



天津港集团
TIANJIN PORT GROUP

智联港航 绿动未来
携手共迎智慧绿色枢纽港口新机遇

Intelligent Port & Shipping, Green Future
Jointly Embracing New Opportunities for Smart and Green Hub Ports

2025.11 吉隆坡

C O N T E N T S

01

数字赋能，铸就全球智慧港口新标杆

Digital Empowerment, Forging a New Global Benchmark for Smart Ports

02

绿色转型，构建跨区域可共享的低碳生态

Green Transformation, Building a Cross-Regional Sharable Low-Carbon Ecosystem

03

生态友好，打造人与自然和谐共生的港口样板

Eco-Friendly Development, Creating a Port Model of Harmonious Coexistence
Between Humans and Nature

04

港航融合，激活中马跨境合作的邮轮引擎

Port-Shipping Integration, Activating the Cruise Engine for China-Malaysia Cross-
Border Cooperation

1. 数字赋能，铸就全球智慧港口新标杆

Digital Empowerment: Forging a New Global Benchmark for Smart Ports



12

岸桥
Shore Bridge

42

场桥
RTG

92

智能运输机器人
ART

3,000,000+

吞吐量
Throughput

60%

减少人力使用
Staff Reduction

50%

工艺优化
Optimization

30%

降低成本
Reduce Costs

0%

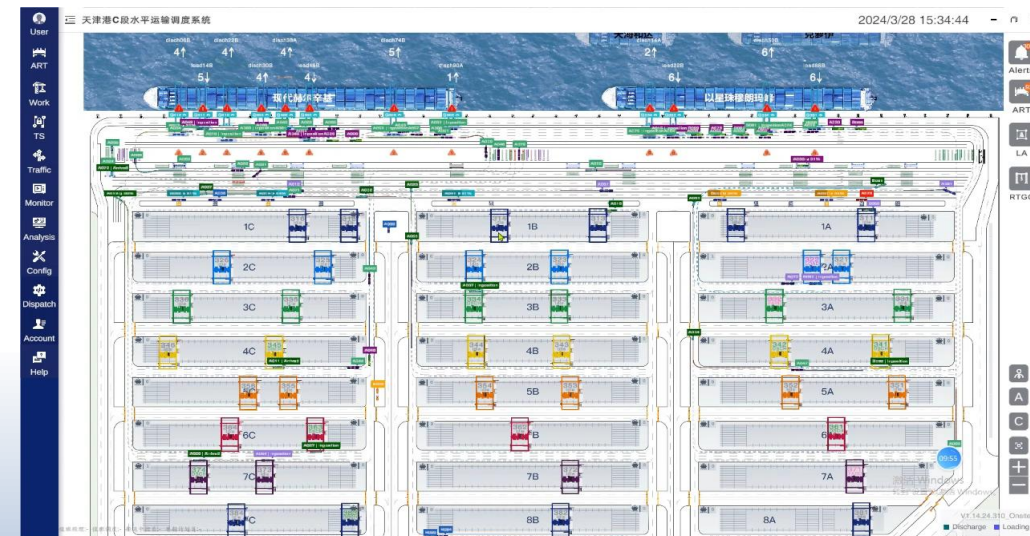
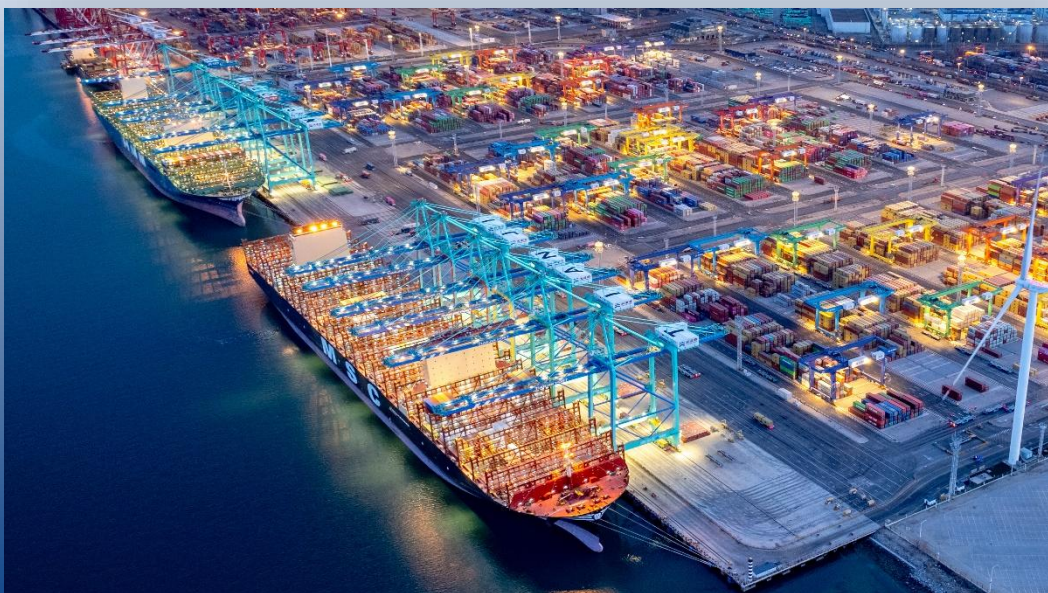
碳排放
Carbon Emission



