

U.S. Market Overview & Insights

Business Network for Offshore Wind

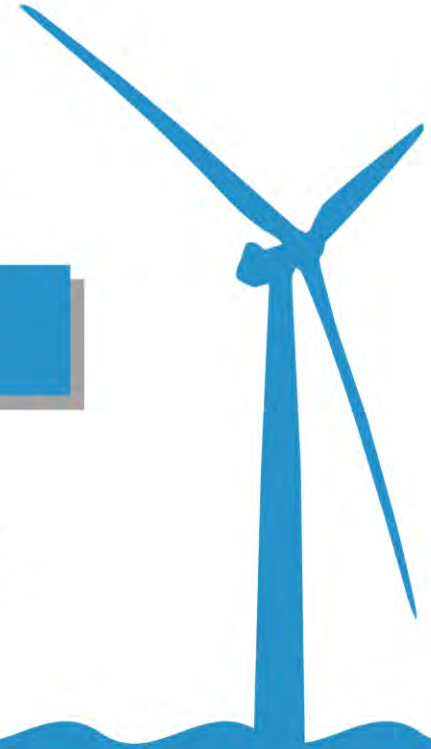
An Introduction to Floating Offshore Wind & its Supply Chain

Business Network for Offshore Wind

- 1 Focus on developing US offshore wind industry and its supply chain
- 2 Non-profit, Membership-Based
- 3 Provide: *Market Data, Education, Training, Research, and Introductions*

550+

MEMBERS



& GROWING

WHY Offshore Wind?

Job Creation

Offshore wind is a golden opportunity for growth in the U.S. job market. The U.S. Department of Energy's National Renewable Energy Laboratory estimates that each Megawatt (MW) of offshore wind power leads to the creation of 20.7 direct jobs. The force multiplier of offshore wind energy is evident, and a published report estimates up to 30,000 MW of capacity, 83,000 jobs, and \$25 billion of annual economic output by 2030. The construction of offshore wind farms will create more jobs, provide more clean energy, and offer more reliable ways to power our nation.

Learn more at:
whyoffshorewind.org



CLEAN ENERGY

Clean, renewable energy
for everyone to enjoy



AFFORDABLE

Affordable, competitive
prices for ratepayers



VIEWSHED

Deepwater, unassuming
solutions on the horizon



HURRICANES

Offshore wind turbines are
designed to survive hurricanes

Offshore Wind: Powering the World

GLOBAL DEMAND



>630 GW by 2050*

368 GW Pipeline**

56 GW Operating

**Source: McKinsey*

*** Source: Department of Energy*

FINANCE



\$16.6B European Projects Financed*

\$2.2B U.S. Investments*

**As of 12/31/21*

FLOATING MARKET



60.7 GW Global Pipeline

15 GW by 2035 U.S. Goal

123 MW Operating

U.S. MARKET



83.9 GW Demand

30 GW by 2030 U.S. Goal

17.6 GW Under Contract

42 MW Operating



**Biden
Administration
Actions**



**Infrastructure
Investment
& Jobs Act**



**Inflation
Reduction
Act**



National Offshore Wind Industrial Strategy

**Building Market Certainty and Targeting Investments
in Supply Chain & Infrastructure**

U.S. OSW Structure



BUSINESS NETWORK FOR
OFFSHORE WIND

STATES

Request call areas, enact policy that drives the market, enforce state and local regulations

