



# *THE GREEN PORT OF THE FUTURE*

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*Association of Pacific Ports 109th Annual Conference*

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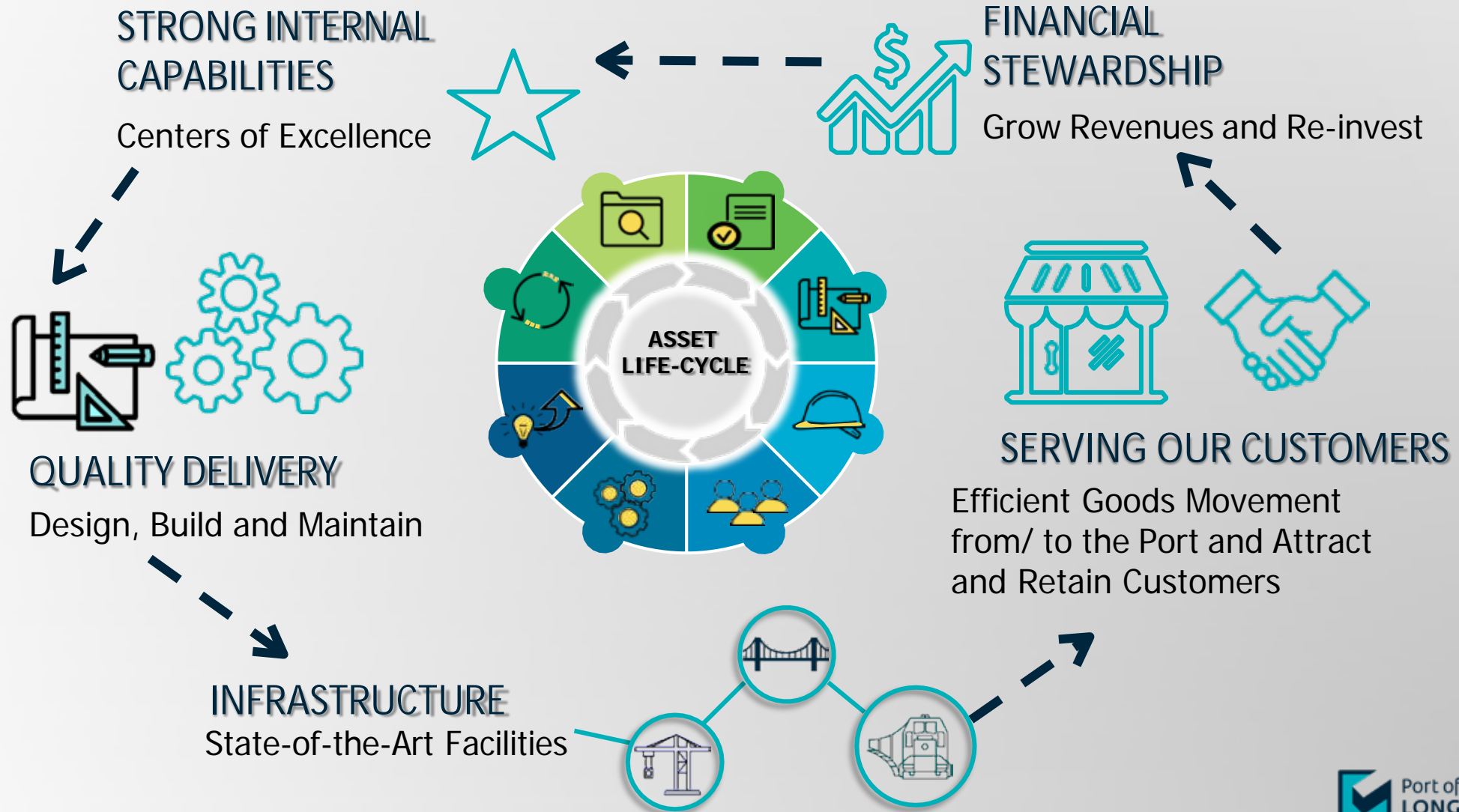


Port of  
**LONG BEACH**  
THE PORT OF CHOICE



# ENGINEERING

## PHILOSOPHY: BUILD **SMART** TODAY for the GREEN PORT OF THE FUTURE



An aerial photograph of a large port facility, likely a container port, with a city in the background. The port features several large cranes and a long pier extending into the water. The city is densely packed with buildings and roads, and a river or canal winds through it. The water is a deep blue color. The text "ZEERO-ING IN ON THE GREEN PORT" is overlaid on the image in white, bold, sans-serif font. A thin yellow horizontal line is positioned below the word "ZEERO-ING".