1.1 创新新型自动化码头装卸工艺

Innovating new loading/unloading technologies for automated terminals

面向传统自动化集装箱码头常见布置形式和装卸工艺，天津港采取“场桥堆场水平布置边装卸+岸桥单小车地面集中解锁”的新型装卸工艺，实现码头的经济、高效运行，更好满足世界主流码头的新建或改建需求。



Aiming at the common layout forms and loading/unloading technologies of traditional automated container terminals, Tianjin Port has proposed the new loading/unloading technology of "horizontal arrangement of yard cranes with side loading/unloading + quay cranes with single trolley and centralized ground unlocking", realizing the economical and efficient operation of the terminal, which well meets the needs of new construction or reconstruction of mainstream terminals in the world.



1.2 自主研发智能水平运输系统

Independently developing an intelligent horizontal transportation system



二集司获评绿色智慧“双五星”港口，引领行业迈入自动化2.0。上线运行自主可控的全新一代智能化集装箱码头管控系统JTOS。

Tianjin Port Second Container Terminal Company has been awarded with "Double Five Star" green and smart port, marking a leading position in the industry to automation version 2.0.

JTOS(smart container terminal operating system) of a new generation by domestic R&D is online for automated container terminal.



1.3 建设智慧绿色能源系统

Constructing a smart green energy system



建设智慧能源系统，采用“自发自用，余电上网”模式，包含风电和光伏两个部分。系统并网发电后每年总发电量将达到2330.2万千瓦时，可节约标煤约7340吨，减少二氧化碳排放约2万吨。

A smart energy system has been built, adopting the mode of "self-generation for self-use, surplus power connected to the grid", including two parts: wind power and photovoltaics. After the system is connected to the grid for power generation, the total annual power generation will reach 23.302 million kWh, which can save about 7,340 tons of standard coal and reduce carbon dioxide emissions by about 20,000 tons.



2.1 能源供给绿色化

Greenization of energy supply



依托港口空间资源，建成24台风电机组与14万平方米光伏电站，总装机容量超140兆瓦，年发电量超3亿千瓦时，目前绿电占港口生产用电量比重超70%，年减碳量突破20万吨。

Relying on the port's spatial resources, we have built 24 wind turbines and 140,000 square meters of photovoltaic power stations, with a total installed capacity of over 140 MW and an annual power generation of over 300 million kWh. At present, green electricity accounts for more than 70% of the port's production electricity consumption, and the annual carbon reduction volume exceeds 200,000 tons.



