrogen Energy Headquarters. In July 2022, the government signed a strategic cooperation agreement with Shanghai Electric Group to settle the Shanghai Electric New Energy Company in Fengxian New City.

- **Construct gradient cultivation system for innovation subjects in the new energy industry**

Fengxian District continues to boost the construction of innovative and entrepreneurial carriers such as technology enterprise incubator and maker space to provide high-quality space and preferential and fast policy services for enterprises. Through the cultivation system of municipal scientific innovation & entrepreneurial carrier, other potential new energy carrier resources in the district are excavated and reserved. The district has promoted the construction of Fengxian University Science Park, actively established partnership with East China Normal University, Shanghai University of Electric Power, Shanghai Ocean University and other universities, and completed the strategic cooperation framework agreement with Shanghai Jiao Tong University and East China University of Science and Technology.

Case 5 Technical Breakthrough for New Energy Fuel Cell Technology with Enterprises as the Main Body

Fengxian District puts a new premium on creating scientific innovation environment for enterprises, and encourages technical breakthroughs in new energy with enterprise as the main body. In the district, Shanghai Sino Fuel Cell Co., Ltd. (hereinafter referred to as "Sino Fuel Cell") is a typical representative with prominent achievements in technological breakthrough and innovation in new energy industry. It is also a private new energy high-tech enterprise cultivated by the Ministry of Science and Technology of the People's Republic of China and supported by the governments at all levels in Shanghai, a pioneer of research and development and industrialization

for fuel cell technology in China, and the earliest domestic company to develop automotive fuel cell engines. Its low-voltage fuel cell technology reaches the world advanced level and possesses completely independent intellectual property rights. After over 20 years of technical accumulation and precipitation, Sino Fuel Cell has owned comprehensive, autonomous and controllable intellectual property rights and batch production and application technologies, established a leading professional testing center in China, established a scientific research team with reasonable structure, and conducted cooperation of production, education and research in an all-round manner. In the 2022 Beijing Winter Olympics, 455 fuel cell buses and logistics vehicles equipped with Sino Fuel Cell piles provided services.

- **Advance new energy industry agglomeration through school-enterprise cooperation in the district**

Backed by the State Key Laboratory of Intelligent and Connected Vehicles, Fengxian District explores and deepens district-district cooperation and district-school cooperation, and jointly builds the Demonstration Zone for Fengxian Intelligent and Connected Vehicle Test with Lingang Group and Shanghai Jiao Tong University. In addition, it attracts and gathers a large number of supporting enterprises in the upstream and downstream industries of new energy ICVs such as Kunyi Electronic and Sino Fuel Cell, initially forming an industrial chain with complete functions and sound industrial ecology. In the field of new energy, four academician expert workstations (park service centers) have been approved, and three academicians of the Chinese Academy of Sciences and Chinese Academy of Engineering have been flexibly introduced.

- **Form popular science brand characteristics in the field of new energy**

Taking the Science and Technology Festival as an opportunity, Fengxian District has collected 177 activities for the festival, and carried out science popularization innovation activities such as “Energy Crisis and new energy” and “Science Lecture Hall on New Energy Development Knowledge”, attracting more than 100,000 audiences. Centering on four themes, such as new energy innovation workshop, a tour exhibition of community science museum was held at 16 points in sub-districts and towns of the district, covering more than 6,000 people. New energy science popularization activities were conducted through joint efforts with municipal-level science popularization bases during Shanghai Science and Technology Festival and National Science Popularization Day, and through such WeChat official accounts as “Popular Science E Station” and “Fengxian Technology”.

(4) Promote the practice of green and low-carbon development

- **Carry out meteorological three-dimensional monitoring and impact assessment**

Since 2017, Fengxian has built or upgraded 15 regional automatic meteorological stations to achieve full coverage of towns, sub-districts, communities and development zones. With average distance between stations no more than 4-6 km, more stations have been set in important roads, areas along rivers and seas and other key regions. Combined with the all-day real-time data monitoring network and satellite remote sensing

technology of automatic stations, Fengxian District has conducted ecological benefit assessment, heat island effect assessment and tracking in response to climate change response to provide relevant technical application support for energy demand estimation.

Case 6 Evaluation of Heat Island Effect Intensity based on Satellite Remote Sensing

To meet such requirements as objective evaluation of urban ecological construction benefits, support of spatial planning, economic and social development planning as well as energy demand estimation, Fengxian Meteorological Bureau carried out the evaluation and analysis of heat island effect intensity based on satellite remote sensing, and put forward relevant decision-making suggestions.

The main contents include: 1) based on environmental impact characteristics such as land use/coverage and available data, select and determine evaluation indicators, evaluate the ecological benefits of thermal environmental in typical regions, and evaluate the ecological construction effectiveness in Fengxian and its impact on heat island effect; 2) classify land coverage/use types based on satellite images and in combination of inversion of vegetation green quantity, and extract different levels of ecological cold sources to calculate the area ratio of ecological cold sources in the district and analyze the driving mechanism of cooling; 3) predict and analyze the impact of meteorological disasters, and take preventive actions in time to reduce the adverse effects of meteorological disasters on the protection and restoration of vegetation ecosystems.

Certain results have been achieved. In 2020 and 2021, surface temperature analysis was carried out based on satellite remote sensing and ground monitoring data, with a better evaluation of the intensity change and test of heat island effect in Fengxian, and an objective evaluation of the ecological construction performance and the response of climate change to the ecological construction effect. From the perspective of climate improvement, constructive suggestions have been put forward on the selection of tree species and vegetation distribution.

- **Promote the development of green and low-energy buildings**

Fengxian District continues to promote the development of green buildings and prefabricated buildings. For newly-built civil buildings, green building standards at basic level and above are adopted. For newly-built state office buildings, large-scale public buildings and other government-invested public buildings with a single building area of more than 5,000 square meters, the green building standards of two-star and above standards are implemented. For residential buildings with a total building area of more than 10,000 square meters and all industrial projects, prefabricated buildings are implemented. These requirements are stipulated in the land transfer by means of bid invitation, auction or listing for sale. In addition, the operation and management of public buildings energy consumption monitoring system was advanced. The project for energy consumption monitoring platform for state organ office buildings and large public buildings has been established. Now, the platform is being developed, upgraded and connected to Fengxian Big Data Center. At the same time, the administration measures on platform management are released to standardize the management of energy consumption monitoring system and ensure stable, continuous and efficient energy consumption monitoring.

Case 7 Green Construction Technology of Fengxian Museum Project

Relying on the overall green ecologic environment in the "Shanghai Fish", the new Fengxian museum project lays emphasis on the coordination and integration with the surrounding lakes and landscapes. Such measures as land saving of buildings, energy saving performance, water saving performance, material selection and saving, indoor and outdoor environmental control are conducted according to the green building standard requirements to realize the three-star construction goal of green buildings.

Figure 11 Interior of Fengxian Museum

Case practice: 1) The rainwater runoff in the site is controlled by designing permeable pavement, concave herbaceous field and rainwater collection pool. Siphon roof drainage system is adopted and rainwater pre-treatment system is set at the front of the pool. Through these efforts, rainwater can be used as the replenishment water source for greening and landscape to realize rainwater recycling. 2) Low reflection curtain wall is used for the facade, and the outdoor landscape lighting mainly consists of courtyard lights and projection lights to eliminate light pollution interference to the surrounding environmental and building objects. 3) By using the full air system with primary return air and full heat recovery device with rotating wheels, the energy consumption of heating, ventilation and air conditioning system is reduced by 9.4% compared with the standard reference building showing remarkable energy saving effect. 4) Water-saving irrigation system is used for landscape water, green building materials are used, and digital BIM design is matched.

- **Promote the integrated application and energy-saving transformation of building renewable energy**

Fengxian District strictly controls the green transformation and examination and approval of public buildings and state office buildings in accordance with *Shanghai Building Energy Saving Regulations* to promote the integrated application of renewable energy and energy-saving transformation of buildings in an orderly manner. In 2021,

integrated application of renewable energy covered 207,000 square meters of the district, involving seven projects; and energy-saving renovation was completed for existing buildings covering 70,600 square meters, including such renovation projects as the consulting room of the outpatient building of Fengxian Traditional Chinese Medicine Hospital, and the ventilation system of the laboratory of the third discipline building of Fengxian Campus of Shanghai Institute of Technology.

- **Promote the construction of green and low-carbon pilot zones**

The establishment of green and low-carbon pilot zone is actively promoted in Fengxian District. The "Shanghai Fish" project was awarded the three-star project in Shanghai Green Ecologic City in 2021. The district is committed to completing the construction scheme of Shanghai Fish, Digital River and Sea green and low-carbon pilot zones in 2022. Located in the core position of Fengxian New City, Shanghai Fish covers a land area of 2.53 km^2 and a development area of 1.21 million square meters, and has a population of about 12,400 people. Positioned as the energetic public service core area, an ecological pioneer area for green waters and a low-carbon livable fashion city, it has conducted green and low-carbon development planning with three scenes: near-zero community, zero-carbon public building and a park with fixed carbon emission. Nested in the northeast of Fengxian New City, Digital River and Sea has a land area of 1.37 km^2 and provides about 20,000 ~ 30,000 jobs. It is aimed to be developed into a digital international industrial city, and its construction is based on five green and low-carbon demonstration scenes such as energy replacement.

Case 8 Construction of "Digital River and Sea" Green and Low-carbon Pilot Zone

Digital River and Sea is one of the two low-carbon pilot zones being built by Fengxian District, and an urban construction area with a certain scale and complex functions in Fengxian New City. The pilot zone strives to reduce carbon emissions by 20% by creating five green and low-carbon demonstration scenes, including energy replacement, high-quality green base, zero waste recycling, green travel and low carbon life.

In the energy replacement scene, the pilot zone puts forward the layout scheme of photovoltaic based on sunshine conditions, builds roof photovoltaic, buildings with photovoltaic, energy-storage, direct current, flexibility technology, various types of ultra-low energy consumption buildings to construct an intelligent micro-grid system of "photovoltaic-storage-charging-use" and a twin energy system.

In the high-quality green base scene, the pilot zone maintains the green space rate in the development process through a digital platform, builds a carbon neutral digital forest, and explores the integration of photovoltaic and greening.

In the zero waste circulation scene, a multi-stage water circulation system is built to create a zero emission circulation mode for building wastes.

In the green travel scene, a shared slow traffic system is built, and road greening facility belts and intelligent commuter unmanned vehicle systems are arranged adapting to different scenarios.

In the low carbon life scene, a low-carbon life circle is created through spatial planning, and a low-carbon enterprise communication circle is formed through system construction. What's more, the carbon inclusive mechanism is explored through innovative governance.

SDG10: Reduced Inequalities

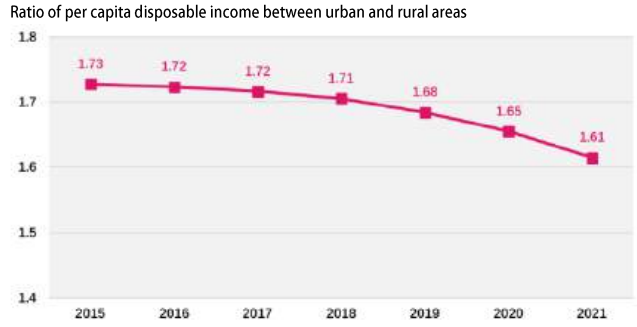
Under the goal of “Fair Sharing”, Fengxian District provides high-quality public services shared by all across the district by building a public service gathering area and a 15-minute community circle in the new city, and focuses on promoting the improvement of livable quality of the old urban areas in combination with urban renewal. Through the rural industry development and the improvement of living environment, people in the rural areas can fully enjoy the development achievements, and a city friendly to children, the elderly and other groups of different ages can be further built.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG10
Provide high-quality public services shared by all	Construct public service gathering areas in Fengxian New City.	Public building groups in Nine Trees region	► Sports venue area per capita	10.4
	Promote the construction of 15-minute community circle			
	Build a vibrant youth community			
Promote the improvement of livable quality in old urban areas	Renewal and reconstruction of old residential areas	Reconstruction of the Jiefangyiqu old community	► Area of old house repair work ► Total investment of old house repair work	10.4
	Reconstruction of old urban areas and "urban villages" in Nanqiao Town			
	Urban renewal in "Nanqiaoyuan" area	Urban Renewal in "Nanqiaoyuan"		
Let rural areas fully enjoy the fruits of development	Construction of OVOP demonstration villages and towns	Construction of OVOP demonstration village in Wufang Village	► Discrepancy in per capita disposable income between urban and rural areas ► Discrepancy in per capita consumption expenditure between urban and rural areas	10.1 10.4
	Promote comprehensive assistance for rural development			
	Carry out high-quality housing construction in rural areas			
Build a child-friendly city	Create a child-friendly community	Construction of "Voice of children" child-friendly community in Jinhai Sub-district	► Health care management rate for children under 7 years old	10.2
	Link the channels for "participation by children"			
	Build a child health service system	Children Rehabilitation Center of Fengpu Sub-district Community Healthcare Service Center		
Build an age-friendly city	Age-friendly renovation for home environments		► Number of contracted family doctors ►Life expectancy	10.2
	Let the elderly have a lifelong education opportunity			
	Promote the construction of retirement community	"Wuzhai ·Qingchunli" retirement community in Xidu Sub-district		
	Improve the health management service level for the elderly	Free health examination for the elderly over 60 years old in Fengxian District		
	Build a long-term aging nursing system			

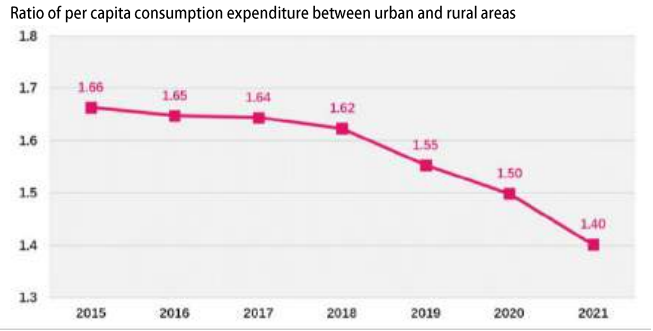
Key Indicators

Discrepancy in per capita disposable income between urban and rural areas



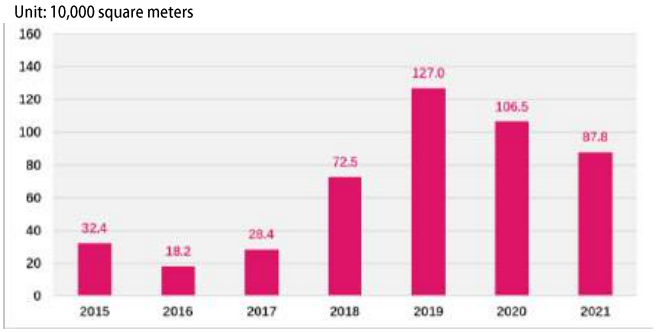
During 2015-2021, the ratio of per capita disposable income between urban and rural areas in Fengxian District **decreased from 1.72 to 1.61**, with ever-narrowing gap.

Discrepancy in per capita consumption expenditure between urban and rural areas



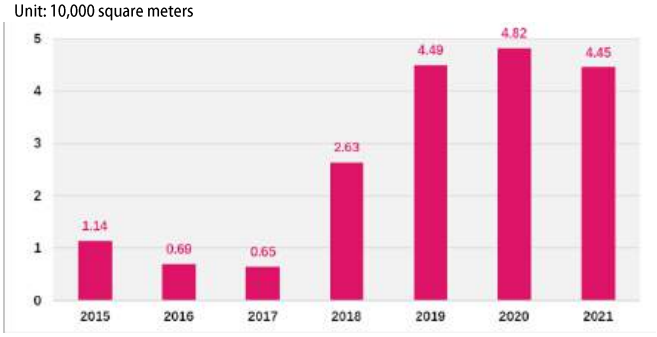
During 2015-2021, the ratio of per capita consumption expenditure between urban and rural areas in Fengxian District **dropped from 1.66 to 1.40**, with ever-narrowing gap.

