



Tianjin Nangang Industrial Zone on Responsible Care **2024** Annual Report

An aerial night photograph of the Tianjin Nangang Industrial Zone. The image shows a vast industrial complex with numerous tall distillation columns, storage tanks, and intricate piping systems, all brightly lit with industrial lights. In the background, the city lights of Tianjin are visible under a dark sky. A semi-transparent green overlay covers the bottom half of the image, serving as a background for the title text.

Annual Report of Tianjin Nangang Industrial Zone on Responsible Care 2024

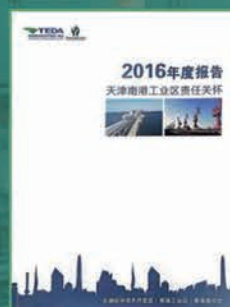


CONTENTS

About the Report	01
Preface: Drawing a New Blueprint for High-quality Development of Green Petrochemical Industry in Nangang through "Five-pronged Integration"	03
Chapter 1. About Us	05
About TEDA	07
About Nangang	15
Chapter 2. Achievements in Responsible Care	23
Community Awareness	25
Emergency Response	29
Safe Storage and Transport	31
Process Safety	33
Pollution Prevention and Control	35
Occupational Health and Safety	37
Product Safety	39
Safety and Security	41
Chapter 3. Responsible Care Star	43
Tianjin Nouryon Peroxides Co., Ltd.	45
SINOPEC & SABIC Tianjin Petrochemical Co., Ltd.	47
Chapter 4. Sustainable Improvement	49
Chapter 5. Milestones of Responsible Care of Nangang in 2024	53

Is there any previous report of such a kind?

Nangang officially launched "Responsible Care" on May 16, 2011;
The Annual Report of Tianjin Nangang Industrial Zone on Responsible Care 2011 was first released in 2012.
Fourteen consecutive years of responsible care report.



Enterprises Committed to Implementing Responsible Care



Our honors



Chemical Industry Parks for
High Quality Development

National
'Green Chemical Industrial Park'

National
'Smart Chemical Industrial Park'

Tianjin Circular Economy
Demonstration Zone

Beijing Tianjin
Electronic Chemical Base

Tianjin Chemical New Materials
Industry Theme Park

National
Water Efficiency Leader

Tianjin
Tianjin 'Water-saving Park'

One of the first batch of national
clean production audit innovation
pilot project parks

About the Report

This report is the 14th Responsible Care Report of Tianjin Nangang Industrial Zone, with the aim of presenting to the public the effectiveness of its responsible care work in the economic, environmental, health, safety management capabilities, and social fields in 2024.

What is covered by the Annual Report?

The main focus of the work in various fields of "responsible care" in Tianjin Nangang Industrial Zone in 2024 includes economy, community awareness, emergency response, safe storage and transport, process safety, pollution prevention and control, occupational health and safety, product safety, and safety and security.

What time period does the Annual Report cover?

The reporting period for this report is from January 1, 2024 to December 31, 2024, with some content appropriately extended to 2023 and January 2025 due to comparison needs.

How frequently is the Annual Report released?

The Report of Tianjin Nangang Industrial Zone on Responsible Care is an annual report and will continue to be released annually in the future.

What are the writing principles of the Annual Report?

Adhering to the principles of openness, standardization, transparency, and objectivity.

What do these terms mean?

"Tianjin Economic-Technological Development Area" and "TEDA" both refer to Tianjin Economic-Technological Development Area in this report.

In this report, "Nangang Industrial Zone", "Industrial Zone", "Nangang", and "Park" all refer to TEDA Nangang Industrial Zone.

This report is published in both printed and online electronic versions. For electronic version, please follow the WeChat Official Account of "Tianjin Economic-Technological Development Area - TEDA" or "Tianjin Nangang Industrial Zone" to check and download. If not necessary, please use the electronic version of the report for the sake of resource conservation and our planet protection.



Government Portal of Tianjin Economic-Technological Development Area
<https://www.teda.gov.cn>



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Preface



Hong Shicong

CPC Secretary & Chairman
Tianjin Economic-Technological
Development Area

Drawing a New Blueprint for High-quality Development of Green Petrochemical Industry in Nangang through "Five-pronged Integration"

On the coast of Bohai Sea, a new green petrochemical industry city is accelerating its rise. As the core carrier area for the transformation and upgrading of Tianjin's petrochemical industry, Nangang Industrial Zone has been shouldering the strategic mission of "green petrochemical" since its planning, and has written a butterfly chapter in the transformation of the old industrial base with the pen of innovation. In 2024, the development of the park will usher in a historic breakthrough: benchmark projects such as Sinopec's 1.2 million tons/year ethylene project have been put into operation successively, major projects such as the comprehensive utilization of Tongyan high-performance polymer materials have started construction comprehensively, and industry leaders such as Xinhecheng Nylon New Materials have flocked in. This year, the park was awarded the title of "High Quality Development Chemical Industrial Park", providing a "new model" for the construction of modern chemical industrial parks by deepening the innovative practice system of "Five-pronged Integration".



Practice responsible care and achieve from conceptual consensus to action demonstration.

As a pioneer in implementing responsible care with parks as the main body nationwide, Nangang Industrial Zone has established a three-dimensional practical framework of "enterprise commitment star rating practice three-level report". The demonstration effect and strong appeal of responsible care are driving hazardous chemical enterprises in Nangang to gradually realize the transformation from "institutional constraints" to "value recognition". Five leading enterprises, including Sinopec Catalyst, voluntarily make public commitments to responsible care. 27 chemical enterprises deeply participate and jointly initiate the establishment of the Responsible Care Enterprise Working Committee, deepen organizational guidance, and establish six working groups. We will strive to make our promises more solid and our ideas more genuine. In the future, we will do our best to polish the national "Responsible Care Star".

Cultivate a strong safety culture and achieve intrinsic safety from external driving.

We are well aware that safety culture is the fundamental guarantee for the high-quality and sustainable development of the park. With the concept of "zero emissions, zero accidents, zero casualties, and zero property losses" as the core, we are focusing on establishing a safety culture system in Nangang, guiding various enterprises to refine their safety concepts and visions, fully drawing on good practices and methods of enterprises, and nurturing Nangang's first version of Safety Culture Manual. At the same time, we have formulated guidance for the construction of enterprise safety culture, continuously cultivating Nangang's safety culture based on this, nourishing people's hearts with culture, and changing behavior. Multiple enterprises have actively responded to the application to establish themselves as demonstration units for safety culture at both the city and city levels, and have established distinctive corporate safety cultures. The safety culture atmosphere is gradually becoming stronger, and the background of the "intrinsic safety" park is gradually emerging.

Deeply cultivate green transformation and achieve a transition from high carbon dependence to low-carbon cycle.

Deeply cultivate green transformation and achieve a transition from high carbon dependence to low-carbon cycle. Faced with the challenge of the "dual carbon" era, the park has created an energy transformation combination of "green electricity trading+cold energy utilization". In 2024, the trading volume of green electricity in Nangang Industrial Zone exceeded 300 million kWh, and the impressive data is supported by innovative mechanisms such as green electricity salons and resource docking platforms. What is even more remarkable is the commissioning of China's first cold and hot energy exchange station, which has pioneered the energy coupling between LNG receiving stations and petrochemical plants, saving 13 million cubic meters of natural gas annually, marking a substantial step forward in the energy cascade utilization of chemical industrial parks.

Amidst the surging tides of the Bohai Sea, thousands of sails compete, and it takes ten years to refine jade before it is formed. Standing at a new historical node, Nangang Industrial Zone has built an innovative system of "five-pronged integration" by deepening the development concept of "high-end, refined, green, safe, and intelligent". This new green chemical city by the Bohai Bay not only injects surging momentum into Tianjin's high-quality development, but also demonstrates to the world the innovative answer of the construction of a Chinese style modern chemical park with practices such as responsible care, safety culture, and green and low-carbon development.



01

About Us

- About TEDA
- About Nangang

About TEDA

Overview of TEDA

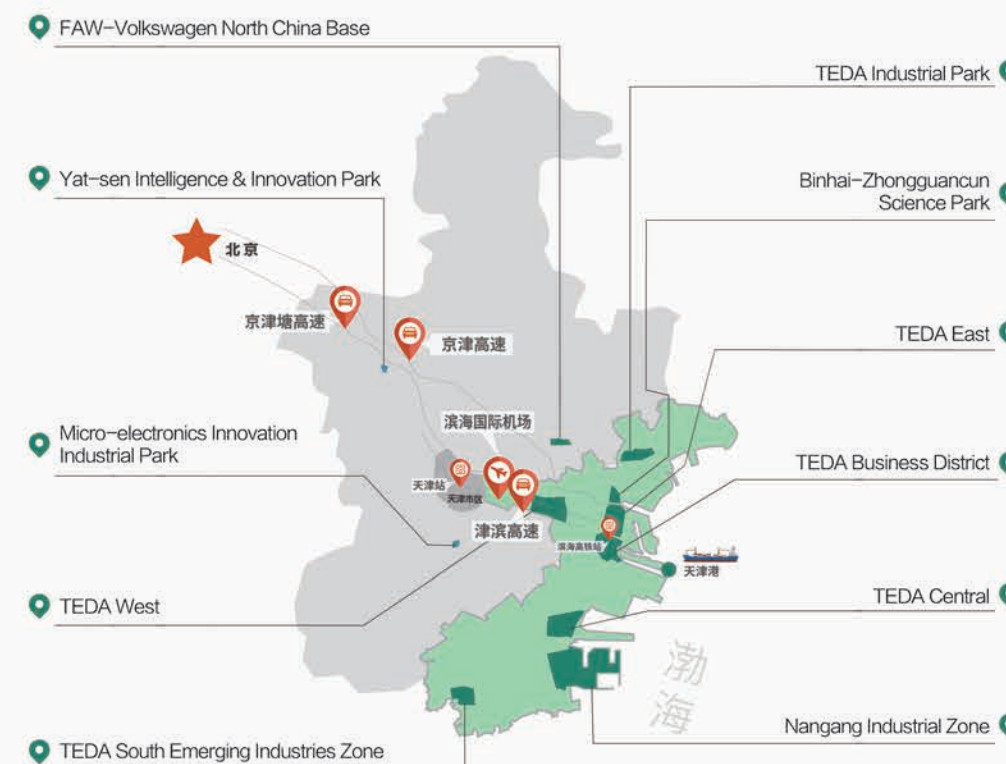
Tianjin Economic-Technological Development Area (abbreviated as TEDA and transliterated as Taida) is one of China's earliest national-level development zones approved by the State Council in 1984. In August 1986, Mr. Deng Xiaoping, the chief architect of China's reform and opening up, wrote "Development Zones Are of Great Promise" when he visited TEDA. Since 1997, the main economic indicators and comprehensive development level of TEDA have continued to lead among national development zones. In the ranking of national economic development zones by the Ministry of Commerce, it has ranked first for 16 consecutive years. After 40 years of development, TEDA has created a miracle of open development on a saline alkali wasteland, built a modern industrial new city, and become one of China's national development zones with the largest economic scale, the highest degree of outward orientation, and the best comprehensive investment environment.



开发区大有希望
邓小平 一九八六年八月



Sitting at the juncture of the Bohai Economic Rim and the Beijing-Tianjin-Hebei Province Megalopolis, TEDA is a key player in the industrial landscape of Beijing, Tianjin, and Hebei Province, and the kernel of Tianjin Binhai New Area. It is 142 kilometers away from Beijing, 40 kilometers away from the urban areas of Tianjin, and only 5 kilometers away from Tianjin Port, the world's highest-level artificial deep-water port. It has convenient transportation, and the high-speed rail takes only 22 minutes and 56 minutes to reach the urban areas of Tianjin and Beijing South Railway Station. Covering a land area of 403 km², TEDA includes TEDA East, TEDA Business District, TEDA West, Nangang Industrial Zone, TEDA Central, Binhai-Zhongguancun Science Park, TEDA Industrial Park, Yat-sen Intelligence & Innovation Park, Micro-electronics Innovation Industrial Park, TEDA South Emerging Industries Zone, FAW-Volkswagen North China Base, etc.



TEDA has actively integrated into national development strategies such as the Beijing-Tianjin-Hebei Region Coordinated Development and has won a series of national "gold signboards" in the fields of reform and innovation, opening up to the outside world, and industrial development.

The first free trade pilot zone in northern China

National demonstration base for new industrialization industries

The first batch of national level innovation and entrepreneurship demonstration bases

The first pilot cities (districts) for industrial and financial cooperation in China

The first pilot areas for the integration of the two industries in the country

National digital service export base

It is one of the first three ecological industrial parks in China

The first national pilot parks for circular economy

National level overseas high-level talent innovation and entrepreneurship base

During the 14th Five-Year Plan period, TEDA has further promoted the construction of five major projects, including the core area of the Beijing-Tianjin-Hebei coordinated development strategic cooperation functional zone, the reform and opening-up pilot zone, the Bincheng central innovation zone, the modern industrial system, and the new era beautiful Bincheng core area, and striven to build the central area of the advanced manufacturing R&D base, the new era beautiful Bincheng core area and the national economic and technological development zone demonstration area.

