



*The Planning and Design of the Nation's Largest
Floating Offshore Wind Terminal*

PIER WIND

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November 12, 2024



Port of
LONG BEACH
THE PORT OF CHOICE

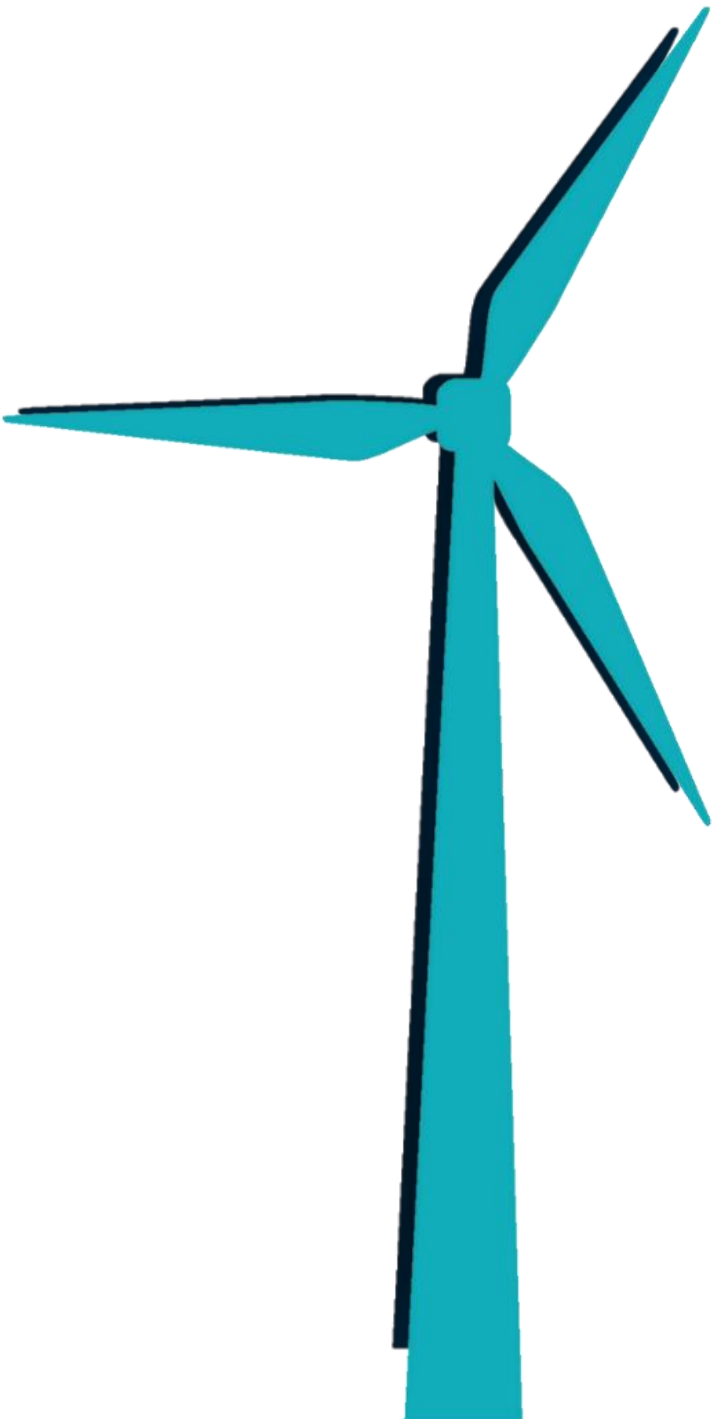


MILLION TEUS

\$200 BILLION

WE ARE THE GREEN PORT





