

01

Port-connecting Platform - Tianjin Port
Whole Industry Chain Logistics Digital
Intelligence Project





1 Measures Taken by the New District to Promote the World-class Port

On February 18, 2021, the Municipal Party Committee and the Municipal Government issued "Opinions on Implementing the Outline of Building a Transport-Strong Nation"



Target

In 2035, Tianjin will be basically built into a city with strong transportation capability, and will have a modern comprehensive transportation system.



Port container 30 million \$TEU %

To march into the fifth generation port

To build a world-class intelligent green international hub port

To build a core shipping area in North China

To become a strategic support of jointly building the "Belt and Road Initiative" and an important support of China's new pattern of all-round opening up

From May 27, 2021, Binhai New Area Transportation Bureau (as the leader) works with various technology service providers (as the participants) to put forward the preliminary idea of building a port-connecting platform (Tianjin Port Whole Industry Chain Logistics Digital Intelligence Project).



- On May 25, 2021, Lian Maojun, member of the Standing Committee of the Municipal Party Committee and secretary of the Binhai New Area Party Committee, went to the key project site in the bonded area to conduct an investigation and presided over the on-site promotion meeting. He came to G7 and encouraged the person in charge of the enterprise **to give full play to its own strength in scientific and technological innovation and R&D, further enhance the core competitiveness of products, strive to build a network freight platform, and rely on the aggregation effect of the network platform to expand the market space and achieve greater development.**
- From May 27, 2021 to July 14, 2021, Wang Haiyan, director of the Transportation Bureau of Tianjin, conducted onsite investigations and presided over special conferences several times **to study how the network freight industry serves Tianjin Port.**





2 Status investigation

The goal of building an international shipping center in North China still has a lot of room for improvement in the following aspects:

Intelligent Port

- Low site turnover rate affects the utilization of waterfront sites.
- Low efficiency of storage yard
- **Information interaction in the whole process of collection, distribution**

Green Port

- 70% vehicles are diesel trucks, causing environmental pollution.
- In case of special weather, the capacity will be reduced.
- **Developing new energy sources and realizing the goal of “carbon peak and neutrality”**