Area of old house repair work



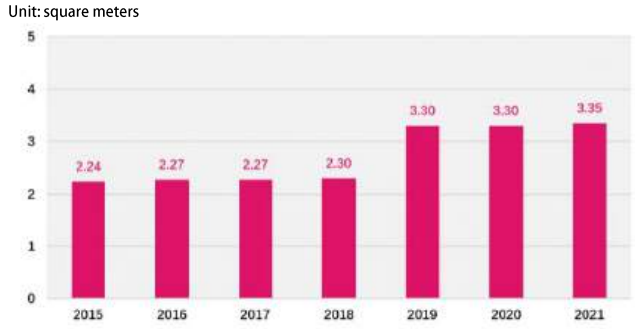
From 2015 to 2021, the annual average area of old house repair work in Fengxian District reached **675,000 square meters**, benefiting about **61,000 households**.

Total investment of old house repair work



From 2015 to 2021, the number of old house repair projects in Fengxian District hit **191**, reaching a total investment of **1.89 billion yuan**.

Total investment of old house repair work

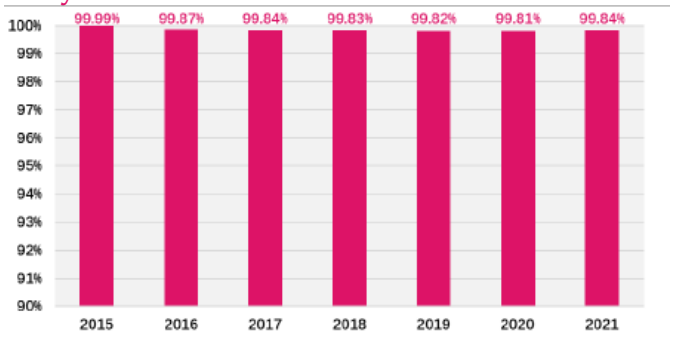


From 2015 to 2021, the sports venue area per capita in Fengxian District increased from **2.24 square meters** to **3.35 square meters,** up by **49.6%**.

Life expectancy of registered population

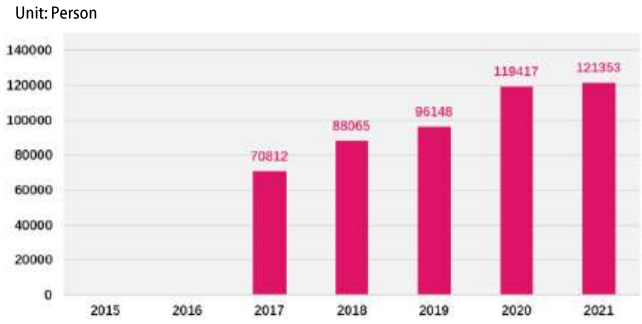
During 2015-2021, the life expectancy of registered population in Fengxian District increased from **82.75 years old** to **84.10 years old**.

Health care management rate for children under 7 years old



Since 2015, the health management rate of children under 7 years old in Fengxian District has maintained steadily above **99%**.

Number of contracted family doctors



During 2021, the number of contracted family doctors in Fengxian District hit **121,000**.

Major Progresses

- **Remarkable agglomeration effect has been achieved for high-quality public service resources in new city area**

Based on the rich ecological resources in the district, Fengxian accelerates the creation of the urban characteristic image of "Cross Water Street, Square Lattice Green Gallery and Interleaved Field" through the construction of public building groups such as Fengxian Museum, Shanghai Fish and Nine Trees Future Art Center. The diversified functions of green public space are further integrated, including residence, commerce, business, cultural tourism, science and education research and development, to realize the development of urban high-quality shared space.

- **Residential environment in old urban areas has been improved significantly**

The people-oriented renovation of urban living environment is promoted in Fengxian District. Accumulated 4,728,100 square meters of houses in old residential areas have been renovated, and the old houses have been repaired; the renovation projects of "urban villages" such as "720 urban villages in Beigang" have been implemented to promote the development of Nanqiao old urban areas. The "Nanqiaoyuan" urban renewal project has been promoted with 30,000 square meters of public green area and 40,000 square meters of public activity space added, which has effectively improved the living environment in old city areas and alleviated the problems of insufficient public supporting facilities.

- **Initial effect of 15-minute community circle has been shown**

The construction of 15-minute community living circle has been promoted actively to gradually advance the equal coverage of basic public services across the district. Nanqiaoyuan area, as a pilot construction area of Shanghai 15-minute community living circle, has seen remarkable achievements, and realized the multi-point and networked coverage of public service resources such as commercial services, sports and leisure, public green space, medical treatment, education and aging in Fengxian old urban areas. On this basis, Fengxian District further promotes the construction of "15-minute community living circle" to meet the standards, and strives to build "a people-oriented and humanized city blessed with rich culture".

- **Rural residents' sense of acquisition and happiness have been improved through rural revitalization and development**

By tapping regional characteristics, integrating agricultural resources and adjusting industrial structure, the district spares no efforts to promote rural revitalization and development that everyone can feel. By the end of 2021, the district had planned and promoted six boutique leisure agriculture and rural tourism routes, with six national OVOP (one village, one product) demonstration villages and towns (Qingcun Town, Jiefang Village in Qingcun Town, Pandian Village in Zhuanghang Town, Cungu Village

in Zhuanghang Town, Taozhai Village in Qingcun Town, and Wufang Village in Qingcun Town). Fengxian District enhances the service of village architects, and helps farmers build livable and eco-friendly houses with modern functions, safe structure, economical cost, and coordinated style through design services. Comprehensive assistance is implemented in rural areas by setting up economic development platforms which are mutually shared, cultivated and built at district level and village level to effectively improve the sense of fulfillment and happiness of farmers living in difficulties.

- **Full coverage of child-friendly community is achieved in sub-districts and towns**

Fengxian District took the lead in building child-friendly community in 2018, and the pilot communities in Fengcheng Town, Qingcun Town and Haiwan Town in 2020 were awarded the first batch of child-friendly communities in Shanghai. In 2021, child-friendly communities were successfully built in Nanqiao Town, Situan Town, Zhelin Town, Zhuanghang Town, Jinhui Town, Xidu Sub-district, Fengpu Sub-district and Jinhai Sub-district, and Fengxian New City took the lead in realizing the full coverage of child-friendly communities among the five new cities in Shanghai.

- **Significant achievements have been made in the construction of age-friendly city**

Fengxian District takes active steps to build an age-friendly city. In 2021, the pilot reconstruction of the age-friendly home environment was started in Nanqiao Town, which was then gradually promoted to other areas of the district to create safer and more comfortable living environments with higher quality for the elderly. Combined with the needs of rural area, the district actively explores a new idea of constructing "Qingchunli" retirement community by combining home-stay planning and holiday-style aging. Since 2017, health examination has covered all registered elderly over 60 years old in the district. Since 2016, more than 600,000 health examinations have been completed, and 539 new tumors have been discovered. In 2021, the health management rate among elder hit 76.27%.

Important Measures

(1) Provide high-quality public services shared by all

- **Construct public service gathering areas in Fengxian New City**

Relying on the location and ecological advantages of Shanghai Fish, Fengxian District actively promotes the construction of public building groups formed by No. 200 Oriental Beauty Valley Avenue and Nine Trees (Shanghai) Future Art Center. Based on the favourable natural forest and water conditions of the project base, it lays out the functions of ecological leisure, cultural art and shared conference. Through these efforts, the multi-functional development is realized in the "human-orientated" public green space in Fengxian New City to provide high-quality multi-functional public service resources for the public.

Case 9 Public Building Groups in Nine Trees Region

Situated in the middle of Fengxian New City, the project base is adjacent to Jinhui Port to the east, and the Shanghai Fish and the future new city "CAZ zone" to the south, and Oriental Beauty Valley Avenue to the north. As the project base, the Unit 06 in Fengxian New City covers a total area of about 489.67 hectares, of which about 70% of the current land is natural woodland, which can be hailed as the "green lung of the new city". Together with the southern Unit 08 of Shanghai Fish, a central park of 10,000 mu is formed, which becomes an important engine leading the ecological sustainable development of the new city.

Main practices of the case: 1) attract a batch of benchmark cultural art projects such as Nine Trees Future Art Center and Yan Zi Academy; 2) integrate the natural forest water resources of the base, optimize the layout and grouping of maker space by taking advantage of the current construction land patches, and create a distinguished forest garden featuring "one garden, one product, one waterside courtyard". Thus, a cultural art service center of the new city center is built to provide citizens with a leisure place with unique ecological and artistic characteristics; 3) introduce trendy service functions such as Internet live streaming, and entertainment to form a public recreation service area around the small cross water street; 4) each building group of maker space is sited in the current construction land patch or open space patch. Some patches have retained homesteads and dwellings; some have been introduced with maker space projects first, and some are adjacent to important functional areas. Each patch is adjacent to water and lake, nested in dense forests, and is linked to the external urban roads through the reorganized capillary road network, thus forming a space intertwined with "forest, water, courtyard, bridge, and road".

Figure 12 Nine Trees Future Art Center

- **Promote the construction of 15-minute community circle**

Under the overall deployment of Shanghai, Fengxian District actively promotes the construction of 15-minute community living circle, so that citizens can enjoy perfect basic

public service facilities such as aging, medical treatment, education, commerce, transportation, culture and sports within 15 minutes of walking distance centering their homes. Nanqiaoyuan region in Fengxian is among the pilot areas of constructing Shanghai 15-minute community living circle. The area basically covers the old urban areas of Fengxian Nanqiao. In addition to agglomeration of business services, there are 20 fitness trails, 125 puzzle game and fitness points, 6 community public sports fields, 2 gyms for citizens and a forest trail of about 5.5 kilometers long. What's more, the district-wide green space is composed of ecological gardens, ecological corridors, and pocket parks, allowing citizens to "see green scenery after opening windows and access to parks after stepping out from their home"[1].

- **Build a vibrant youth community**

High-level and international culture, education, medical and sports resources have been introduced in Shanghai Fish to build an international youth community and attract young talents at home and abroad to gather and settle there. Together with Shanghai Fish, a future-oriented gateway to the west of the new city is built in two banks across the river, and a central bay to the south of Shanghai, an amazing youth art fashion center, a shared office place orienting at new future, and a new cultural innovation charm area in the south of Yangtze River will be built. Having an aggregate area of about 3 square kilometers, this area has 1/3 of residential lands, a planned residential population of about 60,000 and an employed population of about 30,000.

(2) Promote the improvement of livable quality in old urban areas

- **Renewal and reconstruction of old residential areas**

The renewal and renovation of old residential areas in Fengxian District focuses on people's living needs. In addition to routine renovation subjects, pilot work has been fully carried out in terms of "micro-infrastructure" projects and intelligent community construction. The best service organizations are selected through public bidding, and the renovation progress is under supervision throughout the project period. The district supervises and evaluates the safety, quality and civilized construction of the renovation project, actively promotes the establishment of demonstration sites for residential renovation projects, sets up reception points for residents' complaints at the construction site for timely feedback and coordination and solving of problems reported by residents. Thus, the district did a good job in the government's practical projects on a solid basis to improve satisfaction and happiness of residents.

Case 10 Reconstruction of the Jiefangyiqu Old Community

Built in the late 1970s, Jiefangyiqu community is located in Nanqiao Town, Fengxian District. The community was in bad repair. To improve this, District Housing Management Bureau included Jiefangyiqu community in the comprehensive renovation projects of old house in 2020, and conducted comprehensive renovation for the houses, roads, parking spaces, greening, ornaments,

[1] Source: Wen Hui Bao: http://dzb.whb.cn/2022-02-16/2/detail-753668.html

fire protection apparatus, monitoring devices and sub-district lamps in the community, involving 1,416 households in 34 buildings, with a total building area of 88,796.82 square meters, thus refreshing a new look for the community. The renovation mainly included renovating old houses, improving green space quality, and reshaping the vitality of fitness areas.

Old houses have been totally different in appearance. Based on the renovation of building facade, the building floor has been decorated with lacquer. A large area of beige was applied to echo the surrounding neighborhoods, and the unit door head was matched with the main color of building.

The quality of green space has been improved. A green leisure space was enclosed by landscape wall and parking shed, with uniform styles of the arc seats and greenery landscape; the landscape wall was painted with simple and bright color, and decorated with various elements of points, lines and surfaces, adding a new touch of modernity and fashion to old residential area.

The vitality of fitness area has been reshaped. There is a vibrant feel to the place with red plastic pavement, orange lounge frame and other bright colors. The calligraphy and paintings on the fence exude scholarly ancient charm. Adjacent to the Jiefang West Road and open to the public, this area not only meets the activity needs of community residents, but also injects vitality to the surrounding old urban areas.

- **Reconstruction of old urban areas and "urban villages" in Nanqiao Town**

With the S4 Expressway as the boundary, Nanqiao Town is divided into east and west areas, in which, the east is called new urban area and the west is called old urban area. Since the beginning of the 20th century, the old urban area in the west has been a mature area of urbanization due to its long history of development, where Fengxian landmarks such as Shenjia Garden, Guhua Park, Dingfeng Factory and Nanqiao Cinema have converged here. Now, the west area of Nanqiao Town has been basically developed with various residential areas of different sizes and development ages scattered everywhere, making the problems of the old city more and more apparent. As the development of new city enters the fast lane, the development differences between the new city and the old city in the west have become more prominent. In recent years, a total of 1.613 billion yuan has been invested by Fengxian to improve people's livelihood, and a series of livelihood projects have been conducted, including the renovation of 900,000 square meters of old houses and secondary water supply projects in 46 communities, which has improved the style of the old city. In consideration of the declining living quality of residents in the old city in the west, Fengxian is striving to apply for the reconstruction project of "720 Urban villages in Beigang". Through cooperation with the leading development enterprise for "urban villages", the project has reasonably allocated its project funds and arranged the operation schemes, and the full participation of citizens in the renovation has been achieved through public selection schemes.

- **Urban renewal in "Nanqiaoyuan" area**

"Nanqiaoyuan" area is located in the Fengxian old urban area, and the focus for urban renewal project there is the soft power of urban culture. Up to now, more than 20 special investment promotion sessions themed at urban renewal have been held, and more than

10 cultural promotion and exchange activities related to urban renewal have been held. Focusing on the "2 +1 + X" spatial layout of urban renewal, the area has deeply excavated the local history and culture, and a total of 21 cultural remains have been studied and excavated. In addition, special cultural topics such as *Shenjia Garden and Shen Menglian*, *First Plum in the South of Yangtze River and Cao Family in Fengxian* and *Hundred Years Dingfeng - From 1864 to 2021* have been prepared.

Case 11 Urban Renewal in "Nanqiaoyuan"

The "Nanqiaoyuan" urban renewal project is located in the central section of the old urban areas of the Nanqiao Town of Fengxian District. It is urgent to spur the vitality of the old city and improve the functions through "double increases and double decreases" (namely, increase green space and increase open space, and decrease development intensity and population density).

Figure 13 Interior of Nanqiao Academy

Case practice: 1) Deeply tap the local historical cultural context in the district. More than 10 cultural promotion and exchange activities related to urban renewal have been held such as "Urban Renewal Life Record - Taking Sources in Dingfeng as an Example" and "Shanghai ·Fengxian Urban Renewal Forum". 2) The renewal of buildings, public service facilities and environmental construction have been initialized in such key projects like Shenjia Garden, Dingfeng Source Garden and Nanqiao Academy in key projects. 3) Overall research and design and overall planning have been conducted for the development and construction of various blocks within the district to fully enhance the ecological, public welfare and cultural performance of the project. 4) The whole process participation mechanism has been established throughout the investment promotion and operation process, from project research to development and construction. Key focus has been paid to the differentiated creation of different projects concerning their functional positioning to promote the innovation and upgrading of old brands such as "Dingfeng Taiji" and "Huifuyuan Tea House". 5) The main role of community residents has been played fully in urban renewal and construction, and various new media have been utilized for widespread promotion of information related to urban

renewal planning and construction. For the Shenjia Garden project, residents have been organized several times to hold scheme communication and introduction meetings after the joint efforts of the party building alliance, the Government and the Community Neighborhood Committee. A citizen tour group has been established for safe and civilized construction.