OFFSHORE PIER WIND



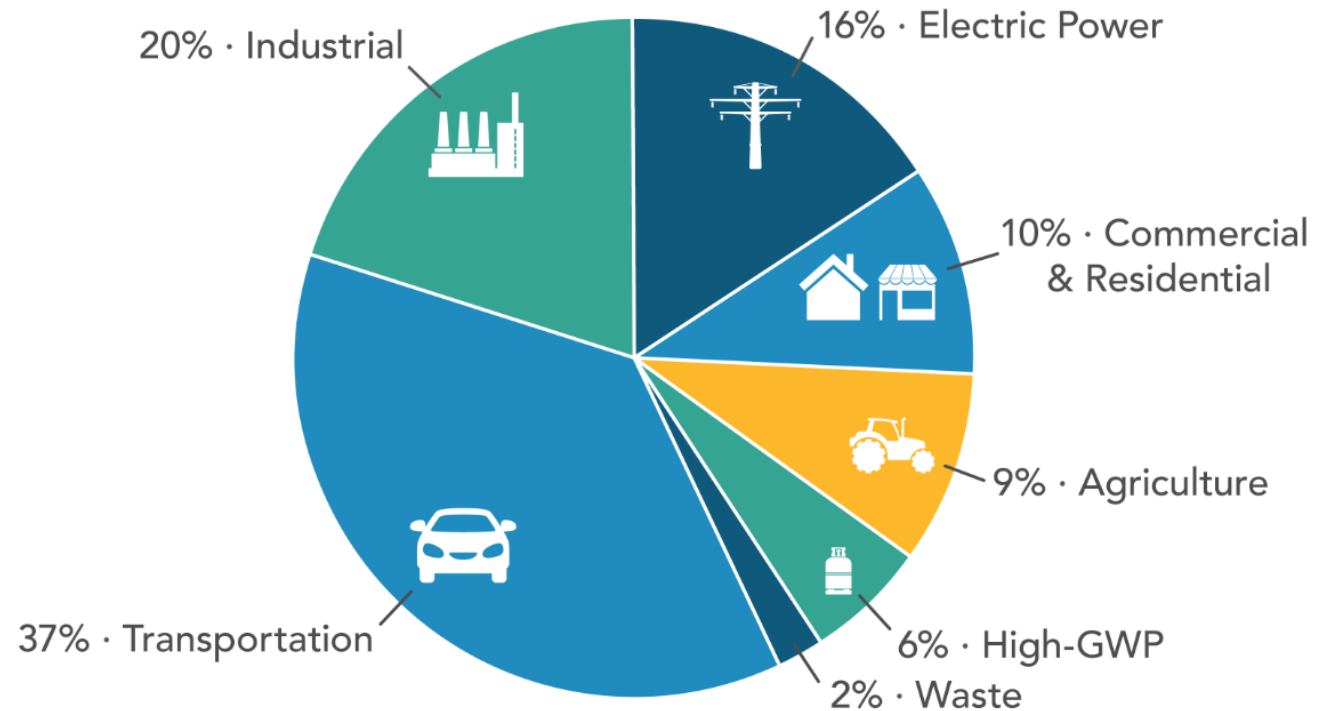
TACKLING THE CLIMATE CRISIS

SENSE OF *URGENCY*



CALIFORNIA'S 2020 GHG EMISSIONS

Source: CARB, [California Greenhouse Gas Emission Inventory Program](#)

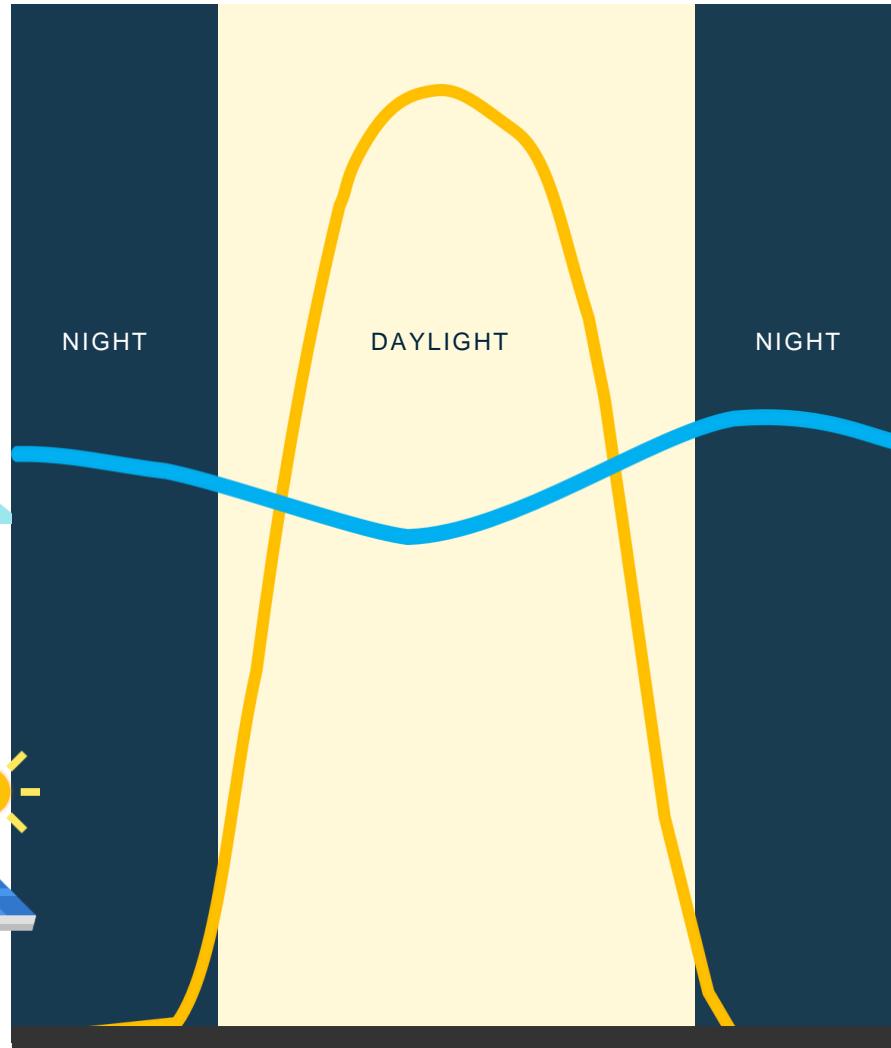
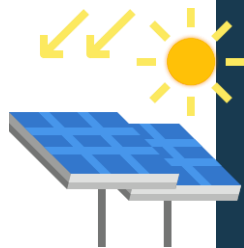