U.S. BOEM / U.S. BSEE

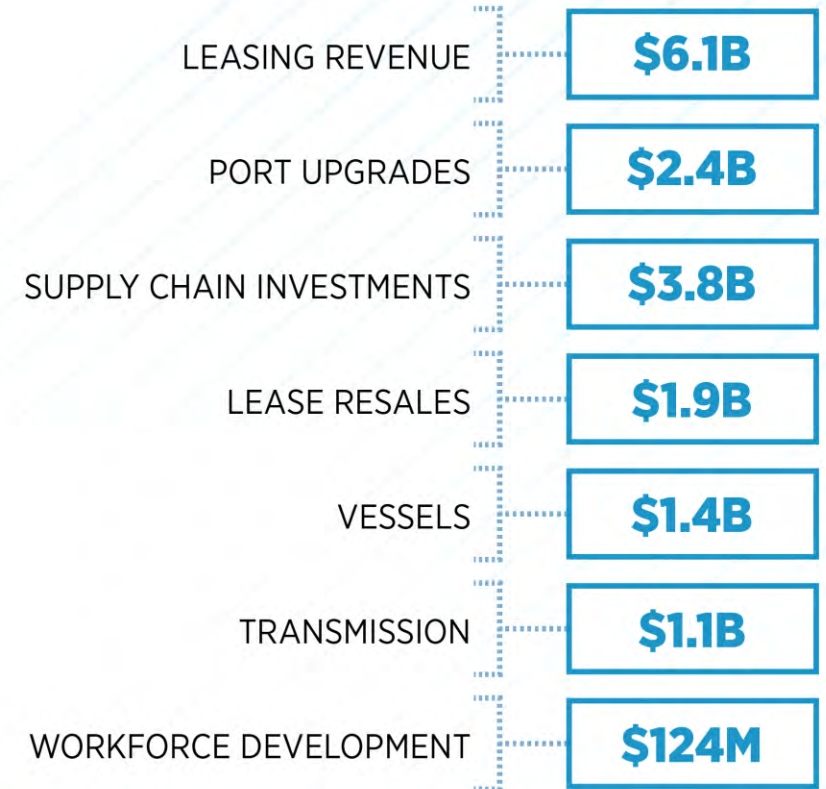
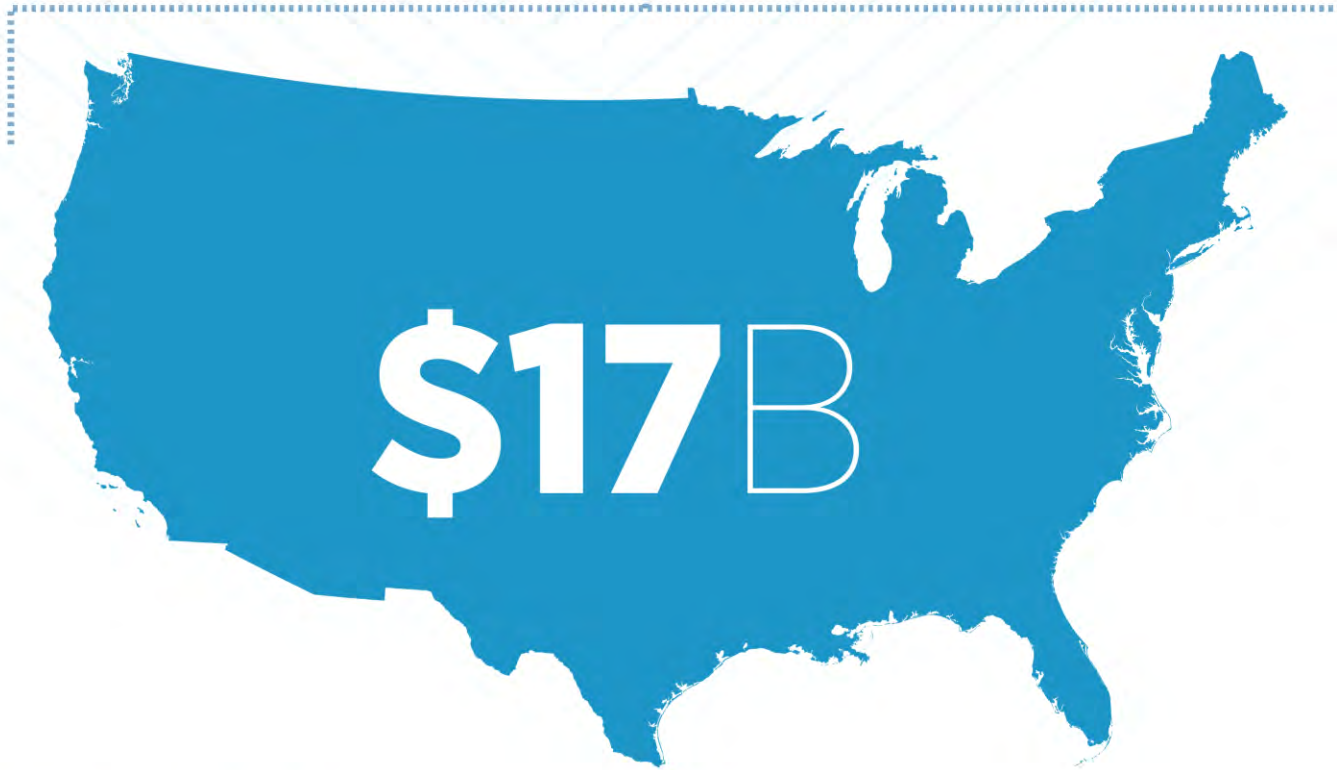
Siting, leasing, permitting and approval of plans, regulate OSW projects