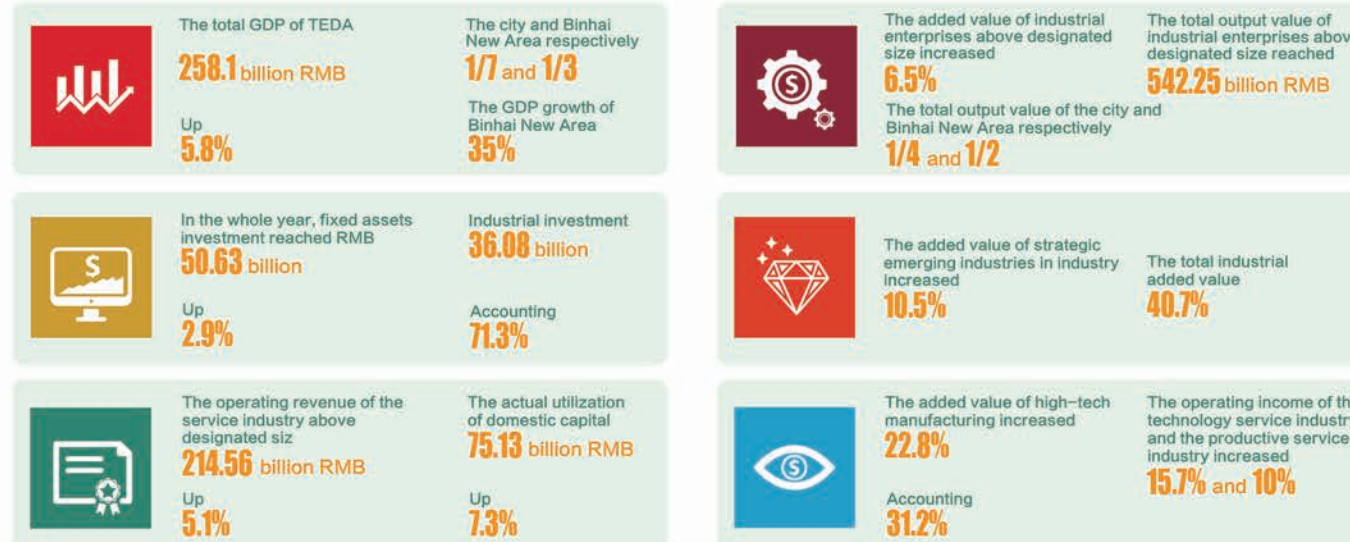
TEDA Today

In 2024, TEDA will adhere to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the guiding principles of General Secretary Xi Jinping's important speech on his inspection of Tianjin and the important instructions for the work of the national economic development area, comprehensively implement the "ten actions" of the municipal party committee and the municipal government, especially the deployment of high-quality development support and guidance actions in Binhai New Area, implement the "three measures", promote the "three innovations", and celebrate the 40th anniversary of the zone with a series of outstanding achievements.

◆ Development strategy: 1233445



◆ Stronger and more *active* economic development



As of the end of 2024, TEDA has introduced a total of **6,531** foreign investment projects from **97** countries and regions, with a cumulative actual use of foreign investment of USD **70.412** billion. Among them, **124** Fortune **500** multinational companies invested in **601** projects.

◆ The industrial foundation is more solid and *strong*

In the manufacturing industry, the four leading industries of automobiles and high-end equipment, new chemical materials, new generation information technology, and medicine and health have strong strength. Two 100 billion level industrial clusters have been formed, including automobiles, high-end equipment, and new chemical materials, as well as two 50 billion level industrial clusters, namely new generation information technology and pharmaceutical health; It is the main carrier area of Tianjin's automobile industry and the main carrier area of the petrochemical industry; Having a new generation of carrier rocket industrialization base; Bringing together a large number of leading enterprises such as FAW Toyota, FAW Volkswagen, Great Wall Motors, Volkswagen Transmission, Samsung Vision Mobile, Samsung Electric, Sinopec, PetroChina, CNOOC, Bohai Chemical, Shell, Novo Nordisk, Kailaiying, Kangshifu, CanSino, and WuXi AppTec.



In the field of modern service industry, service industry clusters represented by full license finance and full format platform economy are flourishing. TEDA is the only and one of the few fully licensed financial areas in Tianjin, with 158 licensed financial institutions and 1,500 fund asset management enterprises. Its business management scale exceeds RMB 3.5 trillion, and its tax contribution is nearly RMB 10 billion. The added value of the financial industry accounts for 1/4 of the city's total; it is a gathering place, model export place, and innovation source of commercial factoring institutions in China. The total assets of commercial factoring account for more than 20% of the country's total, and it has the only industry innovation base in the country - Tianjin Commercial Factoring Innovation and Development Base; A group of platform economy industry leaders such as Didi, Meituan, 58.com, Lianjia, and Liepin are accelerating their development, and the potential of their business formats is constantly being released; gathering over 500 shipping companies, the traditional shipping industry has a solid foundation, and high-end shipping services such as shipping finance and maritime law are accelerating their development; more than 50 leading Internet medical enterprises, such as Gaoji Medical, Fanshengzi, Zero Krypton Technology, JD Health, have gathered to create the "TEDA model" of Internet medical industry; Huayi Brothers, Perfect World, Fun Age, Wanda Media, Pilot Media and other leading cultural and sports industries have settled in, and the whole digital cultural and entertainment industry chain has initially formed; the live streaming economy is developing rapidly, and efforts are being made to build a "cross-border+live streaming" e-commerce industry ecosystem. In 2023, the Tianjin Cross border E-commerce Demonstration Park (Economic Development Area) was approved as a national e-commerce demonstration base.

◆ Technological innovation is more *enterprising*

The technology carrier platform is constantly upgrading. As one of the first batch of national innovation and entrepreneurship demonstration bases, it has established a number of important platform carriers such as the National Supercomputing Tianjin Center, the International Biomedical Joint Research Institute, the Binhai New Area Information Technology Innovation Center, the Artificial Intelligence Innovation Center, the National Overseas Talent Offshore Innovation and Entrepreneurship Base (Tianjin Binhai New Area), and the Binhai New Area Environmental Innovation Research Institute. The collaborative innovation leading and radiation driving role of the platform is constantly strengthened; A number of major research and development pilot platforms, including Sinopec Beihua Institute, Shijiazhuang Institute, Engineering Institute, and CNOOC Tianhua Institute, are accelerating their construction to create the Nangang Science and Technology Innovation Center and Maturation Base, and focusing on building the Beijing-Tianjin-Hebei National Technology Innovation Center in the field of new materials.



Innovative entities continue to gather. vigorously implementing the gradient cultivation plan for innovative enterprises, establishing a high-tech enterprise cultivation database, and gradually strengthening the team of technology-based enterprises.



1211

National high-tech enterprises

1395

National technology-based small and medium-sized enterprises

691

Fledgling enterprises

56

Leading (cultivating) enterprises

75

Gazelle enterprises

The innovation ability has been constantly improved. and a series of independent innovative products, which have reached the international leading level and filled the domestic gap, have emerged, such as "recombinant novel coronavirus vaccine", "intracranial drug eluting stent system", aerospace Taixin, "implantable left ventricular assist system", "magnetic suspension turbine vacuum pump", and Yunsheng intelligent fully independent industrial UAV system. Vigorously implementing the strategy of strengthening talent zones has gradually formed a benign interactive development pattern of talent leading emerging industries and industry driving talent aggregation.



↑700

Leading talents

42,000

Middle and high-level talents

↑380,000

Talents of various types in the entire region

101

Postdoctoral workstations

45

Postdoctoral innovation practice bases

538人

Postdoctoral talents have entered the station

◆ A more open and *inclusive* business environment

Continuously deepen the reform of government services. efficiently accomplish one thing. Establishing the first diversified co construction and system integration enterprise related service complex in China - TEDA Investment Service Center, striving to building a unified "Investment Portal" and "Investor-friendly Hub" in TEDA. Strategic cooperation has been established with over 120 high-quality institutions, providing 193 value-added services covering 5 major areas including legal services, overseas services, financial services, new quality productivity, and talent services. The country's first "Association Matrix" has formed a shared and win-win platform system that includes hundreds of leading enterprises and nearly ten thousand member enterprises. To build a one-stop overseas service base in northern China (TEDA), integrate the diverse forces of "government+association+institution+enterprise" to form the TEDA Overseas Service Alliance, develop the "Overseas Service Map", and provide comprehensive support for overseas enterprises. Establish the first roadshow center in China dedicated to the development of new quality productivity, and promote precise coordination among multiple stakeholders through the collaboration and linkage of six specialized committees. Activate the city's first foreign-related business reception workstation, providing one-stop processing for foreign nationals coming to China, and offering 39 value-added services in 14 categories. Eight pioneering reform measures in the city, including "TEDA Industrial Reform 5.0" and "Starting Construction as soon as All Industries Obtain Land", have been implemented, relying on the "Construction Project Joint Review Service and Efficiency Supervision Service Platform" to promote a project commencement rate of 80%. Integrate and establish a dedicated business environment line for TEDA. Distribute the "Three Lists 2.0" of flexible law enforcement to continuously enrich the content and fields of flexible law enforcement matters in TEDA. The administrative service matters of 203 pilot free trade zones in the Beijing-Tianjin-Hebei region have achieved "same standards among colleagues", 162 high-frequency matters have been "processed across provinces", and business licenses have been processed locally in different places, accelerating the formation of an integrated service pattern.



Continuously building an industrial ecosystem and optimizing "full lifecycle services". Innovatively conduct research on the business environment of industries and establish the first set of indicators for the business environment of biopharmaceutical, petrochemical new materials, and platform economy industries in China; Focusing on the challenges of industrial development, promoting the implementation of the "1+3" drug regulatory technical service platform, and speeding up the approval of drug and device products; The "Customs Local Cooperation" drug clearance joint service mechanism accelerates the clearance of special goods; Utilize the advantages of industry guidance funds and OTC targeted cultivation to provide various financial support services; Promote the independent evaluation of skilled talents in enterprises, explore the comparative recognition of international vocational qualifications and domestic professional title qualifications; Organize enterprises to implement dual energy consumption control, introduce policies to guide low-carbon transformation and upgrading, and provide multi-dimensional services for high-quality development of the industry.

◆ Urban construction is more intelligent and *livable*



The education and medical facilities are well-developed. Several universities, including TEDA College of Nankai University, Tianjin University of Science and Technology, and Binhai Petrochemical Industry Research Institute of Liaoning University of Petrochemical Technology, as well as 12 primary and secondary schools, including TEDA No.1 Middle School, Tianjin TEDA School affiliated with East China Normal University, Yaohua Middle School Bincheng School, and TEDA Yueyangdao Primary School, and 33 kindergartens, are located in TEDA. The "prestigious school matrix" has been formed, among which Tianjin Juilliard School is the first overseas cooperative educational institution of the world-renowned music school-Juilliard School; A fully covered medical and health system has been formed, including comprehensive hospitals, specialized hospitals, and community health centers. Among them, TEDA Cardiovascular Disease Hospital is the first hospital in China to obtain three JCI gold medals. TEDA Hospital was invested and built by TEDA Administrative Commission and is a public tertiary comprehensive hospital integrating medical treatment, teaching, scientific research, prevention and health care, and rehabilitation. The first traditional Chinese medicine hospital in the new area, Binhai New Area Traditional Chinese Medicine Hospital, has landed in TEDA, further enriching the layout of high-quality medical resources in the region.



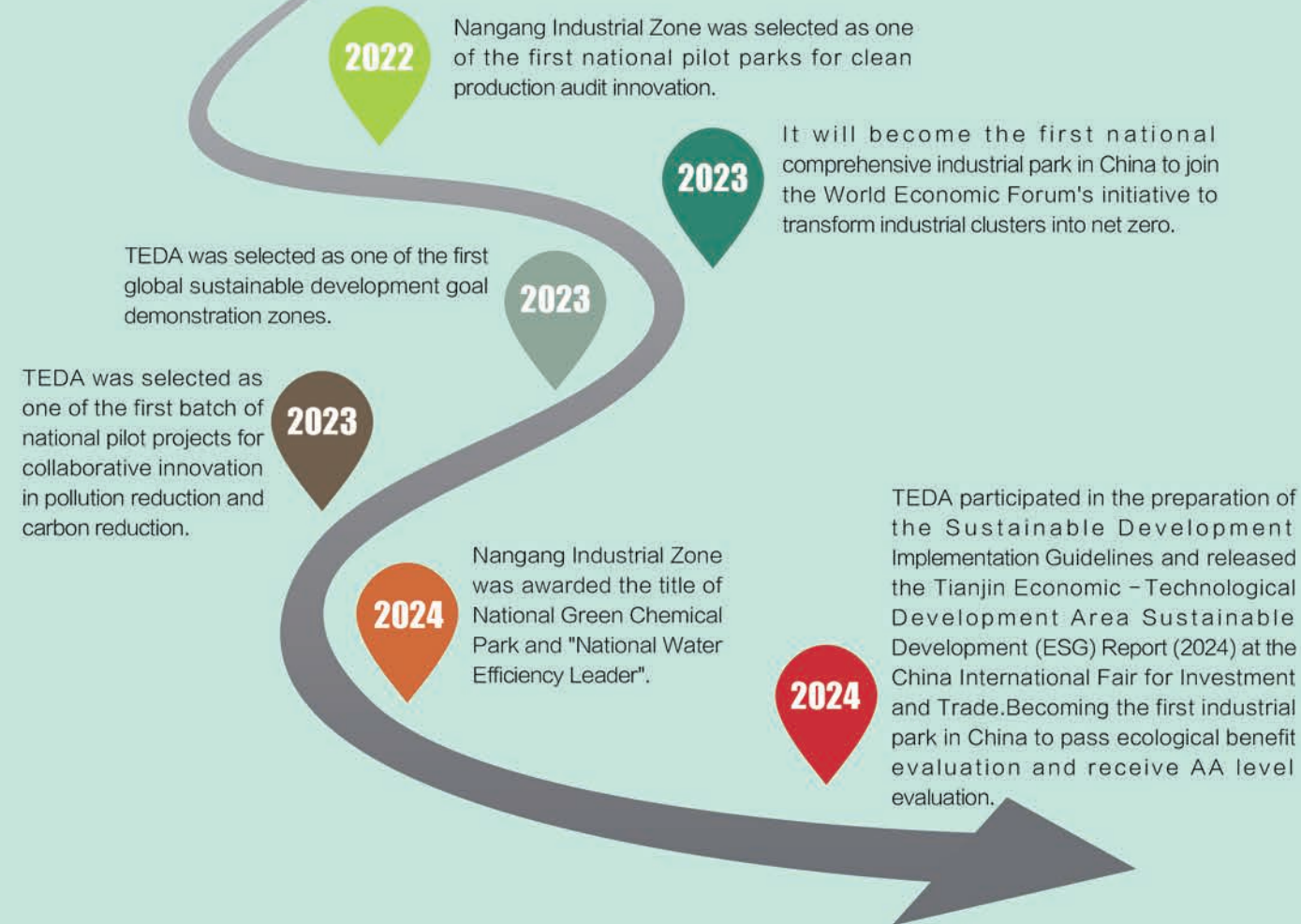
There are abundant cultural, tourism, and commercial resources. Fully integrating domestic and foreign business travel elements, linking points into a line, connecting lines into a network, strengthening circles and expanding coverage, building the "four key business districts" with Yongwang Business District, MSD Business District, Jinyuanbao Business District, and Wanda Business District as the core. New business models and consumption scenarios continue to emerge, the scale of business districts continues to expand, and the radiating and driving functions are increasingly prominent; 68 high-quality hotels, including InterContinental, Marriott, and Crowne Plaza, and over 40 high-end business office buildings continue to gather, with complete service facilities and a strong business atmosphere, becoming a gathering place for urban elites; the Dagou Shipyard Site Memorial Hall, Tanggu South Station, Chaoyin Temple and other cultural relics have a long history and profound cultural heritage, reflecting the long cultural heritage of TEDA; Tianjin CTF Finance Center, Tianjin Juilliard School, Binhai New Area Cultural Center, Tianjin Polar Ocean Park and other popular check-in spots have become the new "business cards" of TEDA and Tianjin; The top ten industrial tourism sites, including Jinyao Daren Tang Modern Traditional Chinese Medicine Industrial Park and Kangshifu Dream Exploration Park, have distinct characteristics. The "Yuxiang" cultural tourism area has risen strongly. In 2022, TEDA was approved as a demonstration zone for comprehensive tourism in Tianjin, and regional cultural tourism has once again taken a new step forward.

