

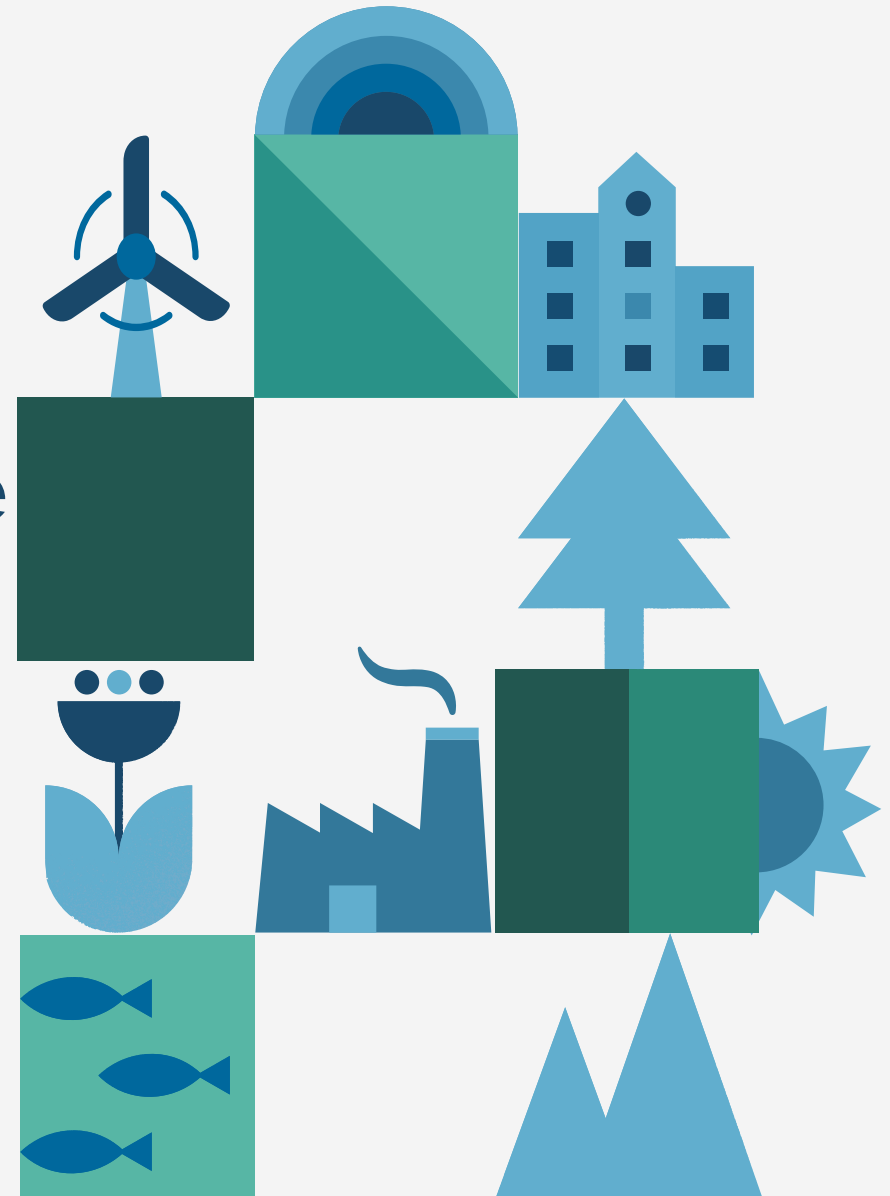


Taiwan International Ports Corporation, Ltd.

Taiwan Port's Sustainable Development and Offshore Wind Power Business

Stanley Yang

Senior Deputy Director of Planning and Development Dept.





Contents



01
Introduction
of TIPC



02
TIPC's Pathway to
Port Sustainability



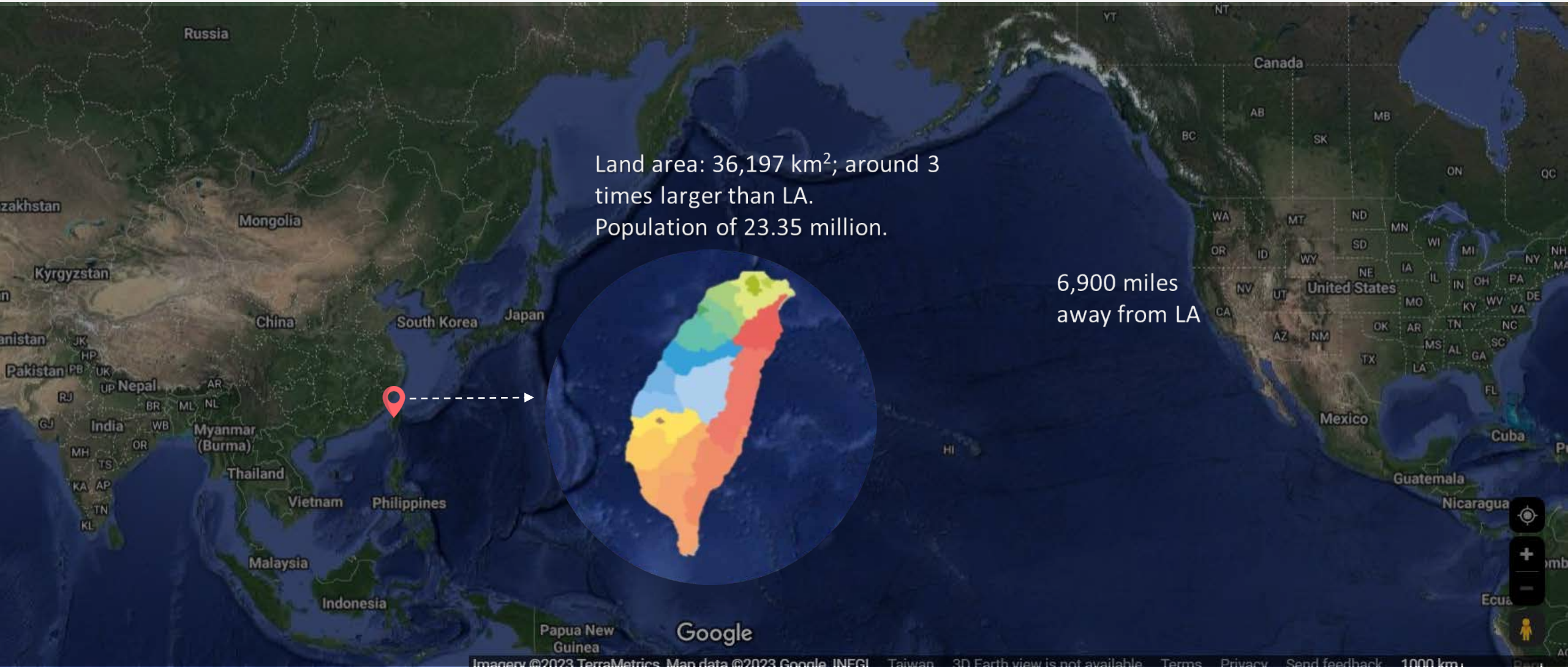
03
Offshore Wind Power
Business in Taiwan Ports



01 / Introduction of TIPC



Where is Taiwan?