PRIVATE DEVELOPERS / LEASEES

Acquire lease rights and develop projects

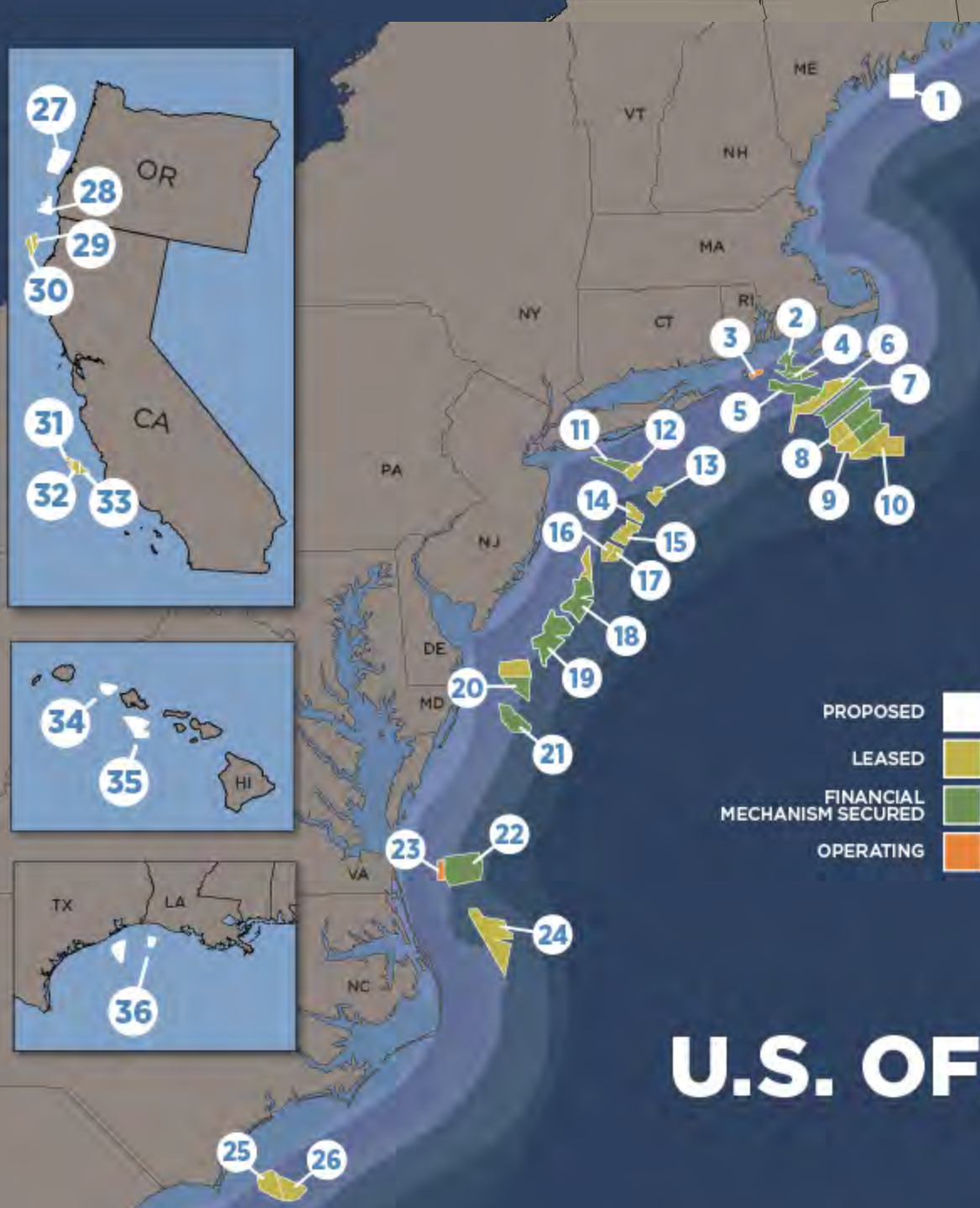
Investments in U.S. Market

TOTAL INVESTMENTS



\$9.8B OF INVESTMENTS MADE IN 2022

Offshore Wind Projects in U.S. Waters



- | | | | | | |
|----|--|----|--|----|--|
| 1 | Maine Aqua Ventus I
(New England Aqua Ventus) [11 MW] | 12 | Excelstor Wind
(Vineyard Mid-Atlantic) | 23 | Coastal Virginia OSW - Pilot
(Dominion Energy) [12 MW] |
| 2 | Revolution Wind
(Ørsted / Eversource) [704 MW] | 13 | Bluepoint Wind
(Ocean Winds / GIP) | 24 | Kitty Hawk Offshore Wind
(Avangrid) |
| 3 | Block Island Wind Farm
(Ørsted) [30 MW] | 14 | Attentive Energy One
(TotalEnergies Renewables) | 25 | OCS-A 0545
(TotalEnergies Renewables) |
| 4 | South Fork Wind Farm
(Ørsted / Eversource) [132 MW] | 15 | Community Offshore Wind
(RWE / National Grid) | 26 | OCS-A 0546
(Duke Energy Renewables Wind) |
| 5 | Sunrise Wind
(Ørsted / Eversource) [880 MW] | 16 | OCS-A 0541
(Atlantic Shores) | 27 | Coos Bay Call Area |
| 6 | Bay State Wind
(Ørsted) | 17 | Leading Light Wind
(Invenergy) | 28 | Brookings Call Area |
| 7 | Vineyard Wind / Park City W. / Commonwealth W.
(CIP / Avangrid) [900/804/1,232 MW] | 18 | Atlantic Shores Offshore Wind
(EDF / Shell) [1,510 MW] | 29 | OCS-P 0561
(RWE) |
| 8 | Beacon Wind
(Equinor / bp) [1,230 MW] | 19 | Ocean Wind 1 & 2
(Ørsted) [1,100/1,148 MW] | 30 | OCS-P 0562
(CIP) |
| 9 | Southcoast Wind
(Shell / Ocean Winds) [1,204 MW] | 20 | Skipjack I / II Wind Farm
(Ørsted) [120/846 MW] | 31 | OCS-P 0563
(Equinor) |
| 10 | Liberty Wind
(CIP) | 21 | MarWin / Momentum Wind
(US Wind) [270/808.5 MW] | 32 | Golden State Wind
(Ocean Winds / CPPIB) |
| 11 | Empire Wind 1 & 2
(Equinor / bp) [816/1,260 MW] | 22 | Coastal Virginia OSW - Commercial
(Dominion Energy) [2,640 MW] | 33 | OCS-P 0565
(Invenergy) |
| | | | | 34 | Oahu North Call Area |
| | | | | 35 | Oahu South Call Area |
| | | | | 36 | Gulf of Mexico WEAs |