◆ Circular and collaborative development is more sustainable *sustainable*

Tianjin Economic-Technological Development Area

One of the first batch of ISO14000 national demonstration zones	The first low-carbon demonstration town in APEC
National pilot units for circular economy	One of the first batch of national green industrial parks
One of the first batch of national ecological industry demonstration zones	One of the first batch of national circular transformation demonstration pilot parks that have passed the acceptance inspection.
National Low-carbon Industrial Demonstration Park	

The "TEDA Green and Low-carbon Development Model" was selected as a typical case of green and low-carbon by the Ministry of Ecology and Environment of China.



About Nangang

Overview of Nangang

Nangang Industrial Zone is a professional chemical park developed and constructed by Tianjin Economic-Technological Development Area (TEDA), with a planned area of about 180.5 square kilometers. It is a national demonstration base for new industrialization (petrochemical industry), a national energy strategic reserve base, and a Beijing-Tianjin electronic chemical base. It is the main carrier of high-quality development of Tianjin's petrochemical industry, located in the southeast of Binhai New Area, Tianjin, at the intersection of the Beijing-Tianjin-Hebei metropolitan area, and is the estuary of the Beijing-Tianjin-Hebei chemical new material base. Relying on superior geographical advantages, a three-dimensional collection-distribution-transportation network is formed with ports as the core, supported by shipping, railways, highways, and pipe galleries.



Since its development and construction, Nangang Industrial Zone has always been committed to building a high-end, refined, green, safe, and intelligent chemical new material base and petrochemical industry gathering area. In recent years, it has been successively rated as a national smart chemical park, green chemical park, Tianjin chemical new material industry theme park, and high-quality development chemical park.



Our Development History

2009

Nangang Industrial Zone was born as a result of Tianjin's "dual cities and dual ports" urban spatial development strategy.

2014

The national petrochemical planning layout plan pointed out that Tianjin's petrochemical industry should cluster and develop towards Nangang Industrial Zone.

2015

The Central Committee of the Communist Party of China and the State Council issued the Outline of the Beijing-Tianjin-Hebei Coordinated Development Plan, which clearly stated the construction of a world-class petrochemical industry base in Nangang, Tianjin.

2019

The executive meeting of the Tianjin Municipal Government approved the plan to upgrade the Nangang Industrial Zone, positioning the park as a "world-class chemical new material base".

2021

Tianjin's 14th Five Year Plan and 2035 Vision Goal Outline clearly proposed to "build a world-class Nangang Chemical New Materials Base and Petrochemical Industry Cluster".

2022

The 12th Party Congress of Tianjin explicitly proposed to "build a world-class green chemical new material base in Nangang Industrial Zone at a high level".

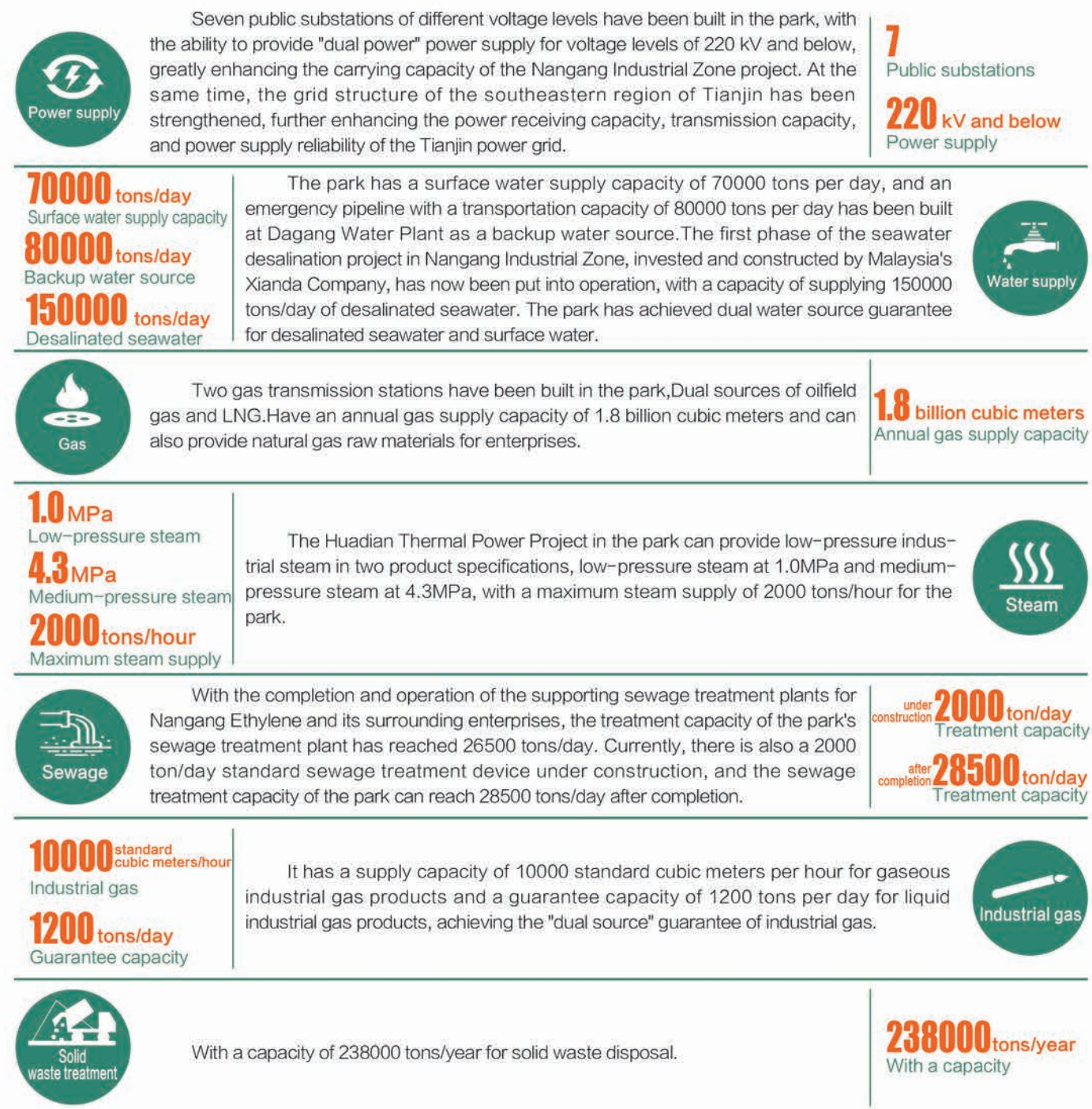
2023

The fifth executive meeting of Tianjin Municipal Government deliberated and passed the Implementation Plan for High Quality Development of Petrochemical and Chemical Industry in Tianjin and the supporting policy package, which clearly defined the requirements to promote the petrochemical and chemical industry to achieve high-end, international, green and intelligent development, and focus on building the main battlefield of Nangang Industrial Park.

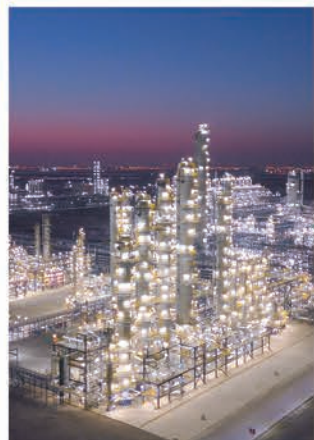
On May 16, 2011, Nangang Industrial Zone took the lead in launching "Responsible Care" among national chemical industrial parks. In 2012, the first annual report was released, and in 2015, the Responsible Care Global Charter was signed. In 2023, the Responsible Care Enterprise Working Committee was established. Through years of practice, a responsible care promotion system of "park guidance, department promotion, group promotion, and dual practice" has gradually been formed. The core concept of "zero emissions, zero accidents, zero casualties, and zero property losses" has become the professional standard and action guide for practitioners, achieving a high degree of unity in the scientific development and harmonious coexistence of parks and enterprises. In 2024, Nangang Industrial Zone was awarded the national "Responsible Care Star" by the China Petroleum and Chemical Industry Federation. As the deputy director unit of the Responsible Care Working Committee, Nangang Industrial Zone is actively committed to promoting the development of responsible care in China while striving for practice. The group standard Guidelines for the Implementation of Responsible Care in Chemical Industrial Parks that it participated in the compilation has been rated as a demonstration project for the application of group standards by the Ministry of Industry and Information Technology of China.

Nangang Today

As the largest, most well-equipped, and comprehensive professional chemical park in northern China, Nangang actively promotes the integration of upstream and downstream industries. Focusing on the demand for high-end materials in fields such as biomedicine and new materials, Nangang prioritizes the layout of products that are urgently needed for industrial development, have a solid research and development foundation, and broad market prospects. It strives to create a high-end, refined, green, safe, and intelligent chemical new material base and petrochemical industry cluster.



Adhere to high-end development



● **Planning for diversification of product raw materials.** Implement the requirements of integrated management of Nangang Industrial Park, fully support the completion and operation of Sinopec Tianjin Petrochemical Refining Quality Improvement and Reconstruction Project, promote the improvement of refining capacity of Tianjin Petrochemical, and ensure the diversified supply of raw materials. The cross regional petrochemical pipeline corridor has been completed and put into use, realizing the interconnection of raw materials and products between Dagang and Nangang areas, as well as the supply of raw materials for the PetroChina Dagang Petrochemical and Nangang Ethylene projects; Simultaneously accelerate the construction of light hydrocarbon bases, establish a diversified, multi-channel, and multi-mode raw material supply system, and strengthen the ability to guarantee raw materials. Combining with the layout of China Resources Recycling Group, explore the promotion of comprehensive utilization of waste, rational development of recycled plastic production capacity, promote the development of circular economy in the park, and promote the diversification of raw materials.



● **Continuously improving product competitiveness.** Combining with the strategic positioning of Tianjin as an international consumer center city, relying on Sinopec, Bohai Chemical Group, and private leading enterprises, further strengthening the collaborative cooperation between the petrochemical industry and downstream industries. Explore new market demands and application scenarios, create new growth points for the petrochemical industry, and enhance the correlation with downstream industries. Guide enterprises to produce key chemical new material products with high demand, wide application, and good technical foundation, and enhance the competitiveness of chemical new material products in Nangang Industrial Zone.



● **Promoting the transformation of scientific and technological achievements.** With the overall support of Binhai New Area, a construction plan for the Nangang Green Petrochemical Science and Technology Innovation Center has been formed, planning to build a spatial layout of "one center, multiple support points" for the green petrochemical science and technology innovation center. Promote the landing and accelerated construction of 8 pilot bases with a total investment of RMB 6 billion. Among them, the Tianjin Scientific Experiment Base of Sinopec Beihua Institute and the Huaxi Pilot Platform have been put into operation; Three pilot bases, including the Bohai Chemical Research Institute Pilot Base and the China National Chemical Corporation New Materials Innovation Platform Base, will be built within the year; Three pilot bases, including Sinopec Institute of Petrochemical Technology, Sinopec Engineering Institute, and CNOOC Tianhua Institute, are accelerating their construction. The comprehensive building of Nangang Science and Technology Innovation Center is about to be put into operation, and the construction of supporting experimental buildings is underway. A service pilot project platform will be built to help enhance the industrialization strength of pilot projects. Relying on CNPC Bohai Petroleum Equipment and National Pipeline Network Group, establish Tianjin Petrochemical Industry Carbon Capture and Utilization Technology and Equipment R&D Innovation Alliance and Tianjin Oil and Gas Storage and Transportation Engineering High end Equipment Manufacturing Innovation Alliance. Actively coordinate and cooperate with Tianjin University, Nankai University, Haihe Laboratory, etc., strive to include Nangang in the "multi-point" layout of Tiankai Higher Education Science and Technology Innovation Park, and promote the "local" transformation of scientific research achievements in the field of chemical engineering in Nangang.

Adhere to refinement

● **Strengthening high-level planning.** Under the guidance of the Municipal Development and Reform Commission, the Overall Development Plan for Tianjin Nangang Industrial Zone (2024-2035) is formulated to guide the high-quality development of the park with high-level planning. Based on the actual development of the park, complete the special planning and revision of transportation, water supply, gas, heating, drainage, electricity, communication, fire protection, pipeline integration, oil and gas field stations and other fields to support project layout and infrastructure construction.

Continuously improving the industrial chain

Strengthen the leadership of two leading companies

Sinopec Ethylene Industry Cluster Project and Bohai Chemical New Materials Industrial Park.