History of TIPC

"A Young ,
yet Well-experienced Port Operator.
Wholly-Owned By Taiwan MOTC"

4 Harbor Bureaus

Keelung, Taichung,
Kaohsiung, Hualien

March 1st, 2012 →



Maritime and Port Bureau
Port Authority

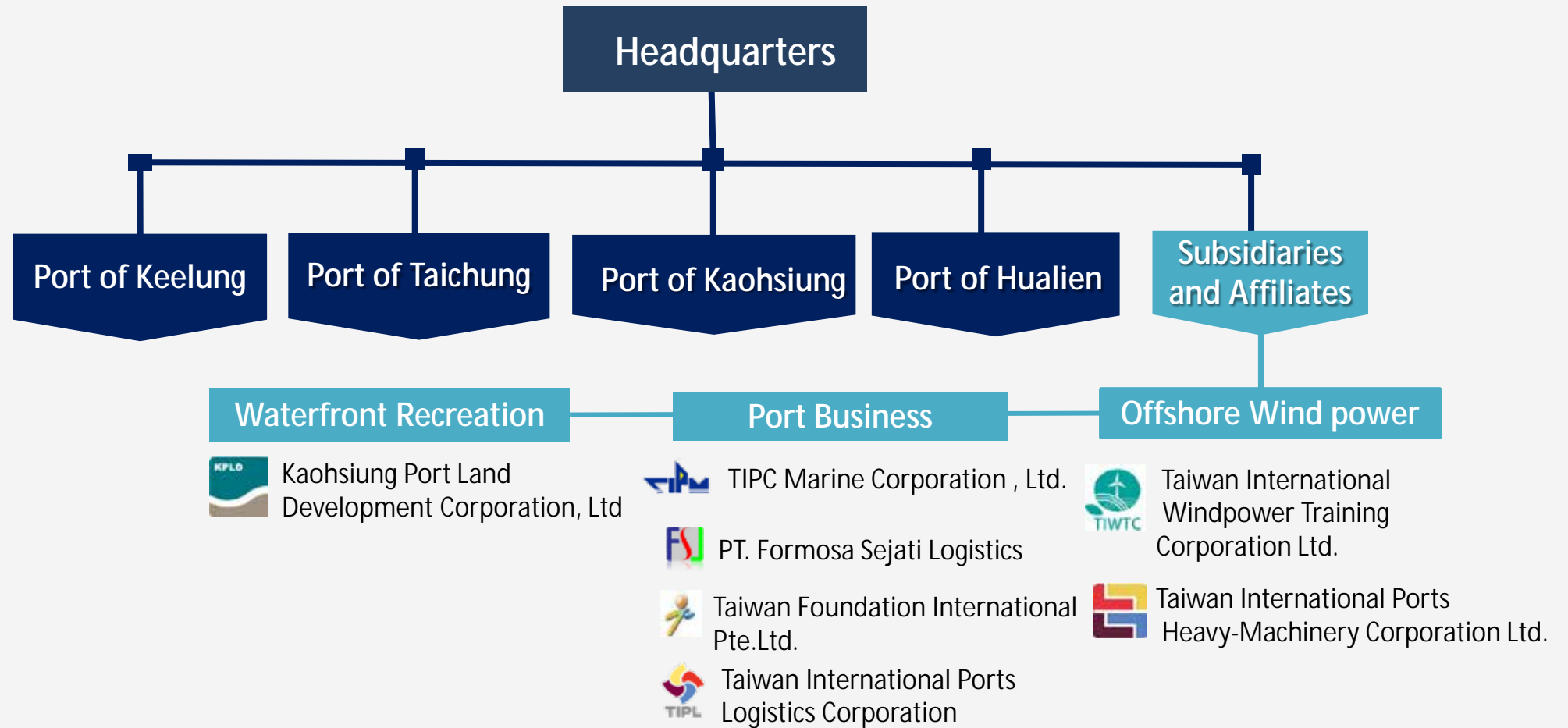


Port Business Operation
state-owned company

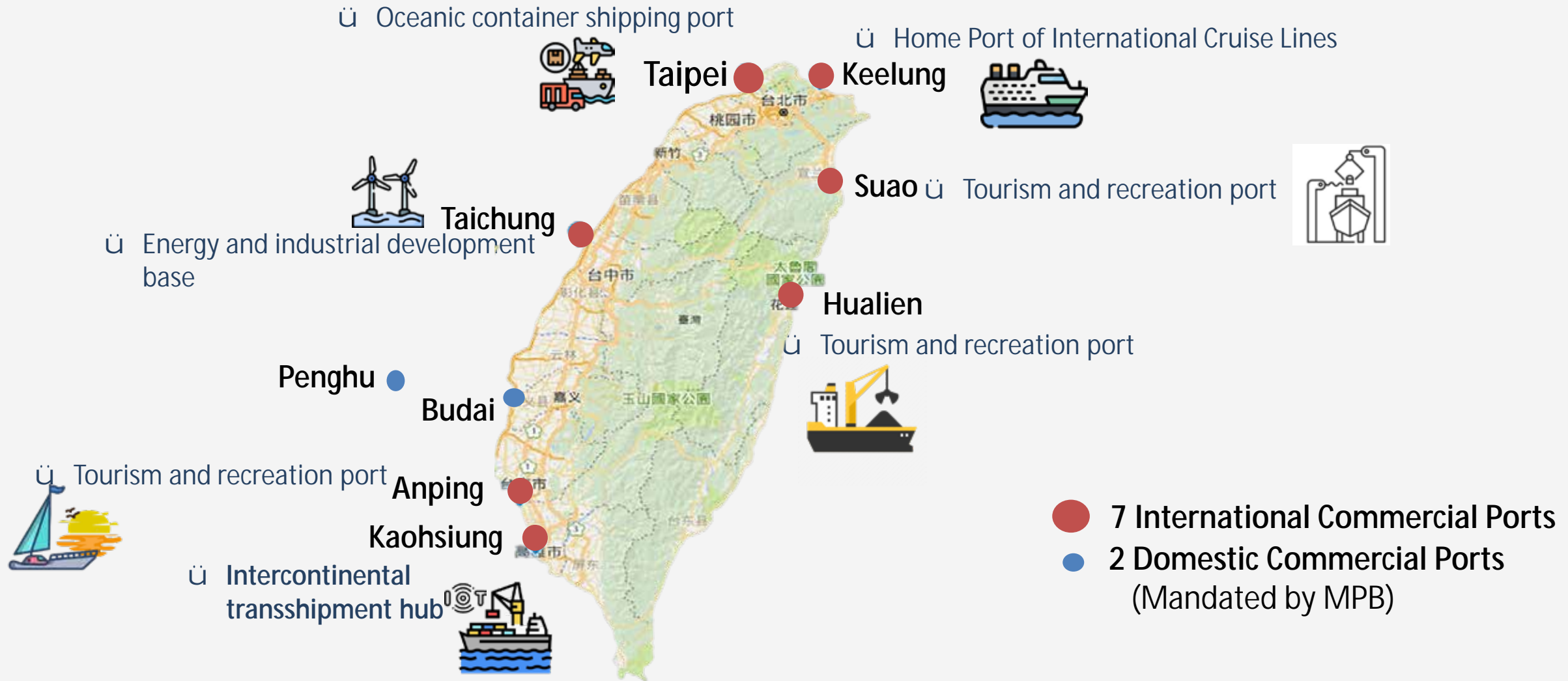
Responsible for operating and managing
Taiwan's International Commercial Ports



TIPC Group Chart



Ports Operated by TIPC



02 / TIPC's Pathway to Port Sustainability





Based on the 17 Sustainable Development Goals issued by UN

The Sustainable Development Goals (SDGs), also known as Global Goals, are a set of 17 integrated and interrelated goals to end poverty, protect the planet and ensure that humanity enjoys peace and prosperity by 2030.