**ZEERO-ING IN ON**  
**THE GREEN PORT**



Port of  
**LONG BEACH**  
THE GREEN PORT





PIER B

PIER A

PIER C

PIER S

PIER T

PIER E

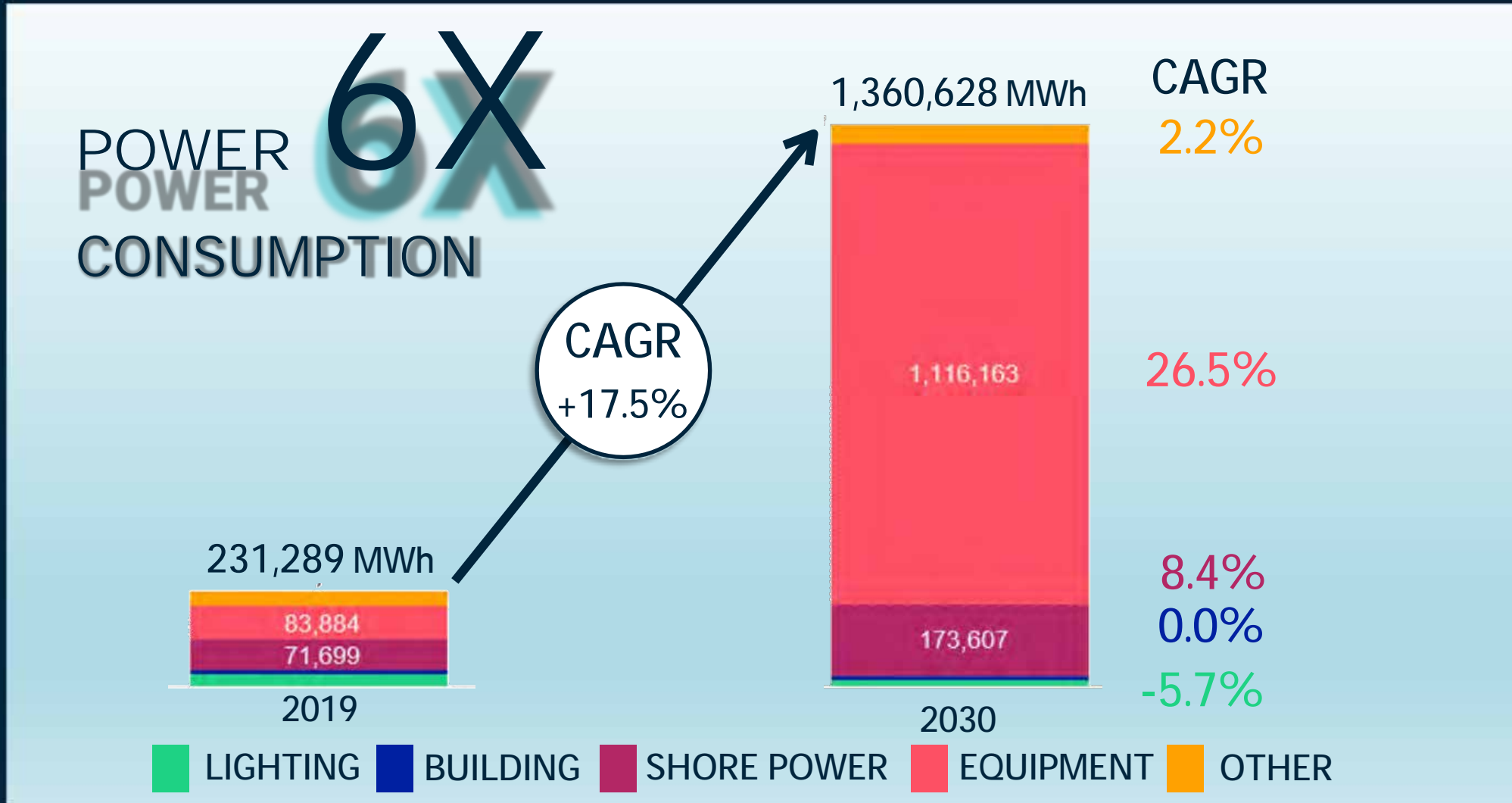
PIER G

PIER F

PIER J