(3) Enable rural areas fully enjoy the fruits of development

● Construction of OVOP demonstration villages and towns

Integrating the existing beautiful village, agriculture, ecology, culture and other resources, Fengxian District plans, promotes and introduces six leisure agriculture and rural tourism boutique routes with the goal of "connecting points to lines, connecting pieces into belts and clustering them into circles". Among them, the boutique route of "Shuttling through ancient and modern times and seeking dreaming place" in spring and summer seasons of 2021 was selected as the "Spring Season" boutique scenic spot route of 2021 Beautiful Countryside Leisure Tour in China, which was promoted on the website of the Ministry of Agriculture and Rural Affairs of the People's Republic of China. Fengxian District actively cultivates the national star enterprises (parks) for leisure agriculture and rural tourism, organizes relevant business entities to re-declare, guides the compilation of achievement materials, and cooperates with experts for acceptance of the enterprises (parks). The district continues to explore the characteristic industries and development models for each village and town in the district, organizes the application of China's beautiful leisure villages and OVOP demonstration villages and towns, and vigorously promotes the integration of primary, secondary and tertiary industries. The level has been upgraded surrounding the varieties, quality and brands, and a new model for rural industrial development integrating production, processing, sales and service has been built.

Case 12 Construction of OVOP Demonstration Village in Wufang Village

Yellow peach is the first-class economic crop in Wufang Village, and the village-wide planting area totals 700 mu. With "thriving business" as the starting point, the village has formed a cooperative business model combining production, processing, sales and service by integrating industry leading resources from colleges as well as deep processing and e-commerce marketing industries. In 2020, the production value of yellow peach reached 25 million yuan, and the characteristic leading industry of "yellow peach +" accounted for 70% of the total output value of the village. Relying on Shanghai Sinong Technology Co., Ltd., Wufang Village links the secondary industry and connects to tertiary industry related to yellow peach based on the primary industry to comprehensively construct the brand system framework of "combining production and sales, and linking agriculture with culture and tourism" for the yellow peach. Targeted "agricultural orders" have been created to ensure production and income increase of yellow peach farmers living in difficulty, and the per capital disposable income of employees in the leading industries has increased by more than 10% in recent three years. In 2021, Wufang Village was successfully awarded the title of OVOP demonstration village.

Main practices: 1) Wufang Village strengthens production and marketing docking, establishes the yellow peach sorting system, introduces Hema Fresh and other commercial entities to jointly

build a self-operated e-commerce trading platform named "The Peach You Like". With yellow peach as the main raw material, special drinks such as yellow peach soda, beer, liquor and health sweet soup of peach gum are launched, and desserts such as yellow peach cakes and pastries are developed, which can be purchased through online platforms. 2) Based on different growing seasons of yellow peach, timely launch such campaigns as online and offline outing travel in peach orchard, traditional folk culture, local intangible cultural heritage project experience, etc. In the mature season, combined with the characteristic brand celebration program of "Yellow Peach Festival", supporting activities such as yellow peach picking, peach king competition and seasonal agricultural products exhibition are held. In addition, the music festival themed at escaping from cities to peach yards is held to continuously explore the optimal integration path of "yellow peach + agricultural travel". 3) For the three troubling problems of "yellow peach" to be solved urgently, Wufang Village cooperated with Shanghai Sierteng Technology Service Co., Ltd. (a local professional operating company), and established Shanghai Sinong Technology Co., Ltd. (a subsidiary with main businesses including daily planting management of yellow peach and integration of primary, secondary and tertiary industries) in March 2019 to improve the intensive specialization level of yellow peach planting and enhance the added-value brand of yellow peach industrial chain. The yellow peach planting experts from the Municipal Academy of Agricultural Sciences were invited for professional guidance and technical support.

Figure 14 Style of Wufang Village

- **Promote comprehensive assistance for rural development**

In 2019-2021, Fengxian District successively introduced three measures to improve the identification and assistance of farmers living in difficulties. In July of each year, according to the requirements of Shanghai Assistance Office, the dynamic adjustment and review of farmers living in difficulties are actively carried out through relevant processes such as proactive application, democratic appraisal, economic check, public confirmation, sub-district and town audit, etc. Fengxian District has also practiced the "One hundred villages" assistance model, and mobilized 100 economically weak villages in the district to invest 100,000 yuan each to set up an economic development platform called "Shanghai Baicun

Industrial Co., Ltd." (hereinafter referred to as "Baicun Industrial") which is shared, cultivated and built jointly at district level and village level. Each village holds 1% of the shares, and all kinds of assistance funds are used for purchasing industrial park properties and other projects after integration, and 70% of the project income is used for helping farmers with living difficulties, and the remaining 30% is used for collective economic redevelopment at village level.

- **Carry out high-quality housing construction in rural areas**

Fengxian District continues to advance the village architect system, and urges all sub-districts and towns to implement the funds for village architects. Designers dedicated to rural construction and development in Fengxian District were encouraged to actively participate in the selection of the second batch of village architects in Shanghai to put the village architects system into place. In addition, ordinary people were encouraged to choose village architects so that the later can fully participate in the rural construction and development. Fengxian District planned and organized the selection and appraisal of rural landscape improvement design schemes. For contracted rural architects and designers who love and are familiar with Fengxian and aspire to devote themselves to the rural construction and development of Fengxian District, the district convened them to carry out the overall design of "Waterway, Forest, Farmland, and House" for the groups (more than 20 households) organized by various sub-districts and towns. In addition, the district has also established a "One Form" system for rural house construction management to standardize the rural house construction and improve the design and management level.

(4) Build a child-friendly city

- **Create a child-friendly community**

As a national-level demonstration area for implementing the Program for the Development of Women and children, Fengxian District has actively promoted the construction of facilities such as "Flower of Sea" Youth Activity Center, "Children's Theater" in Nine Trees Future Art Center, Bubble Park for Outdoor Recreation of Children, and Women and Children Activity Center in Fengxian District, and established several youth practice platforms and special funds for children's art development. The three-level service base of "Child Service Centers + Children's Homes + Children's Service Points" has been established to realize the full coverage of "After-class Caring Centers in Summer Vacation" in development zones of the sub-districts and towns.

Case 13 Construction of "Voice of Children" Child-friendly Community in Jinhai Sub-district

By fully using the advantageous resources like professional readers of Nine Trees Kindergarten and Future Art, Song Huaiqiang Studio and little interpreters in museums, Jinhai Sub-district has built a full-coverage service system with "one center and multiple sites" by establishing child service centers, children's homes and children's service points. Focusing on the "four-in-one" children's community education service mode integrating "children-family-community-society", Jinhai Sub-district has worked to create an eco-friendly 15-minute community living circle with complete

facilities and perfect services for children, and achieve the cooperation among communities, families, and schools. Through these efforts, a platform for children's social experience has been built, which has won praise from the public.

Main practices: 1) build a child service center with a total area of 3,400 square meters to meet the needs of children of 0-17 years old in the community; 2) based on the years of reading history and the ritual and music characteristics of the Nine Trees Future Art Space in the district, enrich children's cultural artistic life and enhance community participation through the theme activities such as "Little Readers", "Little Interpreters" and "Little Councilors" themed at "Voice of Children, and Happy Childhood"; 3) all departments of the government cooperated with social forces to give full play to social resources such as Oriental Beauty Valley Chamber of Commerce and "Yuandongli" Sorority of Women Entrepreneurs. A "1+1+X" children's service team composed of professional children's social workers and community part-time volunteers has been established under the organization of society to jointly enhance the professionalism of the children's service operation team.

Figure 15 Children playing and running in the lawn

- **Link the channels for "participation by children"**

Fengxian District has linked the channels for "participation by children" by constructing the mechanism of "triple joint meeting", "joint proposal" and "attending inquiry". As to the mechanism of "triple joint meeting", an unimpeded channel of discussion has been promoted by public selection of 5-10 child representatives and 5-10 parent representatives in each residential area (at least one child representative and one parent representative in each community), and holding a "meeting of children (parents) in residential area", one "child-friendly public living room" and one "joint meeting for child-friendly community" every month. In the mechanism of "joint proposal", three grass-roots child representatives or parent representatives can jointly submit a proposal to the "joint meeting for child-friendly community", which will be handled within 60 days, and the District Office for Women and Children is responsible for following up the handling and

reply of the proposal. In terms of mechanism of "attending inquiry", for working meetings involving the interests of children concerning major project construction, renovation of public facilities, and handling of proposal submitted by children (parents), 1-2 children and parent representative can be invited to attend the meeting if conditions permit, and representatives can directly put forward inquiries or opinions on the work at the meetings.

- **Build a child health service system**

Fengxian District successfully established Shanghai Early Childhood Development Base in 2019 for carrying out early childhood health management services. Under the government's leadership, the district strengthens the cooperation, exchange and resource sharing with education, civil affairs, disabled persons federation, women's federations and other relevant departments to jointly build an all-round management and service system for early childhood development. Led by the District Maternal and Child Health Institute, two comprehensive medical treatment institutions (Central Hospital and Fengcheng Hospital), and three community healthcare centers (namely Nanqiao, Fengpu and Situan) provide early childhood development services by classification to promote the standardized management of early childhood development.

Case 14 Children Rehabilitation Center of Fengpu Sub-district Community Healthcare Service Center

The Fengpu Sub-district Community Healthcare Center has built the only rehabilitation and treatment center with the largest overall scale and complete functions in Fengxian District. It is specialized in functional assessment, rehabilitation assessment, formulation of rehabilitation training plans and determination of training programs for children with cerebral palsy, mental retardation and language disorders, and providing regular training to parents to help rehabilitation treatment for children with cerebral palsy.

In May 2019, Fengpu Sub-district Community Healthcare Center and Children's Hospital of Fudan University jointly established the "Children Rehabilitation Collaboration Base". In June 2020, the base was awarded the "Children Rehabilitation Service Contract Organization" by the Fengxian District Disabled Persons' Federation. In the past two years, the Central Children Rehabilitation Base has seen booming development, which truly created a rehabilitation harbor in the doorway. Up to now, 168 children have been received and cured, 100 children are being treated, and 8,054 people have been treated. After regular rehabilitation and evaluation, most children have made progress to varying degrees.

Main practices: 1) District high-quality rehabilitation resources by integrating upper and lower links: Through the "interconnection" technology with tertiary hospitals such as Children's Hospital of Fudan University and community children rehabilitation base, establish a two-way referral and technical support mode. 2) Build rehabilitation technical support through "Medical-school linkage": The Fengpu Sub-district Community Healthcare Center cooperates with Fengxian Hui Min School (a special education school in the district) to build a new model of "combining medicine with education" that combines the school with hospital education and rehabilitation training to provide high-quality services for disabled children.

Figure 16 Children Rehabilitation Center

(5) Build an age-friendly city

- **Age-friendly renovation for home environments**

Since 2021, Fengxian District has started the pilot of age-friendly renovation for home environments. Certain subsidies are granted to the elderly (60 years old and above) who voluntarily apply for renovation and are qualified for the subsidy conditions. At the same time, the annual renovation index has been continuously expanded: for example, the index in 2021 was increased from the initial 50 households to 100 households, and the actual number of renovated households reached 134 households. The pilot work started in Nanqiao Town of Fengxian District in the first half of 2021, and then was expanded to Xidu Sub-district and Fengpu Sub-district. In 2022, the renovation has covered a total of 7 sub-districts and towns according to the demand statistics. According to the actual needs of different elderly people, Fengxian District made targeted plans, selected suitable products, and provided personalized product service packages, including the construction and renovation services for daily activity areas such as toilets, kitchens, living rooms, bedrooms, balconies, etc. The goal was to ensure "convenient indoor walking, safe toilet and bathing, convenient kitchen operation, improved home environment, intelligent safety monitoring, and adaptation of assistive devices" so as to provide the elder with safer, more convenient and more comfortable home care environment.

- **Let the elderly have a lifelong education opportunity**

Fengxian District founded the University for the Elderly in March 2005, which now covers an area of 22.3 mu and a building area of 39,458.37 square meters. The school is equipped with complete functions and integrates learning, activities, services and meal assistance. A three-level management (school, department and class) is adopted in the university. At present, the university has eight departments including health care, language and literature, literature and art, life art, instrumental music, painting and

calligraphy, opera and computer, and offers 23 majors, 86 courses and 190 classes. Nearly 7,000 students were enrolled in the spring of 2022. The school has 46 classrooms such as tea art, guqin and cooking, 12 activity places such as library, bookstore, tea room and dance hall, as well as other service places like small theater, large, medium and small meeting rooms, barber shop and an underground parking lot with 141 parking spaces. What's more, a dining place that can simultaneously accommodate more than 400 people is provided. An art festival has been held since 2018 to let the elderly in the district participate in cultural art more deeply and enjoy the happiness of artistic life through singing competitions and other activities.

Figure 17 Guqin classroom in Fengxian University for the Elderly

- **Promote the construction of retirement communities**

Taking rural tourism as the development opportunity, Fengxian District makes use of existing collective houses and farmers' idle houses to build rural aging communities for the nearby elderly to live together, and introduces home aging, community meal assistance and other services while ensuring farmers' incomes from the circulation of idle houses. This initiative realizes the elderly's basic wishes for aging in place. Fengxian District actively researched and issued the *Plan on Promoting the Building of the "Qingchunli" Retirement Community*, encourage the towns and villages promote the construction and operation of "Qingchunli" retirement community oriented at actual needs of the elderly in combination with the actual situation of rural industrial development of "one headquarters of manor, garden, park styles" and feedback of village-level income from rural revitalization, and encourage the introduction of professional aging service teams to operate the retirement community and build the aging brand of "As Happy as the Young" in Fengxian. At present, five "Qingchunli" aging communities have been built in Wufang Village in Qingcun Town, Puxiu Village in Zhuanghang Town, Wuzhai Village in Xidu Sub-district, Cungu Village in Zhuanghang Town, and Xinqiang Village in Jinhui Town.

Case 15 "Wuzhai ·Qingchunli" Retirement Community in Xidu Sub-district[2]

On October 25, 2021, "Wuzhai · Qingchunli" retirement community in Xidu Sub-district, Fengxian District was officially unveiled. With a total building area of about 5,300 square meters and 150 beds, the community is a characteristic retirement community with the theme of "Still young" built by revitalizing farmers' idle houses.

The community is characterized by "beautiful environment, spacious space and fresh air". Wuzhai Village Committee developed leisure functions such as flowers and vegetables planting as well as picking of fruit trees in surrounding farmland through the circulation of contracted lands in rural areas, and made extensive use of natural elements to help the elderly enjoy production, rebuild mind, and continuously expanded rehabilitation and leisure and other aging service functions. In addition, the community integrates "centralized care, day care and training of skills", and sets up functional areas such as audio-visual rooms and painting and calligraphy rooms as needed. In order to improve the quality of life for the elderly in the community, the retirement community entrusts professional aging organizations for its daily operation and management. The community is equipped with nursing staff based on the standard ratio of 1:4 to provide day care, long-term care and home-based home care for the elderly. In addition, the community makes full use of resources to conduct training among carers, and draws business backbones from nursing experts or care aids to provide professional institutional and home-based nursing training for non-professional carers in aging institutions and family members of people with mental retardation and disability within the district. The purpose is to improve family members' care skills, self-protection and management ability through training, and promote the quality of aging services within the jurisdiction.

The retirement community offers a range of options for the elderly to choose from, including two-person, three-to-four-person, and six-person rooms. Charging standards are set based on whether the elderly reside within or outside the district, allowing for differentiated pricing. This approach not only meets the needs of the aging population in the village but also creates market access opportunities.

Figure 18 "Qingchunli" retirement community in Xidu Sub-district

[2] Source: https://export.shobserver.com/baijiahao/html/417895.html

- **Improve the health management service level for the elderly**

Fengxian District included the "Full coverage of free health examination for the elderly over 60 years old" as the government practical projects, and set up the related leading group for organizing, coordinating, promoting implementation, assessment and supervision of the project. X-ray examination was added on the basis of the elderly health examination project stipulated by the state, and tumor marker protein chip screening and atherosclerosis risk assessment, ASCVD assessment and management have been added from 2019. Fengxian District strengthened the full coverage of promotion and notification regarding the elderly health examination to ensure that the free health examination notification can be distributed to every eligible elderly. Appointment and concentrated health examination was mainly conducted for each community healthcare center. During the health examination, the medical staff went to work in advance to prepare breakfast for the elder. After the health examination, the family doctor completed the health examination report in time, fed back the health examination results in time, and interpreted the health examination report for the elder. In addition, consultation telephone service was set up to provide all-round high-quality services.