Further implement along 6 themes



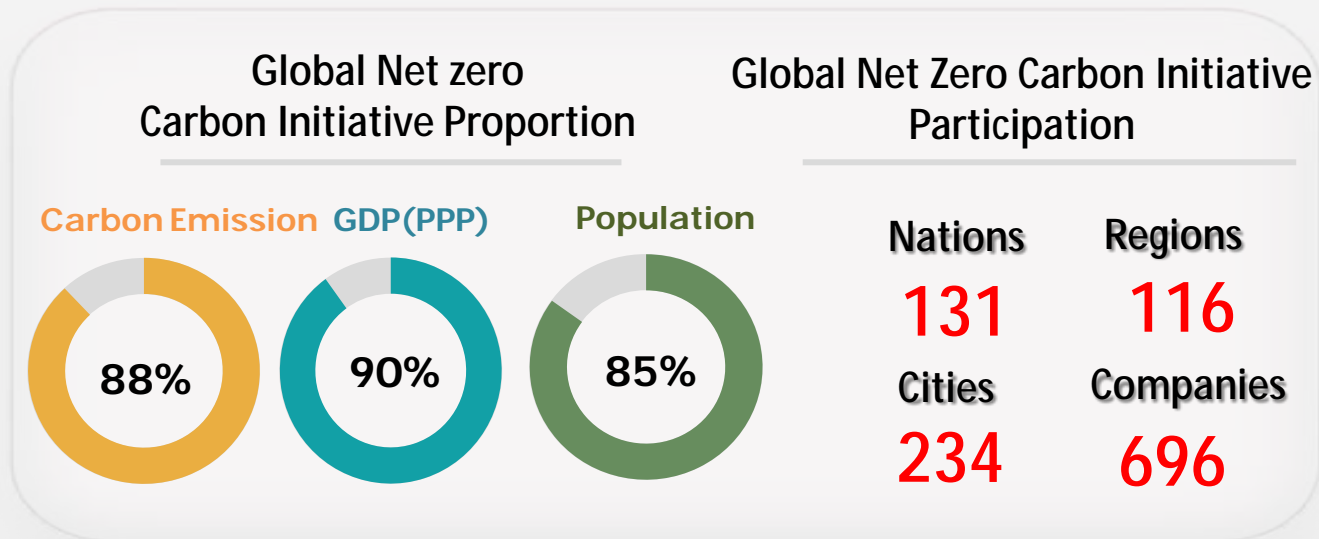
Innovative digital applications ,data collaboration with stakeholders in Port Management System; Smart port initiatives

Energy efficiency; circular economy; bio-based economy; renewable energy; CO2 reduction initiatives ; clean ship incentives; deployment of alternative transport fuels; low and zero-carbon bunkering infrastructure

Trends of Global Carbon Reduction

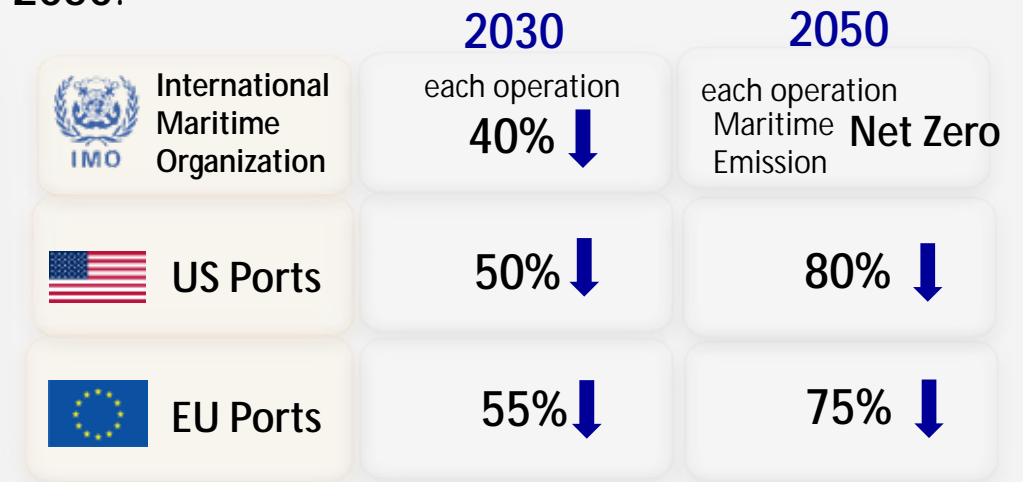
Carbon Reduction Action

- The **Paris Agreement** is a legally binding international treaty on climate change adopted on December 12, 2015.
- **131** countries, **234** cities and **696** companies around the world take action, accounting for **85%** of the global population.