# CONSUMPTION WITH FULL ELECTRIFICATION



Compound Annual Growth Rate (CAGR) from POLB Cargo Forecasts

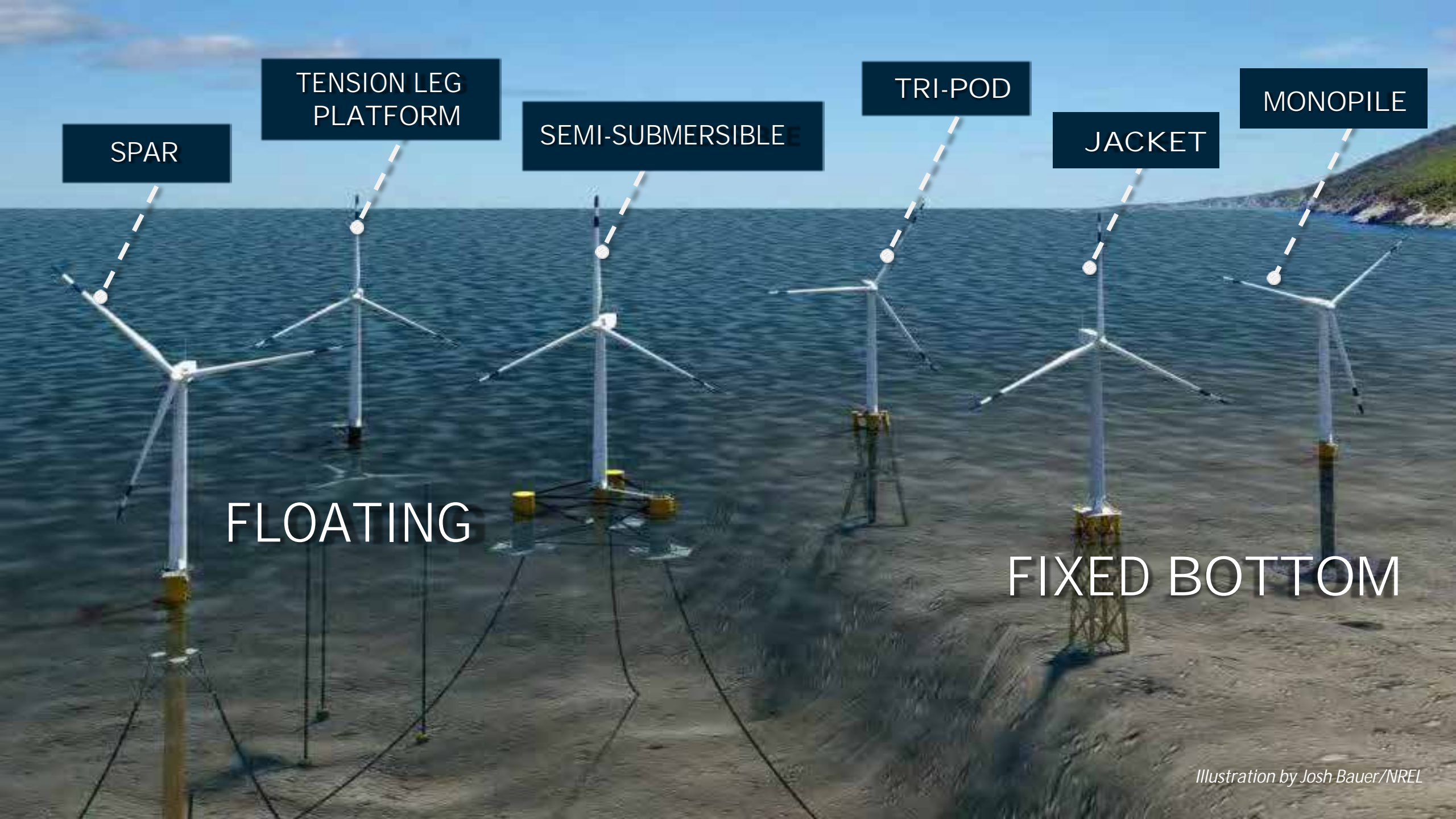




**PIER WIND**

**THE FUTURE IS FLOATING**





SPAR

TENSION LEG PLATFORM