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U.S. OFFSHORE WIND MARKET

U.S. OFFSHORE WIND

PROCUREMENT GOALS BY STATE

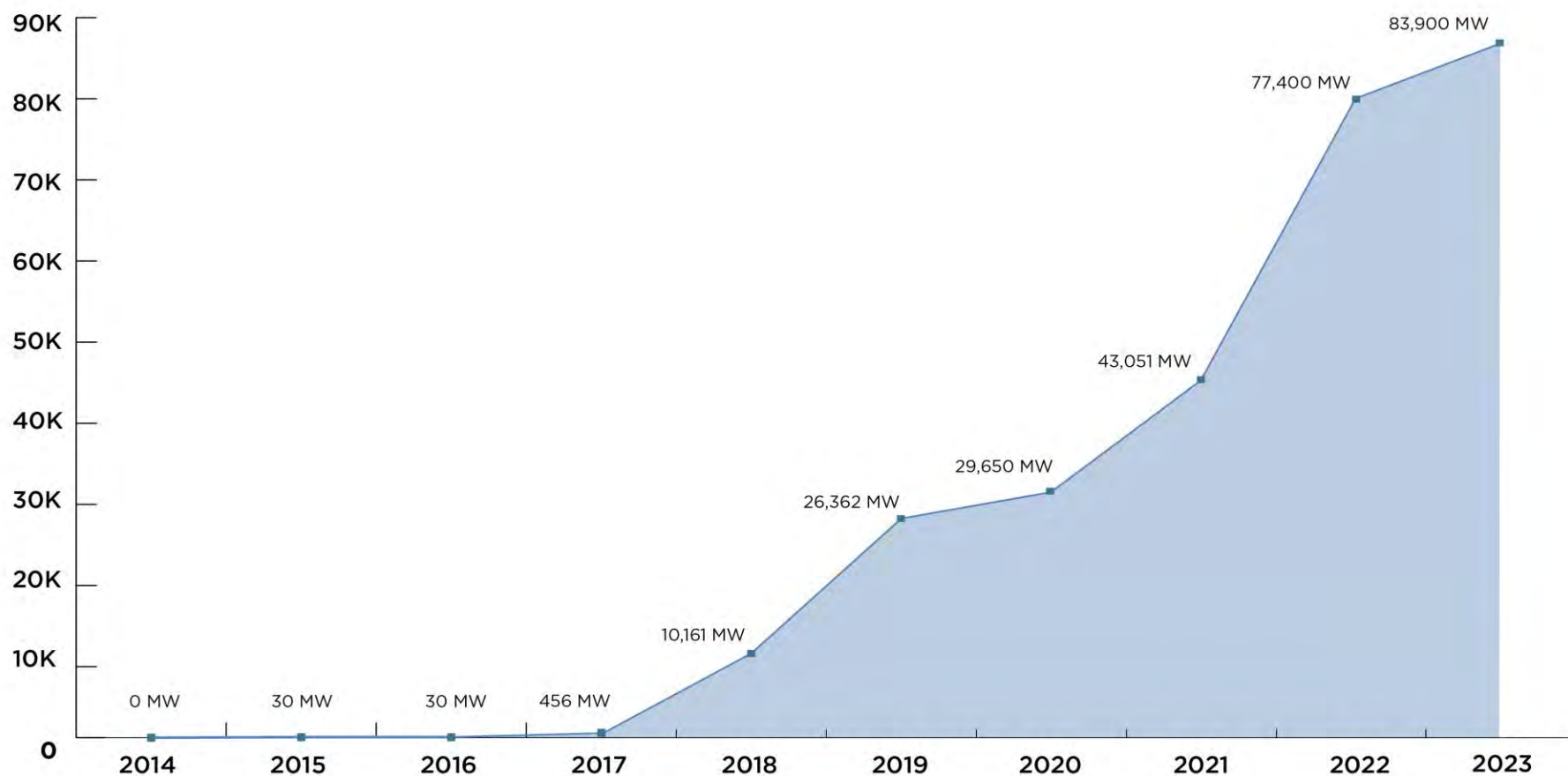
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STATE	GOAL (GW)	YEAR	STATUTE/EO
United States	30	2030	EO
New Jersey	11	2040	Statute/EO
New York	9	2035	Statute
Maryland	8.5	2031	Statute
North Carolina	8	2040	EO
Massachusetts	5.6	2035	Statute/EO
Virginia	5.2	2034	Statute
Louisiana	5	2035	Task Force/EO
Connecticut	2	2030	Statute
Rhode Island	1.03	-	Statute
Maine	0.131	2030	Statute
California	25*	-	Statute/Task Force
Oregon	3*	-	Statute

* State planning goal

State Commitments to OSW



Updated 01/04/2023

The trends of sum of Megawatts and sum of Megawatts for year

State OSW Procurement

Power Purchase Agreements (PPA)—a long-term electricity purchase agreement

Offshore Renewable Energy Credit (OREC)—represent the environmental attributes of one megawatt-hour of electric generation from an offshore wind project. They are used to meet compliance with state offshore-wind-specific renewables portfolio standard provisions.