Maritime Carbon Reduction Action

- **IMO** promises to reach net-zero GHG emissions from global shipping close to **2050**.
- The **EU** and the **United States** pledged to reduce port carbon emissions at least **75%** and **80%** in **2050**.





TIPC Sustainable Development Committees & Task Forces

Vision & Strategy making.
Approve targets and plans.

Sustainable Development Strategy Committee

- Convener: Chairman
- Member: President, External experts

2030: 50% Carbon Neutrality
2050: 100% Carbon Neutrality

Target & planning.
Review implementation progress.

Sustainable Development Promote Committee

- Convener: President
- Member: Branches President
- VP, Chief Sustainability Officer

Task forces
Implement action plans.

Sustainable Office (PMO)

- Chief Sustainability Officer

Environmental Sustainability

Workplace Friendliness

Social Participation

Sustainable Construction

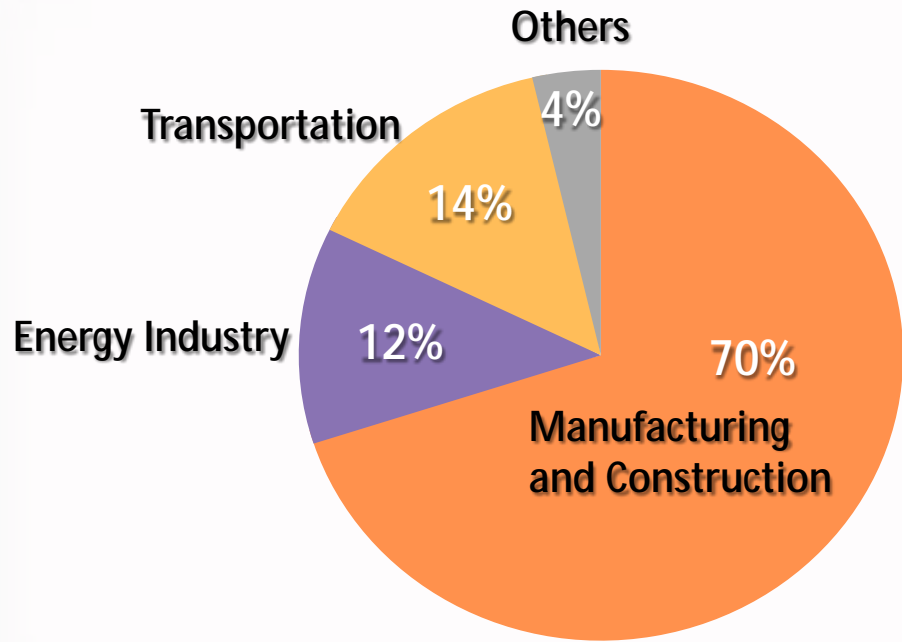
Customer Relations

Risk Management

Corporate Governance

GHG Emissions in Taiwan (2021)

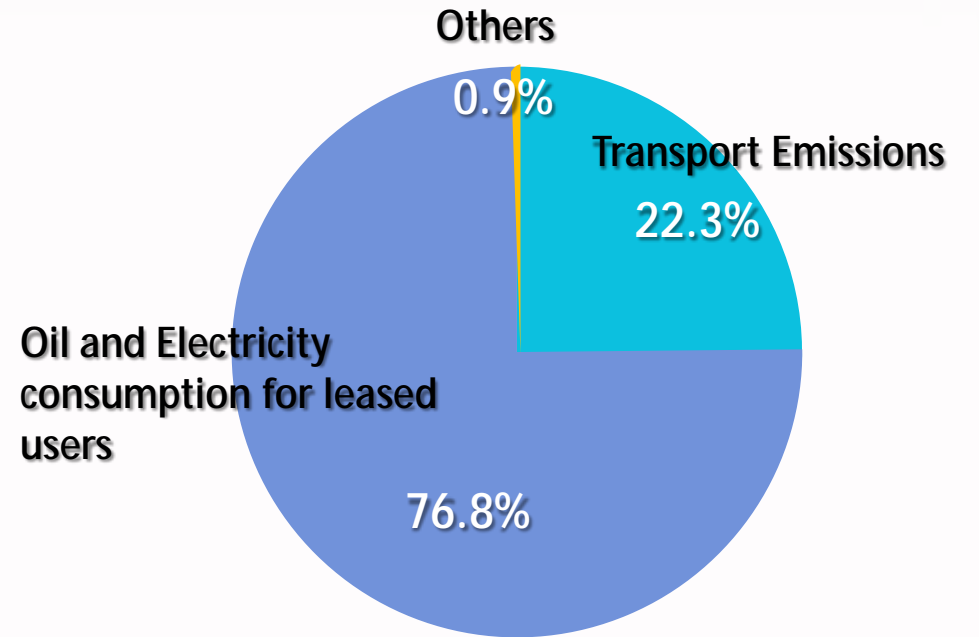
Taiwan



GHG Emissions 285.131 MTCO₂e

(Data from 2022 Taiwan GHG Emissions Report)