SEMI-SUBMERSIBLE

TRI-POD

JACKET

MONOPILE

FLOATING

FIXED BOTTOM

# PLANNING FOR FUTURE INNOVATION

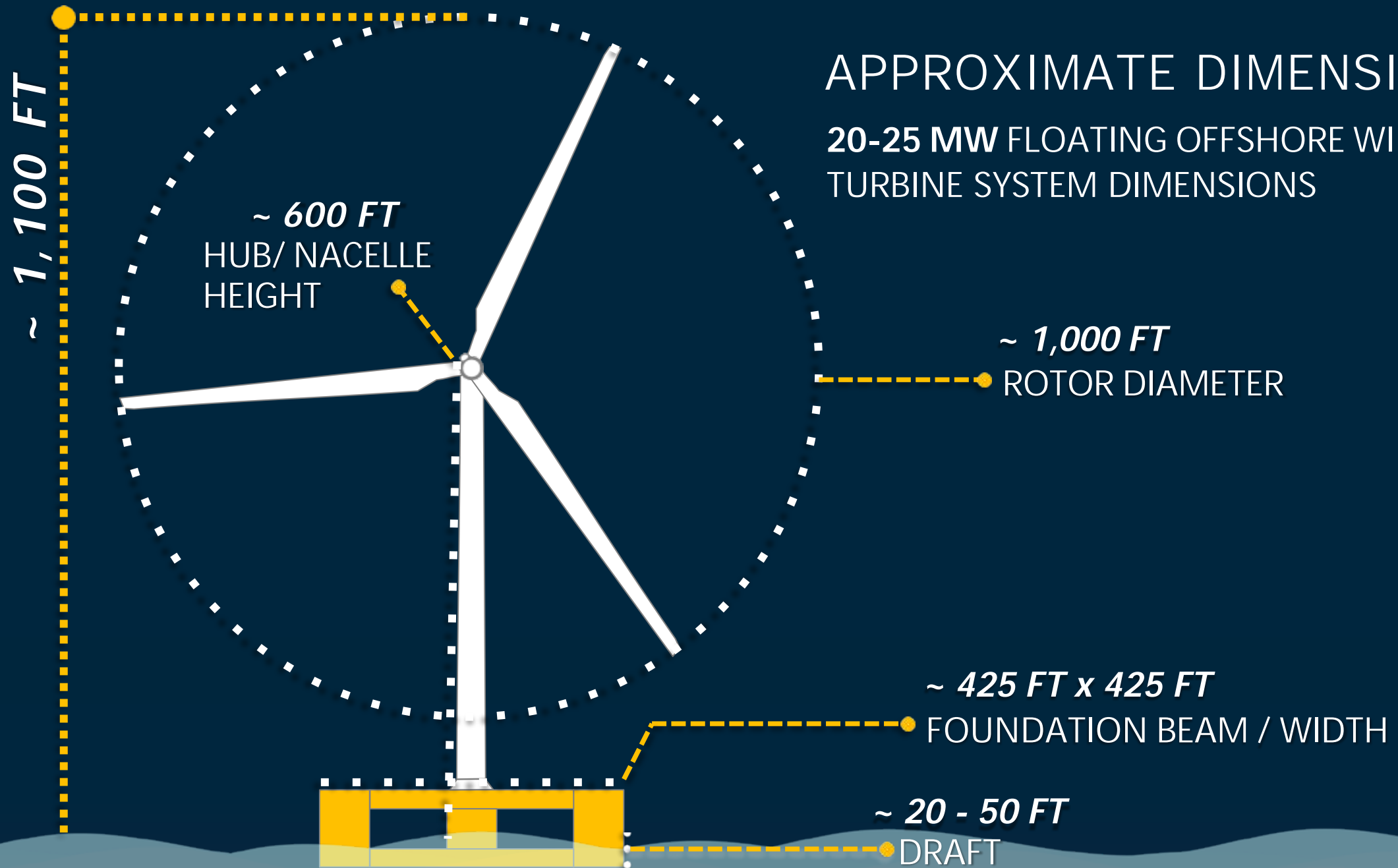
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# APPROXIMATE DIMENSIONS