Safe Port

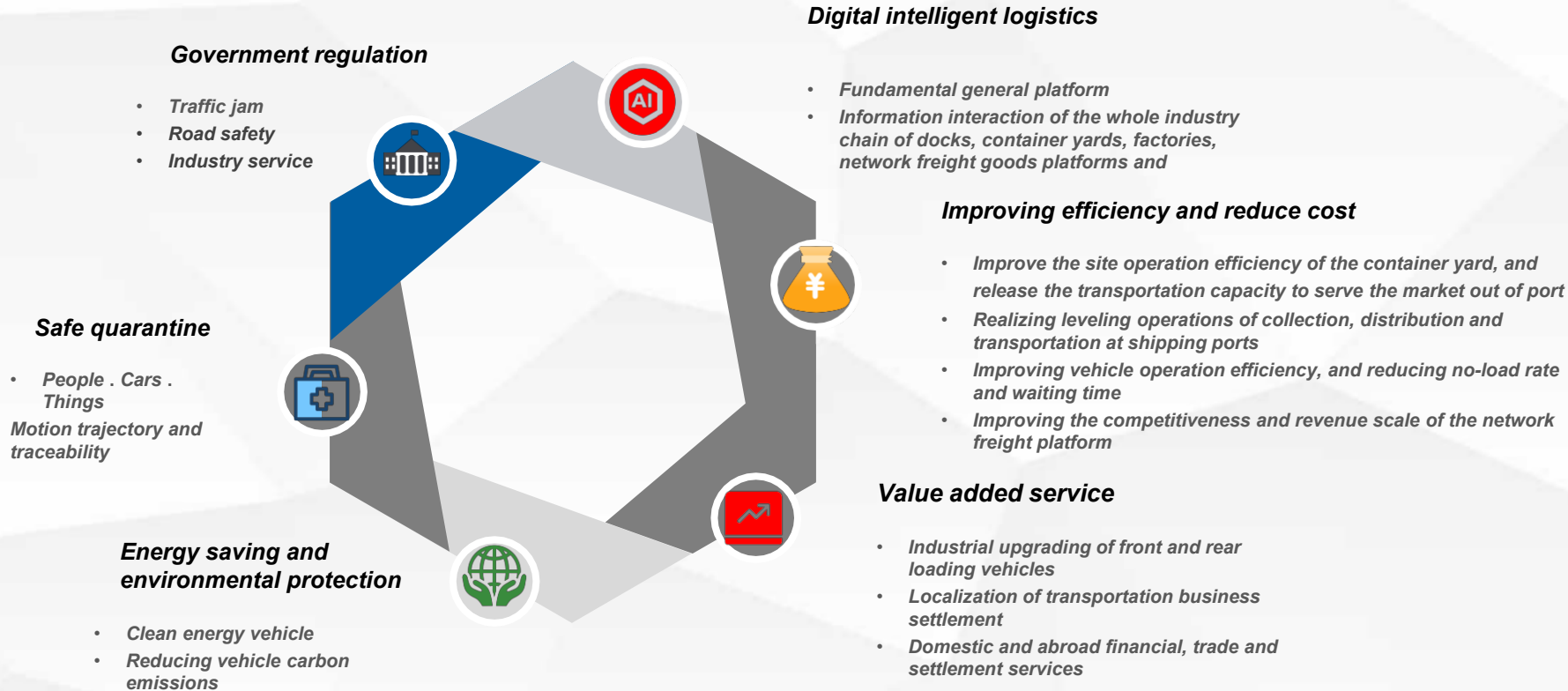
- 14,654 short-distance vehicles and 15,432 drivers
- About 50,000 vehicles per day, about 75,000 practitioners
- Regional safety, traffic, environmental protection and epidemic prevention hazards
- **Optimizing short-distance, trunk line transportation organizations and Visualization of the whole process of transportation**

Value added service

- Offsite settlement of trunk line freight cost(more than 80%)
- Nonlocal trade of goods and financial services (more than 60%)
- Nonlocal transportation vehicle service market (more than 90%)
- **Whole chain scenario credit platformization**

3 Platform's functional architecture

Improving the digital intelligence level of logistics in the whole industrial chain of shipping ports.



4 Implementation paths

The project takes the pain point of port business (secondary storage yard) as the entry point to connect the business flow and data flow channel of port-short barge transportation-secondary storage yard-trunk line transportation-factory/ source of goods, and build the whole scenario of Tianjin port traffic and realize a virtuous circle featuring intelligent transportation, green freight transportation, business cost reduction, transportation efficiency improvement, port throughput improvement, shipping industry agglomeration, traffic congestion reduction, etc.

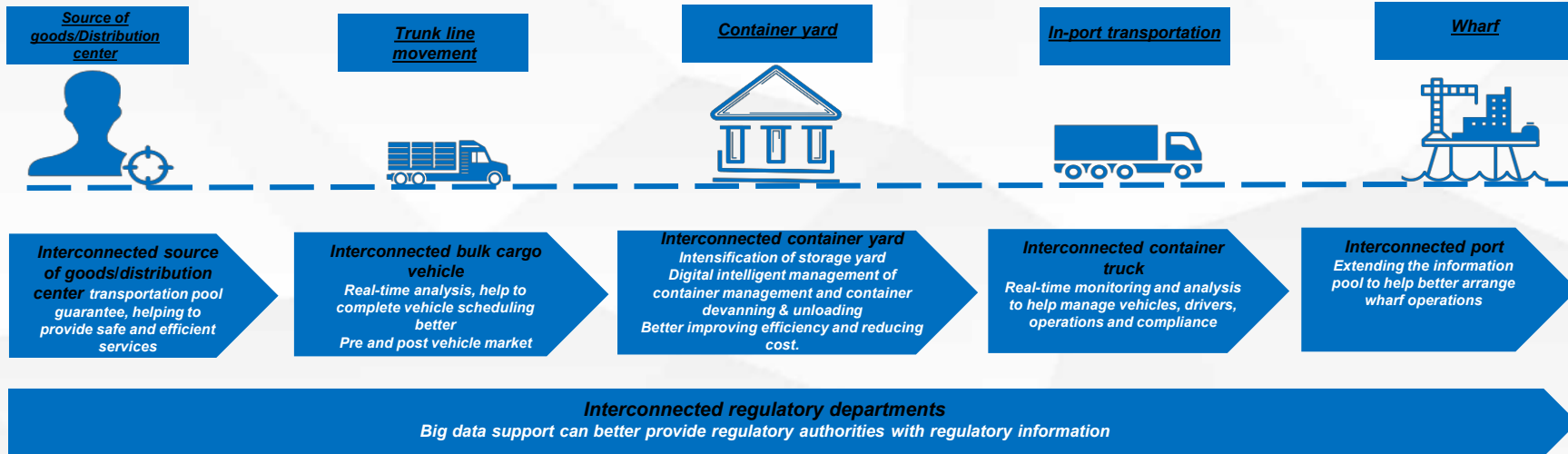
Port-connecting digital intelligence platform