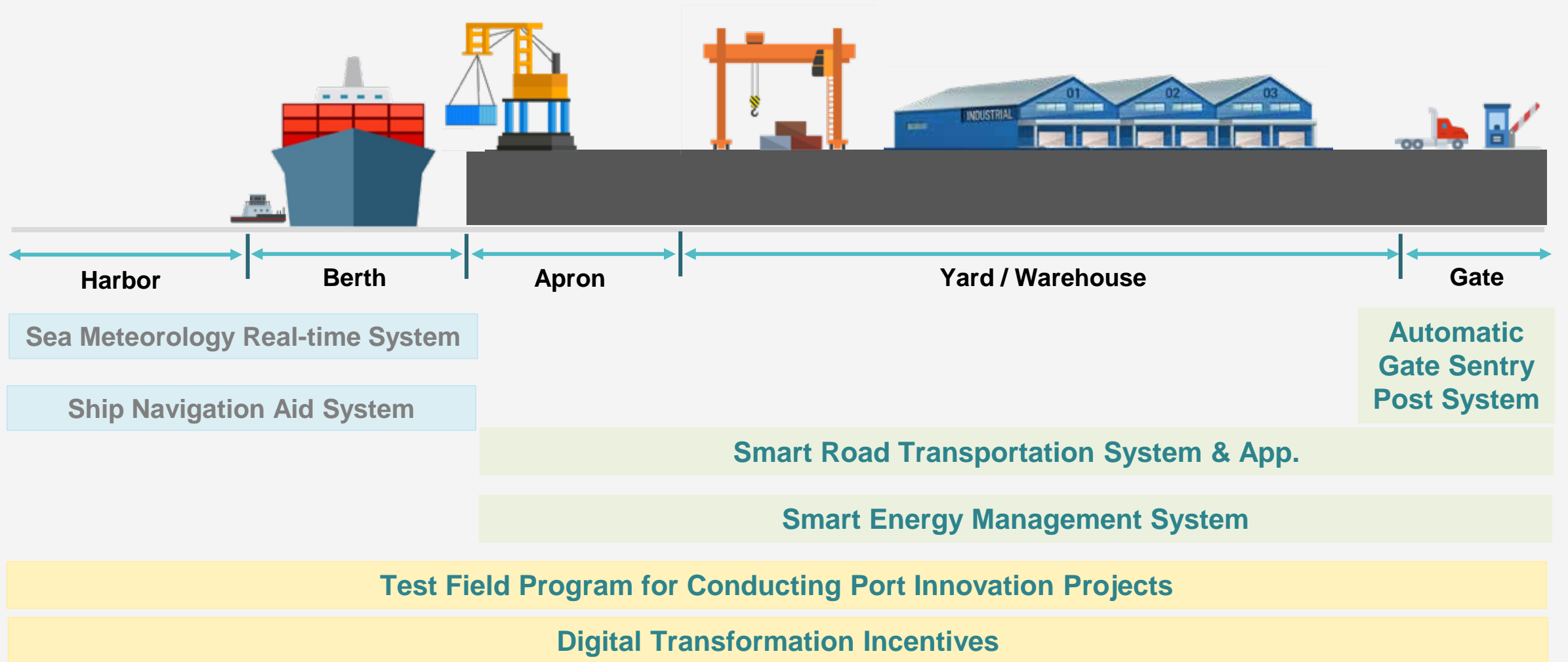
Taiwan Ports



GHG Emissions 5.904 MTCO₂e

TIPC 0.024 MTCO₂e

Digitalization Applied in Our Ports to Help Achieve Port Sustainability



Other Major Actions to Promote Green Port in Taiwan Ports



2022 Carbon Reduction Achievements

Vessel Speed Reduction



Reach

25,533 Vessels

Carbon Reduction

86,142 MT

Automatic Gate Sentry Post



95 Lanes

20 million Vehicles

Carbon Reduction

3,546 MT

Solar Power Generation



Area

215,614 o

Set Capacity

21,563 my r

Carbon Reduction

12,018 MT

Planting Efforts



Planting area

748.0 j c

Coverage

12.1%