ROLE OF OFFSHORE WIND

OFFSHORE
WIND



SOLAR



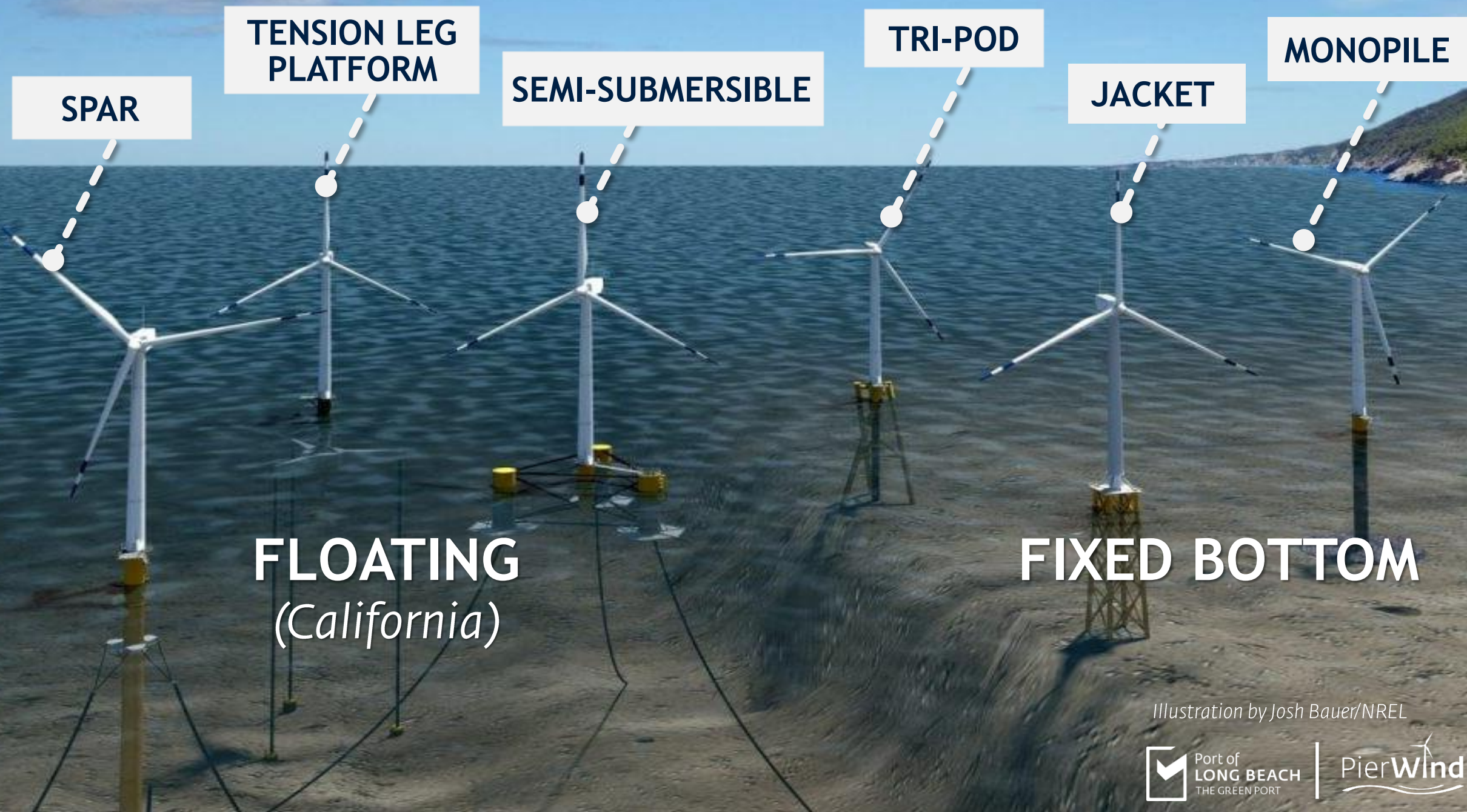
HOUR OF DAY 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

- Abundant source of domestic renewable energy – California has the highest offshore wind energy in the nation
- Balances out solar generation, producing more energy at night and during cloudy winter months when solar generation falls off



Port of
LONG BEACH
THE GREEN PORT

ZEEERO
Zero Emissions, Energy Resilient Operations



SPAR

TENSION LEG PLATFORM

SEMI-SUBMERSIBLE

TRI-POD

JACKET

MONOPILE

FLOATING
(California)

FIXED BOTTOM

Illustration by Josh Bauer/NREL



PLANNING FOR FUTURE INNOVATION

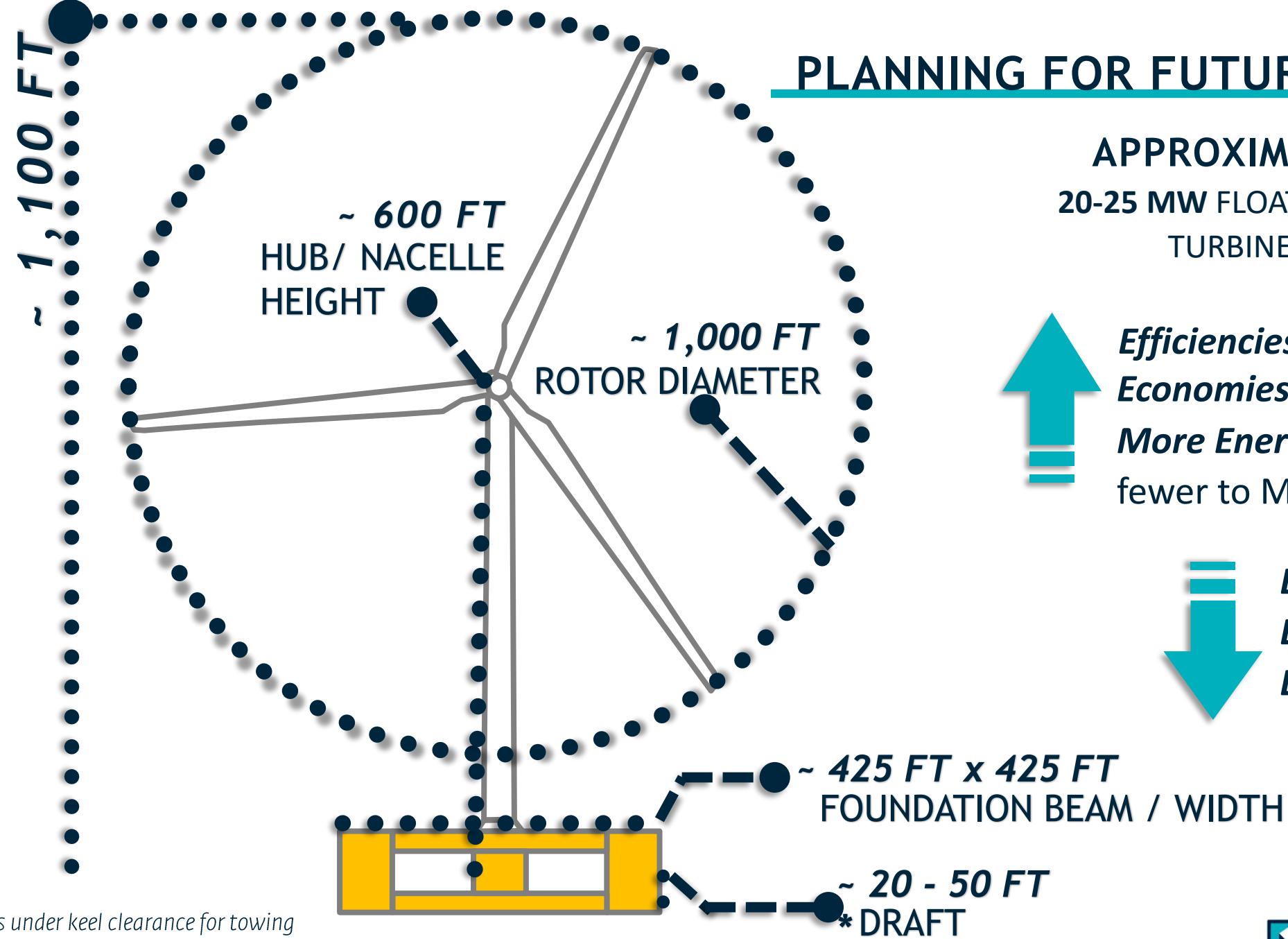
APPROXIMATE DIMENSIONS
20-25 MW FLOATING OFFSHORE WIND
TURBINE SYSTEM DIMENSIONS