Figure 19 Morning exercise in Guhua park, Fengxian District

Case 16 Free Health Examination for the Elderly over 60 Years Old in Fengxian District

Fengxian District has advanced the free health examination for the elderly over 60 years old by adding into the District Government Practical Projects. Over the years, the medical staff of the community have provided elderly health management with sincerity, patience, and true heart whether in daily service or under special epidemic situation. In 2021, about 122,800 people over 60 years old completed the health examination.

1) Fully guarantee the health examination of the elder group through active preparation. Some communities have few medical staff. In order not to affect normal medical services, the medical staff there start the health examination for the elderly in the community at 5:30 a.m. in the morning, and

then continue daily diagnosis and treatment services at 8:30 a.m. after finishing the appointment medical treatment. During the elderly health examination period, the medical staff also need to prepare for the health examination for the next morning after work, and transfer and download the health examination data. The family doctor team is bustle about summarizing, analyzing and evaluating management of the health examination results.

2) Actively promote the elderly health examination project by integrating resources. In addition to the health examination project for the elderly over 65 years old as stipulated in the municipal documents, Fengxian District has advanced the health examination for all the registered population over 60 years old every year both in quality and quantity. Since 2019, the district has integrated public health service projects and pioneered tumor marker protein chip screening and ASCVD assessment and management.

3) Guide the elder group for active participation through promotion. By distributing brochures and notices and posting posters through the 21 community healthcare centers in the district, the elderly residents are guided to actively participate so as to achieve full coverage. This effectively improves the awareness rate of the public and ensures no loopholes or dead ends regarding promotion.

- **Build a long-term aging nursing system**

Through the preparation of such policies as Examination Methods of Long-term Care Insurance Institutions in Fengxian District and Work Standards for Long-term Care Insurance Community and Home Care Service Institutions in Fengxian District, the district has established a regular training mechanism for nursing staff, carried out nursing staff training for district-wide home service institutions every year, and organized nursing skills competition. In addition, the district has established a dynamic supervision system for home service to realize dynamic, visual and real-time supervision of service process, and striven to explore and promote the pilot of long-term care insurance.

SDG12: Responsible Consumption and Production

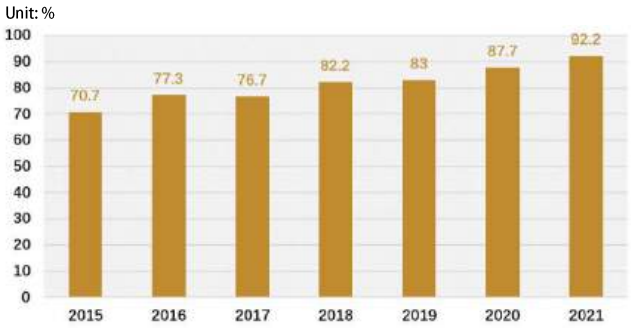
Under the goal of “Green Resilience”, Fengxian has carried out the top-level design for the construction of “waste-free city”, committed to reducing the generation of waste and creating a beautiful city with “delightful water and sky scenery” to promote the development of cyclic economy mode by developing the recycled production of resources in agriculture, industry and building industry, and promote the transformation and upgrading of economic transition by upgrading existing industrial parks and developing new industrial functional areas, as well as building a modern new city with resilience.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG12
Promote the construction of a "zero-waste city"	Strengthen the management of solid waste		► nvironmental air quality index (AQI) ► Annual average concentration of PM2.5 ► Proportion of Excellent Class III water quality sections in major river sections ► Amount of domestic garbage generated by per capita ► Urban domestic sewage treatment rate	12.5
	Enhance clean air initiative			
	Promote the water pollution prevention and control initiative	Up-to-standard renovation of Jinhui Port-Qianqiao section		
	Advance garbage classification and reduction	Domestic garbage classification and intelligent reuse in Qingcun Town		
	Create a beautiful city blending with "delightful water and sky scenery"			
Promote the development of cyclic economy model	Ecological cycle agriculture development		► Comprehensive utilization of general industrial solid wastes	12.2
	Industrial cyclic economy development	Recycling reconstruction of Shanghai Hangzhou Bay Economic & Technological Development Zone		
	Recycling utilization of industry resources			
Promote the economic transformation and upgrading development	Promote the industrial upgrading and development of industrial parks			12.1
	Promote the development of cultural tourism industry in Hangzhou Bay	Development of the Bay Tourist Area		
	Promote the construction of international ecological business district			
	Build a future-oriented new digital industrial city			
Build a modern new city with resilience	Construct a resilient urban space		► Forest coverage ► Number of bus routes	12.2
	Construct a multi-level green intelligent transportation network	Construction of Zhuanghang Country Park		
	Create a blue water network with organic resilience	Water system management of "Shanghai Fish"		
	Construct a green and ecologic forest city			

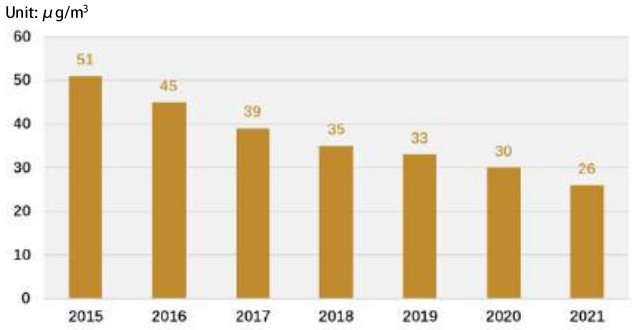
Key Indicators

Environmental air quality index (AQI)



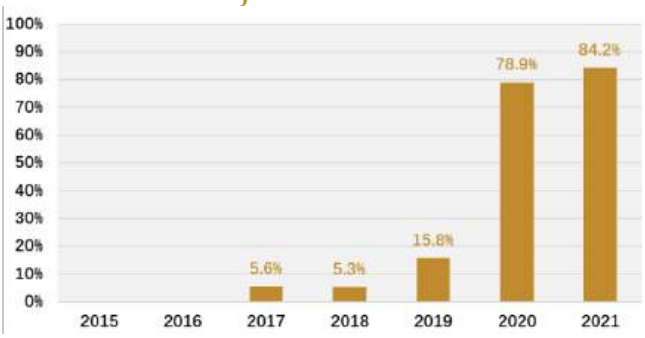
In 2021, the environmental air quality index (AQI) of Fengxian District was **92.2%**, **up by 21.5%** compared with that in 2015.

Annual average concentration of fine particulate matters (PM2.5)



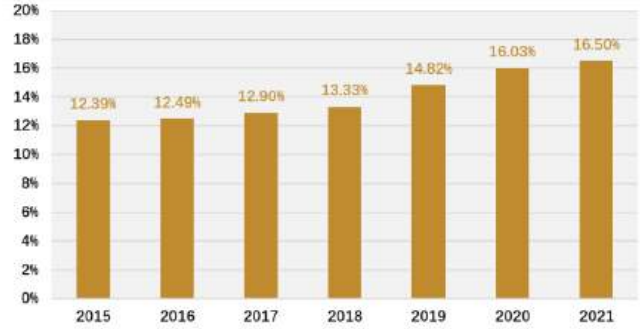
In 2021, the annual average concentration of fine particulate matters (PM2.5) in Fengxian District was **26 μg/m³**, **down by 49.0%** compared with that in 2015.

Proportion of Excellent Class III water quality sections in major river sections



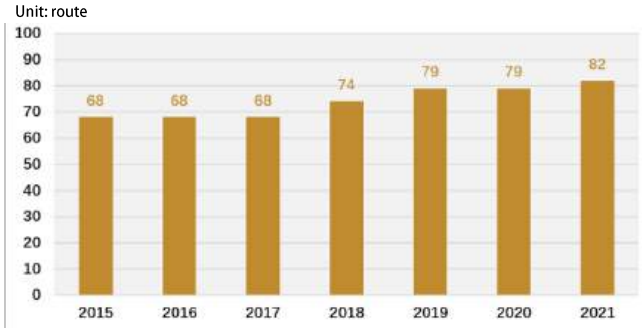
From 2015 to 2021, the proportion of excellent water bodies in major rivers in Fengxian District increased from **0%** to **84.2%**.

Forest coverage



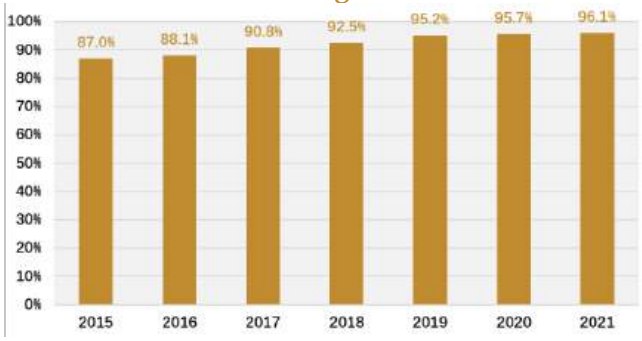
By the end of 2021, the green land rate of built-up area in Fengxian District amounted to **43.80%**, the per capita green area of the park reached **17.77 m²**; the built greenway was about **136 km** long, and coverage rate of greenway service radius reached up to **96.04%**.

Number of bus routes



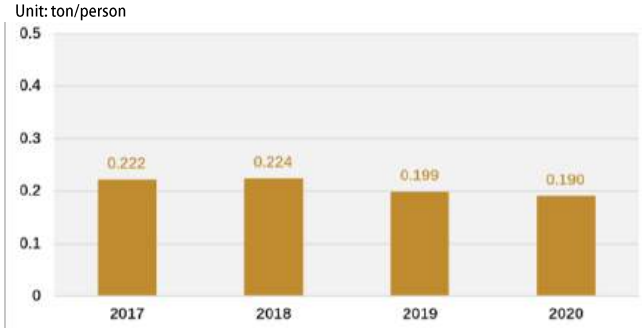
From 2015 to 2021, the number of bus routes in Fengxian District increased from **68** to **82**.

Urban domestic sewage treatment rate



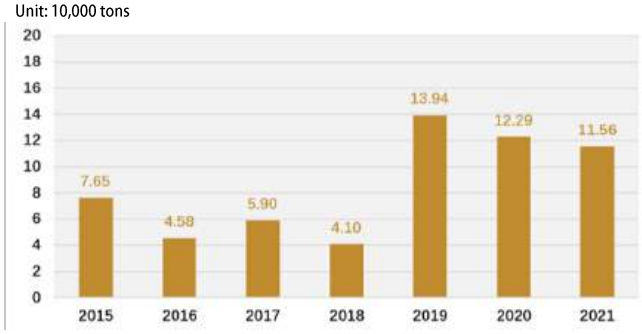
From 2015 to 2021, the urban domestic sewage treatment rate in Fengxian District was up from **87%** to **96.1%**.

Amount of domestic garbage generated by per capita



At the end of 2021, the recycling rate of domestic garbage in Fengxian District amounted to **40%**, the coverage rate of domestic garbage classification community was **100%**, and the harmless treatment rate of domestic garbage achieved **100%**.

Comprehensive utilization of general industrial solid



From 2015 to 2021, the comprehensive utilization of general industrial solid wastes in Fengxian District increased from **76,500 tons** to **115,600 tons**.

Major Progresses

- **The ecological environmental quality continues to improve**

Fengxian District continues to promote the "Delightful Water and Sky Scenery" project. Through the clean air initiative, the air environment quality has been significantly improved. In 2021, the air quality index (AQI) was 92.2%, up by 16 percentages compared with that in 2015. Through the water quality guaranteeing initiative, the water environment has continued to be improved, and the water quality up-to-standard rate was 100% in 2021. In the initiative of protection of clean lands, the life cycle management requirements of construction land have been strictly implemented, 286 plots have been reviewed and filed, and the restoration of 6 contaminated plots has been advanced.

- **Positive results have been achieved in garbage classification and reduction treatment**

Fengxian District has achieved positive results in the construction of domestic garbage classification terminal facilities and the classification and collection from the source. In 2017, the district was listed as Grade A in the Establishment of National Demonstration Areas for Rural Garbage Classification and Recycling, and ranked first in the Shanghai city. It was also identified by the Ministry of Housing and Urban-Rural Development of the People's Republic of China (MOHURD) as one of the 100 demonstration areas for rural domestic garbage classification and resource utilization in China. In 2018, it was identified by Shanghai as one of the first six districts for universal implementation of the garbage classification system. The standardized management of hazardous wastes has been promoted continually in the district. From 2017 to 2021, field assessment of standardized management of hazardous wastes was carried out for the 366 waste generation units, and the compliance rate was 96.4%.

- **The waste recycling ability continues to increase**

Cored at the waste reduction and resource utilization, Fengxian promotes the development of green industry in "Oriental Beauty Valley" + "Future Space", incubates a batch of typical resource recycling and reuse enterprise to form a characteristic industrial chain in the resource utilization of waste foam, waste electronic products and waste kitchen oil. The district has formed strong solid waste terminal disposal capacity. At present, the district houses three hazardous waste incineration disposal units, two domestic waste incineration plants, three building garbage classification and recycling centers, and has one proposed district-level bio-energy reuse center (wet waste disposal) to ensure that no garbage will be emitted out from the district.

- **The economic space system basically realizes global network coverage**

A district-wide network ecological space system has been built in Fengxian District. Five projects, including the projects on both sides of Punan Canal and the "Shanghai Fish"

Lake Island Landscape Project, won the Quality Project Gold Award or Quality Project Award in "Garden Cup" of Shanghai, among which the Lake Island Project also won the Shanghai "Magnolia Cup", and the Hehe Park was selected as a demonstration site of sponge city by the SMCHURDM. The district actively promoted the construction of Zhuanghang Country Park, and completed the construction of park groups such as "Yuli Forest", "Peach Gallery", "Guanghui Wetland" and "Puwei Portal", which realized ecological upgrading and functional transformation, and improved the basic support and landscape style in the district. In recent years, the vegetation ecological index has been improved across the district.

- **Industrial transformation, upgrading and development have achieved initial success**

In recent years, Fengxian District has effectively promoted industrial transformation, upgrading and development by combining the upgrading of existing industrial parks with the development of emerging industrial functional zones. The transformation and upgrading of existing parks has been promoted around the planning strategy of "Oriental Beauty Valley + Future Space", and 16 characteristic industrial parks have been declared. Seizing the opportunity of the digital industry, the district promotes its development towards a future-oriented new digital industrial city, such as building the Digital River and Sea International Industrial City and Lingang Nanqiao Science and Technology Park, promotes the agglomeration of digital industry clusters, and builds an innovative demonstration zone for urban digital transformation. For the precious eco-coastal resources in the district, Fengxian District has actively promoted the transformation and development of tourism space in Bay Tourist Area, develops sports events, cultural creativity, cultural research and other projects, and has completed the brand improvement and comprehensive upgrading of sightseeing facilities of three major stock projects, including Fisherman's Wharf, Blue Sea and Golden Sands and Gulf National Forest park, and has planned to build four major incremental projects, such as "Great Wall of Haiguo" cultural park.

- **Complete a number of sponge implementation projects and model projects**

At the end of 2018, "Shanghai Fish" won the title of construction pilot zone for Shanghai municipal-level sponge city through planning and project integration. In 2022, the special planning "Digital River and Sea" sponge city was submitted for approval, with the construction control and guidance of sponge city in various plots in the industrial city being further refined from the development and construction level. It is planned to build a brand-new sponge city within the new city to demonstrate and lead the construction of sponge cities across the district.

- **The construction of green intelligent transportation system has been continuously improved**

Fengxian District has built new infrastructures such as urban management information platform, city information model (CIM) platform and data center, and built

an intelligent urban information management center and basic operation platform featuring data driving, intelligent decision-making and unified command, and the pattern of "integrated transportation business platform + big data center of industry" has been formed. Since December, 2020, the research on the layout scheme of Fengxian New City hub has been initialized with the network layout with layered functions to lead the development and construction of new city through the planning of multi-level rail transit hub stations.

Important Measures

(1) Promote the construction of a "zero-waste city"

- **Strengthen the management of solid waste**

Fengxian District strengthens the whole-process information management of hazardous wastes, and includes all units and processes involved in hazardous wastes into the information system for management. At present, a total of 3,208 hazardous waste generating units have completed the filing of management plans in the district. Promote the informatization construction of medical waste management, strengthen the real-time monitoring of medical waste, and comprehensively advance the information-based construction of medical waste management. A total of 175 medical waste generation units have been included in Shanghai Hazardous Waste Management Information System, and the medical waste electronic sheet is being gradually promoted.