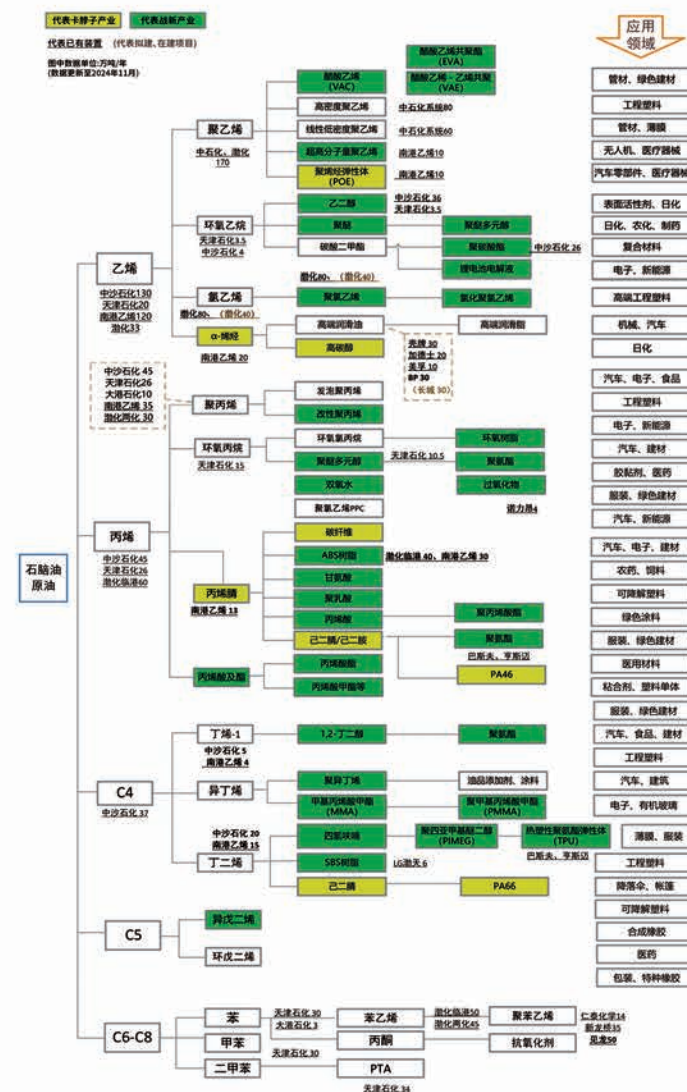
Deeply cultivate four key areas

specialty olefin derivatives, advanced chemical materials, high-end fine and specialty chemicals, and high-end productive services.

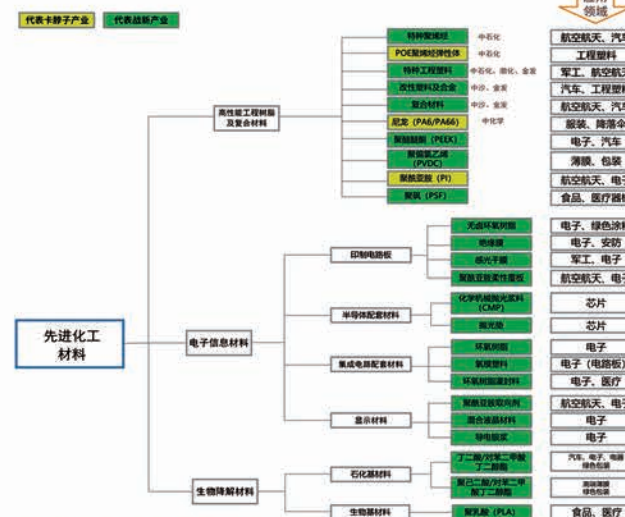
Create 10 fine molecular chains

Carbon 2, Carbon 3, Carbon 4, Carbon 5, high-performance resins and composite materials, electronic information materials, biodegradable materials, electronic chemicals, high-end fine chemicals, and medical and health materials.

特种烯烃衍生物产业链



先进化工材料产业链



高端精细及专用化学品产业链



高端生产性服务业产业链



Adhere to greenization

● **Successfully listed as a national "green chemical park".** Nangang Industrial Zone has passed the first batch of clean production audit innovation pilot evaluations nationwide and is the only approved project pilot in Tianjin. Continuously investing nearly RMB 15 billion to build a smart environmental management system, an ecological environment monitoring network, and ecological restoration projects, to comprehensively supervise the safety and environmental protection of the park. Encourage and support enterprises to carry out green technology applications, with 2 national level green supply chain enterprises and 1 municipal level green factory. Building a "Carbon Neutrality Research Center" relying on the Tianjin Emissions Exchange, PetroChina natural gas sales, and Kunlun Energy; Relying on Tianjin University of Technology, Tianjin University, and Three Gorges Group to establish the "Smart Green Energy Coastal Laboratory".



● **Developing green power applications.** Nangang has introduced wind power and offshore photovoltaic projects, guiding and supporting enterprises to engage in green power trading. In 2024, Nangang Industrial Zone will apply for the annual trading of 355 million kWh of green power, accounting for about 7% of the city's annual green power trading and 10% of the total electricity consumption of the park; The planned total for 2025 is about 2 billion kWh, accounting for 40% of the total electricity consumption in the park.

● **Promote seawater desalination.** The Xianda seawater desalination demonstration project has been put into operation, which can replace 50 million tons of surface water consumption annually. Nangang Industrial Zone has become the first industrial park in China to use seawater desalination as its main water source. It is one of the first industrial parks in the city to pass the certification of "water-saving park" and the first to be awarded the title of "water efficiency leader".



● **Developing cold energy cascade utilization.** The Sinopec LNG cold and hot energy exchange station has been put into operation, achieving energy coupling between LNG receiving stations and large-scale petrochemical production facilities. The Zhongsheng Cold Energy Comprehensive Utilization Project will be completed within the year, creating the first cold energy cascade utilization demonstration park in the country.

Adhere to safety measures

In recent years, Nangang Industrial Zone has always placed a prominent position in strengthening the safety emergency management system and capacity building, adhering to the overall strategy of "source control and systematic management", continuously innovating the safety emergency supervision mechanism, constructing two full process management systems for construction projects and production enterprises, and creating two management systems for emergency management and disaster prevention and reduction.

Whole process management of construction projects

- ◆ Site selection stage
- ◆ Admission stage
- ◆ Review stage
- ◆ Construction stage
- ◆ Trial production stage
- ◆ Acceptance stage

Full lifecycle management of production enterprises

- ◆ Normal production stage
- ◆ Equipment inspection and maintenance stage
- ◆ Suspension and resumption stage
- ◆ Closure and cancellation stage of the enterprise

Emergency management system

- ◆ Monitoring and early warning system
- ◆ Emergency preparedness system
- ◆ Emergency command system
- ◆ Emergency support system

Disaster prevention, reduction and relief system

- ◆ Monitoring and early warning system
- ◆ Preparation system
- ◆ Command system
- ◆ Support system

● **Building an essential security system.** With a sense of crisis and bottom line thinking of "no risk, no loss", we will do a good job in security management strengthen the "core strength" of personnel, platforms, and mechanisms, and promote the coordinated efforts of safety production supervision, comprehensive regional environmental governance, emergency rescue, and disaster prevention and reduction. At the same time, Nangang Industrial Zone will adhere to the direction of intelligence to serve high-quality development, complete the expansion of the park's smart platform, enrich the functions of smart environmental protection, smart pipe gallery, smart municipal governance, smart construction, smart energy, etc., and achieve the linkage of "one map"; Supporting enterprises to carry out the construction of digital intelligent factories and workshops around intelligent manufacturing, digital manufacturing, industrial cloud services, and other related areas; By implementing the 'seamless governance' policy, we aim to connect the entire lifecycle services of petrochemical and chemical industry projects, issue service guidelines, and provide the most convenient and comprehensive guidance for project implementation.

Concept of Safety Culture in Nangang Industrial Zone

Core concept	Safety is the most thoughtful service, the most realistic need, the most critical guarantee, and the noblest virtue. Without safety, there is nothing.
Safety goal	Zero accidents, zero casualties, and zero property damage.
Safety Vision	To promote management through culture and safety through management, to achieve an inherently safe chemical park where personnel's thoughts are not lax, equipment safety is not hidden, material management is flawless, system regulations are fully covered, and safety management has no blind spots.



Adhere to intelligence

● **Successfully listed as a national "smart chemical park".** Since its establishment, Nangang Industrial Zone has attached great importance to the construction of smart chemical parks and focused on creating a "smart Nangang". It has built a smart park management platform that integrates various functions such as safety production, environmental protection, emergency management, closed management, transportation management, energy management, office management, and public services. It has initially built a smart chemical park with deep perception, comprehensive interconnection, intelligent efficiency, safety and green. By 2023, it will become the 27th smart chemical park in China.

In recent years, a continuous investment of RMB 330 million has been made to improve the level of digitalization in the park, with the direction of mechanization replacing personnel, automation reducing personnel, and intelligent unmanned operation.

● **Promote the construction of a smart management platform.** multi-level layout of terminal perception devices, creation of three monitoring and early warning centers, realization of a "big emergency, all disaster" monitoring and early warning network, and promotion of prevention system construction. Digitize the dual prevention mechanism, implement the "two key and one major" warning grading push, online management of special operations, video AI analysis and other functions, and build a "online+offline" collaborative supervision mechanism. Establish application systems such as closed management, full process management of hazardous chemical vehicles, and intelligent pipe gallery management to achieve dynamic supervision of public areas, industrial pipe galleries, and the entire process of people, vehicles, and materials in chemical industrial parks.

● **Promote the construction of smart factories.** guide and support enterprises to invest in high standards in smart management, and support enterprises to build more smart factories and digital workshops. Realize full coverage of the intelligent control platform for safety risks in hazardous chemical enterprises, and build a smart management pattern for park enterprise associations.



02 Achievements in Responsible Care

- Community Awareness
- Emergency Response
- Safe Storage and Transport
- Process Safety
- Pollution Prevention and Control
- Occupational Health and Safety
- Product Safety
- Safety and Security

Community Awareness

As one of the earliest industrial parks in China to carry out responsible care work, Nangang Industrial Zone has formed a new pattern of "dual-wheel drive" of park guidance and group promotion, and "co-construction and sharing" between the park and enterprises through more than ten years of development practice. In the process of global sustainable development, the role of enterprises as social citizens has long surpassed the creation of economic value, and they also carry the mission of co-existence and prosperity with the industrial park. Community awareness is not only the foundation for enterprises to practice responsible care, but also the core bridge for building trust and realizing value sharing. In the past year, through the implementation of a variety of "Public Open Day" activities, society has entered the park and approached the enterprise, interpreting the profound connotation of "responsible care" with actions, making the community not only a geographical neighbor, but also a partner with emotional resonance.



March 21, 2024

Attended the 2024 Annual Work Seminar of the Responsible Care Working Committee held in Yizheng, Jiangsu.

August 8, 2024

Shan Zefeng, deputy secretary of the Binhai New Area District Committee and district mayor of Tianjin, inspected and served key construction projects.

September 27, 2024

Liu Guiping, the member of the Standing Committee of the Tianjin Municipal Party Committee and Executive Vice Mayor, investigated and served the Sinopec Tianjin Petrochemical Nangang Ethylene Project.



December 21, 2024

The Tianjin Emergency Management Bureau organized experts from the Ministry of Emergency Management's Safety Science Institute to review the park's integrated management safety improvements, and the final score was 88.23, confirming that it had reached Class D (lower risk level) status.

March 14, 2024

Li Shousheng, the president of the China Petroleum and Chemical Industry Federation, led a team to conduct research in Nangang Industrial Zone.

July 24, 2024

Nangang Industrial Zone was awarded the national "Responsible Care Star".

August 22, 2024

Tianjin University Blue Ocean Summer Camp carried out summer internship practice activities in Nangang Industrial Zone.

November 5, 2024

Lian Maojun, a member of the Standing Committee of the Tianjin Municipal Party Committee and Secretary of the Binhai New Area Party Committee, inspected and served the Sinopec Tianjin Nangang Ethylene Project.



04 责任关怀之星	42
上海化学工业经济技术开发区	43
天津南港工业区	46
华锦集团有限公司	48
巴斯夫(中国)有限公司	50





Invited to participate in the China Chemical Park Sustainable Development Conference

On April 11, the 2024 China Chemical Park Sustainable Development Conference was held. The principal responsible person of Nangang Emergency Management Office participated as an interview guest and delivered a speech in the Responsible Care Sub-Forum for Chemical Parks on several topics, including how park-enterprise interaction can help extend the development of responsible care activities, how to plan and carry out a successful community awareness activity, and how to use online media to carry out more abundant community awareness activities. Representatives of the Nangang team shared their experiences at the Responsible Care Sub-Forum.

Convened a meeting to promote responsible care practice and safety culture creation

On March 25, a meeting was held to promote the practice of responsible care and the creation of a safety culture. The park released the "Nangang Industrial Zone Safety Culture Manual" and interpreted the responsible care star-rated enterprise evaluation standards, the preparation of the Responsible Care annual report, and the key points for the creation of a model enterprise for the construction of a safety culture in the Binhai New Area. Bohua Development and Sinopec Commercial Storage Branch shared their experiences in creating model enterprises for safety culture in Tianjin and the Binhai New Area respectively.



Convened a responsible care report release and public commitment meeting

On September 24, a responsible care report release and public commitment meeting was held to release the 2023 responsible care report or social responsibility report of the park, enterprise working committee and enterprises in the zone, forming a "three-report system". Five new enterprises in the zone, Sinopec Catalyst, Beijing Gas, Sinopec Ineos, Castrol Lubricants, and Wanghai Technology, and two renamed enterprises, Shinhan Oil and Juli Materials, publicly committed to the society, voluntarily practiced the concept of responsible care and submitted the "Responsible Care Commitment".

Organized the Green Park Open Day and Restocking event

On the occasion of the 53rd World Environment Day, the park held the 2024 Green Park Open Day and Restocking event. More than 70 representatives of the event walked into the park and got close to the ocean. A total of 50 million Chinese shrimp seedlings, 165,000 half-smooth tongue sole seedlings, 15,000 kg of Manila clam seedlings, and 10,000 kg of green clam seedlings were released at the Nangang workboat dock. Nangang has contributed to the enrichment of fishery resources in the Bohai Sea and the restoration of the marine ecological environment.