Efficiencies
Economies of Scale
More Energy in WEA with
fewer to Maintain

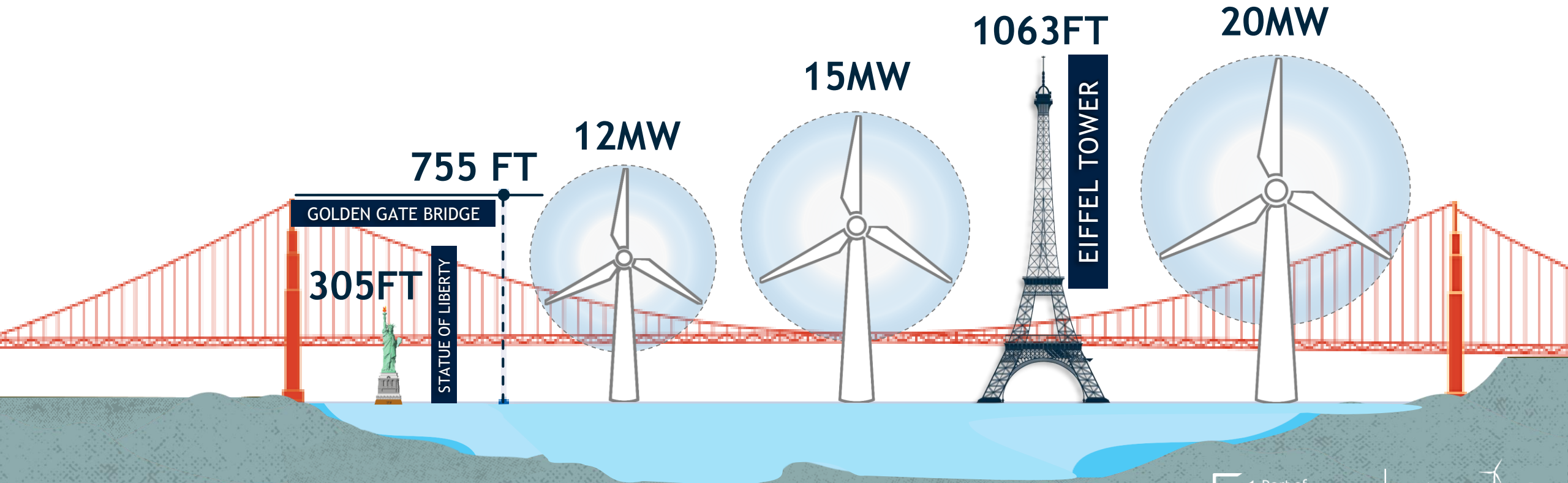


Less Sea Space,
Less Impacts and
Lower Cost of Energy



* Plus under keel clearance for towing
Source: Pier Wind Conceptual Report April 2023