- **Enhance clean air initiative**

Fengxian District actively promotes the completion of various objectives and tasks concerning energy conservation, emission reduction and greenhouse gas emission control, and strictly controls new pollution emissions of construction projects and EIA approval of various projects. Actively implement the upgrading and transformation of small and medium-sized fuel and gas boilers, complete the upgrading and transformation of 465 boilers in the district, and promote the comprehensive governance of pollution for 10 industrial furnaces; promote the VOC governance of 188 enterprises in key industries such as chemical industry, printing industry and pharmaceutical industry; formulate the adjustment scheme of production and transportation plan of key enterprise in autumn and winter (October-March) to ensure the emission reduction of gas-related enterprises during heavy polluted weather and major events. As of December 2020, the actual emission reduction of nitrogen oxides reached 34.27%, exceeding the standard by 14.27%; the actual emission reduction of sulfur dioxide has reached 3,679.28 tons, completing the required emission by 100%.

- **Promote the water pollution prevention and control initiative**

The initiative plan of water pollution prevention and control has been promoted steadily in Fengxian District. With water quality as the top priority, Fengxian implements

the requirements for sections subject to national assessment and municipal assessment, focuses on the up-to-standards of water quality assessment sections, and coordinates the linkage pollution control of main stream and tributaries. By carrying out the enterprise evaluation of enterprises under control, the district focuses on the evaluation on the enterprises under control within the service scope of sewage treatment plants with fluctuating water quality and unstable operation, and the enterprises under control that have been punished due to out-of-standard discharge in recent year. A total of 145 wading enterprises were reviewed, with the full coverage review of enterprises involved in heavy pollution and key enterprises.

Case 17 Up-to-standard Renovation of Jinhui Port-Qianqiao Section

Located in the middle reaches of Jinhui Port, Jinhui Port-Qianqiao section is 600 meters south of Punan Canal and about 11.5 kilometers away from the estuary. Taking 2014 as the benchmark year, its water quality is Class V, and the excessive factors are ammonia nitrogen and total phosphorus. In 2017, the excessive factor was BOD, with an average concentration of 6.32 mg/L, exceeding the standard value of Class IV water by 5.3%. As such, it was required to gradually improve the current Class V water quality and eliminate the poor Class V water quality before 2019. After renovation, the water quality of Jinhui Port-Qianqiao section was gradually upgraded from Class V to Class III. 1) Carry out diversified governance. All livestock breeding sites have been removed within the specified time; the wharf yard has been renovated according to standards; and municipal rainwater and sewage facilities have been improved and renovated. 2) Improve the monitoring ability of surface water environment. The early warning and monitoring network for Jinhui Port water system environment has been further improved, and the monitoring frequency of hydrological water quality in cross sections has been increased. In addition, a new hydrological water quality online monitoring station has been built to realize real-time monitoring of water quality. 3) Promote the long-term management mechanism of riverways. The river management mechanism of "river chief system" has been fully promoted to enhance the long-term management of riverways.

Figure 20 The river of Jinhui Port in Fengxian

- **Advance garbage classification and reduction**

Fengxian District has initially established a "dual-network integration" recycling service system, and built 461 "dual-network integration" recycling points in residential areas (340 of which have been upgraded and reconstructed) to comprehensively intensify the recycling efforts of recyclable materials. The construction of terminal facilities has been expedited with two center projects for comprehensive utilization of renewable energy (1,000 tons/day), one kitchen waste disposal site (120 tons/day) and one eastern wet waste carbonization disposal plant (60 tons/day) being built to promote the construction of bio-energy reuse projects in the district. The supervision has been enhanced for kitchen waste collection, transportation and disposal units. All kitchen waste collection and transportation vehicles have been equipped with GPS and vehicle running instruments for 24-hour supervision and realize intelligent and effective supervision of domestic waste classification in the whole process.

Case 18 Domestic Garbage Classification and Intelligent Reuse in Qingcun Town

As an ancient town in the center of Fengxian District, Qingcun Town has actively explored the new model of garbage classification by resorting to scientific and technological means since the implementation of *Regulations of Shanghai Municipality on Municipal Solid Waste Management* in 2019. The enthusiasm for actively participating in garbage classification has been further improved among residents, and the comprehensive satisfaction of garbage classification has reached as high as 98%. At present, per capita dry garbage reduction of about 10% has been achieved in the pilot community, the small bags of garbage being thrown on the ground in the community have been plummeted, and the sanitation in public areas has improved significantly. Waste clothes in domestic garbage have been turned into environmental-friendly absorbent cotton after crushing, and made into green plant bases for hydroponic "house gardening" after secondary processing, thus making the garbage compartments and community environment more and more beautiful.

Figure 21 Intelligent garbage delivery point in Zhangnong Fuyuan

"Intelligent devices for fixed disposal of domestic garbage" have been used in Fuyuan Community, Zhangnong Lane, Qingcun Town, thus realizing the "zero-contact", "multi-function" and "customized" intelligent garbage classification, and creating a new integrated treatment mode of dry garbage, wet garbage, toxic and harmful garbage and recyclable garbage. In 2021, Qingcun Town added 30 intelligent monitoring devices around garbage bins and dropping points in various

villages, and will complete the full coverage of intelligent supervision for all communities by the end of 2022. In addition, the one-network unified management platform will be further connected to create an intelligent city featuring "a screen to view the world and a network to administrate the city" with full coverage and no blind spots. In addition, Qingcun Town incorporates the carrying of GPS positioning system and weight sensing system on sanitation vehicles into the platform to achieve real-time monitoring of running track and amount of carried and disposed garbage, and gradually forms a closed-loop management system with clear source data management and combination of human-oriented and technology-based prevention.

- **Create a beautiful city blending with "delightful water and sky scenery"**

Fengxian District has made further progress in "delightful water and sky scenery" project and meritorious service competition by selecting and awarding units, individuals, and outstanding projects having remarkable achievements in protecting and improving ecological environment every year. What's more, online and offline tour exhibitions have been conducted in different forms to play the exemplary role and value-leading role. In December, 2020, Fengxian District Government and Shanghai Municipal Bureau of Ecology and Environment signed the *Strategic Cooperation Agreement on Building Integrated Demonstration Zones with Modern Environmental Governance System* to jointly promote the first implementation of modern environment governance system in Fengxian District. The focus has been made on advancing the innovation and exploration of "leader" system about environmental protection, third-party environmental pollution governance, green supply chain and green finance. The district took the lead in formulating and issuing the implementation plan for the selection of "leading" enterprises in environmental protection in the city, and selected the first batch of 24 enterprises with industry-leading level in pollution reduction, environmental management and cyclic economy.

(2) Promote the development of cyclic economy model

- **Ecological cycle agriculture development**

Fengxian District promotes the development of ecological cycle agriculture, builds demonstration bases of ecological cycle agriculture, and is committed to forming a batch of replicable and propagable ecological cycle planting and breeding models and building a long-term mechanism for ecological cycle agriculture. Fengxian District has created the ecological cycle agriculture demonstration sites mainly around the five aspects below: 1) industrial integration: Achieve balanced layout and cyclic development among industries. A development pattern has been built for overall planning of grain and vegetables, integration of planting and breeding, and industrial integration; the layout has been coordinated for supporting service facilities such as collection, disposal and distribution of agricultural wastes, and a large, medium and small recycling system has been built; 2) clean production: Promote applicable technologies such as replacing chemical fertilizers with organic fertilizers, testing soil for formulated fertilization, green prevention and control of pests and diseases. The utilization rate of chemical fertilizers and pesticides has been improved, and the use of chemical fertilizers and pesticides has been reduced.

Improve the recycling and disposal system of pesticide packaging materials and agricultural films to improve the quality of agricultural production environment; 3) resource recycling: Effectively protect and reasonably develop and use agricultural resources. The ecological cycle agriculture mode has been widely applied with "resources-waste-renewable resources" as the core; and livestock manure, crop straw, fruit tree branches, tail vegetables, and fungus residue have been effectively recycled and reused.; 4) green products: Ensure safe environment for the origin of agricultural products, and improve the agricultural standard system; the certification rate of green food of agricultural products has been significantly improved, and the pass rate of sampling inspection of agricultural products has remained high with full coverage of traceability of quality and safety for major agricultural products; 5) improved quality and efficiency: Establish and improve the marketing system of high-quality agricultural products. The brand-based sales rate of major agricultural products has been greatly improved; significant progress has been made in improving agricultural efficiency and increasing farmers' incomes, showing remarkable economic, social and ecological benefits. From 2018 to now, Fengxian District has completed the construction of one demonstration town and five demonstration bases, which have passed the municipal acceptance.

- **Industrial cyclic economy development**

The existing manufacturing industry in Fengxian District has a certain scale with numerous large industrial parks such as Shanghai Industrial Comprehensive Development Zone and Hangzhou Bay Economic and Technical Development Zone, imposing heavy tasks for industrial recycling transformation. As early as 2006, Fengxian District issued the Implementation Opinions on Developing Cyclic Economy with the aim to promote the development of cyclic economy through centralized layout from industry to park. Since 2015, NDRC and Shanghai Municipal People's Government have successively issued relevant policies to promote the green and circular development of parks. On this background, Fengxian District has promoted the recycling transformation of major parks through such means as industrial structure adjustment, industrial waste resource utilization and intelligent management.

Case 19 Recycling Reconstruction of Shanghai Hangzhou Bay Economic & Technological Development Zone

The recycling transformation of the park is an important starting point for the country to promote cyclic economy and green manufacturing. Located in the south of Shanghai and the north bank of Hangzhou Bay, Shanghai Hangzhou Bay Economic & Technological Development Zone is in a pivotal position in the development strategy of Shanghai coastal passage. Cored at the construction of renewable resources utilization base, the development zone promotes a new round of green and low-carbon cyclic development. Through recycling reconstruction, the efficiency of resource use has been significantly improved. With the recycling of solid waste, waste water and waste gas of enterprises in the development zone, the economic benefit, resource environmental benefit and social benefit have been further enhanced in the park. 1) Strengthen the core leading industries and high-tech oriented enterprises, establish the functional zone pattern with logistics-chemical enterprise-waste disposal unit as the direction. Thus, the unified collection of wastes and

recycling system, as well as multi-level water resource recycling utilization system have been enhanced in the park. 2) Construct an indicator system for recycling transformation in the park. 22 key construction projects have been realized, covering the optimization of spatial layout, and the development of cyclic economy, resource environment, renewable energy, and operation management, and other fields, with an actual total investment of 109.14 million yuan. Among them, 16 short-term construction projects have been completed at the end of 2020.

- **Recycling utilization of industry resources**

In 2021, Fengxian District achieved 100% coverage of the reporting system for important building materials in the housing construction projects. The District Safety Quality Supervision Station carried out 459 times of inspection for projects under construction, and filed cases for punishment for illegal projects found. From mid-April to early May 2022, a special inspection was conducted for prohibited and restricted materials, with 4 rectification orders were issued. At the same time, the district has actively promoted the reuse of waste building concrete. For 129 construction projects that are not newly built with a total investment of more than 20 million yuan in the district, the recycling utilization information concerning waste building concrete has been reported by 100% according to requirements.

(3) Promote the economic transformation and upgrading development

- **Promote the industrial upgrading and development of industrial parks**

Through land consolidation and planning, Fengxian District actively promotes the elimination of outdated capacity, digestion and utilization of existing resources to accelerate the construction of characteristic industrial parks. The construction of high-standard plants has been advanced actively in the park. By the end of 2021, 33 high-standard plant projects including Huayi, Rinnai, Envona, Chuanmei Industry, Chester, UC and Daikin New Materials have been started, involving a total building area of 1.15 million square meters. Around the planning strategy of "Oriental Beauty Valley + Future Space", 16 characteristic industrial parks have been built and declared, and the transformation and upgrading of the park has been promoted through construction of high-standard property, park infrastructure and investment operation.

- **Promote the development of cultural tourism industry in Hangzhou Bay**

Fengxian District integrates all tourist nodes in Hangzhou Bay, connects the coastal landscape roads, and forms a loop line from Binhai Avenue-Jinhuitang Road-Haiwan Road-Fengzhe Highway-Fengpao Highway-Suitanghe Road. In the seawall landscape section, a pro-sea passage has been added; in the southern section of forest park, a new wetland ecological park has been built; in Fisherman's Wharf-Blue Sea and Golden Sands section, it is planned to expand the purification area around the sea to form a "ten-mile long beach". At the same time, Fengxian District strengthens the guidance of operation and development, and boosts the promotion roles of fashion and art festivals in tourism space. Relying on famous scenic spots such as Gulf National Forest Park, Fisherman's

Wharf Commercial District, MXGP Stadium and International Kite Flying Field, the district actively creates an event economy; on the basis of Tianzhifan Cultural Innovation Park and Fisherman's Wharf Commercial sub-district, Fengxian focuses on introducing, cultivating and expanding the cultural creative and artistic formats.

Case 20 Development of the Bay Tourist Area

Bay Tourist Area covers the southern coast except Lingang Fengxian Park, with its north to S4 Shanghai-Jinshan Expressway and Haiwan Town boundary, east to Zhonggang, south to Hangzhou Bay and west to Fengxian District boundary. It has the valuable ecological coast of Shanghai. Currently, the area is in the transition period of construction with sports events as its current development focus. Huating Dongshitang is newly listed as a national key cultural relics protection unit. The "Great Wall of Haiguo" cultural park relying on such resource is now under planning. Due to insufficient utilization of space and the lack of core attractions, this area is facing bottlenecks in tourism flow and consumption. The Bay Tourist Area gradually promotes the transformation from one-season tour to four-season tour, and reshapes its tourist attraction.

1) Open up the land-and-sea landscape loop route, upgrade the tourism nodes along the route, and integrate and revitalize the existing tourism resources; 2) expand sports and leisure events, enrich cultural art activities, and improve the popularity; 3) add eco-holiday boutiques to form differentialized competition with Jinshan, and focus on introducing IP resources to achieve dislocation development with Jiangsu and Zhejiang provinces; 4) build two new engine projects, "Great Wall of Haiguo" cultural park and "Seaside Homestay" holiday park, to reshape the tourism attraction core of the area; 5) plan the regional cooperative development of Tanxu Island and expand the future tourism development pattern.

Figure 22 Blue Sea and Golden Sands seaside beach

- **Promote the construction of international ecological business district**

The construction of international ecological business district is being actively promoted in Fengxian District. Through the T-shaped ecological corridor and layout of TOD-oriented business space, a demonstration model of ecological business district

blending city with forest will be created. Three kinds of forest infiltration interfaces, low-carbon energy-saving green buildings and two kinds of blocks blending city with forest will be laid out in the area to form rich underground space functions and traffic organizations, thus building a three-dimensional city connecting underground to ground in combination with forests. Using forest as the boundary, it is planned to scientifically lay out the functional space such as financial office, conference and exhibition, leisure business, cultural performance, sports and entertainment, natural science popularization and ecological rest at high, medium and low density with natural ecological zones.

- **Build a future-oriented new digital industrial city**

Seizing the opportunity of digital industry, the district promotes the development towards a future-oriented new digital industrial city, such as building the Digital River and Sea International Industrial City and Lingang Nanqiao Science and Technology Park. Fengxian builds a digital platform for empowering industrial development, builds an innovative demonstration zone of urban digital transformation, promotes digital industrial clusters and agglomeration to realize the new city construction with three key industries of digital industry, beautiful and healthy industry, intelligent network connection as well as "X service belts" such as commercial complex, and international community.

Figure 23 Lingang Nanqiao Science and Technology Park

(4) Build a modern new city with resilience

- **Construct a resilient urban space**

Based on regional ecological resources, Fengxian District builds functional areas such as Shanghai Fish, central forest land and ecological city business district around the industrial layout such as Oriental Beauty Valley and Future Space, and plans to build an urban area with three-dimensional industrial comprehensive functions. Construct the

resilience of spatial layout through the elastic adaptation of space and the reasonable reservation of emergency space and site; by taking the ecological advantage of the central forest land, highlight the construction concepts of green resilience such as sponge city and green building; strengthen the control of indexes like roof greening rate, proportion of green open space and green building; create a multi-level green demonstration zone with zero-carbon building, green block and carbon neutral business district to reflect the blue-green resilience characteristics in new city design. Fengxian District plans to complete the construction of sponge city in the built-up area by 40% in 2025, advance the overall construction of sponge implementation projects from such aspects as transportation infrastructure, new city construction, water system and greening system to realize the whole life cycle control of sponge city construction.