Informationization innovation platform

Realizing the whole process visualization of logistics through informationization platform.

Digital industrial chain

The whole process of participation, analysis, automation of process and integration management along the upstream and downstream of the digital industrial chain



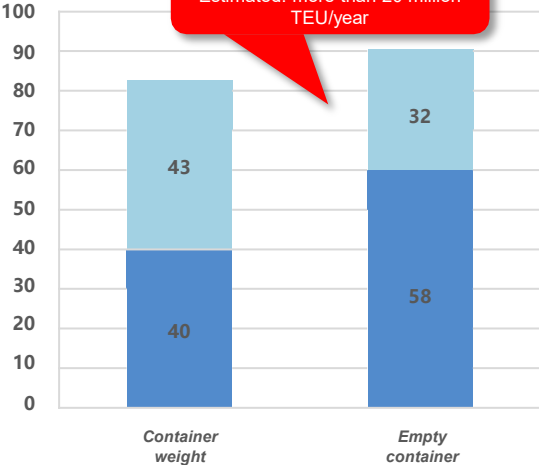


5 Plan effects

Throughput of Tianjin Port in 2021
(unit: ten thousand TEU/month)

Domestic trade Foreign trade

Average: 1.74 million TEU/ month.
Estimated: more than 20 million TEU/year



Data source: Estimated according to the actual data in the period from January to July, 2021

Status quo

At present, there are 14,654 short-distance vehicles with 15,432 drivers, and the actual theoretical demand is 7,700 vehicles with 15,400 drivers.



Item	Container type	Container quantity (TEU/month) Vehicle demand (unit)			
		Domestic trade	Foreign trade	Domestic trade	Foreign trade
Container weight	20'(70%)	279,100	300,900	1,861	2,006
	40'(30%)	59,807	64,479	399	430
Empty container	20'(70%)	407,600	227,100	1,359	757
	40'(30%)	87,343	48,664	582	324

Conditions set for calculation:

- Container type proportion: 20'/40' =70%/30%
- Vehicle configuration: loaded container and 40'empty container (one container per truck), empty container (two 20'per truck).
- Driver configuration: 2 drivers per truck (two shifts)
- Transportation frequency: 5 rounds/day

After the implementation of the plan

<Realizing leveling operation>



① Solving traffic congestion.

- Waiting time ↓down by 50%(from 2 hours→1 hour)

② Increasing transportation frequency

- 5 rounds/day→7 rounds/day

③ Releasing transport capacity under the current workload

- Demand: 5500 trucks
- Released 9,154 trucks and 4,432 drivers

④ Released transport capacity increases throughput.