SCALE COMPARISON



NACELLE

15 MW PROTOTYPE



Source: Vestas



TOWER

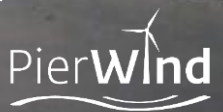


Source: Journal of Commerce

BLADE



Source: LM Wind Power



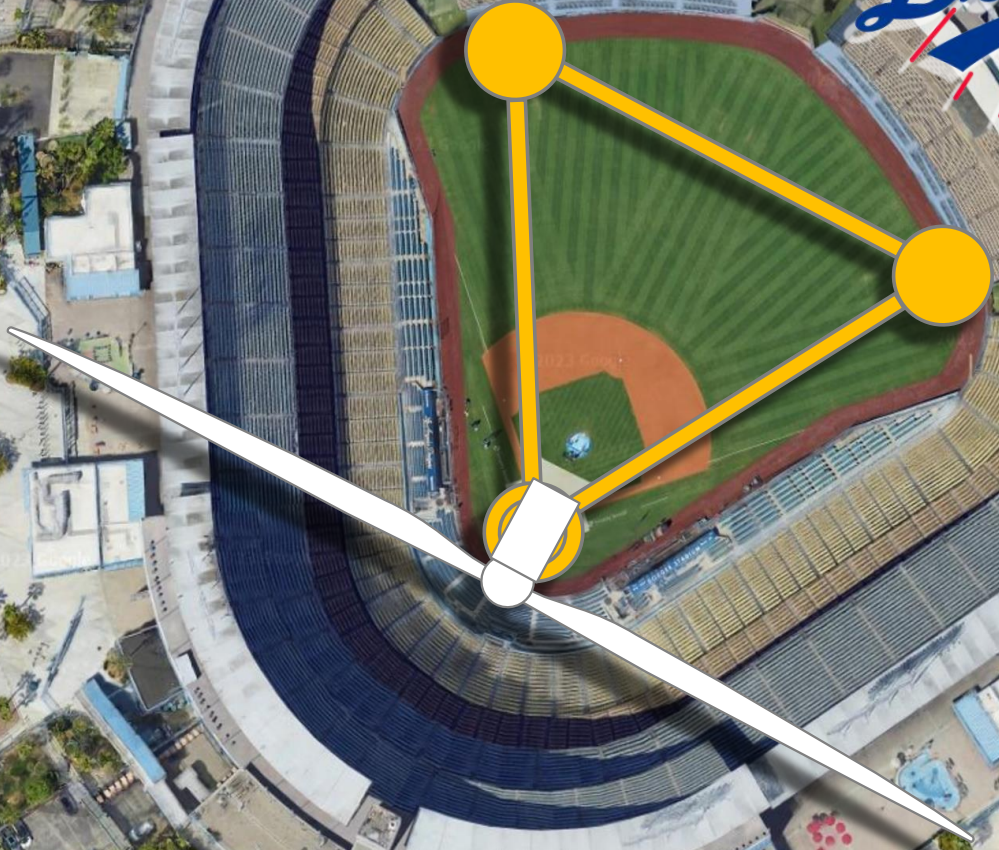
FOUNDATION



Source: Principle Power



DODGER STADIUM



FLOATING OFFSHORE WIND TURBINE ASSEMBLY



**TOW OUT TO
INSTALLATION SITE**



*Credit photos: LM Wind Power,
Vestas, Journal of Commerce,
Principle Power, Maritime Cyprus,
fotocommunity.de, Port of Monroe,
Dockgo, Euractiv, Wind Plus*

LEASE HOLDERS

-  RWE Offshore Wind Holdings, LLC
-  California North Floating LLC
-  Equinor Wind US LLC
-  Golden State Wind, LLC
-  Invenergy California Offshore LLC



Source: BOEM [California Activities](#)

WIND LEASE AREAS

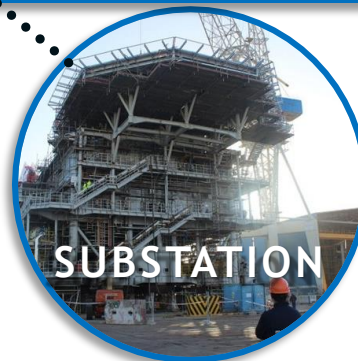
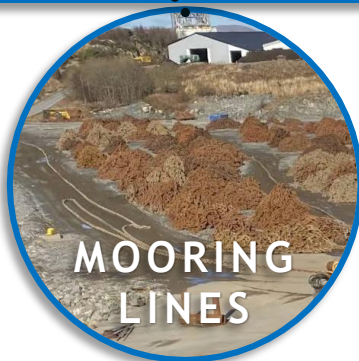
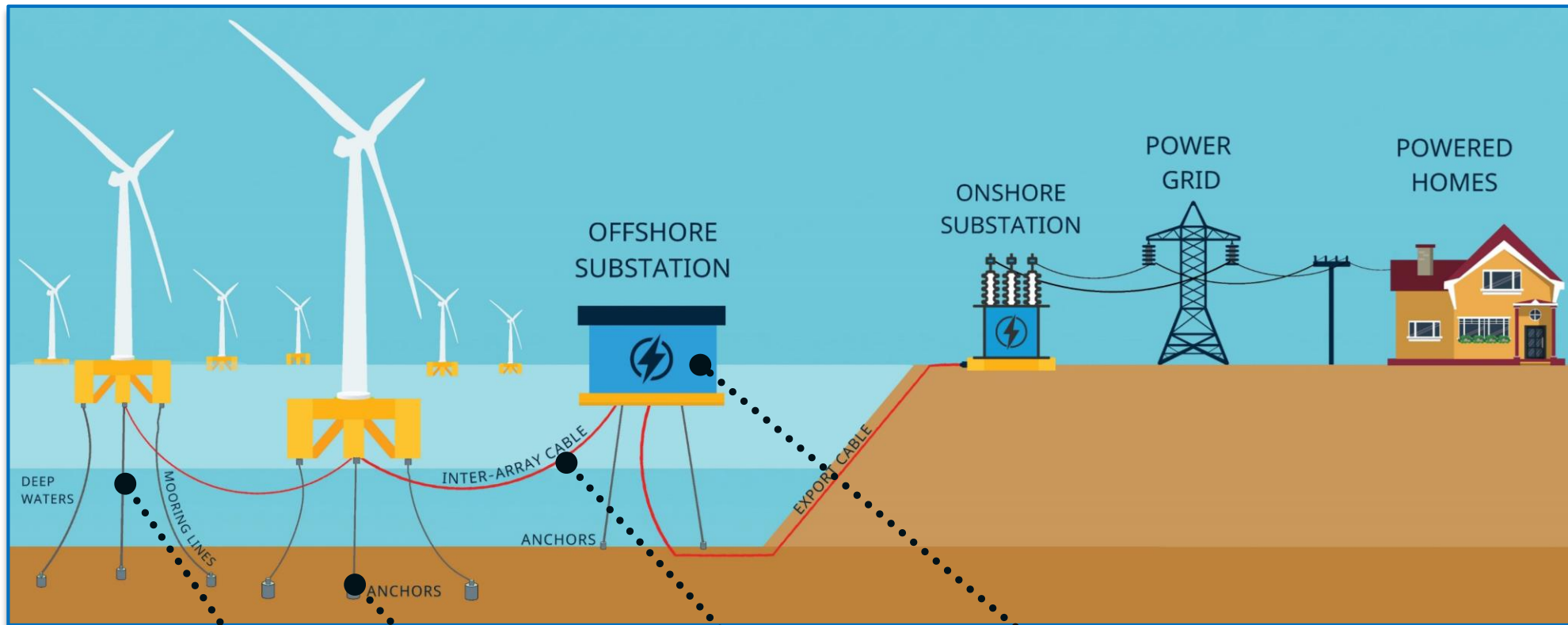