LEASE
AREA

Provisional Winners of the California Lease Areas, \$757,100,000 in High Bids

OCS-P0561

RWE Offshore Wind Holdings, LLC

\$157,700,000

OCS-P0562

California North Floating LLC

\$173,800,000

OCS-P0563

Equinor Wind US LLC

\$130,000,000

OCS-P0564

Central California Offshore Wind LLC

\$150,300,000

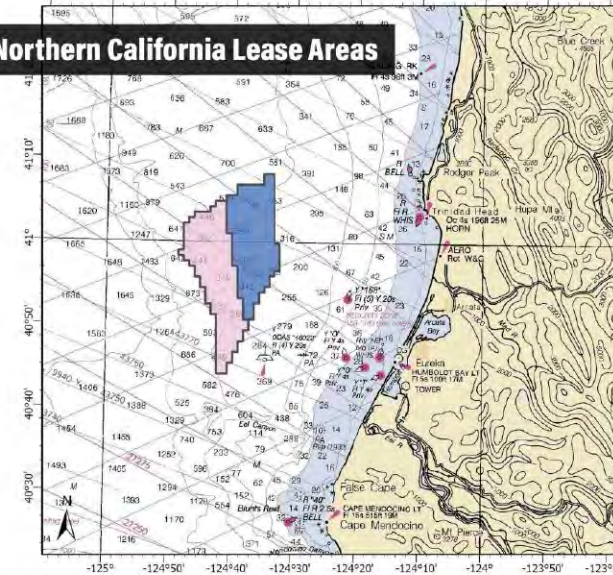
OCS-P0565

Invenergy California Offshore LLC

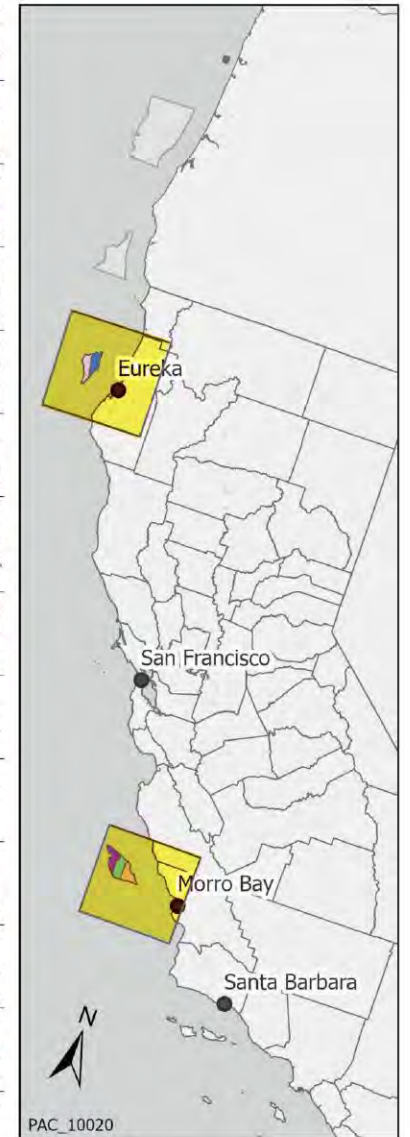
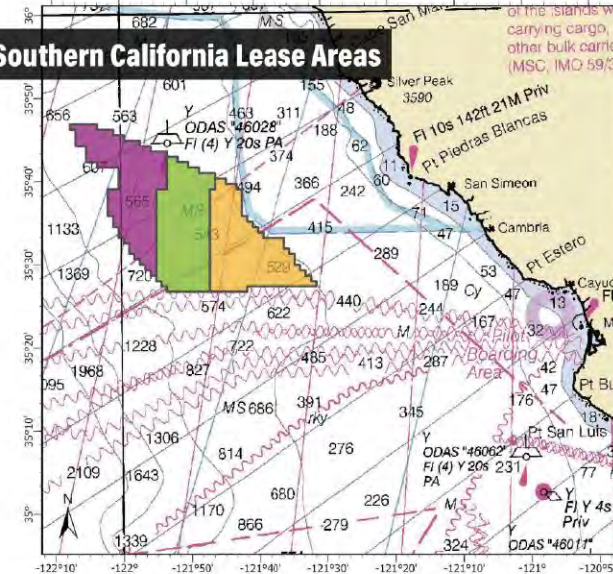
\$145,300,000