Carbon Reduction

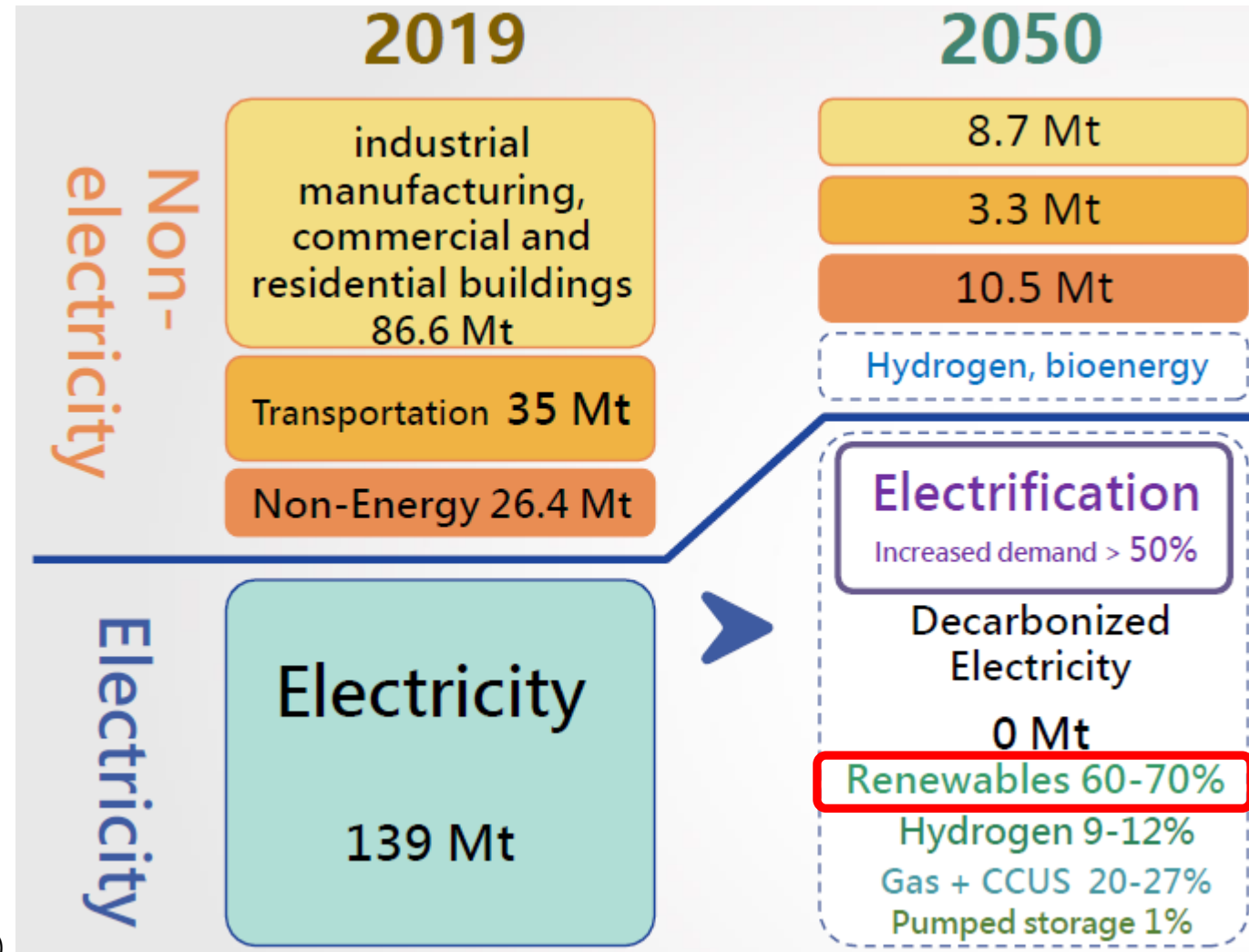
7,350 MT

03 / Offshore Wind Power Business in Taiwan Ports



Taiwan's Energy Transition Policy

Taiwan announced the **2050 Net-Zero Emissions Pathway** in 2022, targeting to reduce carbon emissions and bring 60-70% Renewable energy to Electricity sector in 2050.





Mount Wuyi

The Taiwan Strait begins to encounter the northeast monsoon in October every year.

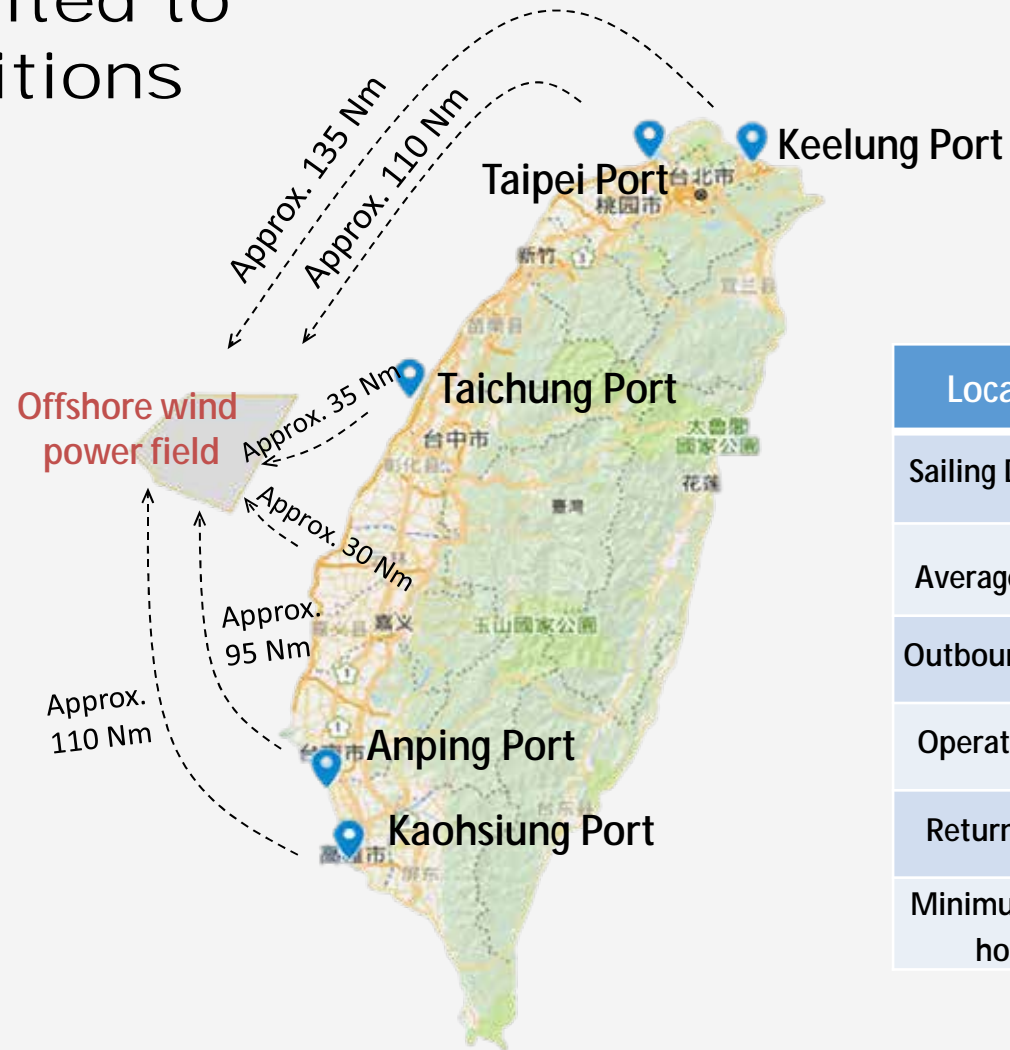
In addition, the Central Range of Taiwan and the Mount Wuyi of Fujian are pinched, so that the average wind speed could reach a rare speed.