(Wind Lease Areas are not part of POLB PierWind Project)

Source photo: NOV

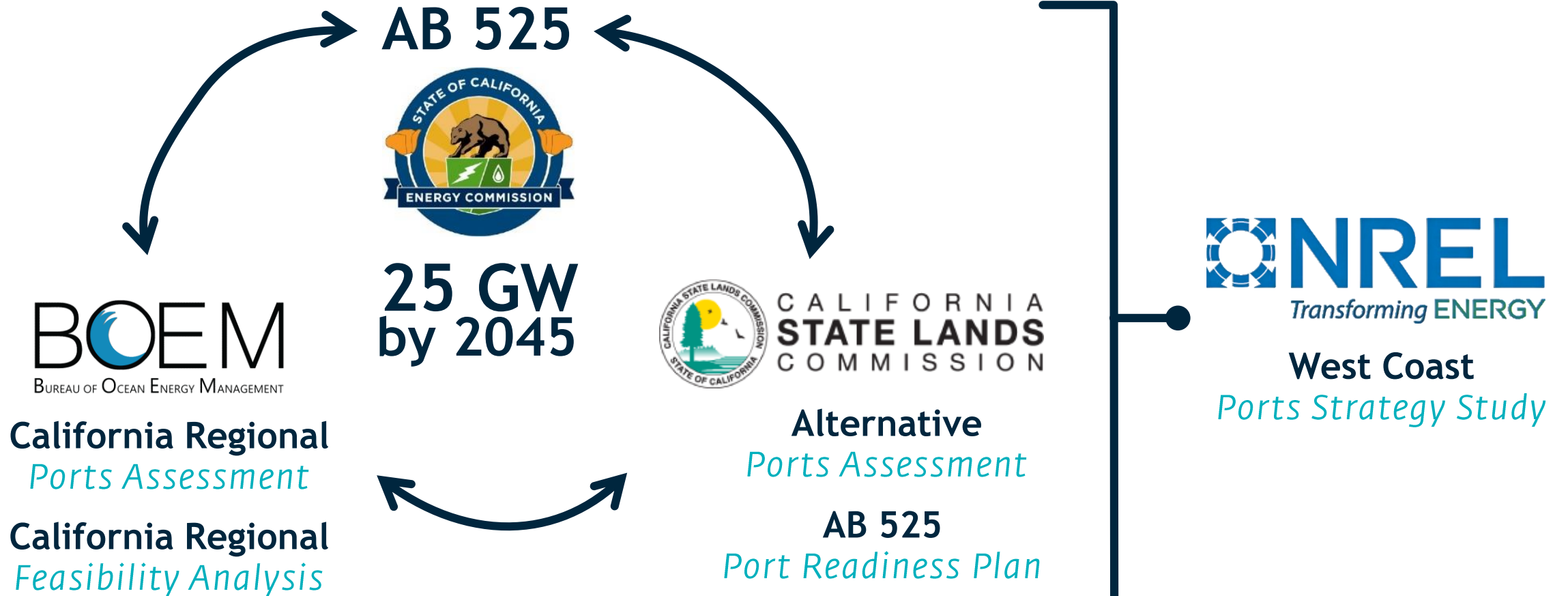


FLOATING OFFSHORE WIND FARM DEVELOPMENT

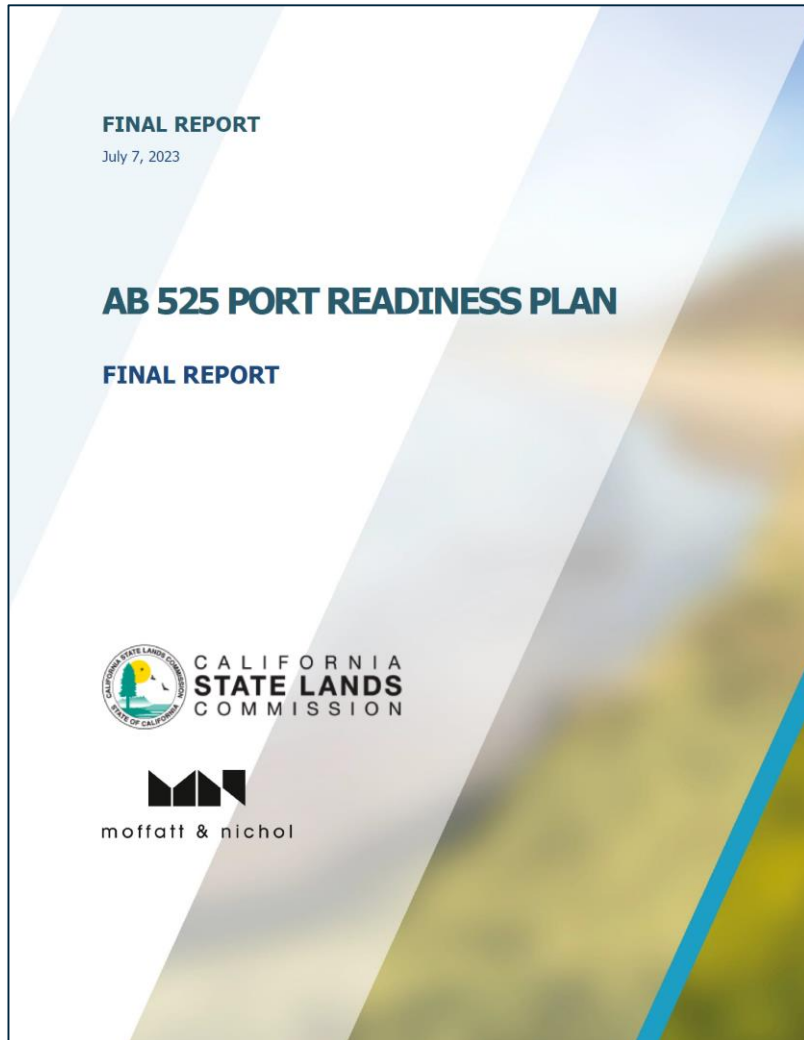


Credit Photos: Acteon, Semar AS, Global Marine Group, Grupo COBRA

WHOLE OF GOVERNMENT APPROACH



AB 525 PORT READINESS PLAN



- Need **multi-port strategy**
- Staging and integration sites are the **most critical**
- **Only a few ports** are suitable for staging and integration
- **Port of Long Beach** is one of them

Source: [CSLC AB 525 Port Readiness Plan July 7, 2023](#)

UNIQUE QUALITIES OF PORT OF LONG BEACH