BOEM Bureau of
Ocean Energy Management

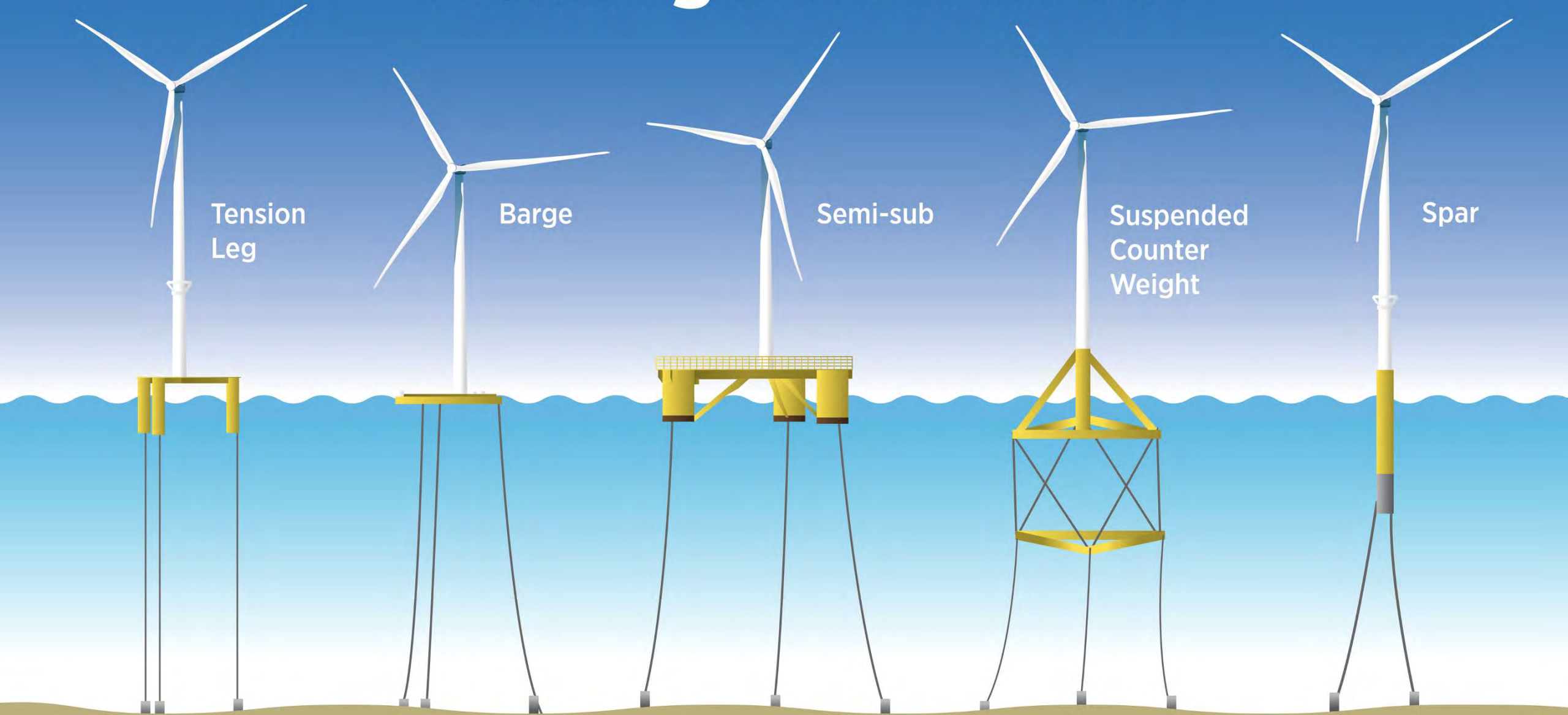
Northern California Lease Areas



Southern California Lease Areas



Floating Foundations



Floating Offshore Wind

A National Opportunity

NATIONAL FLOATING TARGET:

15 GW by 2035

DOE EARTHSHOT:

Reduce costs by **70%**

- Approx. 2/3 of the total technical offshore wind potential is at water depths requiring floating offshore wind (NREL)
- Necessary to meet state decarbonization goals
- Two U.S. demonstration projects: Aqua Ventus & Kent Houston Offshore Engineering
- Nearly \$50 million in new Floating R&D
- Policymakers already looking to floating offshore wind
 - *New York Master Plan 2.0*
 - *Central Atlantic Call Area*
 - *California Lease Areas*
 - *Gulf of Maine*
 - *Gulf of Mexico*

THE BUSINESS NETWORK FOR OFFSHORE WIND

offshorewindus.org

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Image courtesy of Ideol BYTP ECN

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OFFSHORE WIND



FLOWIN Prize

70

The American-Made FLOating Offshore Wind ReadINess (FLOWIN) Prize aims to help unlock the potential of cost effective floating offshore wind turbines.