Central Range

Average Wind Speed could reach 11.94-12.02 m/s

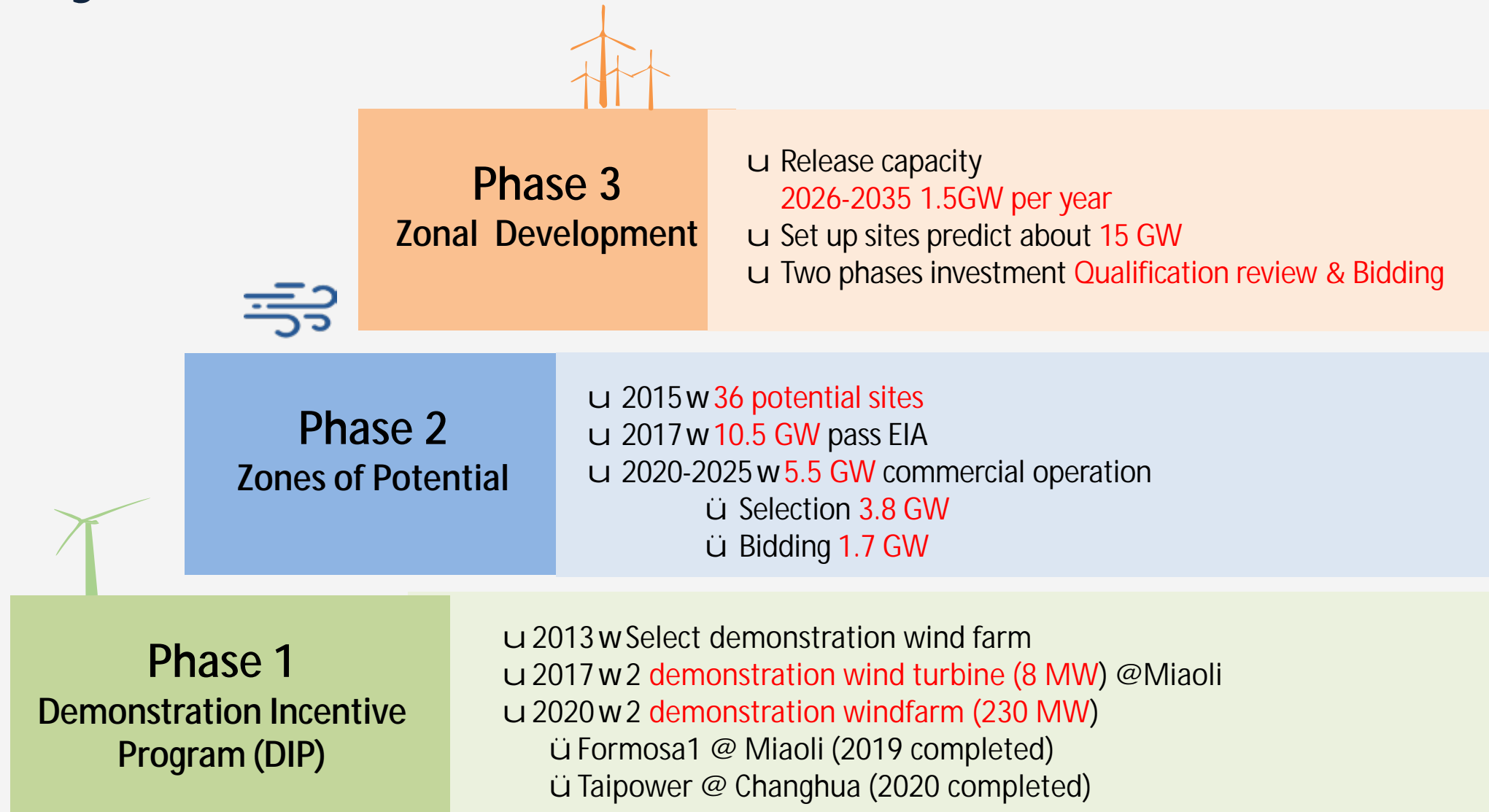
Taichung Port is Taiwan's premier offshore wind power base, benefited to its favorable conditions and location.



Location	Central Area	North, South Area
Sailing Distance	Approx. 35 Nm	Approx. 110 Nm
Average Speed	5knots	5knots
Outbound hours	7hrs	22hrs
Operate hours	72hrs	72hrs
Return hours	7hrs	22hrs
Minimum work hours	86hr/3.58(day)	116hr/4.8(day)

(Reference from CDWE.com.tw)

Offshore Wind Power Policy in Taiwan



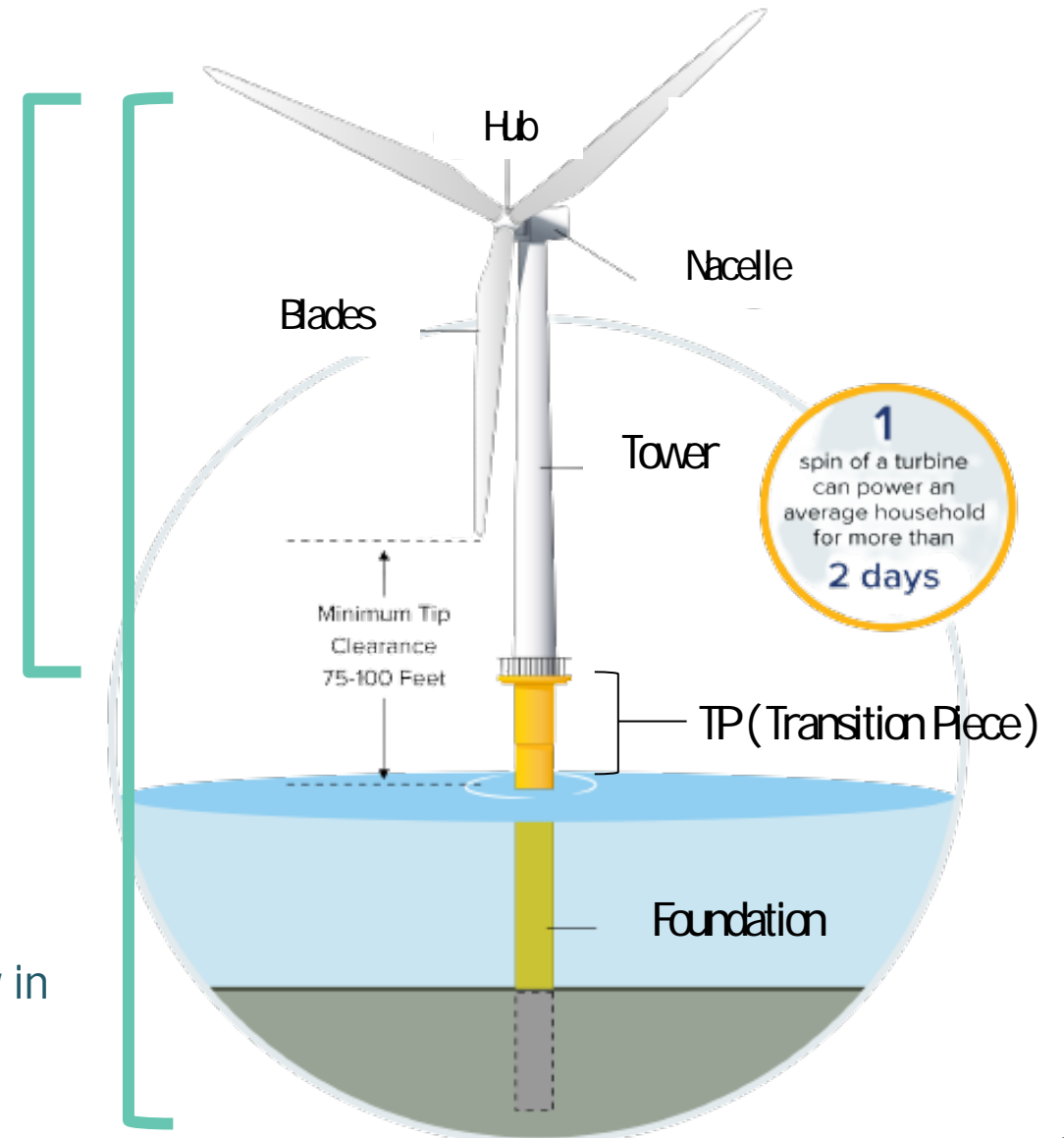
Turbine Pre-assembly and Fabrication in Taiwan