Organized the "Thousand-Mile Tour Through the Green Chemical Park" event

On April 15, Nangang Industrial Zone held the "Thousand-Mile Tour Through the Green Chemical Park" event with the theme of "promoting the high-quality development of chemical parks and leading the construction of green chemical parks". The Chemical Park Working Committee of the China Petroleum and Chemical Industry Federation, together with environmental protection experts in the industry, formed a service team to conduct in-depth exchanges with park enterprises on VOCs solutions for the chemical industry, OCS detection technology, VFL vertical flow maze technology, and zero-discharge technology for wastewater of chemical enterprises, and conducted in-depth research in the park to guide the green environmental protection construction of the park.



Organized the environmental protection benchmarking exchange event

On June 13, environmental protection managers from 40 enterprises in the park's chemical, new materials, warehousing and other fields conducted an environmental protection benchmarking exchange event. This event built a platform for government-enterprise exchanges, mutual comparison and mutual learning between enterprises, and guided enterprises to establish a green development concept, align with high-level ecological and environmental protection, and unswervingly follow the path of green development. Through

in-depth visits to the Zhongsha device area, on-site learning of environmental protection facilities and safety management work experience and applying them to the ecological and environmental protection work of enterprises, the standards and levels of environmental protection work of enterprises will be further improved.

Organized the corporate green and low-carbon technology exchange event

On May 15, the park built an exchange platform for enterprises to learn from each other, draw lessons from each other and make progress together, and held an enterprise green and low-carbon technology exchange event. Tianjin Bohua Chemical Development Co., Ltd., Sinopec INEOS (Tianjin) Petrochemical Co., Ltd., and Xinda (Tianjin) Seawater Resources Development Co., Ltd. shared their respective strategies, concepts and plans for green and low-carbon development, and introduced the achievements and experiences in technological innovation, energy conservation, and emission reduction measures.



Organized a themed publicity activity on "Leaders Talk About Safety"

Organized and carried out the "Leaders Talk About Safety" activity. On February 1, Ma Jianjun, a member of the Standing Committee of the Party Committee of the Economic Development Zone and deputy director of the Management Committee, took the construction of a smart chemical park as the theme, comprehensively interpreted the country's requirements for the smart construction of chemical parks and hazardous chemical enterprises, and introduced the construction process, specific functions and practical results of the Nangang Smart Chemical Park. On December 26, Zeng Weipeng, a member of the Standing Committee of the Party Committee of the Economic Development Zone and deputy director of the Management Committee, explained the newly revised "Regulations on Work Safety of Tianjin Municipality" to the main leaders of enterprises in the zone, and explained in detail the background of the revision of the "Regulations on Work Safety of Tianjin Municipality", the main systems established, the main clauses and legal responsibilities, etc.



Emergency Response

Emergency response emphasizes responding to emergencies quickly and orderly to ensure personnel safety and reduce property losses and environmental impacts. As part of the smart park, Nangang Smart Emergency is composed of safety supervision, emergency command, closed management, transportation management, disaster prevention and mitigation, environmental management, energy management, smart pipe corridors and other systems. It constructs the "large-scale emergency, all-disaster" smart emergency management system of Nangang Industrial Zone to ensure timely and accurate emergency data, shared information resources, and efficient command and decision-making.



Strengthen fire prevention publicity and reminders and carry out thematic education and training

The park organized enterprises to carry out the theme training activity of "Everyone talks about safety, everyone knows how to respond to emergencies – focus on improving the disaster prevention and risk avoidance capabilities of the grassroots". In combination with the characteristics of different groups of people and enterprises, the park comprehensively used fire cases, on-site demonstrations, theoretical lectures and other methods to focus on promoting knowledge on production safety policies and regulations, emergency risk avoidance, escape and mutual rescue, fire safety, etc., and firmly establish fire safety awareness.



Strengthen the self-rescue capabilities of enterprises and carry out firefighting competitions

The park organized 11 enterprise fire brigades and 24 micro fire stations to carry out firefighting competitions and the "119" Fire Protection Promotion Month activities, giving full play to the role of enterprise fire brigades and micro fire stations in firefighting and rescue, fire protection publicity, and hidden danger rectification. Through competitions in 7 subjects, the business capabilities of enterprise fire brigades and micro fire stations were comprehensively tested.



Strengthen the service concept and provide guidance and assistance to enterprises

The park "diagnoses" various types of enterprises in terms of fire responsibility implementation, fire facility configuration, evacuation route setting, electrical line safety, flammable and explosive material management, employee fire safety training, etc., and puts forward targeted improvement suggestions to help enterprises discover and eliminate potential fire safety hazards.

Strengthen the on-site rotation training mechanism and carry out joint exercises between government and enterprises

Based on the actual situation that there are a large number of hazardous chemical production, storage and transportation enterprises in the park and there are many professional fire brigades in the enterprises, a work mechanism for on-site rotation training has been formulated for the Nangang Fire Rescue Brigade. Together with the professional fire brigades of 11 enterprises in the Nangang Industrial Zone, on-site rotation training is carried out for all hazardous chemical enterprises in the Nangang Industrial Zone, strengthening the construction of joint coordination, joint training, joint exercises, joint combat and joint evaluation mechanisms, strengthening joint actual combat exercises with professional teams, and discussions on chemical fire cases.

Strengthen maritime emergency support and improve emergency response capabilities

The "2024 Tianjin Dagang Port Area Beijing Gas Tianjin LNG Ship-Shore Joint Emergency Exercise" was held, and the joint emergency response capabilities at sea were effectively enhanced through various forms such as shallow water search and rescue coordination emergency tabletop exercises, search and rescue volunteers' water boat operation and lifesaving, shore-based oil pollution containment and removal training, and "flood prevention and typhoon prevention" emergency tabletop exercises.



Strengthen emergency response team building and carry out emergency command training

The national comprehensive fire brigade, enterprise professional fire brigade, and enterprise fire management personnel in the district were organized to go to the Lianyungang base of the National Dangerous Chemicals Emergency Rescue Training and Drill to carry out a five-day emergency rescue team commander training. The training focused on the main risks currently facing the park, and set up three research and study topics: accident handling of dangerous chemical transport vehicles, accident handling of chemical equipment, and accident handling of chemical pipe corridors. At the same time, it simulated typical disasters and organized them according to the four steps of theoretical study, program discussion, real fire drill, and summary and evaluation, which is highly targeted and effective.



Strengthen security technology support and improve smart park construction

Consolidated the construction of the smart park management and control platform, and continued to promote the construction of an online monitoring and early warning system for safety risks of major hazardous sources. Connected more than 4,200 risk monitoring and early warning data from 26 "two key and one major" enterprises; completed the access of more than 570 videos from 25 enterprises; completed the access of the digital platform for the double prevention mechanism of 24 hazardous chemical enterprises; and completed the access of special operation ticket data from 24 enterprises.

Safe Storage and Transport

Large oil and gas storage companies have large stocks of hazardous chemicals, high safety risks, and fast-moving vehicles carrying hazardous chemicals, making supervision difficult. The park focuses on the core concept of "prevention first, control-based", systematically sorting out the risk identification and prevention and control strategies for chemicals and materials in the entire process of storage, loading and unloading, and transportation. By introducing intelligent monitoring systems, standardized operating procedures, and dynamic risk assessment systems, it builds a full range of safety barriers covering "people, machines, materials, methods, and environment", and continuously improves the park's storage and transportation safety management capabilities and technical levels.



Upgrade the smart monitoring system to strengthen the safety management of the pipe corridor

The smart video monitoring system of the park's pipe corridor uses 8 sets of high-point laser pan-tilt cameras and 1 set of AR panoramic spherical camera to conduct 24-hour collection and shooting of large-scale scenes in the pipe corridor area within the zone. Relying on system linkage and big data drive, it realizes visual data collection and intelligent management through intelligent perception, real-time monitoring and information sharing, and realizes smart, efficient and safe pipe corridor operation and management.



Promote the application of innovative technologies to build a solid defense line for storage and transportation safety

Promote the intelligent upgrade of enterprises in the park, deploy a variety of intelligent inspection robots in key areas of the factory, accurately detect equipment temperature, monitor equipment vibration, flange valve leakage, pipeline leakage, etc., which can better adapt to complex environments, reduce employee labor intensity and inspection costs, and comprehensively improve the level of inspection automation and intelligence.



Communicate, exchange and share experiences to safeguard the bottom line of oil storage safety

Organize large-scale oil and gas storage companies in the area to carry out management experience exchange meetings, focusing on responsibility implementation, hidden danger investigation, "4321" risk prevention and control mechanism, emergency drills, and intelligent technology applications. Experience practices such as "reading maps to identify roads", "finger-to-finger narration", and "safe gas stations" are replicated and promoted among enterprises in the park.



Build a strong defense line around the pipeline to ensure the safety of long-distance pipelines

The park takes "high-consequent area management + third-party construction management around pipelines" as the key point to comprehensively sort out the oil and gas long-distance pipelines and transportation media passing through Nangang Industrial Zone, continuously improve the level of refined management, and ensure the safe and stable operation of the oil and gas long-distance pipelines.

Complete the expansion of the park's pipe corridor to ensure safe transportation of materials

A total of 1,897 meters of pipe corridor expansion was completed throughout the year, opening up the "main artery" of material transportation and realizing the interconnection of material pipe corridors between PetroChina Dagang Petrochemical Company and the core area of Nangang Industrial Zone. After the pipe corridor is put into use, enterprises can directly transport raw materials through the pipe corridor, realize safe and reliable transportation of raw materials, and reduce transportation costs.



Accelerate the construction of key projects to enhance the comprehensive support capabilities of the park

The construction of the smart logistics comprehensive service center for hazardous chemicals in the park was completed in December 2024. It is planned to have 452 parking spaces and is the first professional parking lot for hazardous chemicals in the Beijing-Tianjin-Hebei region built in accordance with the "Construction Standards for Parking Lots for Hazardous Materials Transport Vehicles in Chemical Parks". It provides the park with closed management, smart park construction, chemical logistics supply chain construction, and other aspects of the safety system construction, intelligent supervision, and multi-functional park supporting services.



Standardize the management of dangerous goods and put the container yard into use

The newly built dangerous goods container yard in the park is mainly responsible for the storage, transshipment and handling of Class 2 to Class 6 dangerous goods containers and some Class 8 to Class 9 dangerous goods containers. This has increased the storage capacity of relevant dangerous goods containers in Tianjin Port and improved the ability to manage dangerous goods and prevent and resolve port safety risks.



Process Safety

Process safety carries the mission of ensuring the inherent safety of production and preventing major risks. Against the background of the continuous improvement of the complexity and scale of modern chemical production, process safety management has become a key link in balancing efficiency and safety, innovation and compliance. The park adheres to "source control and systematic management", focusing on key links such as process design, equipment operation, operation and maintenance, and change management. Through international advanced methods such as HAZOP analysis and Layers Of Protection Analysis (LOPA), it builds a prevention and control system covering the "process-equipment-personnel" trinity.



Carry out special training on chemical process safety management

The park invited Comrade Wang Haoshui, former member of the Party Leadership Group and chief engineer of the Ministry of Emergency Management, to conduct special training on chemical process safety management. From the three aspects of the origin and development of chemical process safety management, the importance of carrying out chemical process safety management, and the element system of chemical process safety management in my country, he systematically introduced the current situation and development history of chemical process safety management at home and abroad, and interpreted in detail the 20 elements of the "Guidelines for Safety Management in Chemical Processes" standard system.



Organize special seminars on safety handling of abnormal working conditions

The park focuses on abnormal operating conditions, controls dynamic risks, and continuously promotes relevant enterprises to understand and implement the specific requirements of the "Guidelines for Safety Handling of Abnormal Conditions in the Production Processes of Chemical Enterprises (Trial)", correctly respond to various uncontrollable risks under abnormal conditions in the production processes of chemical enterprises, and improve the company's control over safety risks under abnormal conditions. It organizes special training and conducts further seminars on how to implement the "Guidelines".



Organize new enterprises to carry out key protection layer analysis

Experts from well-known institutions were hired to conduct on-site analysis and evaluation of key protection measures for key hazardous sources in four newly commissioned hazardous chemical enterprises in the district. A list of key hazardous sources in enterprises and an inspection list of protection layers for key hazardous sources in enterprises were formed to further consolidate the safety foundation of hazardous chemical enterprises and improve the level of inherent safety management.

Adhere to project access review from a high starting point

In accordance with the "Tianjin Nangang Industrial Zone Industrial Prohibition and Restriction Catalogue and Project Access Index Comprehensive System (Trial)", strictly review the access of projects entering the zone from a high starting point and insist on a "one-vote" veto for safety. Throughout the year, we issued preliminary safety review opinions for 9 projects, completed site selection assessments for 12 projects, and continued to follow up and serve the safety access work of 7 projects, ensuring safe production access and consolidating the safety foundation of hazardous chemical construction projects.

天津南港工业区 产业准入负面清单和入园准入负面清单 (试行)		南港工业区 入园准入负面清单		南港工业区 入园准入负面清单	
序号	名称	序号	名称	序号	名称
1	1.1	1	1.1	1	1.1
2	2.1	2	2.1	2	2.1
3	3.1	3	3.1	3	3.1
4	4.1	4	4.1	4	4.1
5	5.1	5	5.1	5	5.1
6	6.1	6	6.1	6	6.1
7	7.1	7	7.1	7	7.1
8	8.1	8	8.1	8	8.1
9	9.1	9	9.1	9	9.1
10	10.1	10	10.1	10	10.1
11	11.1	11	11.1	11	11.1
12	12.1	12	12.1	12	12.1
13	13.1	13	13.1	13	13.1
14	14.1	14	14.1	14	14.1
15	15.1	15	15.1	15	15.1
16	16.1	16	16.1	16	16.1
17	17.1	17	17.1	17	17.1
18	18.1	18	18.1	18	18.1
19	19.1	19	19.1	19	19.1
20	20.1	20	20.1	20	20.1

Promote the assessment mechanism of the safety management system

Strengthen enterprise process safety management, and encourage newly-commissioned hazardous chemical enterprises to conduct annual safety management system assessments in accordance with the "Tianjin Nangang Industrial Zone Chemical Enterprise Safety Management Assessment Manual" and the "Safety Management in Chemical Processes", continuously improve problems in the safety management system, and continuously improve the safety management system.