[Follow the Challenge](#)

[View Challenge Rules](#)

[View Challenge Results](#)

Aikido Technologies (San Francisco, California):

Beridi USA (Spanish Fork, Utah)

OCG-Wind Full Cycle (Oakland, California)

FloatHOME (Emeryville, California)

PelaStar (Seattle, Washington)

Technip Energies (Houston, Texas)

VoltturnUS+ Domestically Produced Concrete Hull (Orono, Maine)

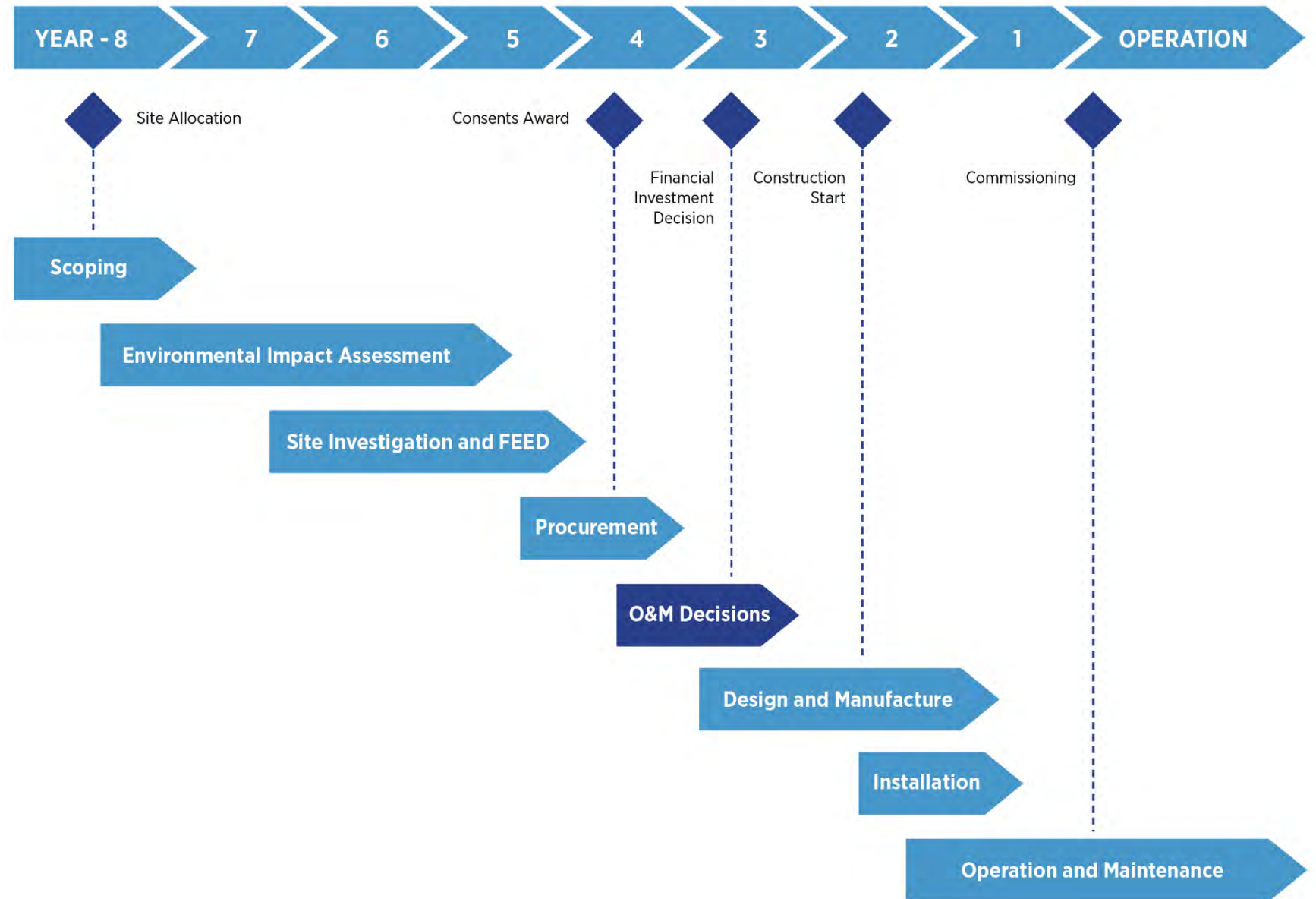
Tetra Triple-One (Boston, Massachusetts)

WHEEL U.S. (Coral Gables, Florida)

BOEM Timeline



When Do Supply Chain Activities Occur?