20-25 MW FLOATING OFFSHORE WIND  
TURBINE SYSTEM DIMENSIONS



# NACELLES

15 MW PROTOTYPE





# BLADE





# TOWER





# FOUNDATION





# FLOATING TURBINE INTEGRATION



ASSEMBLE



LOADOUT ONTO SEMI SUB



FLOAT OFF



WTG INTEGRATION



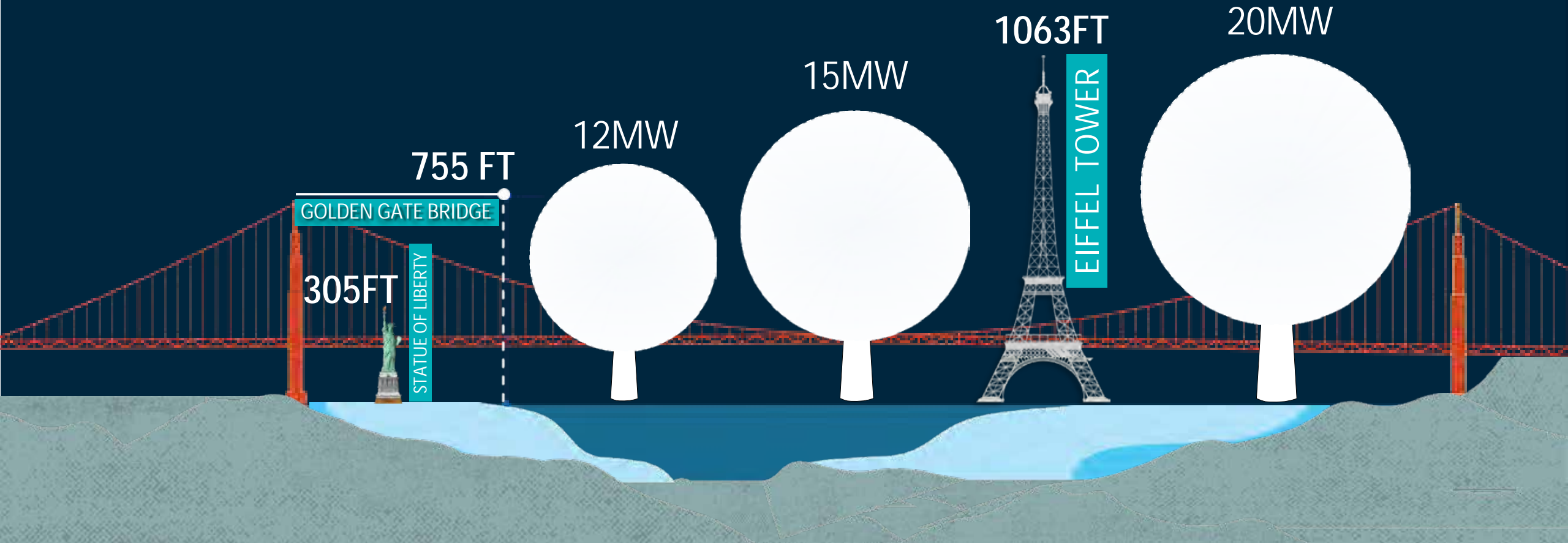
TOW OUT TO INSTALLATION SITE



**WIND  
LEASE AREAS**

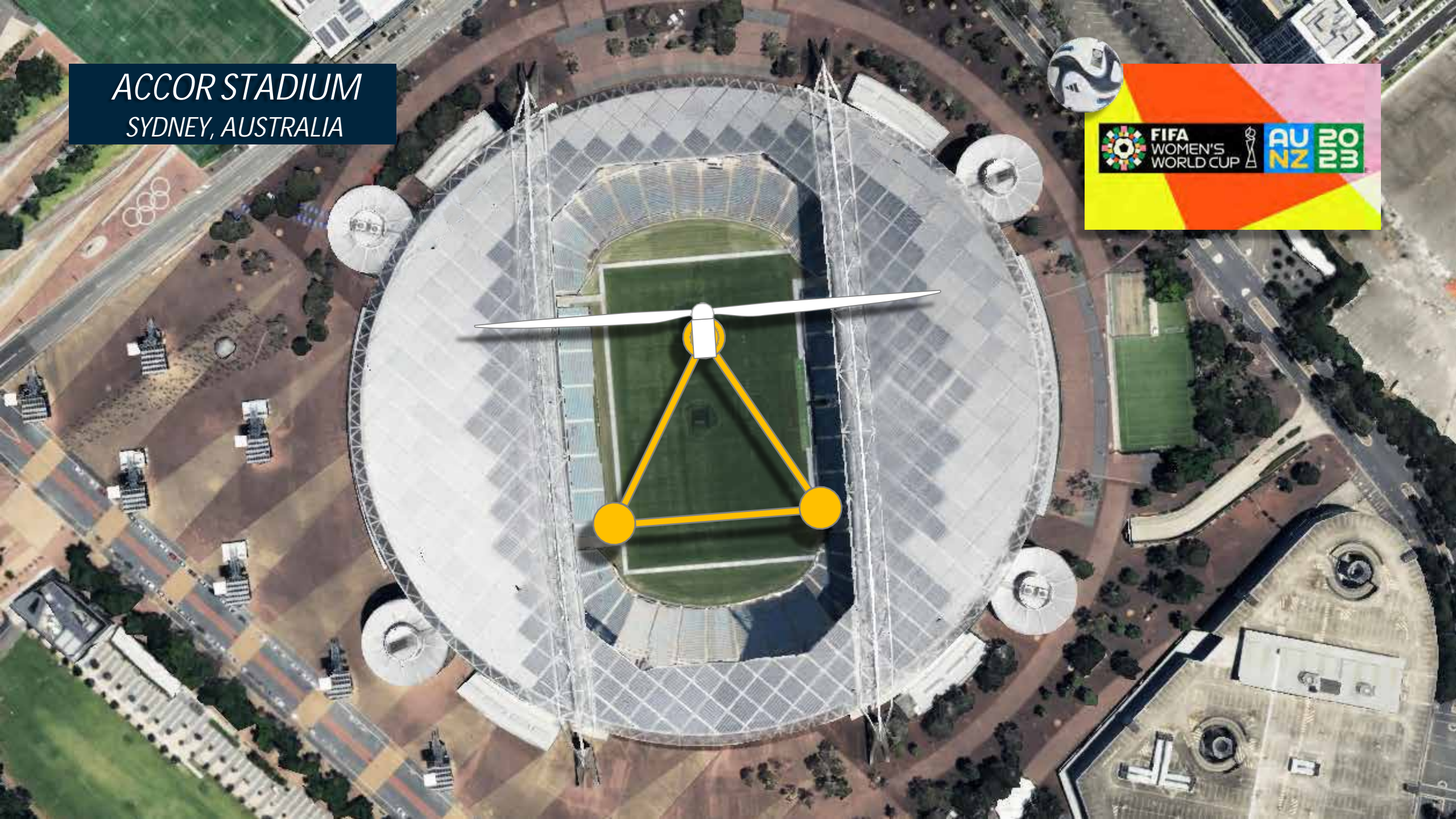