2.2 作业设备清洁化

Cleanization of operation equipment



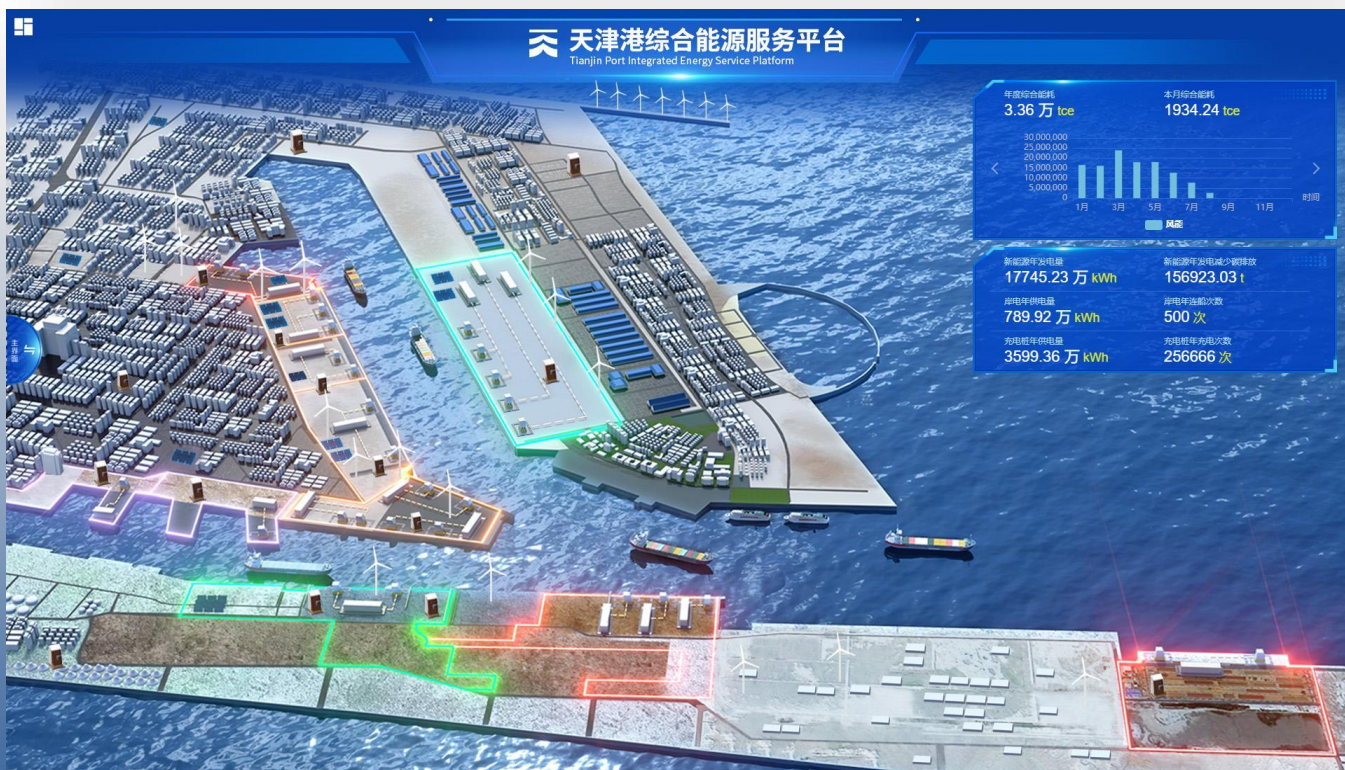
自主研发氢-电混合动力水平运输机器人ART，
实现集装箱短倒集卡100% 电动化；港作设备
清洁化占比近60%、单位电能消耗占比超70%，
位于中国港口领先水平。

We have independently developed the hydrogen-electric hybrid power horizontal transportation robot (ART), realizing 100% electrification of container short-haul trucks; the proportion of clean port operation equipment is nearly 60%, and the proportion of unit electric energy consumption exceeds 70%, leading among Chinese ports.



2.3 能源管理数字化

Digitalization of energy management



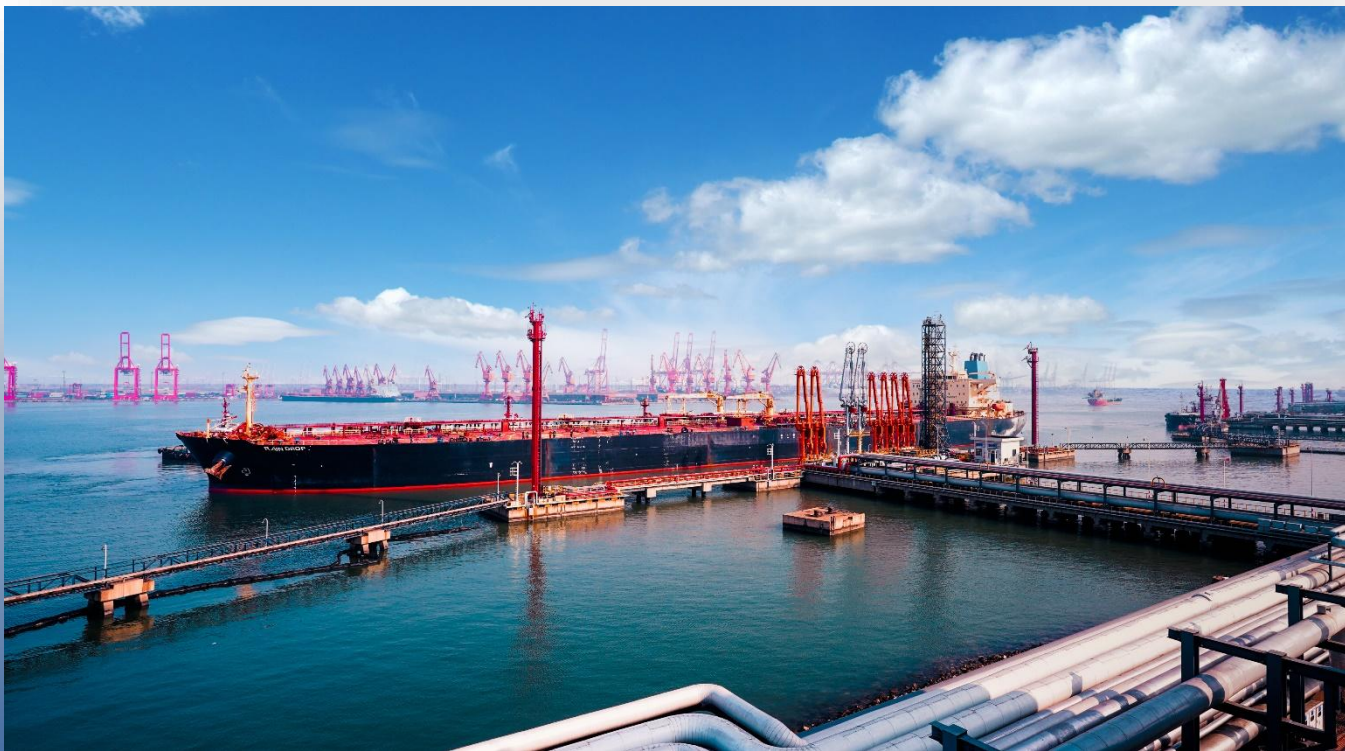
创新“智能调控中心+能碳管控系统”双核模式，通过多源数据融合、智能故障诊断技术，实现发电、输电、用电全链条管控，目前已覆盖 270 余个数字化功能单元、34万个数据监测点