HARBOR DISTRICT

STATE'S LARGEST SKILLED MARINE, MANUFACTURING, AND CONSTRUCTION WORKFORCE

CENTER OF US SUPPLY CHAIN WITH EXTENSIVE ROAD, RAIL, AND MARINE TRANSPORTATION NETWORKS AND SUPPLY CHAIN LOGISTICS

PART OF LARGEST INDUSTRIAL PORT COMPLEX IN THE NATION

NO AIR HEIGHT RESTRICTIONS

INDUSTRY LEADER IN DEVELOPING LARGE MARINE INFRASTRUCTURE

FEDERAL BREAKWATER

-40' to -70' DEEP

-76' MAIN CHANNEL

WET STORAGE

SINKING BASIN

TRANSPORTATION
CORRIDOR

FIXED PIERS

-76' MAIN CHANNEL

400 ACRES

7,500 FT HEAVY LIFT
CAPACITY WHARF

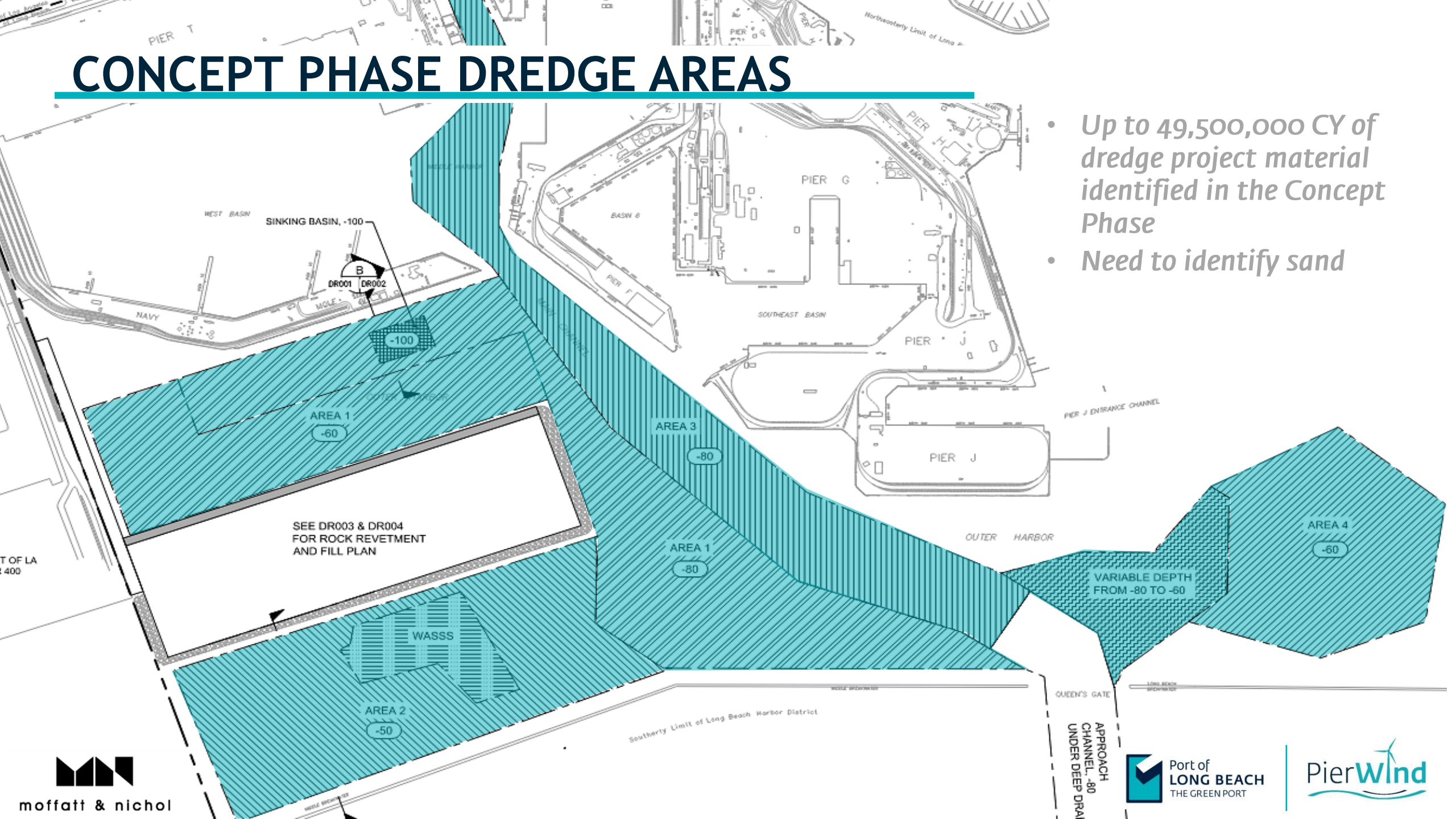
WET STORAGE

CONCEPT DESIGN

[Pier Wind Concept Report](#)