# SCALE COMPARISON





*ACCOR STADIUM*  
SYDNEY, AUSTRALIA





3-5 S&I sites  
One per week  
per S&I site

~1,300 UNITS  
25 GW  
BY 2045





# HOW CAN THE PORT OF LONG BEACH HELP SUPPORT?

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

CENTER OF US SUPPLY CHAIN

NO AIR HEIGHT RESTRICTIONS

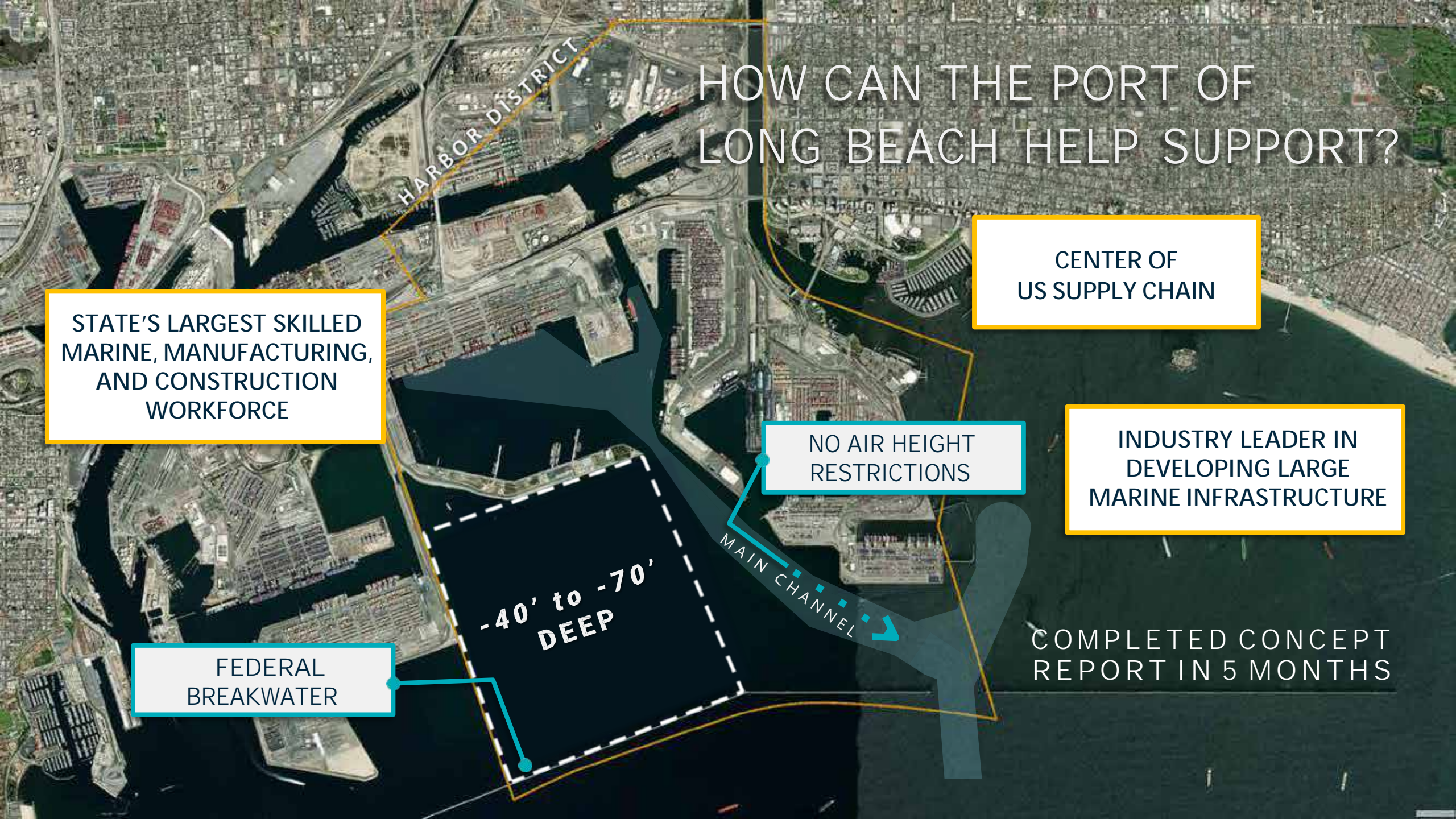
INDUSTRY LEADER IN DEVELOPING LARGE MARINE INFRASTRUCTURE