Promote the management and control of key operational matters of the enterprise

Strengthen the management and control of dynamic risks of key operations, and encourage 10 enterprises involved in hazardous chemical processes in the district to identify and compile a list of key operations involved in the start-up and shutdown stages of each hazardous chemical process unit and important process adjustment stages based on the risk characteristics of their units. A total of 388 key risk points were identified, and 70 recorders with remote transmission functions were equipped to conduct video monitoring and recording of key operation processes.



Assist enterprises to carry out safety risk diagnosis and assessment

The park helps enterprises fully identify process risks, conducts safety design diagnosis and assessment for enterprises involved in key hazardous chemical processes, guides enterprises to add necessary safety facilities, and improves the level of enterprise safety risk prevention and control.



Pollution Prevention and Control

Green is not only a color, but also a development concept. Nangang Industrial Zone is committed to building a low-carbon, environmentally friendly, circular and efficient green petrochemical industry system, insisting on reducing pollutant emissions from the source, building an environmental monitoring and early warning system, real-time monitoring of the park's environmental quality, continuously increasing marine protection efforts, and effectively carrying out marine ecological restoration and comprehensive management of the port area; focusing on the circular utilization of resources, continuously increasing the proportion of green energy, building seawater desalination demonstration projects, cold energy cascade development projects, offshore photovoltaic and offshore wind power projects; vigorously promoting green buildings, green energy, and green transportation, forming a complete green development system, and continuously promoting the harmonious coexistence of industry and ecology.

The environmental quality of the park has significantly improved

The air quality continues to improve

39 $\mu\text{g}/\text{m}^3$
Average annual concentration of PM2.5

3 $\mu\text{g}/\text{m}^3$
Year-on-year decrease

263 days **71.9** % **13** days
Excellent days Accounting year-on-year

promoting the development of Bohai Chemical, completing the VOCs treatment and renovation of the hazardous waste warehouse in the storage and transportation center, Haifeng Coatings completing the renovation of the exhaust gas collection system, Hengyang Company completing the renovation of six storage tanks with efficient floating disks and sealing methods, Nangang Port Company completing the upgrade and renovation of windproof nets and fixed sprinkler facilities, Bohai Chemical and SINOPEC & SABIC Petrochemical completing the interconnection of exhaust gas bypass. Refine the linkage and control of air quality assurance, strictly prevent and control ozone pollution in summer, initiate and implement 10 adverse weather responses, 4 orange warnings for heavy pollution weather, and 2 yellow warnings. Conduct performance evaluations for 9 key enterprises in Nangang Industrial Zone, including 2 A-level enterprises and 2 B-level enterprises. Organize 16 enterprises including SINOPEC & SABIC Petrochemical to conduct leak detection and repair on 250000 dynamic and static sealing points, with a total of 565 leak points repaired.

Significant improvement in water environment quality

150 items
Monthly monitoring of surface water
99.3 %
Compliance rate

The Nangang Datou River pollution tracing project was carried out, with a total of 128 samples taken from the river channel, pump station, and enterprise pollution sources. Spectral technology was used to diagnose the homology of pollution sources, and 8 abnormal enterprises were interviewed and further verified. In terms of key tasks, we will promote the sewage treatment plant in the textile industry park to solve the problem of low influent concentration, and promote the inspection and maintenance of the sewage collection pipeline network in the central area.

Continuous improvement of soil environment

2520 items **15** locations **720** items **15** items
Soil monitoring Environmental groundwater monitoring

Organize 14 key soil units in Nangang to conduct soil pollution hazard investigation and self-monitoring of soil and groundwater, and strictly prevent and control new soil pollution. Urge all waste producing enterprises in Nangang to prepare hazardous waste management plans and regularly apply for hazardous waste management plan filing.

Comprehensive utilization of cold energy reaches a new level

The park's LNG cold energy comprehensive utilization demonstration project has been fully integrated with the resource endowment and development needs of Nangang Industrial Zone from the planning, preparation to the construction stage. On August 29, the cooperation between Sinopec and Zhongsheng Technology is a pioneering practice in the field of LNG cold energy comprehensive utilization and the coupled development of the petrochemical industry in China. It has become an important part and implementation model of the Nangang Industrial Zone's green and low-carbon energy development plan, marking that the park has reached a new level in the field of efficient utilization of clean energy.



New members added to the municipal "green factories"

The park has been promoting technological transformation, green industrial upgrading and the construction of green manufacturing demonstration units by creating green manufacturing benchmark enterprises. Tianjin GS Battery Co., Ltd. was awarded the title of Tianjin Green Factory in 2023. By the end of 2024, Nangang Industrial Zone has cultivated 2 national green supply chain enterprises and 1 municipal green factory.



Passed the first batch of national clean production audit innovation pilot assessment

Nangang Industrial Zone successfully passed the first batch of national clean production audit innovation pilot assessments and is the only approved project pilot in Tianjin. The park actively explores a new model of clean production audits, proposes 3 first-level indicators and 21 second-level indicators for the overall audit and evaluation of clean production in Nangang Industrial Zone, and establishes a clean production audit enterprise expert database to encourage enterprises to actively share their achievements and application experience in energy conservation, consumption reduction, pollution reduction and carbon reduction, break down information barriers, and promote the rapid dissemination and application of technology.

Organized a roundtable meeting on green electricity trading and low-carbon development

With the goal of achieving "green electricity across the entire region", the park continues to integrate high-quality resources, build a high-quality green electricity docking platform, promote information exchange, resource connection, and business interaction among multiple parties, and continue to provide enterprises with accurate and efficient carbon reduction services. On November 29, it held the "Second Nangang Industrial Zone Green Electricity Trading and Low-Carbon Development Roundtable", and publicized the Tianjin electricity market trading mechanism and the latest green electricity trading policies for 2025; the power sales company promoted its sales services and carried out policy presentations on the creation of corporate water efficiency (energy efficiency) "leaders".

Organized the "Beautiful China" water conservation week promotion event

On March 28, a "Beautiful China" water conservation week publicity event with the theme of "use water resources prudently and manage water resources strictly and meticulously" was held. Interactive exchanges and communications were conducted with enterprises in the park on the park's water resources situation, water conservation policies, and the promotion and application of seawater desalination water. The event also provided guidance and services to enterprises in making the declaration of water conservation enterprises, which increased the attention paid by enterprises in the park to water conservation work and promoted the rational use and sustainable development of the park's water resources.



Significant results have been achieved in environmental risk control

Organized Wuzhe Logistics and Boxi Oil and Gas to conduct emergency drills for sudden environmental incidents to build a solid regional ecological defense line. Promote the "one park, one policy, one map" work in Nangang Industrial Zone, organized experts to hold four technical discussions on the three-level prevention and control system of accident water in Nangang Industrial Zone, and combine the regional risks and water system characteristics of Nangang to initially form a series of work results such as "Nangang River Stop Valve Facility Details", "Rainwater Open Channel Pipeline Network Pump Station Status Map", "Bohua Rainwater Collection and Supporting Pump Station Status Map" and "Landscape Channel Current Volume Details", laying a solid foundation for regional ecological and environmental safety.

Innovative and coordinated regional assessment of soil and water conservation

The soil and water conservation regional assessment report of Nangang Industrial Zone successfully passed the expert review and was approved, realizing the transformation from "single project assessment" to "regional overall assessment", saving time and financial costs for enterprises and project promotion, optimizing the service business environment, and helping project construction to enter the "fast lane".



Occupational Health and Safety

Strengthen the safety line through the construction of a safety production standardization system and the continuous operation of a dual control system, continuously promote enterprise safety production management and occupational health management, rely on intelligent monitoring technology to achieve advanced risk warning, take the creation of safety culture demonstration enterprises as the key point, build a safety culture system, regularly conduct job health risk assessments, continuously optimize resource allocation, ensure the investment and effective use of safety costs, and urge enterprises to fulfill their primary responsibility for safe production.

Many companies were selected into the list of "Healthy Enterprises"

The park continuously promotes enterprises to improve the working environment, enhance the level of enterprise health management and service, and protect the health of workers. It actively promotes the construction of healthy enterprises around establishing and improving management systems, building a healthy environment, and creating a healthy culture. SINOPEC & SABIC Tianjin Petrochemical Co., Ltd. was selected into the list of "the third batch of excellent cases of healthy enterprise construction of the General Office of the National Health Commission", and Sinopec Tianjin LNG Co., Ltd. was selected into the list of "healthy enterprises" in the field of occupational health by the Health Commission of Tianjin and Binhai New Area in 2023. Tianjin Xinyang Co., Ltd., Tianjin Bohua Chemical Development Co., Ltd., China Power Construction (Tianjin) New Energy Development Co., Ltd., and Tianjin Nouryon Peroxides Co., Ltd. were awarded the title of Tianjin Healthy Enterprise in 2024.



Continuous monitoring and guidance of occupational health work

Further improve occupational disease prevention and control for workers carry out health monitoring and hazard factor investigation and monitoring of workers in positions involving benzene hazards in the park, covering more than 500 people in four companies, and coordinate with the expert group members of Tianjin Center for Disease Control and Prevention to provide guidance on the protection of workers in relevant companies and conduct health monitoring and physical examinations for workers exposed to hazard factors, form a monitoring work report and a monitoring and early warning risk assessment report, and further play the role of monitoring data analysis and judgment and early warning prediction.

Promote occupational health protection actions

Organized the signing of the "Medical Emergency Response Service Agreement of Nangang Industrial Zone Petrochemical Area" to provide stationed medical teams and set up service stations for the park, offering pre-treatment of work-related injuries and emergency response support services organized the Nanang Industrial Zone Occupational Disease Prevention and Control Law Promotion Week and Responsibility Care Activities, with the theme of "adhere to prevention first, safeguard occupational health", focusing on improving the occupational health safety awareness of workers and protecting the occupational health rights and interests of workers, popularizing occupational disease prevention and control and occupational health knowledge, and creating a strong atmosphere in which the whole society cares about occupational health.



Convene a national promotion meeting on national standards for personal protective equipment

On April 10, a national promotion meeting for national standards for personal protective equipment was held. Through this promotion activity, the needs for standardization of personal protective equipment were further clarified, and a high-quality standard system for personal protective equipment was promoted. Enterprises in the park will have a deeper understanding of the national standards for personal protective equipment, enhance awareness of personal protective equipment management, and improve the effectiveness of the use of personal protective equipment.



Policies guide the construction of corporate safety culture

The park's safety and emergency management department issued the "Guiding Opinions on the Construction of Enterprise Safety Culture in Nangang Industrial Zone", taking the creation of safety culture demonstration enterprises as the key point, and giving "extra points" to successfully created enterprises in annual production safety audits, awards and honors, etc. Through the joint efforts of park enterprises, in 2024, China Petroleum and Chemical Corporation Petroleum Commercial Reserve Co., Ltd. Tianjin Branch was awarded the municipal safety culture demonstration enterprise, CNOOC (Tianjin) Oilfield Chemical Co., Ltd. and Tianjin State Reserve Oil Base Co., Ltd. were awarded the new district-level safety culture demonstration enterprises.



Carry out special training on inspection of explosion-proof electrical equipment

Organize enterprises in the region to carry out special training on the inspection and management of explosion-proof electrical equipment, focusing on the principles, selection, installation, maintenance and key points of inspection and management of explosion-proof electrical equipment, improving the management capabilities of explosion-proof electrical equipment in hazardous chemical enterprises, continuously checking for major accident hazards of explosion-proof electrical equipment, and helping enterprises effectively resolve pain points and challenges in explosion-proof electrical equipment operations.

Carry out mutual learning and mutual improvement campaign for large-scale maintenance operations

To effectively prevent and resolve accidents during maintenance and repair operations of chemical production equipment, on September 4, the industrial park organized a mutual learning and mutual improvement campaign for large-scale maintenance operations to help upgrade the safety of the industrial park. Through enterprises sharing risk control measures and experience in the maintenance process, the RACI management matrix, and communicating with each other around the difficulties and doubts of safety management during the shutdown and overhaul of equipment, the risk identification and control capabilities were improved.



Build a solid defense line for safety production standardization in the park

To further advance the standardization of enterprise production safety, the park combines the actual production situation of hazardous chemical enterprises, and provide targeted assistance and guidance in five aspects: safety leadership, safety production responsibility system, information and compliance management, education and training and capacity building, and dual prevention mechanism construction. Throughout the year, 12 hazardous chemical enterprises including Tianjin Nouryon Peroxides Co., Ltd. were promoted to create qualified safety standardization units.





Product Safety

Strive to build a high-end, fine, green, safe and smart new chemical material base and petrochemical industry cluster. By strictly implementing the International Chemicals Management Convention and national mandatory standards, build a full-chain supervision system covering R&D, production, storage, transportation, use and recycling, and establish a PDCA closed-loop management model oriented towards sustainable improvement to achieve full life cycle safety management from the entry of raw materials into the factory to the delivery of products.

Strengthen food quality and safety supervision

Actively guide enterprises and construction sites to apply for food business licenses, interpret the licensing standards in detail, implement Order No. 60 of the State Administration for Market Regulation, assist enterprises in establishing and improving food safety management systems, clarify operating standards and responsible persons in each link, and improve internal management systems. At the same time, increase supervision efforts, and inspect a total of 96 food production and operation units throughout the year to ensure food safety.



Strengthen product quality and safety supervision

Inspected 4 certified enterprises, and organized 17 batches of quality sampling for key industrial products such as hazardous chemicals, lubricants, batteries, and finished oil, with a pass rate of 100%. Organized enterprises to participate in the Tianjin and Binhai New Area quality research project evaluations, and finally 18 projects from 5 enterprises won Binhai New Area awards, and 11 projects from 3 enterprises won municipal awards, fully demonstrating the innovative achievements of enterprises in quality improvement and setting a good example for other enterprises.



Strengthen the safety supervision of verification and measurement

Conducted special training on energy measurement for two enterprises in Nangang, clarified the professional requirements and training plans for energy measurement personnel, improved the business capabilities of personnel, guided enterprises to build a complete energy measurement management system, and conducted in-depth explanations from framework building to detailed rule formulation. Evaluated the actual situation of enterprises in energy measurement equipment management, data collection and analysis, and system implementation, put forward targeted rectification suggestions, and continuously tracked the implementation of rectification.