- **Construct a multi-level green intelligent transportation network**

According to the different functional positioning of city lines and urban lines, Fengxian District adopts the network layout with layered functions by arranging city lines around new city for quick connection with the outside world, while taking into account the traffic reservation for the flexible development space in new city. The urban lines, however, are deeply arranged in the new city to guarantee large-capacity transportation, and effectively connect the integrated development of Yangtze River Delta Metropolis Circle and the construction of Fengxian New City. The district actively promotes traffic digital transformation. The special planning for the design of smart traffic was started in 2021 to promote the construction of intelligent three-dimensional traffic management system with integrated transportation platform and digital management system of roads.

- **Create a blue water network with organic resilience**

Since 2014, Fengxian District has planned to build and promote the construction of "Cross Water Street" in the Punan Canal, Jinhui Port of Nanqiao new city. Relying on the multiple water system resources of Punan Canal, Jinhui Port and Hangzhou Bay, the functions of riverside activity areas on both sides of Punan Canal have been promoted; by linkage with projects as "Gu Hua Park" and "Shanghai Fish", using Punan Canal for passenger transportation and urban transportation, construction of Punan Canal bus terminal and development of water tour routes, the regeneration of Punan Canal and organic linkage with various water environment systems have been advanced in the area. According to the principle of "diverting water from the north to the south and sending water from the west to the east", Fengxian District conducts dispatching of water resources and flood control for 13 sluices under the control of the district. During 2017-2021, a total of 9,242.76 meters of flood control walls were demolished, built and reconstructed, and comprehensive improvement and road maintenance have been built and completed, such as Qingkan bank in Donggang Pond and the inner slope of enclosed levee of the eastern beach of Dongtan Levee, CHD Grey Dam. Riverway improvement such as the reconstruction of check sluice in Juchao Port and the emergency maintenance of south gate of Jinhui Port were completed, which improved the flood control, tide retention, and water drainage capacity of the district.

Case 21 Water System Management of "Shanghai Fish"

Located in the center of Fengxian New City, "Shanghai Fish" park covers a total area of 119 hectares, including about 53 hectares of water area and about 66 hectares of green area. Through seven major projects, including water source pre-treatment, basement improvement, water transparency improvement, purification of submerged plants, filtration of aquatic plants, algae control for aquatic animals, micro-ecological regulation and ecosystem optimization, the project has successfully achieved comprehensive improvement of water quality through physical and ecological technologies without using any chemical reagents. Currently, the water quality of "Shanghai Fish" has reached the Class IV standard of the Environmental Quality Standards for Surface Water (GB2002-3838).

Figure 24 Shanghai Fish area

- **Construct a green and ecologic forest city**

The construction of national forest city was initialized in August 2022, aiming to increase the forest coverage rate above 25% in two years. In the process of construction, Fengxian District optimizes the ecological spatial layout, and implements ecological restoration in combination with urban organic renewal under the guidance of plan. In terms of expanding forest coverage rate, the district actively promotes the construction of ecological corridor around the new city and Huangpu River-Daye River ecological corridor, and promotes the overall construction of forest land in combination with rural revitalization and development by giving full play to regional characteristics. Aiming at the goal of "One park, one city", the district constructs a green land system of urban and rural park with regional park (country park), urban park, regional park and community park (county-level park) as the main body, which is supplemented by pocket park and three-dimensional greening. In terms of policy guarantee, Fengxian District implements certain financial subsidies for afforestation and greening, such as granting three-year financial subsidies for villagers who have planted and maintained trees based on required method in front of and behind houses, and for related planting organized by Village

Committee beside villages, roadsides and watersides. Continuous efforts have been made to promote the construction of "digital Garden" and "smart park", and a digital information database for landscaping, an information release and social service information sharing platform, and an information-based supervision system for urban landscaping have been established to realize the intelligent operation and management of park.

Figure 25 Fengxian central woodland

Case 22 Construction of Zhuanghang Country Park

The construction of Zhuanghang Country Park was started in 2019. As the key starting area for agronomy park in Fengxian District, this country park is located in the north of Zhuanghang Town of Fengxian District, north to Huangpu River. It houses dense water systems and covers a total area of about 14 square kilometers. Combined with the overall human cultural and ecological texture of the region, the district focuses on building a "π-type" core area of 4.5 square kilometer area surrounded by water system, green forest and roads. Surrounding the five major elements of "land, forest, water, road, and house", Zhuanghang Country Park has been constructed with the strategy of "Ecological Edition"+ "Functional Edition", and completed the cluster construction of "Yuli Forest", "Peach Gallery", "Guanghui Wetland" and "Puwei Portal", providing the general public with a place for sightseeing and recreation. In addition, this injects new dynamic to the development of new rural industries, improving economic efficiency and humanistic benefits and enriching rural formats.

1) "Guanghui Wetland" cluster: Having a total building area of about 7,100 m^2, the project is housed in Puxiu village of Zhuanghang Town. Relying on wetland landscape, vast fields and original rural texture, a rural manor group with attractive ecological environment and patchwork space has been built. The buildings are in the flush-gable modern style while retaining the style of traditional Jiangnan buildings, emphasizing the spatial richness, and the diverse visual space endows the buildings with more details.

2) "Yuli Forest" cluster: The project is located in the waterfront conservation forest of Yuli

village, covering a total building area of about 7,000 m². Combining the original ecological conservation forest in the district and the courtyard landscape in front of and behind house, the group is in the form of "New South of the Yangtze River of Shanghai style", which redefines the charm of "30% gray and 70% white" while keeping the building form of Jiangnan residential community.

3) "Peach Gallery" cluster: The project is in Puxiu village and has a total building area of about 2,800 m². Through the farmhouse peach yards and ecological forest lands in the district, this group restores the original pastoral style of Shanghai in the 1960s-1970s, and provide tourists with country-style homestay and special catering. What's more, a park with typical farming culture atmosphere in Jiangnan water town is created by offering recreational functions such as forest camp and happy farm by combining existing forest land and farm land landscape.

4) "Puwei Portal" cluster: On the east side of Puwei Highway, the project covers a total building area of 400 m². Relying on the local advantages, the group combines art with ecology, leisure, experience and sightseeing, and plans to create a country park landscape with artistic characteristics to the west of the area.

5) "Four Good Rural Roads" project: The country park is spanned with eight "Four Good Rural Roads" (with four vertical and four horizontal roads respectively) with a total length of 13.34 kilometers. With "pastoral" as the key point, the roads are built by following the principles of "planting the trees in their original places with scattered space by adapting to local conditions" to organically integrate the current plants around the road and the grouped greening landscape; the characteristics of "homesickness" is highlighted by integrating such elements as old house materials, local green plants and Zhuanghang traditional cloth into the design and arrangement of small landscapes, street lamps and bridge railings; by grasping the highlight of "intelligent", advanced functions such as early warning, information sharing and environmental monitoring can be realized through 5G planning and construction.

Figure 26 Zhuanghang Country Park Guanghui Wetland

SDG17: Partnerships for the Goals

Under the goal of “Common Development”, Fengxian actively promotes international friendly exchanges and cooperation, participates in paired-up assistance between the eastern and western parts of China, and deepens the coordinated development of Yangtze River Delta. In addition, it aims to build an attractive development environment by bench-marking international standards to promote smooth and close international economic trade development, and strives to enhance exchanges and cooperation with global cities through deep participation in “World Cities Day”.

Response Framework

Important measures	Specific practices	Typical cases	Key indicators	Response to SDG17
Actively promote international friendly exchanges and cooperation	Expand channels for foreign exchanges and cooperation.	The exchange and communication between Fengxian District and Gyeongsan-si have grown in depth and substance.	► Agreement on friendly exchange relationship with foreign cities and institutions since 2015 ► Annual reception of domestic and foreign tourists	**17.16**
	Promote the sharing of integrated development results.			
	Improve the service guarantee for foreigners.			
Actively carry out mutual assistance and coordinated development with other areas in China	Domestic assistance and joint development	National Youth Study Travel Base in Wuchuan County, Fengxian	► Main paired-up assistance, exchange and cooperation areas in China in recent years	**17.15** **17.17**
	Strategic cooperation with Yangtze River Delta cities	Example of cooperation between Fengxian District and Yangtze River Delta cities and counties		
Create an attractive development environment	Reform in examination and approval system and comprehensive supervision		► Total amount of contracted foreign investment through foreign direct investment ► Number of contracted projects through foreign direct investment ► Imported product amount ► Exported product amount ► Composition of contracted projects through foreign investment and investment from Hong Kong, Macao and Taiwan over the years	**17.12**
	Digital-empowered government affair services	Initial launch of "simultaneous issuance of five certificates" in Fengxian District		
	Efforts in soliciting business and attracting investment	Investment season series activities for "Oriental Beauty Valley Fengxian New City"		
Deeply participate in "World Cities Day" activities	Actively participate in the China Observance of World Cities Day.	Fengxian events of 2021"World Cities Day"		**17.16** **17.17**
	"1+1+3+5" series activities in 2021			
	Support the activities through joint efforts by multiple departments.			

Key Indicators

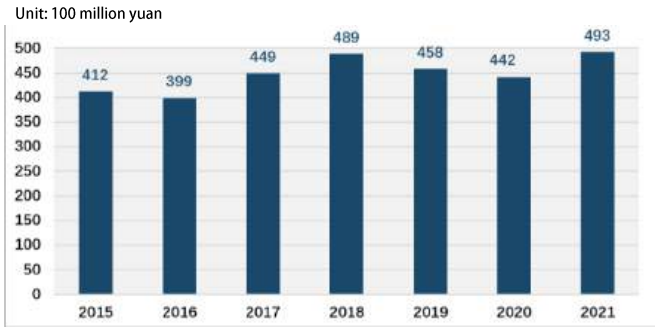
Agreement on friendly exchange relationship with foreign cities and institutions since 2015

Since 2015, Fengxian District has signed friendly exchange relations agreements with **5 foreign cities** and **2 international institutions**.

Main paired-up assistance, exchange and cooperation areas in China in recent years

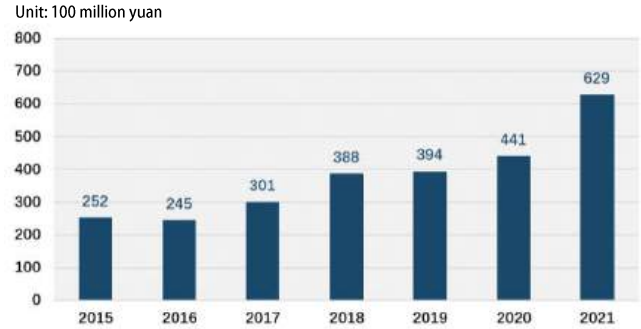
Since 2018, Fengxian District has mainly conducted paired-up assistance with **3 counties** in Zunyi City, Guizhou Province, **1 county** in Guoluo Prefecture, Qinghai Province, and **5 counties** in Dali Prefecture, Yunnan Province.

Amount of imported products



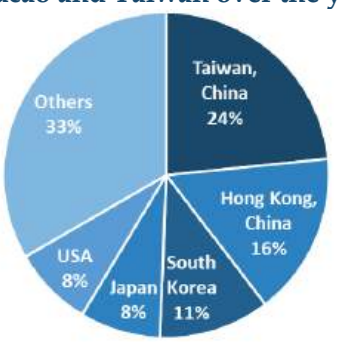
From 2015 to 2021, the annual average amount of imported products in Fengxian District amounted to **44.9 billion yuan**.

Amount of exported products



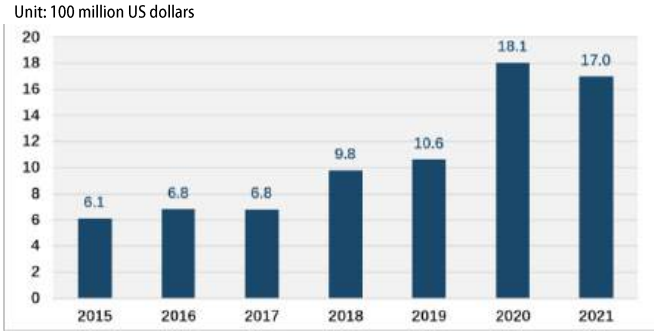
From 2015 to 2021, the annual average amount of exported products in Fengxian District leaped from 25.2 billion yuan to 62.9 billion yuan, with an average annual growth rate of **16.4%**.

➘ Composition of contracted projects through foreign investment and investment from Hong Kong, Macao and Taiwan over the years



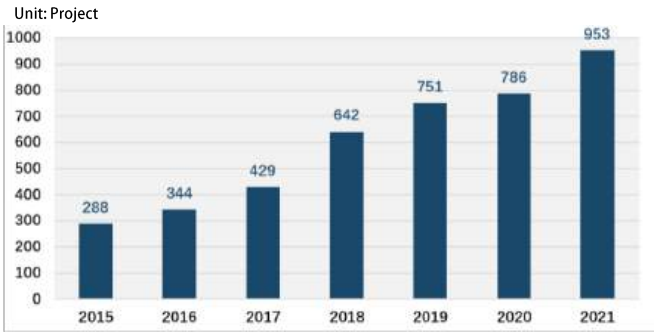
By the end of 2020, in the composition of contracted projects regarding total investment from foreign investment and investment from Hong Kong, Macao and Taiwan over the years, Chinese Taiwan, Chinese Hong Kong, Korea ranked the first three, being **24%**, **16%**, **11%** respectively.

➘ Total amount of contracted foreign investment through foreign direct investment



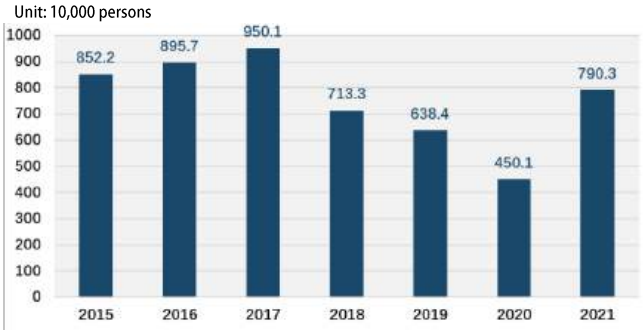
From 2015 to 2021, the total amount of contracted foreign investment through foreign direct investment rocketed from USD 610 million to USD 1.70 billion, with an average annual growth rate of **18.6%**.

➘ Total amount of contracted foreign investment through foreign direct investment



From 2015 to 2021, the number of contracted projects through foreign direct investment surged from 288 to 953, with an average annual growth rate of **22.1%**.

➘ Annual reception of domestic and foreign tourists



From 2015 to 2021, the annual average number of domestic and foreign tourists received by Fengxian District reached **7.55 million**.

Major Progresses

- **The friendly exchange between international cities and related institutions has been continuously expanded**

Fengxian has actively worked to expand the friendly exchanges with international cities and related institutions. Since 2015, friendly exchange agreements have been signed with five foreign cities and two international institutions. In November 2015, Fengxian signed a letter of intent for friendly exchanges with Zabliak, Montenegro; in June 2018, it signed a memorandum of friendly exchanges and cooperation with Lappeenranta, Finland; in June 2018, the district signed letter of intent for friendly cooperation and exchange with Pardubice, Czech; in August 2018, it signed a memorandum of friendship and cooperation with Antwerp, Belgium; in November 2019, it signed a letter of intent for friendly exchanges and cooperation with Gyeongsan-si, Korea; in January 2016, the *Strategic Cooperation Framework Agreement* was signed between Fengxian and Thai-Chinese Cultural Promotion Committee; in October 2016, it signed *Strategic Cooperation Agreement between Oriental Beauty Valley in China and Cosmetics Valley in French* with the Cosmetics Valley in French.