FEDERAL BREAKWATER

-40' to -70'  
DEEP

MAIN CHANNEL

COMPLETED CONCEPT REPORT IN 5 MONTHS





WET STORAGE

SINKING BASIN

FIXED PIERS

MAIN CHANNEL

7,700 FT HEAVY LIFT  
CAPACITY WHARF

WET STORAGE

CONCEPT DESIGN





FLEXIBLE, ADAPTABLE



STAGING AND INTEGRATION

FOUNDATION ASSEMBLY

STAGING AND INTEGRATION

FOUNDATION ASSEMBLY

BLADE MANUFACTURING

400 ACRES

80 ACRES

80 ACRES

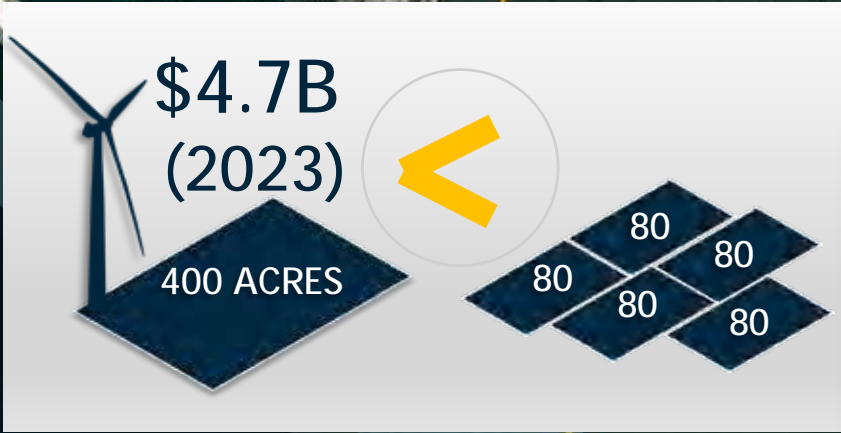
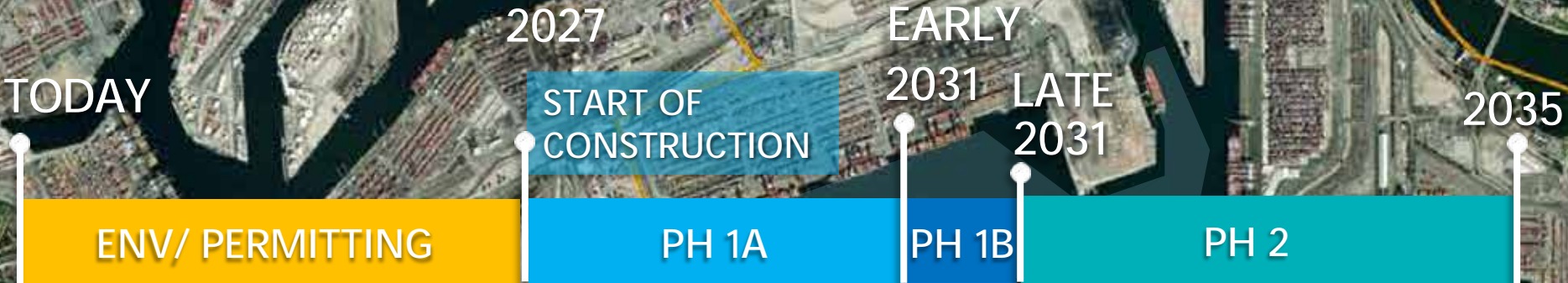
80 ACRES

80 ACRES

80 ACRES



# SCHEDULE AND COST





# BENEFITS SUMMARY

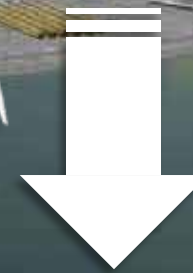
Positions California and the United States to be at the forefront of floating offshore wind innovation and development

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



An aerial photograph of an industrial port area. In the foreground, a long freight train with orange and red cars is moving along a set of tracks that curve through the scene. To the left of the tracks, there is a large industrial facility with numerous large, white, cylindrical storage tanks. In the background, a dense residential or commercial neighborhood is visible, with many small buildings and houses. A complex highway interchange with multiple overpasses and ramps is located in the lower right quadrant. The overall scene is a mix of industrial infrastructure and urban development.