We have innovated the dual-core model of "intelligent control center + energy and carbon management and control system". Through multi-source data fusion and intelligent fault diagnosis technology, we have realized the whole-chain management and control of power generation, power transmission, and power consumption. At present, it covers more than 270 digital functional units and 340,000 data monitoring points.



3.1 空气质量持续改善

Sustained improvement of air quality



2024 年港区PM2.5浓度较2020年下降15.6%，优良天数比例提升6.9个百分点，港区空气质量不亚于城区平均水平。

In 2024, the PM2.5 concentration in the port area decreased by 15.6% compared with 2020, and the proportion of days with good air quality increased by 6.9 percentage points. The air quality in the port area is no less than the average level of urban areas.



3.2 海洋生态持续优化

Sustained optimization of marine ecology



实现入海排污口全流程整治，确保直排海污染源100%达标；常态化清理海岸线与港池漂浮垃圾，维护海洋生态平衡。

We have realized the full-process improvement of sewage outfalls into the sea, ensuring that 100% of direct marine pollution sources meet the standards; we have regularly cleaned up floating garbage on the coastline and in the port basin to maintain the balance of the marine ecosystem.



3.3 生物多样性持续提升

Sustained improvement of biodiversity



实施“153”海岸带生态治理工程，2019年至今累计治理近1000万平方米海岸带，“红海滩”景观初具规模。

We have implemented the "153" coastal zone ecological management project. Since 2019, we have managed nearly 10 million square meters of coastal zones, and the "red beach" landscape has begun to take shape.



4.1 运营成效走在前列

Leading operation performance



2023年，东方邮轮“梦想”号、爱达邮轮“地中海”号先后以天津为母港开启国际航线，使天津港成为疫情后中国首家且唯一实现2艘国际邮轮同期运营的港口。

In 2023, the Oriental Cruise "Dream" and the AIDA Cruises "Mediterranea" successively launched international routes with Tianjin as the home port, making Tianjin Port the first and only port in China to realize the simultaneous operation of 2 international cruises after the pandemic.



4.2 大力推动适港产业集聚

Promoting the agglomeration of port related industries



2025年至今，已接待国际邮轮79艘次、出入境旅客近27.99万人次，稳居中国北方首位。

Since 2025, it has received 79 international cruise ship calls and nearly 279,900 inbound and outbound passengers, ranking first in northern China.



天津始终以开放包容的姿态迎接世界

Tianjin has always welcomed the world with an open and inclusive attitude

今年9月份，天津成功举办上海合作组织峰会，这座兼具深厚历史积淀与现代活力的美丽城市，不仅是北方国际航运枢纽的核心承载地，更有着百年港城的人文底蕴，天津始终以开放包容的姿态迎接世界。



It is worth mentioning that Tianjin successfully hosted the Shanghai Cooperation Organization (SCO) Summit in September this year. This beautiful city, with both profound historical heritage and modern vitality, is not only the core carrier of the northern international shipping hub, but also has the humanistic heritage of a century-old port city, Tianjin has always welcomed the world with an open and inclusive attitude.



在三大领域深化协作

Deepen collaboration in three major fields



一是共享智慧技术

二是共建绿色体系

三是共拓邮轮市场

- 1.Share smart technologies
- 2.Jointly build a green system.
- 3.Jointly expand the cruise market.



天下港口 津通世界

Tianjin Port-Connecting the World



www.ptacn.com



86-22-25707550



86-22-25702080