Turbine Pre-assembly

Turbines are composed of large components such as blades, tower, nacelle. Conducting assembly directly at sea presents significant challenges. A pre-assembly area at port enables major components transported to the temporary base to be safely and partially assembled to form a semi-complete state of the turbine.

Fabrication

Long-distance sea transportation might not be economical, and might encounter bad weather. Some components are fabricated locally to facilitate the development of the offshore wind industry in Taiwan.



Picture from <https://www.nyscrda.ny.gov/>

TIPC's Role in Offshore Wind Power Industry

Designate and invest in berths and hinterland of:

Turbine Pre-assembly Area

- Port of Taichung
- Port of Anping

Set up an offshore wind power training center to provide Global Wind Organization(GWO) and customized courses:

Training Center

Port of Taichung

Designate and invest in berths and hinterland of:

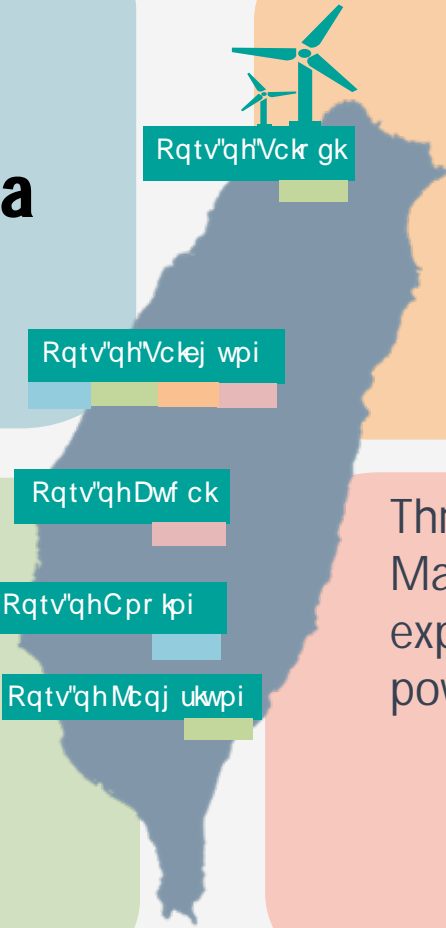
Fabrication Area

- Port of Taichung
- Port of Taipei
- Port of Kaohsiung

Through subsidiaries such as Heavy Machinery and Marine companies to expand into the offshore wind power's:

O&M Services

- Port of Taichung
- Port of Budai

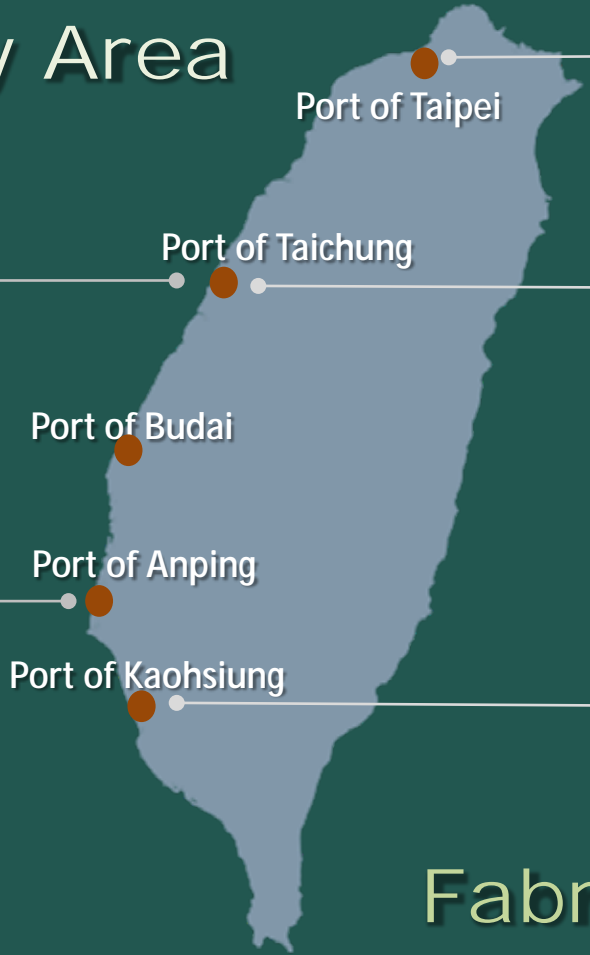


Turbine Pre-assembly Area

TIENLI

- Turbine pre-assembly area
- Home port for working vessels

Warehousing and storage for import underwater foundation



Underwater foundation fabrication base

Turbine fabrication area for local turbine components

- Maritime engineering support
- Underwater foundation fabrication base
- Marine cable

Fabrication Area



Taiwan International Windpower Training Corporation Ltd.

Training Center

In 2022, TIWTC **ranked No. 1** in certificates issued(3,796 GWO certificates) in Asia.



GWO基礎技術訓練課程 / GWO Basic Technical (BTT) Training

機械 Mechanical



電子 Electrical



液壓 Hydraulics



GWO基礎安全訓練課程 / GWO Basic Safety (BST) Training

緊急救護 First aid



火場應變 Fire awareness



徒手搬運 Manual Handling



海上求生 Sea survival



高空作業 Working at heights





5 Barges



34 Tugboats / Guard Vessels



1 Crane Vessels



4 Crew Transfer Vessels(CTVs)



TIPC Marine Corporation, Ltd



Taiwan International Ports Heavy-Machinery Co., Ltd.



Heavy lifting equipment



Special heavy-transport vehicle



Marine cable storage



Taiwan International Ports Logistics Corp

O&M Services



THANK YOU FOR LISTENING!