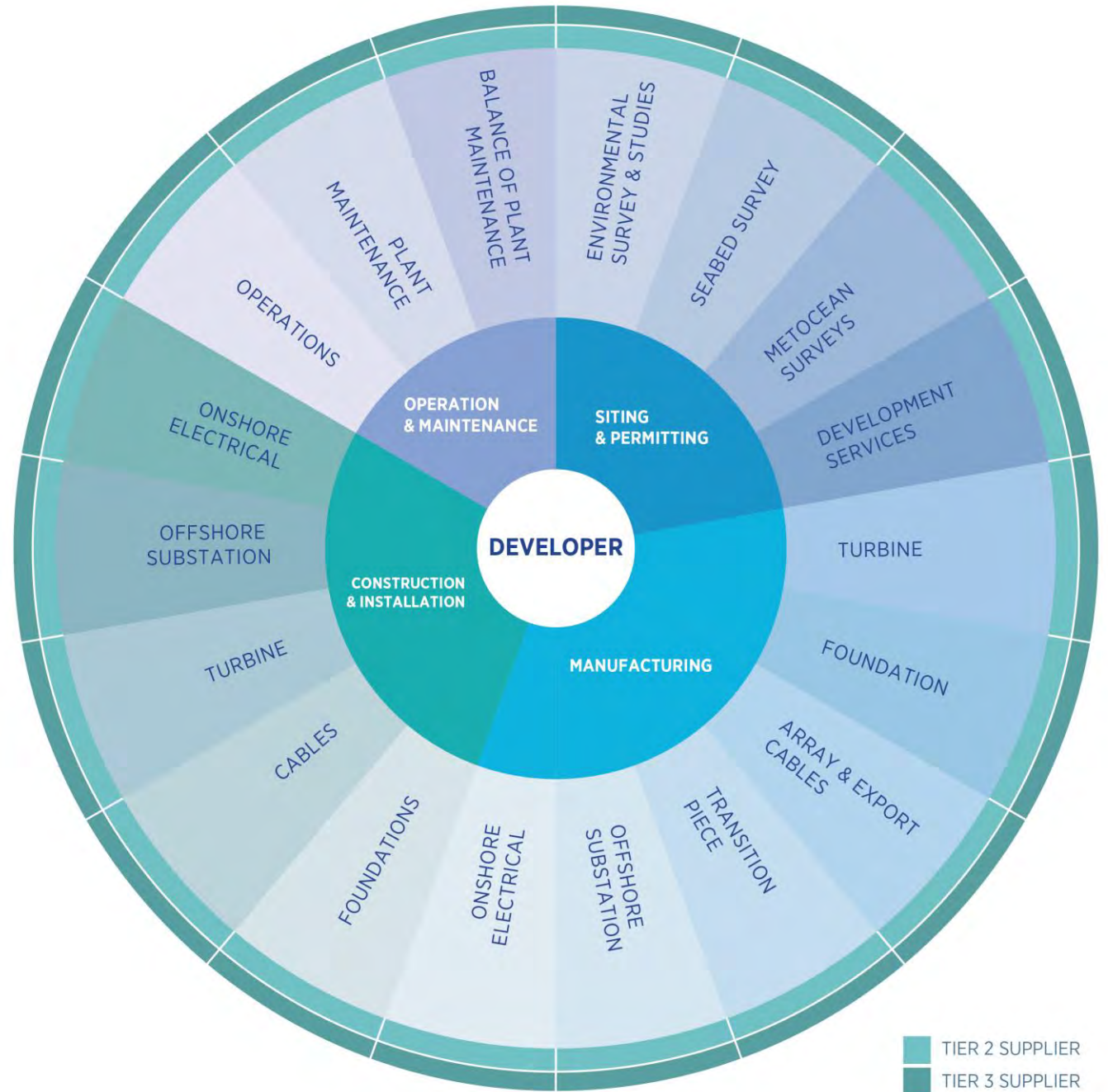


Supply Chain

Supply Chain Capacity



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 BUSINESS NETWORK *for*
OFFSHORE WIND

EMERGING U.S. SUPPLY CHAIN FOR OFFSHORE WIND

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This map of the current supply chain has been pulled from the Business Network for Offshore Wind's Market Dashboard and Supply Chain Connect databases.

GET STARTED

ACCESS THE OFFSHORE WIND SUPPLY CHAIN

BUSINESS NETWORK FOR OFFSHORE WIND

SupplyChainConnect

OFFSHOREWINDUS.ORG

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StateConnect

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DirectConnect

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U.S. OFFSHORE WIND COMPONENT MANUFACTURING

- 
- 1** Cables / *Brayton Point, MA*
 - 2** Foundation Components / *Providence, RI*
 - 3** Cables / *Bristol, CT*
 - 4** Tower & Transition Pieces / *Albany, NY*
 - 5** Secondary Steel / *Port of Coeymans, NY*
 - 6** Secondary Steel / *Wellsville, NY*
 - 7** Monopiles / *Paulsboro, NJ*
 - 8** Nacelles / *Alloways Creek, NJ*
 - 9** Tower, Monopile, Cables / *Baltimore, MD*
 - 10** Secondary Steel / *Federalsburg, MD*
 - 11** Blades / *Portsmouth, VA*
 - 12** Heavy Plate Steel / *Brandenburg, KY*
 - 13** Cables / *Huntersville, NC*
 - 14** Cables / *Charleston, SC*
 - 15** Jacket Foundations / *Houma, LA*
 - 16** Offshore Substation / *Ingleside, TX*

— SOUTHERN CALIFORNIA — **SUPPLIER DAY**

June 7, 2023
Long Beach, California

PREPARE & TRAIN

MEET YOUR BUSINESS OBJECTIVES WITH
EDUCATION & TRAINING PROGRAMS

BUSINESS NETWORK FOR OFFSHORE WIND

FOUNDATION 2 BLADE

INDUSTRY TRAINING

BUSINESS NETWORK FOR OFFSHORE WIND

OffshoreWind**READY**

INDUSTRY EDUCATION

BUSINESS NETWORK FOR OFFSHORE WIND

OffshoreWind**101**

INDUSTRY OVERVIEW

JOHN BEGALA

Vice President for Federal and State Affairs

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