CONCEPT PHASE DREDGE AREAS

- Up to 49,500,000 CY of dredge project material identified in the Concept Phase
- Need to identify sand



SCHEDULE AND COST

TODAY

2027

START OF CONSTRUCTION

LATE 2031

2035

ENV/ PERMITTING

PH 1

PH 2

WET STORAGE

SINKING BASIN

200 ACRES

200 ACRES

WET STORAGE

\$4.7B (2023)

400 ACRES

80

80

80

80

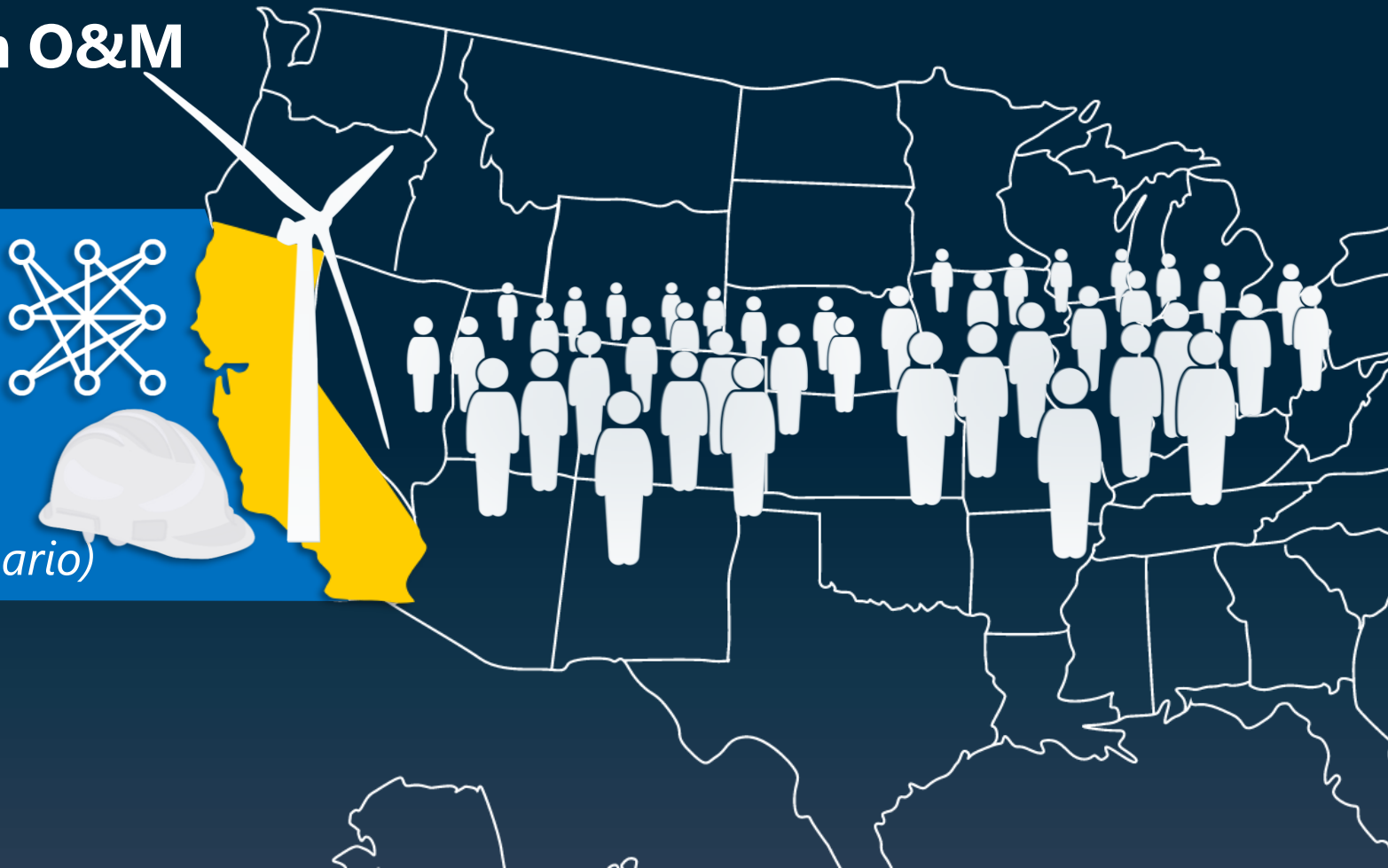
ECONOMIC BENEFIT

\$39.7 billion total state GDP
construction + \$7.9 billion O&M
(NREL/BOEM 16 GW scenario)

17,500 full-time **CA** jobs
in **2045** using cluster-based
strategies

(The American Jobs Project, 18 GW scenario)

AB525: Preliminary Assessment of
Economic Benefits of Offshore Wind



BENEFITS SUMMARY

Positions California and the United States to be at the forefront of floating offshore wind innovation and development

US Goal of 15 GW BY 2035

CA Goal of 25 GW BY 2045

LARGEST PURPOSE-BUILT OFFSHORE WIND FACILITY

SCALE



Greenhouse Gases
Cost of Energy

PierWind

 Port of
LONG BEACH
THE GREEN PORT



Pier Wind Project Concept