Dynamically control the situation of chemicals in the park

Relying on the closed management system of the smart park, a collaborative supervision mechanism for the entire life cycle of hazardous chemicals is established, with full-factor preventive control carried out before entering the park and round-the-clock supervision carried out after entering the park. To dynamically grasp the total amount of hazardous chemicals in the park and the inventory of hazardous chemicals in each enterprise, the Nangang Smart Park Management Platform has launched a "three-minute list" function for hazardous chemicals. Through this function, key elements such as the types and quantities of hazardous chemicals can be viewed in real time.

Strengthen safety supervision of special equipment

Focus on major sources of danger, curb major accidents, pay special attention to industrial pipelines, pressure vessels, boilers and other pressure-bearing equipment, highlight the supervision and inspection of key areas and key fields in the park, inspect 110 enterprises in key areas, find 96 problems and hidden dangers, and issue 11 directives. Punish 2 enterprises, and guide enterprises in the park to fully equip special equipment safety directors and safety managers.



System certification helps quality control

The park encourages enterprises to carry out ISO9001, ISO16949 and other system certification work considering their own production and operation characteristics, establish quality control and product traceability mechanisms, and achieve full-process quality control from raw material inspection, production process monitoring to finished product verification, so as to continuously output high-quality products and services.



Safety and Security

Safety is the lifeline of the chemical industry and the primary commitment of responsible care practice. The park has comprehensively promoted the construction of a standardized system. Through technical means such as 5G positioning system and high-altitude eagle-eye monitoring, it has realized dynamic perception and precise intervention of risks in the entire park. For high-risk scenarios such as hazardous chemicals storage and special operations, it has innovatively implemented a "grid + professional" management model, and simultaneously deepened joint prevention and control with fire protection, medical, environmental protection and other departments to build a solid safety protection network.

Collaborative supervision of the entire chain of hazardous chemicals transportation

The park has established a multi-department linkage mechanism including public security, traffic control, transportation management, and emergency response. Relying on the construction of smart parks and closed management of chemical parks, a new model of coordinated supervision of the entire chain of hazardous chemical transportation has been established. Beforehand, a new preventive supervision system with all elements of "qualification, waybill, and pass" has been established; during the process, a new round-the-clock on-site inspection mechanism of "loading, unloading, transportation, and parking" has been established; afterward, a new model of all-round dynamic evaluation of "personnel, vehicles, and enterprises" has been formed. Through the online + offline closed-loop control of the entire process of hazardous chemical transportation vehicles entering the zone, a total of 9,627 "Road Transport Permit" for road dangerous goods transportation vehicles have been verified, and 688 of them failed, with a failure rate of 7.15%.



Focus on counter-terrorism and maintain public security and stability

Continue to deepen rectification work on key links such as the production, storage, transportation, operation and use of highly toxic, explosive and drug-making hazardous chemicals, and insist on source tracking, management tracking and process tracking. Carried out more than 500 regular and "adversarial" safety inspections, supervised the rectification of more than 30 safety hazards, and conducted background checks on more than 200 people working in core and security positions.

Focus on the problem and reduce police prosecution cases

A joint meeting mechanism for public security in the Nangang Area was established to regularly report police incidents, public opinion, and conflicts and disputes, and jointly study solutions to problems; in view of the weak foundation of the park's monitoring facilities, the video resources of the traffic control, comprehensive management, fishery administration, emergency and other departments were integrated to extend corporate video surveillance coverage to surrounding roads, and urge construction sites to add "small, fast and flexible" monitoring; security guards and public security personnel were mobilized to join the "volunteer police" team, and patrols during crime-prone time periods were increased, etc., to continuously promote the work of reducing police incidents. 1,160 police reports were received throughout the year, and the number of police incidents decreased by 14.14% year-on-year.



Launch the "Spring Thunder 2024" operation

In accordance with the deployment of the new district, the "Spring Thunder" operation was carried out, law enforcement forces were organized, and the daily action of "jointly creating a safe sea area" was steadily promoted. Throughout the year, more than 5,400 staff members and more than 860 motor vehicles were dispatched to patrol more than 49,000 kilometers; more than 50 ships and more than 100 drones were dispatched to cruise more than 1,600 nautical miles; 17 joint operations were organized among various law enforcement units to deal with more than 1,200 maritime-related illegal persons and more than 450 related vehicles, more than 160 sets of illegal fishing gear were confiscated, and more than 220 obstructing ships were discovered and driven away; 9 clues of violations of laws and regulations were discovered, all of which were properly handled, successfully preventing the situation from further deteriorating.

Jointly build and manage safe waters

Deepen the construction of collaborative governance mechanisms, give full play to the advantages of multi-dimensional linkage such as the Bohai West Maritime Collaborative Governance Demonstration Zone and the joint inspection of LNG ships in Tianjin, Hebei, Guangxi and Shandong, and carry out information sharing and co-governance on water transportation safety on a regular basis. Strengthen the construction of maritime rule of law, successfully selected as the first batch of grassroots legislative contact points of the direct maritime system, establish cooperation with the Tianjin Municipal Bureau of Justice and the Tianjin Maritime Court, and host the first maritime moot court in the Bohai Rim region. Solidify the "commercial and fisherman co-governance" joint logistics and linkage work mechanism, regularly carry out joint maritime patrol law enforcement activities with border police stations and other maritime-related units, carry out safety knowledge "into fishing villages" and "into ships" activities, and continue to prevent and resolve the risks of collisions between commercial and fishing vessels.

Traffic management to ensure land safety

The park set up a special task force for the management of Nangang road traffic and established a joint working group with the traffic management department of the new district to comprehensively promote the management of Nangang road traffic and realize legal management on May 1, 2024. After the management, the public security traffic management department innovated a new policing model of "integration of traffic and patrol", combining daily patrol control with the investigation and discovery of traffic violations, and combining enterprise publicity and prevention with traffic safety publicity and prevention, realizing the transformation of traffic violations from passive investigation and punishment to active crackdown, and effectively maintaining the traffic security environment of the park.



Focus on maintaining stability and grasp the main responsibility

Supervise and guide the legal representative, actual controller and actual person in charge of the enterprise to strictly fulfill the responsibility of the first person responsible for production safety, guide the enterprise to establish a production safety responsibility chain, fully implement the production safety responsibility system, insist on holding public security work meetings with the unit regularly, carry out legal training, guide the construction of internal technical defense network of the enterprise, etc., to improve the internal security management efficiency of the unit; at the same time, we actively cooperate with the relevant departments to go deep into the enterprise to investigate various unstable factors. 343 conflicts and disputes were investigated throughout the year, and the resolution rate reached 99%.



Maintain the safety and stability of construction projects in the jurisdiction

Comprehensively investigate, clean up and rectify outstanding problems and potential safety hazards in the field of construction safety, promote the implementation of an external expert-assisted supervision and management system, and regularly arrange experts to conduct a dragnet-style investigation of safety, construction market, and civilized construction for all supervision projects. Organize experts to regularly carry out special treatment of sub-projects with greater risks in projects under construction, strengthen supervision of key projects and key links, and further promote the construction of a long-term mechanism for the investigation and treatment of potential safety hazards to ensure the safety and stability of the construction projects under our jurisdiction.



03 Responsible Care Star

- Tianjin Nouryon Peroxides Co., Ltd.
- SINOPEC & SABIC Tianjin Petrochemical Co., Ltd.



Build a sustainable future together with responsibility as the foundation and innovation as the wings



Tianjin Nouryon Peroxides Co., Ltd.

Tianjin Nouryon Peroxides Co., Ltd. is an important production base in China for Nouryon, a global leader in specialty chemicals, focusing on the research and development, production and sales of peroxide products. As a benchmark enterprise in the chemical industry of Nangang Industrial Zone and deputy director of the Responsible Care Enterprise Working Committee of Nangang Industrial Zone, the company has always adhered to the core values of "safety, environmental protection and sustainability", deeply integrated the concept of responsible care into corporate strategy and daily operations, and is committed to promoting industrial green transformation and harmonious coexistence with the community.

Safety production: building a solid bottom line for development

Tianjin Nouryon Peroxides Co., Ltd. has established an internationally leading safety production management system with the goal of "zero harm, zero emission, and zero hazard". At the same time, the company has been rated as an advanced enterprise in safety production in Nangang Industrial Zone for two consecutive years.

The company actively organized safety management experience sharing activities in the park. Nouryon Asia Pacific HSE Director conducted safety leadership training for hazardous chemical companies in the park and shared effective safety management practices based on actual cases. Organized large-scale maintenance operations mutual learning and experience sharing activities to help the maintenance process of brother companies in the park. Share risk control measures and good practices in the maintenance process, systematically explain the RACI management matrix, and explain in detail the key points of maintenance project process management and the three-level node route.

As an enterprise engaged in the production of hazardous chemicals, the company uses its own training platform to simulate accidents and conduct emergency rescue drills. The company has also conducted joint emergency drills with the park many times to enhance the personnel's ability to deal with abnormal working conditions and improve employees' emergency awareness.

Energy conservation and environmental protection: protecting green mountains and clear waters

The company practices the concept of "green chemistry" and will continue to uphold the concept of green development in the future, constantly explore and innovate, and contribute more to the sustainable development of the chemical industry.

In terms of environmental protection, the company has introduced advanced environmental protection equipment to strictly treat waste gas, wastewater and solid waste generated during the production process. In 2024, a large amount of funds was invested to carry out practical operations for the reduction of hazardous waste, and significant results were achieved, with the disposal of dried sludge reduced by 60%. The factory monitors various pollutant emission indicators in real time to ensure that waste gas and wastewater meet emission standards.

Energy conservation and carbon reduction have also achieved remarkable results. By optimizing the production process, the wastewater discharge has been reduced from an average of 1,000 tons per day to 900 tons, and the concentration of pollutants has also been greatly reduced. By optimizing the start and stop of air compressors and pipe area delivery pumps, we have effectively reduced the consumption of electrical energy.



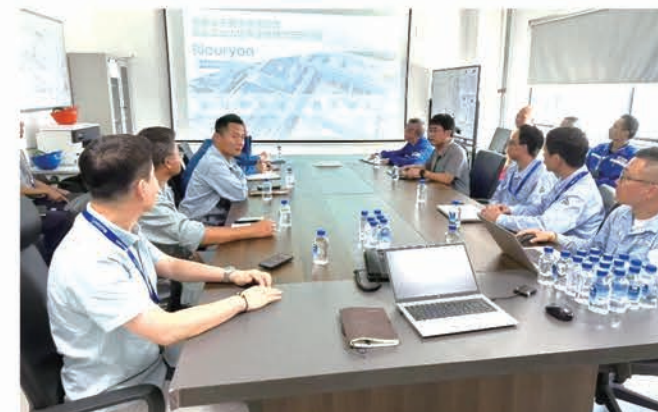
Employee health: people-oriented, empowering growth

The company always puts the health of employees and on-site operation safety as the top management priority.

The company organizes health examinations for all employees every year, and conducts occupational health examinations for employees who are exposed to occupational hazards to form a complete health file. The incidence of occupational diseases among employees has remained zero for three consecutive years.

Health training activities are carried out in an orderly manner every year, combining online and offline methods, covering rich content such as interpretation of safety regulations, accident case analysis, emergency response drills, etc., to ensure that every employee can master occupational health protection skills.

The company actively promotes health work, establishes a special consultation hotline to solve employees' health problems, enhances employees' self-protection awareness, and has won the title of "Healthy Enterprise".



Community co-construction: shared responsibility and shared value

The company insists on carrying out a series of "Public Open Day" activities to promote the concept of "responsible care". It attracts nearby enterprises, employees' families, and surrounding residents to participate. Through multiple interactive sessions, participants can learn more about chemistry and safety knowledge in a relaxed and pleasant atmosphere, and practice responsible care.

Tianjin Nouryon Peroxides Co., Ltd. has always believed that responsible care is a "mutual effort" between enterprises and society. In the future, the company will continue to be driven by technological innovation, open and transparent, and work with employees, customers, communities and industry partners to jointly write a new chapter of safe, green, sustainable and high-quality development, and contribute Nouryon's strength to the construction of a world-class chemical industry base in Nangang Industrial Zone.

SINOPEC & SABIC Tianjin Petrochemical Co., Ltd.

The main business of SINOPEC & SABIC Tianjin Petrochemical Co., Ltd. includes the production, sales and research and development of ethylene and its derivatives. The company has won the honorary titles of Tianjin Top 100 Enterprises, Tianjin Class A Tax Credit Enterprise, Tianjin Advanced Equipment Management Unit, etc. As a member unit of the Responsible Care Enterprise Working Committee of Nangang Industrial Zone, it adheres to the concept of responsible care as the guide, and carries out systematic practice in production and operation, safety and environmental protection, pollution prevention and control, digitalization & intelligence construction and other fields through continuous optimization of technological innovation, upgrading of production processes, and improvement of management systems. Over the years, driven by responsible care, the company has achieved a dual improvement in its social responsibility image and sustainable development capabilities, and has achieved a series of positive results.



Safety and environmental protection have achieved remarkable results repeatedly

Through the solid implementation of the "Intrinsic Safety Enhancement Year" event, various safety and environmental protection work has been steadily carried out, the safety production responsibility has been tightened step by step, the direct operation link management has been strengthened, and the on-site construction standardization has been fully implemented; the three-level management of major hazardous sources has been strictly implemented, and the risk hidden danger dual prevention platform has been put into operation, forming a safe production pattern of full-staff, full-process, and all-round prevention and control, and the number of hidden dangers on the production site has dropped significantly. Green and low-carbon development continues to advance, the construction of "odor-free factories" and "zero-waste enterprises" has been accelerated, resource extraction has continued to decrease, and the company's sustainable development indicators have continued to improve. The company has been awarded the honorary titles of "National Independent Ethylene Enterprise Green Development Advanced Level" and "Tianjin Water conservation Enterprise".