- After implementation of the plan: 5,500 trucks can transport containers as many as 20.88 million TEU/year
- Released transport capacity can meet the demand of increasing the throughput capacity of 8 million TEU/ year or more and other trunk line transportation needs

5 Plan effects

The project cooperates with the Transport Global Practice of the World Bank and the iCET

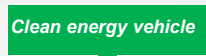


to establish a low-carbon logistics platform.

- Through the digital intelligent platform of port-connecting logistics, the operation will be leveled and the transportation capacity will be improved
- Clean energy vehicles are introduced



20.88 million TEU/ year (5,500 trucks) → 30 million TEU/ year (about 7,900 trucks)



Transport interval	Transportation mileage (km/round trip)	Transportation volume (round/year)	Transportation volume (km/year)	Fuel consumption coefficient	Fuel consumption (L/year)	Carbon emission coefficient	Carbon emission (T/year)	Carbon emission (T/year)	Emission reduction (T/year)
Secondary yard-wharf	10	20184500	201845000	45 L/100km	90830250	2.63 kg/L	238883.56	0.00	238884



6 Project progress

Preliminary investigation

The preliminary investigation about the project has been completed gathered leading technological enterprises including G7, Taiwei, Baishi, Jumeng Gongjian, Didi Freight and TuSimple to establish an industrial alliance.

Low carbon platform

Cooperated with the Transport Global Practice of the World Bank and the iCET to build a "low-carbon logistics platform"

Operating subject

Reached agreement with Binhai Industry Fund on equity structure and cooperation with the Ministry of Transport and China Transport Telecommunications & Information Center

Plan communication

On September 2, 2021, we communicated with Tianjin Port Group. Next, both sides will jointly analyze and promote the solution plan in a comprehensive way

02

Lin-Gang Barge Transport Project



1 Project Description

At present, Tianjin Free Trade Zone (Lin-Gang) does not have the functions of empty container yard and congregation of goods in port and the transportation in this process needs to move back and forth between Tianjin Free Trade Zone (Lin-Gang) and Tianjin Port, and the transport routes mainly include picking up container, congregation of goods in port, picking up empty container and returning empty container. *This part of transportation adopts automobile transport mode.*

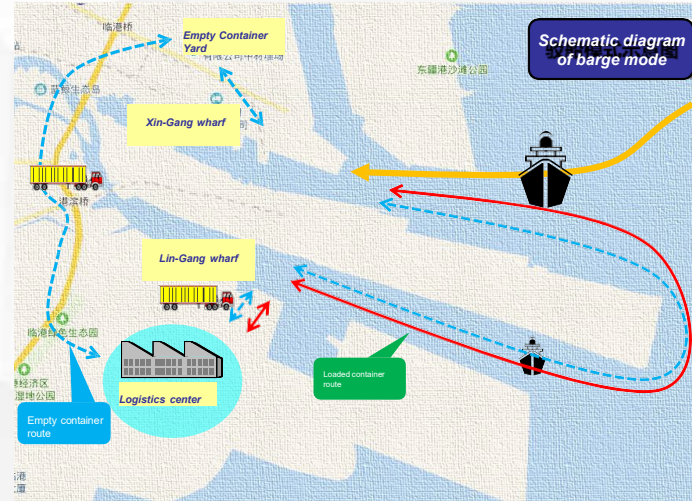
To reduce the overall transportation cost



- Giving full play to the wharf resources of Tianjin Free Trade Zone(Lin-Gang)
- The barge function from Lin-Gang to Xin-Gang wharf has been opened



Effect of the scheme: reducing emission of up to 9,609 tons/year



Transport interval	Transportation mileage (km/round trip)	Transportation volume (container/year)	Transportation volume (round/year)	Transportation volume (km/year)	Fuel consumption coefficient	Fuel consumption	Carbon emission coefficient	Carbon emission (T/year)
Tianjin Port-Lin-Gang (land transportation)	60	182,500	182,500	10950000	45 L/100km	4,927,500 L/year	2.63 kg/L	12959
Tianjin Port-Lin-Gang (sea transportation)	60	182,500	1825	109500	3000kg/day	1095000 kg/year	3.06 kg/kg	3351
								down: 9609