# ON TRACK WITH PIER B

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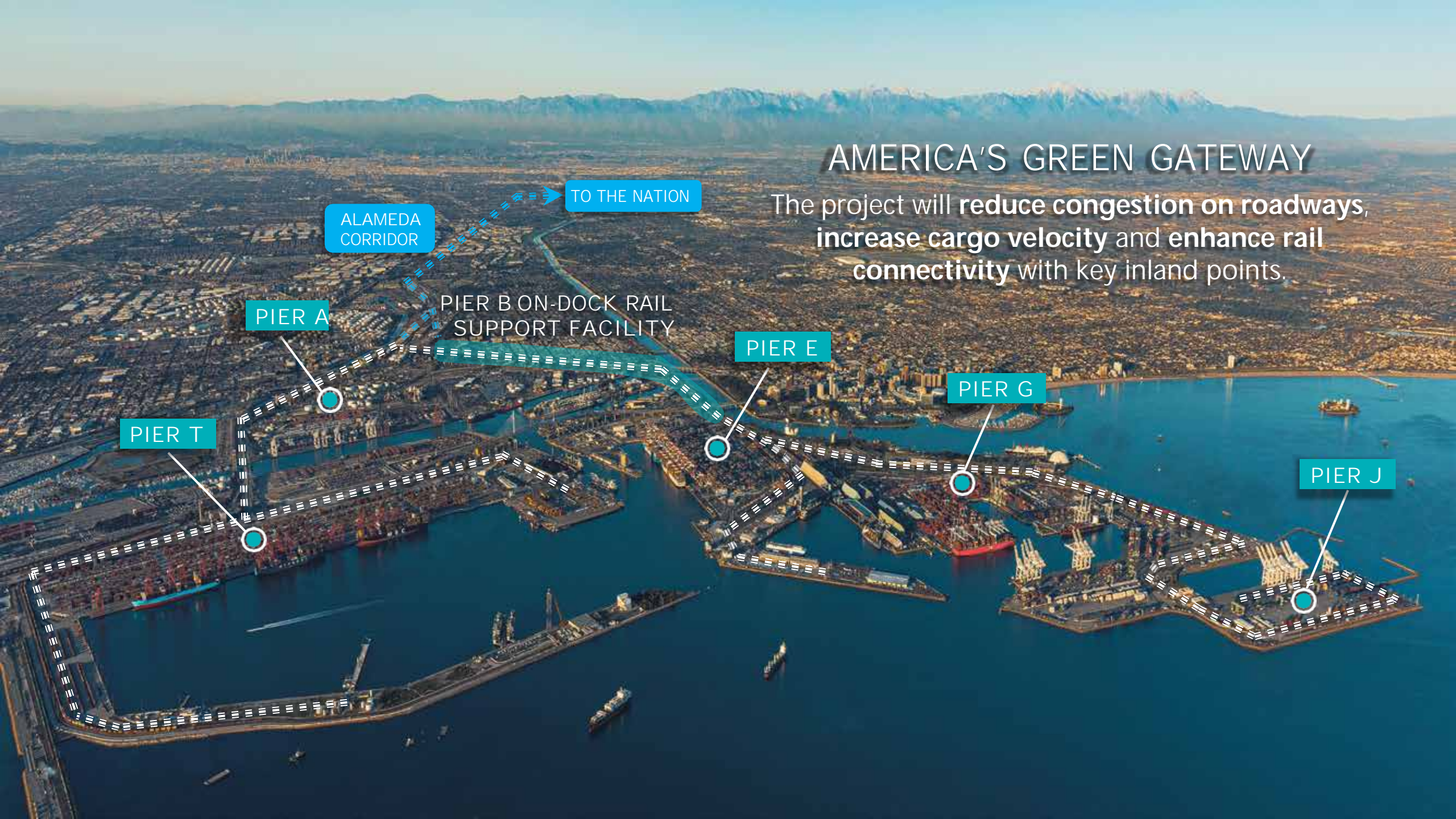
An aerial photograph of a port facility, likely a container terminal, showing various structures, rail tracks, and shipping lanes. A teal callout box with white text is positioned in the upper left quadrant, with a white line pointing to a specific area on the pier. A dashed teal line follows the edge of the pier structure. The surrounding area includes a dense urban grid and a body of water.

PIER B ON-DOCK RAIL  
SUPPORT FACILITY



# AMERICA'S GREEN GATEWAY

The project will **reduce congestion on roadways**, **increase cargo velocity** and **enhance rail connectivity** with key inland points.



ALAMEDA  
CORRIDOR

TO THE NATION

PIER A

PIER B ON-DOCK RAIL  
SUPPORT FACILITY

PIER E

PIER G

PIER T

PIER J



5 GRANTS SECURED  
\$307M AWARD



PIER B ON-DOCK RAIL  
SUPPORT FACILITY

3 OUT OF 10 CONSTRUCTION  
PACKAGES AT 100% DESIGN

15 OUT OF 24  
PROPERTIES ACQUIRED

\$1.567B  
2032 SUBSTANTIAL  
COMPLETION



An aerial photograph of a large port terminal. A massive container ship, with "COSCO SHIPPING" visible on its side, is docked at a pier. The ship's deck is covered with a dense array of colorful shipping containers. Numerous gantry cranes are positioned along the pier, and the surrounding area is filled with stacks of containers and industrial infrastructure. In the background, a city skyline and a body of water are visible under a clear sky.

# WORLD'S GREENEST TERMINAL



# LONG BEACH CONTAINER TERMINAL

NORTH TRUCK GATE FACILITY

18 ALL ELECTRIC SHIP TO SHORE CRANES

36 CONTAINER STORAGE "BLOCKS"



140 ACRES OF CONTAINER YARD AREA

5 REEFER STACKING FACILITIES



8 WORKING  
4 STORAGE  
12 TRACKS TOTAL  
72,941 INTERMODAL RAIL TRACK FEET

3 BERTHS

E26  
E24  
E22  
4,250 FOOT LONG WHARF

SOUTH TRUCK GATE FACILITY

TERMINAL BUILDINGS RANGING FROM 1,000 TO OVER 32,000 SF



5 LEED GOLD



# FULLY ELECTRIFIED TERMINAL

18 SHIP TO SHORE CRANES

69 ELECTRIFIED CRANES

250 BOMB CARTS

64 TERMINAL YARD TRACTOR (UTRs)

102 ZE CONTAINER TRANSPORT VEHICLES

6 INTERMODAL RAIL-MOUNTED GANTRY CRANES (RMG)





An aerial photograph of a large port and city. The port area in the foreground is filled with shipping containers, cranes, and large cargo ships. The city extends into the background, with a dense grid of buildings and a river winding through it. The water is a deep blue, and the sky is clear. The text "THE GREEN PORT OF THE FUTURE" is overlaid in white, bold, sans-serif font, with a thin yellow horizontal line underlining the first line of text.

**THE GREEN PORT OF  
THE FUTURE**