- **The paired-up assistance with inland areas in China has been advanced steadily**

Under the overall arrangement of Shanghai, Fengxian District has actively participated in paired-up assistance with inland areas in China. Since 2018, Fengxian District has mainly conducted paired-up assistance with three counties in Zunyi City, Guizhou Province, one county in Guoluo Prefecture, Qinghai Province, and five counties in Dali Prefecture, Yunnan Province. From 2018 to 2021, Fengxian District guided 6, 6, 9, 6 industrial poverty alleviation projects in paired-up assistance areas respectively, and the actual investments were 240 million yuan, 210 million yuan, 310 million yuan and 170 million yuan respectively. During the four years, Fengxian has sent 43 leaders and 142 professionals of different specialties to the paired-up areas, and held 78 training courses for 3,350 persons in the paired-up areas. In addition, 98 leaders from the paired-up areas came to Fengxian for learning in corresponding posts.

- **The breadth and depth have been continually expanded concerning the coordinated development in Yangtze River Delta**

Guided by urban development and positioned as "the western gateway of the new district, the city center in the south of Shanghai, and a vital new city in the Yangtze River Delta", Fengxian District strives to build a comprehensive node city with distinctive industrial characteristics and unique ecological endowment around the Hangzhou Bay development corridor, and actively seeks common development with Yangtze River Delta urban agglomeration by integrating itself into the development process of the Yangtze River Delta. Up to now, Fengxian has formally signed cooperation framework agreements with Shengsi County in Zhoushan, Zhejiang, Longquan City in Lishui, Zhejiang, Wuxing District in Huzhou, Zhejiang Province, as well as Bozhou City and Huangshan City in

Anhui Province, Huangshan City. By building regional cooperation mechanisms, the regional development cooperation practice has been advanced in terms of industrial development, talent exchange, infrastructure, ecological protection, social interaction, etc.

- **The developing environment is more and more attracting**

Fengxian District strives to create an attractive and first-class development environment, and has made remarkable achievements in the reform of examination and approval system and comprehensive supervision as well as digital-empowered government affair services. From 2019 to 2021, there were 360,366 new market entities. The empowerment level of "AI + Integrated Online Platform" has been continuously improved. Relying on Shanghai Electronic License Library and "Suishenban" APP, the "exemption of submitting notarization or certification documents" has been available for 1,406 businesses through the improvement and application of comprehensive window system functions in Fengxian District Administrative Service Center. In 2020, Fengxian District took the lead in signing a tripartite cooperation agreement regarding "inter-provincial government services" with Huicheng in Guangdong Province and Jiangyin in Jiangsu Province, marking the first attempt following Shanghai's exploration of "Integrated Online Platform" in Yangtze River Delta. Efforts have been made in soliciting business and attracting investment in the district: In 2021, 693 promotion activities were conducted, including: 237 online and offline promotion conferences, and 456 targeted promotion activities; the domestic investment amounted to 14.4 billion yuan, achieving the annual target by 111%; the service trade tax across the district hit 36.194 billion yuan, a year-on-year growth of 52.73%.

- **The participation in "World Cities Day" activities has been deepened**

Fengxian District deeply participates in the "World Cities Day" activities and makes full use of the platform to expand cooperation and exchanges with international cities. By holding the 2021 "World Cities Day" activities, the district has deepened the cooperation and exchanges with other cities, universities and institutions, such as: International Enterprise Singapore. Through the "World Cities Day" platform, Fengxian has further enhanced external promotion and expanded its influential. The event was reported by 33 journalists (25 present and 8 absent) from inside and outside the district from media at all levels including central media, municipal media and district media as well as online media and foreign media.

Important Measures

(1) Actively promote international friendly exchanges and cooperation

- **Expand channels for foreign exchanges and cooperation**

Fengxian District strengthens liaison and exchanges with consulates general of relevant countries in Shanghai, local government offices in Shanghai and business

associations in Shanghai, and carries out a series of communication and promotion activities to deeply tap into exchange and cooperation resources. During the epidemic, "Oriental Beauty Valley ·Future Space" Investment Promotion Center in Korea continued to promote the docking of Korean high-quality products in the Chinese market, visited dozens of Korean brands and promoted the landing of projects in Oriental Beauty Valley. The Oriental Beauty Valley Milan Center was officially inaugurated in Italy. Improve the communication mechanism with the government economic departments, business associations and key enterprises in cities with friendly international exchange relations, sort out the industrial characteristics and trade needs among international cities, give full play to the overseas resources of foreign enterprises in Shanghai and 18 "Magnolia Award" winners, open up international communication links, and strengthen the docking cooperation in industry, trade and scientific innovation. Fengxian District organized a series of online and offline international exchanges or urban promotion activities to promote Fengxian's business environment and investment policies, and held "The Oriental Beauty Valley International Cosmetics Conference" for five consecutive years to create the urban industrial brand. In 2021, 11 large-scale international conferences and forums of various types were held, such as Sino-Italy (Shanghai & Milan) Beauty Industry Online Theme Forum, Concert to Commemorate Beethoven's 250th Birthday, "Shanghai Fish" International Public Art Biennale, etc. Through these activities, the popularity and influence of Fengxian urban brand has been improved continuously.

Figure 27 Site of The Oriental Beauty Valley International Cosmetics Conference of 2020

Case 23 In-depth and Substantial Exchange and Communication between Fengxian District and Gyeongsan-si

In recent years, Fengxian District has been deeply cultivating the resources of its friendship

cities to expand the international "circle of friends". Fengxian District and Gyeongsan-si, Gyeongsang-bukdo, Korea actively carry out exchanges to strengthen mutual understanding and pragmatic cooperation. With the increasingly frequent cooperation and exchanges between Fengxian District and Gyeongsan-si, both parties have a strong will to further promote and expand the depth and breadth of friendly exchanges. On November 2, 2019, they signed the *Letter of Intent for Friendly Exchanges and Cooperation between Shanghai Fengxian District of the People's Republic of China and Gyeongsan-si, Gyeongsangbuk-do, Republic of Korea* in Shanghai Fengxian District. Facing the global epidemic, the two cities innovated and promoted cooperation and exchanges, which fully reflected the brotherhood of mutual support and assistance.

1) Expand the exchange depth of international cities by taking advantageous and characteristic industries as the breakthrough point. Closely integrate foreign communication with investment promotion. Focusing on the strategic deployment for the development of "Oriental Beauty Valley" big health industry, Fengxian District has actively promoted Fengxian District Industrial Park to explore external resources and enhance the opening-up ability. Vigorously promote the connection between Sino-Korea Innovation and Pioneer Park and Korean economic departments, industrial and commercial organizations, trade associations and internationally renowned enterprises in the district. By opening channels, building platforms, and providing policy consultation and information services, attract more institutions and enterprises with complementing advantages to visit, communicate and land projects in Fengxian District so as to promote the economic development of the district. Through industrial docking cooperation, the interconnection between the two governments has been enhanced so as to promote exchanges in science and technology, culture, sports and other fields.

2) Expand the communication breadth of international cities by taking substantive projects as the starting point. Relying on international conferences, provide a platform for the exchange of governments, enterprises, associations, schools and other organizations in international cities. "Sino-Korea Cultural Creative Industry Cooperation and Exchange Meeting", the first cooperation project between two parties, was successfully held in Fengxian in May 2019, and the *Practical Agreement on Joint Cooperation for the Development of Cultural Creative Industry* and the *Framework Agreement on Cultivation, Exchange and Cooperation of Game Creative Enterprises* were signed. Cui Yongzuo, Mayor of Gyeongsan-si, Korea, was invited to attend the second "Oriental Beauty Valley International Cosmetics Conference" in 2019. In September 2019, Gyeongsan-si Football Association and Fengxian District Football Association signed an agreement on football exchange, agreeing to carry out exchange visits every other year from 2020, and promote exchanges and cooperation in the fields of culture, art and economy through exchange on football.

- **Promote the sharing of integrated development results**

Fengxian District intensified the international investment promotion and economic and trade cooperation. For example, Oriental Beauty Valley and French Cosmetics Valley signed a strategic cooperation agreement to jointly promote the development of beautiful health industry. Shanghai Institute of Technology and Daegu Haany University signed an education cooperation agreement. During the epidemic, four middle and primary schools and their corresponding sister schools in Korea and Japan carried out more than ten online cultural exchange activities, which further enhanced the internationalization level of education in Fengxian. Fengxian District hired internationally famous masters to design

and invested heavily to build cultural landmarks such as Nine Trees Future Art Center and museums, and successfully held the "Yanzi Cup" International Youth Calligraphy Competition, exchanged visits and performances with Serbian art teams, successfully held Concert to Commemorate Beethoven's 250th Birthday in 2021, and invited internationally renowned artists to perform on the same stage. In addition, 58 ministers, consuls general and consuls from 33 countries including France, Indonesia, Russia and Korea were invited to Fengxian, visit cultural landmarks such as Nine Trees Future Art Center and Qingxi Old Street and taste special cuisine, through the above efforts, Fengxian strives to promote its good international image and enhance its international popularity.

- **Improve the service guarantee for foreigners**

To intensify the introduction of foreign scientific and technological talents, innovative and entrepreneur talents and high-skilled talents, Fengxian District has rolled out several new policies, such as further relaxing restrictions on age, educational background and work experience, and actively examined and approved foreigners' work permits in China. In accordance with the policies and requirements of the Ministry of Foreign Affairs and the Municipal Foreign Affairs Office, timely adjust the operation procedures and standards for inviting foreigners to China and the fast-channel application to ensure the production, economy, trade, science and technology activities of important enterprises. Since the outbreak of COVID-19, Fengxian District has set up a volunteer team with foreign affairs translation ability in English, German, Korean, Japanese, and the likes to provide timely services such as policy inquiry and material supply for isolated foreigners.

(2) Actively carry out mutual assistance and coordinated development with other areas in China

- **Domestic assistance and joint development**

The first is consumption assistance. Fengxian District actively explores poverty alleviation through consumption by organizing order-placing meetings, opening sales stores, promoting "public welfare + consumption" mode, holding trade fairs, enabling the communication between the supply and marketing parties, and implementing the measures of "entering institutions, enterprises, schools and communities", and cultivating leading production and sales of enterprises of agricultural products. The seconds is labor cooperation. Fengxian District establishes a docking mechanism for labor cooperation between the Fengxian District Human Resources and Social Security Bureau and paired-up assistance counties to help build the cooperation places for human resources and social security departments, intermediary companies and employment units of the two places. The third is to deepen the exchange and communication. Focusing on poverty alleviation through education, health improvement, cultural tourism cooperation, economic and trade business exchanges and other fields, Fengxian provides macro guidance and serves as a bridge to promote the integration and exchange between the two places for cultivating the pioneer of entrepreneurship and prosperity, and guiding social forces to participate in assistance.

Case 24 National Youth Study Travel Base in Wuchuan County, Fengxian

Funded by Shanghai Fengxian Transportation Energy (Group) Co., Ltd., the Youth Study Travel Base in Wuchuan County, Fengxian was opened on September 20, 2019, marking the highly integration and development between the east and the west of Wuchuan County. From poverty alleviation to long-term income increase, from paired-up assistance to joint construction, and from problem finding to targeted development, Fengxian and Wuchuan County have linked the resource endowments of the east and the west around "Study +" and jointly created a demonstration model of cooperation. Amid epidemic, more than 50,000 people came to the base for activities in 2020, and Youth Study Travel Base in Wuchuan County has become an "internet famous site" in Zunyi. In November, 2020, the base was approved as the National Study Travel Base after research decision by the National Research Travel Base Accreditation Committee.

1)Tap the resource endowment of Wuchuan County and the advantages of Fengxian. Wuchuan County in Guizhou Province is endowed with distinctive natural and humanistic characteristics. Mainly of Karst landform, the county features steep mountains, adventurous valleys, strange caves, charming rocks, spacious gardens, special springs and clear waters. Wuchuan is also a multi-ethnic settlement and one of only two Gelao autonomous counties in China. After comprehensive investigation by Fengxian and Wuchuan County, it is determined to take study tour as the entry point for Wuchuan County tourism. The Youth Study Travel Base was built in Wuchuan County, Fengxian to build the brand of "First City for Tour Trip in Wuchuan" and create a complete tourism pattern covering all scenarios and industries suitable for all seasons and available for all.

2) The base is the project with the largest single investment scale supported by Shanghai. The Youth Study Travel Base in Wuchuan County, Fengxian was commenced in March 2018 and completed and opened in September 2019. The base is mainly divided into three functional areas, including Study Travel Base, Living Supporting Area and Outdoor Development Area. Positioned as a comprehensive training center, it is a multi-functional comprehensive travel service center based on Gelao folk culture learning and exchange, outdoor development training, etc. In addition, relying on local resources, such as China Gelao National Culture Museum, "The Source of Gelao" Scenic Area (AAAA), Longtan Ancient Village Scenic Area, Gelao Prairie, Shichao Tiankeng Scenic Area, etc., to provide tourism research projects and holiday summer camp activities for local young people and those from other provinces and cities (such as outdoor rock climbing, adventure, Wuchuan red tourism culture, Gelao national culture promotion and non-legacy culture inheritance, etc).

3) Deepen the highly-integrated development mechanism of industry, university, tourism and research. According to the mode of "joint venture, tripartite trusteeship, break-even and cooperative operation", Shanghai Fengxian Transportation Energy Group and Wuchuan Gelao and Miao Autonomous County Tourism Investment Development Co., Ltd. set up a joint venture company, introduced Shanghai Lvmama Group Company as the later operation team of the base. The Shanghai party will gradually withdraw after the base achieves profit. According to the "3 +7" development plan, that is, three-year initial period + seven-year development period, Wuchuan County will become a typical demonstration for the industrial integration with research as the core within ten years, covering research courses provided by the base, catering, accommodation, parent-child activity, company group building, enterprise treatment and recuperation, venue leasing, conference and exhibition, tourism shopping, local travel services.

4) Effectively drive the long-term poverty elimination among people living in poverty. The

development of Wuchuan County's "Research study+" industry based on the research study travel base will drive the development of surrounding industries such as catering and entertainment, hotel accommodation, traditional retail, cultural sports, cultural creativity, modern agriculture, scenic spot management, etc. It will also promote the employment and entrepreneurship of local impoverished people and long-term income increase, and drive the combination of short-term support and stable poverty alleviation, as well as the combination between poverty alleviation through development and government-subsidized poverty alleviation.

- **Strategic cooperation with Yangtze River Delta cities**

Cooperation mechanism has been actively built between Fengxian District and cities in Yangtze River Delta to realize inter-regional policy exchange, resource sharing, industrial complementary and win-win cooperation. The first is to strengthen planning convergence and serve the new development pattern. Fengxian steps up efforts to an open and integrated strategic space to create a strategic development axis for Hangzhou Bay linkage, embodying the strategic functional axis of Fengxian's development by "linking the west and east". The second is to deepen regional linkage and coordinate cooperation. Implement the National Development and Reform Commission's paired-up cooperation assistance program and promote the cooperation and assistance between Fengxian and Bozhou; hold the "Oriental Beauty Valley · Achieve Tremendous Change" Yangtze River Delta Life and Health Youth Talent Training Camp; promote the inter-provincial optimization of enterprise layout of new chemical materials and other industries to further reflect the strategic value of the industrial chain layout of new chemical materials (especially electronic chemicals) for the construction of collaborative innovation industrial system in the Yangtze River Delta. The third is to promote mutual cooperation and deepen cooperation and exchanges in culture and tourism. By attending the "Opening Ceremony of the Joint Conference on the Work of the People's Congress of Seven Places in Yangtze River Delta & Signing Ceremony of the Global Tourism Framework Agreement", Fengxian has strengthened global tourism cooperation with Changshu City in Jiangsu Province, Zhoushan City, Taizhou City, Jiande City, and Shengsi County in Zhejiang Province, as well as Lu'an City in Anhui Province, and carried out cultural communication with Longquan City in Zhejiang Province.

Case 25 Example of Cooperation between Fengxian District and Yangtze River Delta Cities and Counties

1) Collaboration with Shengsi County, Zhoushan, Zhejiang As the gateways of reform and opening up in Shanghai and Zhejiang respectively, Fengxian District and Chengsi County are close to each other across the water, and have maintained friendly exchange and win-win cooperation for a long time. Since May, 2018, the party and government leaders of the two places have conducted many visits and exchanges, and proposed to promote the joint integration into the overall development strategy of Yangtze River Delta. After negotiation, two parties formally signed a cooperation framework agreement on April 7, 2020 with the aim to accelerate the formation of an open and integrated development pattern by seeking deeper cooperation at higher platforms.