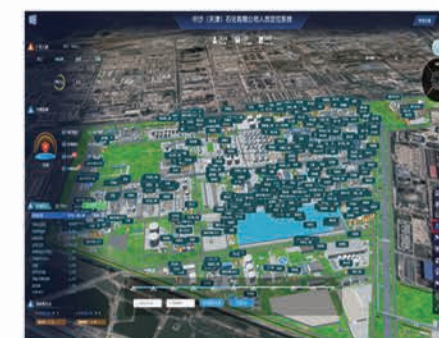
Green salon on pollution prevention and control

As the leader of the pollution prevention and control team of Nangang Responsible Care Enterprises, Sinopec & SABIC has fully played its exemplary and leading role. Taking the pollution prevention salon activities as the starting point, it has regularly built an environmental protection exchange platform for enterprises in the park. By exchanging practical experience and related cases in environmental protection management in LDAR detection and volatile organic compound management, observing and learning the application of management facilities and advanced management experience of enterprises in the zone, it has effectively enhanced the main responsibility awareness of each enterprise for ecological and environmental protection. It has laid a solid foundation for Nangang Industrial Zone to achieve green and sustainable development and ensure the environmental protection and compliance operation of enterprises. These practical explorations have demonstrated Sinopec & SABIC's responsibility in the field of responsible care and provided a replicable innovative model for pollution prevention and control in chemical parks.

Comprehensively advance the "digitalization & intelligence" construction

According to the actual application scenarios, the enterprise builds a personnel positioning system with a reasonable base station layout and accurate positioning accuracy to realize functions such as receiving and sending alarm information, visual display, personnel quantity statistics analysis, personnel activity trajectory analysis, storage and query.

After the transformation of the enterprise access control system, the management needs of vehicles and personnel entering and leaving the factory, card issuance management, face recognition function, data collection and processing, and information statistics and query can be realized, thereby further improving the integrity, informatization, automation and modern management level of Sinopec & SABIC's access control system.



04

Sustainable Improvement

Sustainable Improvement

Community Awareness



Improving community awareness cannot be achieved overnight, but requires continuous investment and mutual efforts. We will always be guided by the principle of "responsibility empowers the future", regard communities and enterprises as strategic partners and a community of shared destiny for the development of the park, establish a long-term communication mechanism, listen to diverse demands, break down cognitive barriers through transparent and normalized dialogue, and deeply integrate corporate development with community welfare; from the popularization of safety knowledge to the implementation of public welfare actions, from green co-construction to cultural integration, in the future, we will continue to deepen the connection between society and enterprises with an open attitude, empower responsible practice with the power of science and technology, and illuminate the road to common prosperity with the light of humanity. In the journey of responsible care, the park and enterprises will always go side by side, constantly win the trust and recognition of the public, and stimulate the endogenous driving force of coordinated development.

Emergency Response



Continue to improve the emergency rescue force system, strengthen the construction of comprehensive emergency rescue support capabilities such as emergency materials, rescue equipment, and emergency logistics, study and establish an integrated regional natural disaster monitoring system, and promote the high-standard construction of a smart park management center in the park's science and technology innovation center, to achieve incremental expansion of local data + cloud storage, meet the data storage, governance, and use needs of the smart park, and ensure data security; leveraging the city bureau project, add high-altitude lookout video points, panoramic gimbal monitoring, gas cloud imaging, or hyperspectral remote detection and other monitoring equipment to further enhance monitoring and early warning capabilities and safety assurance capabilities.

Safe Storage and Transport



Strengthen the functions of the Nangang Smart Park Management Platform and promote the refinement and intelligence of storage and transportation safety management. By combining technical means such as "GPS data of hazardous chemical vehicles", "electronic waybills", "electronic police video on roads", and "centimeter-level high-precision positioning terminals", the entire process and full chain control of hazardous chemical vehicles entering the park is achieved, ensuring that the source is traceable, the destination is traceable, and the status is controllable. This comprehensively enhances the safety level of storage and transportation in the park and builds a solid safety defense line.

Process Safety



Deepen the two "whole process" management work mechanisms and promote process safety management to a new level. Establish digital archives of enterprise safety production, carry out benchmark creation activities for process safety management of hazardous chemical enterprises, organize experience exchange and benchmark learning among enterprises, and promote overall level improvement. Strengthen the professional construction of the safety supervision team, regularly invite industry experts to carry out special training on process safety, and improve the professional quality of supervisors; improve the closed-loop management of hidden danger investigation and treatment, and use intelligent inspection robots, online monitoring sensors and other equipment to achieve early detection and early disposal of hidden dangers, and escort chemical production safety.

Pollution Prevention and Control



Adhering to the concept of green, low-carbon and circular development, with the goal of achieving green, low-carbon and high-quality development, fully considering the carrying capacity of resources and the environment and the needs of low-carbon economic development, actively promote the application of seawater desalination and green electricity; continue to promote the refined management of "five-source simultaneous governance", for mobile sources, promote new energy transportation vehicles, and optimize the traffic routes in the park; in terms of industrial sources, guide enterprises to carry out clean production technology transformation, establish a real-time monitoring system for energy consumption and pollutant emissions, achieve precise emission reduction, and do our utmost to protect the clear water and blue sky of the park.

Occupational Health and Safety



Adhere to the people-oriented principle and strengthen occupational health and safety protection in all aspects. Promote the construction of occupational safety and health standardization in enterprises, formulate assessment rules, and ensure effectiveness. Increase the promotion and application of new technologies, new processes, and new materials, encourage enterprises to carry out technological transformation, and reduce occupational hazards. Optimize and promote the "Yunxingjian" supervision system to provide precise guidance for enterprises; improve the investigation and handling mechanism of occupational hazard accidents, establish an expert database to provide technical support, strictly investigate responsibilities, conduct regular special inspections on occupational health and safety, and effectively safeguard the health rights and interests of workers.

Product Safety



Improve the product safety supervision system throughout the entire chain and enhance product safety assurance capabilities. Promote enterprises to establish product traceability mechanisms to achieve product information traceability throughout the entire life cycle. Strengthen the construction of product quality standard systems, jointly with industry associations to formulate park product safety specifications that are higher than national standards, and guide enterprises to improve product quality. Strengthen certification and accreditation management, establish a dynamic evaluation mechanism for third-party certification agencies, and ensure that certification results are authentic and reliable; carry out joint law enforcement actions on product safety, severely crack down on counterfeit and shoddy products, create a safe and secure market environment, and effectively prevent and control product safety risks.

Safety and Security

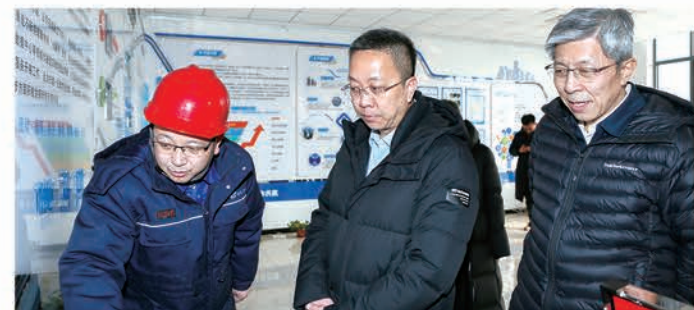


Build a smart and three-dimensional security system to maintain long-term peace and security in the park. Upgrade the closed management system of the park, deeply integrate the electronic fence with video surveillance, face recognition, and intelligent access control, and build an intelligent perception network. Optimize the deployment of security forces for the newly integrated management areas, establish a regional joint prevention and control mechanism, and carry out joint patrols and emergency drills. Conduct real-time security situation analysis of key areas and key facilities in the park, detect abnormal behaviors in a timely manner and issue warnings; strengthen the quality construction of the security team, regularly carry out skills training and actual combat drills, improve emergency response capabilities, and create a stable and safe environment for the development of the park.

05

Milestones of Responsible
Care of Nangang
in 2024

Responsible Care Milestones of Nangang in 2024



Jan.

[January 22, 2024] Nangang East 220 kV substation was put into operation and power was supplied.

Feb.

[February 1, 2024] A "Leaders Talk About Safety" event was organized at the Safety Emergency Training Base. Ma Jianjun, a member of the Standing Committee of the Economic and Technological Development Zone Party Committee and deputy director of the Management Committee attended the event.

[February 9, 2024] Hong Shicong, Secretary of the Party Committee and Director of the Management Committee of Tianjin Economic and Technological Development Zone, inspected and served key enterprises in Nangang Industrial Zone.

Mar.

[March 8, 2024] Nangang Industrial Zone was awarded the title of "Beijing-Tianjin Electronic Chemicals Base".

[March 14, 2024] Li Shousheng, the president of the China Petroleum and Chemical Industry Federation, led a team to conduct research in Nangang Industrial Zone.

[March 18-22, 2024] Emergency management law enforcement personnel and enterprise safety emergency personnel were organized to carry out the first test of 2024.

[March 21, 2024] Attended the 2024 Annual Work Seminar of the Responsible Care Working Committee held in Yizheng, Jiangsu.

[March 21, 2024] Lian Maojun, a member of the Standing Committee of the Tianjin Municipal Party Committee and Secretary of the Binhai New Area Party Committee, inspected and served the Tianjin Scientific Experimental Base of Sinopec Beijing Institute of Chemical Technology.

[March 25, 2024] A meeting to promote responsible care practice and safety culture creation was held.

Apr.

[April 8-12, 2024] The district's fire brigades and fire management personnel were organized to conduct practical training at the National Hazardous Chemicals Emergency Rescue Training and Drill Lianyungang Base.

[April 9, 2024] A delegation of experts from the Municipal Government Consultant Research Group visited Nangang Industrial Zone for research and held a thematic symposium on "cultivating new quality productivity and enabling the high-quality development of our city's petrochemical industry."

[April 10, 2024] The National Standard Promotion Conference for Personal Protective Equipment was held in Nangang Industrial Zone.

[April 11, 2024] Nangang Industrial Zone was awarded the national title of "Green Chemical Park" at the 2024 China Chemical Park Sustainable Development Conference.

[April 11, 2024] The park was invited to participate in the China Chemical Park Sustainable Development Conference and share experiences at the Chemical Park Responsible Care Sub-Forum.

[April 26, 2024] Guests attending the National Dangerous Goods Transport Traffic Safety Coordinated Supervision Pilot Work Conference visited Nangang Industrial Zone.

May.

[May 1, 2024] The public security traffic management department officially took over the roads in the Nangang Industrial Zone and carried out traffic safety law enforcement.

[May 30, 2024] Enterprises in the zone carried out special training and seminars on the "Guidelines for Safety Handling of Abnormal Conditions in the Production Processes of Chemical Enterprises (Trial)".

Jun.

[June 6, 2024] The safety rectification and improvement research team of the Chemical Industry Park of the Ministry of Emergency Management conducted research in Nangang Industrial Zone.

[June 7, 2024] The emergency rescue teams of enterprises in the zone held a competition on safety and emergency response skills.

[June 12, 2024] A working meeting of liaison officers from member units of the "Responsible Care" work leading group was organized and held.

[June 14, 2024] The 2024 National "Safe Production Month" Safety Publicity and Consultation Day event was held in Nangang Industrial Zone.



Jul.

[July 9, 2024] Tianjin GS Battery Co., Ltd. was awarded the title of "Green Factory" in Tianjin in 2023.

[July 17, 2024] At the capacity building training course for full-time safety supervisors in chemical parks organized by the Ministry of Emergency Management, the experience of closed management of chemical parks was shared.

[July 24, 2024] Nangang Industrial Zone was awarded the national "Responsible Care Star".

Aug.

[August 8, 2024] Shan Zefeng, deputy secretary of the Binhai New Area District Committee and district mayor of Tianjin, inspected and served key construction projects.

[August 22, 2024] The Blue Ocean Summer Camp Tianjin University carried out summer internship practice activities in Nangang Industrial Zone.

[August 23, 2024] Nangang Industrial Zone successfully passed the first batch of national clean production audit innovation pilot evaluation.



Sep.

[September 6, 2024] The Nangang Maritime Search and Rescue Branch of the Tianjin Maritime Search and Rescue Center held the "2024 Dagang Port Area Beijing Gas Tianjin LNG Ship-Shore Joint Emergency Drill".

[September 20, 2024] Organized exchanges on the entrepreneurial spirit of Taida between enterprises in the park and traditional well-known enterprises in the Economic Development Zone.

[September 24, 2024] A Responsible Care Report Release and Public Commitment Meeting was held, and the "three-report system" of the park, enterprise working committee, and enterprise were formally formed.

[September 26, 2024] Hong Shicong, Secretary of the Party Committee and Director of the Management Committee of Tianjin Economic and Technological Development Zone, inspected key enterprises in Nangang and carried out safety inspections before the festival.

[September 27, 2024] Liu Guiping, the member of the Standing Committee of the Tianjin Municipal Party Committee and Executive Vice Mayor, investigated and served the Sinopec Tianjin Petrochemical Nangang Ethylene Project.

Oct.

[October 30, 2024] Nangang Industrial Zone was named the 2024 High-Quality Development Chemical Park.

Nov.

[November 5, 2024] Lian Maojun, a member of the Standing Committee of the Tianjin Municipal Party Committee and Secretary of the Binhai New Area Party Committee, inspected and served the Sinopec Tianjin Nangang Ethylene Project.

[November 11, 2024] Tianjin Nangang 1.2 million tons/year ethylene project was completed and put into production.

[November 19, 2024] The Nangang Green Petrochemical Science and Technology Innovation Center was officially unveiled at the 2024 China Petroleum and Chemical Private Economy High-Quality Development Conference.

[November 29, 2024] Tianjin Bohua Chemical Development Co., Ltd. was awarded the title of "Leader" in China's Industrial Carbon Peaking in 2024.



Dec.

[December 21, 2024] The Tianjin Emergency Management Bureau organized experts from the Ministry of Emergency Management's Safety Science Institute to review the park's integrated management safety improvements, and the final score was 88.23, confirming that it had reached Class D (lower risk level) status.

[December 26, 2024] A themed lecture event "Leaders Talk About Safety" was held, with Zeng Weipeng, a member of the Standing Committee of the Economic and Technological Development Zone Party Committee and deputy director of the Management Committee, as the keynote speaker.

[December 26, 2024] The park was awarded the title of "Water Conservation Park" at the Water Conservation Industry Integration and Development Conference.