2) Cooperation with Longquan City, Lishui City, Zhejiang. To deeply implement the Yangtze River Delta integration strategy and support Longquan's overall integration with Shanghai,

Fengxian District formally signed a cooperation framework agreement with Longquan City in September 2019. Both parties will strengthen pragmatic cooperation in economic construction, urban planning, industrial transformation and upgrading, environmental protection, commodity circulation, scientific innovation, cultural exchange, improvement of people's livelihood and talent cultivation.

3) Cooperation with Wuxing District, Huzhou City, Zhejiang Province. After friendly consultation between the people's governments of the two places, a strategic cooperation framework agreement has been achieved through friendly cooperation and exchanges based on the principle of "mutual construction, mutual management and sharing". It is clearly stated that the two places will deepen strategic cooperation in the future, especially the strategic cooperation between Oriental Beauty Valley and beauty town to build three service platforms of "innovation and entrepreneurship platform, financial investment platform and human resources platform" and enable smooth talent exchange and integration of production, education and research.

4) Cooperation with Bozhou City, Anhui Province. With close distance, similar culture, integrated industry and complimentary advantages, the Fengxian and Bozhou governments signed a strategic cooperation agreement in December 2020. Taking Fengxian's cultivation of 100 billion industrial clusters in the "Oriental Beauty Valley" and Bozhou's construction of "World Capital of Traditional Chinese Medicine" as strategic cooperation opportunities, both parties take full play to their advantages, and jointly promote the integrated development of each other's cosmetics manufacturing, life and health, bio-pharmaceuticals, modern Chinese medicine and other leading industries.

5) Cooperation with Huangshan City, Anhui Province. A close tie is built between Fengxian and Huangshan due to ecology and greening. On November 7, 2021, two parties signed a strategic cooperation agreement to give full play of the characteristics and advantages and strengthen the linkage development of industries, deep integration of culture and tourism, as well as co-construction of social undertakings. Further promote exchanges and cooperation. Through the establishment of a normalized working mechanism, frequent visits and "hand in hand" development can be achieved between two parties to form a pattern of mutual benefit and common development.

(3) Create an attractive development environment

- **Reform in examination and approval system and comprehensive supervision**

Fengxian District promotes the reform of examination and approval system, and the "non-bureaucracy" examination and approval reform to realize the flattening of examination and approval levels. In addition, inter-departmental examination and approval working groups are established for centralized office work. At the same time, Fengxian District strengthens the comprehensive regulatory reform, consolidates the foundation of "Internet+ supervision", and establishes an inclusive prudential supervision mechanism. An exemption list has been built for the first or unintentional minor illegal business activities. All departments jointly promote the reform of "one industry, one license" and comprehensive supervision reform through active cooperation, build a comprehensive supervision system with effective resource sharing and organic business coordination, and create a supervision mode of "no disturbing and response to everything"

for enterprises to continuously optimize the business environment of Fengxian District.

- **Digital-empowered government affair services**

Fengxian District works to advance the government affair services empowered by digital technology. First, deepen the reform of "completing every work efficiently". Prepare the annual reform work plan of "completing every work efficiently", arrange the list of "work" in the functional departments at the direct level to make work done more convenient and efficient, and better realize "one thing at one time". Second, drive the "convenient service" and "fast service". "Convenient service": Provide "Personalized Guide + Intelligent Declaration" service for pre-judgment of application conditions, pre-filling of application table and pre-examination of application materials; "Fast service": By streamlining the table filling and intelligent approval processes, it is possible to fill and report data within 3 minutes and without submitting additional data again. Third, deepen the "exemption of submitting notarization or certification documents". Drive the implementation of "exemption of submitting notarization or certification documents" through integrated online platform and advance the electronic filing so that enterprises and masses can submit less or even no data in the actual work. Four, innovate the government service assistance mode, and effectively solve the difficulty of accessing government services from the business sector and the people. Five, drive the "Enjoyment without application". Contact with the municipal platform to realize the transformation from "precise push" to "precise fulfillment" of policies.

Case 26 Initial Launch of "Simultaneous Issuance of Five Certificates" in Fengxian District

"Simultaneous issuance of five certificates" is a phased achievement of Fengxian District in optimizing the business environment, and an exploration attempt to speed up the approval process. This initiative helps increase the intensity of optimizing business environment, and continuously improve the "sense of gain" among enterprises. Based on routine work flow, step-by-step handling is required for social investment projects to obtain land, pass planning, and obtain relevant certificates, which involves many links and is time-consuming. If enterprise managers are unfamiliar with business, it may take even one and a half years to handle them. This long-time approval mode reduces the "sense of gain" among enterprises, which is not conducive to optimizing the business environment.

To actively explore process reform, Fengxian District began to study the "simultaneous issuance of five certificates" as early as 2019, and explored the basic requirements and implementation path for this initiative. Shanghai Zhonglin Supply Chain Management Co., Ltd. got the *Approval Letter of Construction Land*, *Land Use Planning Permit*, *Approval of Construction Project Design Scheme*, *Planning Permit of Construction Project* and *Real Estate Title Certificate* within one working day, marking the first case of "simultaneous issuance of five certificates" in China.

- **Efforts in soliciting business and attracting investment**

Fengxian District continues to strengthen the investment attraction in real economy, visits target enterprises in different places to promote the landing of projects under

discussion, activates the social investment attraction platform, mobilizes the platform's initiative to realize the agglomeration of characteristic projects, and promote the specialized, functionalized and characteristic development of the parks. Fengxian District steadily promotes the construction of Oriental Beauty Valley Industrial Cluster Center, and helps service trade investment to maintain sustainable and rapid development in a higher degree and a wider dimension by building "park-based enterprises and platform-based projects" to form a good pattern in which Oriental Beauty Valley Characteristic Park, "Park-in-Park" Complex and Industrial Cluster Center march forward together. By giving fully play of the roles of entrepreneurs, overseas offices, chambers of commerce, associations and other investment promotion intermediaries, Fengxian actively attracts new businesses through existing ones and promotes investment through circle of friends to improve the pertinence and effectiveness of investment promotion. It actively communicates with pro-business ambassadors, high-quality investment platforms, overseas offices and chambers of commerce associations to strive for high-quality project resources. By the end of 2021, it had a total of 59 district-level pro-business ambassadors.

Case 27 Investment Season Series Activities for "Oriental Beauty Valley Fengxian New City"

When the COVID-19 epidemic is under control, Fengxian District accelerated the pace of "going out" to attract investment. From April to June 2021, it organized a series of investment season activities for "Oriental Beauty Valley Fengxian New City", and held a total of 66 promotion conferences, with more than 6,300 offline participants and 3,174,200 online participants; it carried out 143 targeted visits for key customers, negotiated and promoted 555 projects, which further enriched the investment promotion project library; Oriental Beauty Valley Investment Promotion Center, Yangtze River Delta International Cultural Exchange Center and China Enterprise Association Entrepreneur Club were established in Chengdu, Hangzhou, Shenzhen and Nanjing; it has promoted the signing of a total of 147 projects, with a total investment of nearly 116 billion yuan, an estimated output value of 86.2 billion yuan and a tax revenue of 7.8 billion yuan.

1) Carry out timely deployment in accordance with clear requirements. On April 6, Fengxian issued the *Notice of Investment Promotion Office of Fengxian District of Shanghai on Launching the Series Activities of "Oriental Beauty Valley & Fengxian New City" Investment Season*, which planned to conduct over 100 theme promotion and targeted communication activities of "Going Out" and "Inviting In" by closely following the "cutting-edge and characteristic" requirements.

2) Focus on the key points with targeted efforts. First, focus on key areas. Focusing on key investment promotion areas such as Oriental Beauty Valley, Future Space, Fengxian New City, rural revitalization, cultural and creative industries, and five types of economy (innovation-driven economy, service economy, headquarters economy, open economy, and flux economy), the district conducts offline promotion meetings with distinctive themes and outstanding characteristics and targeted visits to key customers in combination with industrial positioning and characteristic resources. Second, focus on key merchants. The event invited a large number of high-level guests, and attracted guests from industry and urban development. More than 90% of the merchants were new enterprise, and more than 80% were core executives such as chairman, general manager and deputy general manager, as well as heavyweight merchants above the president and vice president of chamber of commerce. Third, focus on key cities. Visits have been conducted to nearly 20 key cities in China for investment promotion or project docking, such as Beijing, Chengdu, Hangzhou,

Guangzhou, Shenzhen, Wuhan, Tianjin, Nanjing, Suzhou, Yangzhou, Wuxi, Xiamen, Zhuhai and Kunshan.

3) Continuously improve brand affect. Through online live broadcasting, the direct-level promotion meeting has attracted over 3 million views, which expanded the coverage of merchants and strengthened promotion. More than 60 news reports have been published or broadcast.

Figure 28 One corner of Oriental Beauty Valley

(4) Deeply participate in "World Cities Day" activities

- **Actively participate in the China Observance of World Cities Day**

Fengxian District has been deeply involved in the activities of "World Cities Day" since 2021. From October 31 to November 1, 2021, it participated in the closing ceremony of the China Observance of World Cities Day, New City Construction Forum, Ecological Resilience Forum, Third High-end Dialogue for Governance of New City in Shanghai and Tongji Urban Communication High-end Forum, which have achieved complete success. In 2022, based on the opportunity of Shanghai's hosting of the 2022 World Cities Day Global Observance and 2nd SDG Cities Global Conference, Fengxian District actively prepared related activities as the venue of one theme forum, two international forums (thematic forums), two theme forums and one supporting exhibition, and carried out the compilation of *Fengxian VLR 2022*.

Case 28 Fengxian Events of 2021"World Cities Day"

From October 31 to November 1, 2021, the Fengxian activities of 2021 "World Cities Day" co-sponsored by the Ministry of Housing and Urban-Rural Development of the People's Republic of China (MOHURD), Shanghai Municipal People's Government and UN-Habitat and hosted by Shanghai Municipal Commission of Housing, Urban-Rural Development and Management and

Fengxian District People's Government brought the curtain down smoothly at Fengxian Oriental Beauty Valley Hotel. During the period, according to the structure of sponsoring, hosting, co-organizing and supporting activities, many activities such as closing ceremony, New City Construction Forum, Ecological Resilience Forum, Third High-end Dialogue for Governance of New City in Shanghai and Tongji Urban Communication High-end Forum were organized and implemented. Jiang Wanrong, Vice Minister of MOHURD, and Zhang Wei, Vice Mayor of Shanghai attended the event and delivered speeches. During the two-day session, more than 550 representatives attended the events, involving more than 100 representatives from MOHURD, Ministry of Ecology and Environment of the People's Republic of China and other provinces and cities. Experts and scholars from 3 international organizations and 12 countries also attended the online and offline meetings.

Figure 29 Closing ceremony of "World Cities Day"

1) Further deepen cooperation and exchanges with other cities and institutions. Through the holding of event, especially the joint organization of conference, the district has deepened the cooperation and exchanges with other cities, universities and institutions, for example: Taking the special forum of Third Shanghai-Singapore High-level Dialogue on Urban Governance as the platform, the cooperation and exchange with the International Enterprise Singapore has been deepened.

2) Further promote the theoretical exploration and construction practice of new city. Through the holding of 2021 "World Cities Day", we have deepened our ideological understanding of "Better City, Better Life", resilient city construction and green development. Through the speeches and research sharing of leaders and experts in various forums, the theme of the conference "Adapting Cities for Climate Resilience" has been expounded, and a lot of guiding opinions and successful cases have been provided for the construction of new city, which was conducive to further building consensus and wisdom, promoting the high-quality development of Fengxian New City and all

regions of Fengxian, and making Fengxian New City "more and more beautiful".

3) Further promote Fengxian New City. Taking "World Cities Day" as a platform, the district further promotes the charms of Fengxian New City, fully displays the image of Fengxian, expands the influence of Fengxian District, and gathers more attention and social power on this new city.

- **"1+1+3+5" series activities in 2021**

In 2021, Fengxian District undertook some activities of World Cities Day in China for the first time, including one undertaking activity, one hosting activity, three co-organized activities and five supporting activities ("1+1+3+5" for short). The undertaking activity - closing ceremony of China Observance of World Cities Day with the theme of "Adapting Cities for Climate Resilience" was held on the afternoon of November 1, accommodating about 130 people. The host event - the New City Construction Forum, was held on the morning of November 1, had a scale of about 130 people and the theme was "Park City: When Humanity Meets Ecology. Co-organized activities included the followings: 1) Ecological resilience forum, which was held on the afternoon of November 1, with a scale of about 90 people and the theme of "Low Carbon Transformation Helps Sustainable Development of Cities"; 2) the Third Shanghai-Singapore High-level Dialogue on Urban Governance, which was held on the morning of November 1, accommodating of about 80 people and the theme of "Join Hands with Climate Initiative and Build a Resilient New City"; 3) 2021 Tongji Urban Communication High-end Forum, which was held on October 31, having a scale of about 90 people and the theme was "New City Culture and Soft Power Communication". Supporting activities include: "Lighting the City" light show, dinner party, theme investigation activities, Ten-year Achievement Exhibition for the Construction of Fengxian New City, green and low-carbon pioneer public welfare trip among the youth-search tours in five new cities.

- **Joint efforts by multiple departments to support the activities**

The success of events cannot be separated from the cooperation of relevant functional departments of Fengxian District. Fengxian District has set up five working groups (comprehensive coordination and liaison group, event planning and publicity group, forum conference and exhibition group, logistics support reception group, epidemic prevention and control security group). Each leading unit is assigned to different working groups according to job responsibilities. The division of work and responsibilities of relevant functional departments were continuously refined and optimized based on the update and adjustment of the activity content. The five working groups participated in the planning and implementation of the events, performed their respective duties during the period, and successfully completed various preparatory work.

Figure 30 Ten-year Achievement Exhibition for the Construction of Fengxian New City

5. Prospects

Fengxian has integrated the concept of sustainable development into the urban strategic planning. The *Comprehensive Plan and General Land-Use Plan of Fengxian District (2017-2035)* released in 2019 has fully responded to the sustainable development concept from the practice process of two sub-goals "oriental beauty valley" and "coastal virtuous city". Based on the framework of the 2030 Agenda for Sustainable Development, this report builds a logical framework for the urban strategic goals and vision system and SDGs system of Fengxian, and outlines the key measures taken by Fengxian to promote the achievements of 17 SDGs. According to the results of this review, Fengxian has further implemented the concept of sustainable development in such areas as SDG7 Affordable and Clean energy, SDG10 Reduced Inequalities, SDG12 Responsible Consumption and Production, and SDG17's Partnerships for the Goals, making significant progress and accumulating rich practical experiences.

Looking to the future, Fengxian will continue to promote the development and practice of sustainable development in the field of 17 SDGs on the basis of implementing new development concept. According to the deployment of the Fourth Plenary Session of the Fifth Committee of CPC Shanghai Fengxian District held in July 2022, the district will focus on the important development support of "Big Ecology, Big Traffic, Big People's Livelihood and Big Data" to meet the aspirations of the people to live a better life, and continuously practice the sustainable development concept. In terms of "Big Ecology", Fengxian District actively creates national ecological garden city and national forest city, and improves its brand of beautiful ecology. As to "Big Traffic", it will focus on opening up the "big artery" of external traffic, smoothen the "internal circulation" of regional traffic, and effectively promote development with Big Traffic. In the aspect of "Big People's Livelihood", Fengxian District leaves the best resources to its people, serves the people with high-quality supply, and promotes the high-quality and balanced development of social causes. In addition, it will hold the bottom line of social guarantee, and enhance its cultural soft power. When it comes to "Big Data", the district will comprehensively promote the digitalization in economy, life, and governance, and move towards the digital age to build new advantages for future development. After the release of this report, Fengxian will further push the integration of sustainable development strategies into the implementation and implementation of local development strategies.

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	Greenery and Public Sanitation Bureau of Fengxian District, Shanghai
	Medical Security Bureau of Fengxian District, Shanghai
	Housing Security and Management Bureau of Fengxian District, Shanghai
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