



HUMBOLDT BAY OFFSHORE WIND PROJECT



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WHY Humboldt Bay for Offshore Wind Farming?

- Federal goal is to produce 110 gigawatts of wind energy by 2050.

California

Required Speed and Quantity of Production

- The State's goal is 25GW by 2045.
- If each turbine is 15MW, then 1,667 turbines will need to be produced.
- If production starts in 2027...
- ...then 93 turbines would need to be produced per year...
- ...or an average of 1.8 turbines per week, every week, for 18 straight years.

Anticipated Project Benefits

- Humboldt will be a leader in energy decarbonization and addressing climate change.
- Vast diversity of new jobs and economic development.
- Redevelopment and revitalization of vacant/blighted site.
- Stimulation of other projects around the bay.
- Opportunity to create a green port, electrification, onsite renewable energy generation, green building materials, etc.
- Opportunity to implement a first-of-its-kind project in preparing for sea level rise.
- Stimulating a 12-month all-season port through increased ship traffic and more attention from the USACE for dredging.
- New revenue to the Harbor District that can be used for other purposes, such as dredging, conservation, and recreation.
- Tourism?

WHERE are Offshore Wind Farming Sites Compared to Humboldt Bay?

- The Port of Humboldt is the 2nd largest bay in CA, behind San Francisco Bay.
- There are three stages to the producing an offshore wind farm –
 1. Manufacturing/Fabrication Site
 2. Staging & Integration
 3. Operations & Maintenance Site
- The Bay of Humboldt is well suited for all stages of the production process.
- Port of Humboldt and Port of LA/Long Beach are the only ports in CA that are capable of doing the Staging & Integration.
- Other ports will be involved in parts of the production process, i.e. Manufacturing/Fabrication and Operations & Maintenance.

The first proposed terminal projects in California.

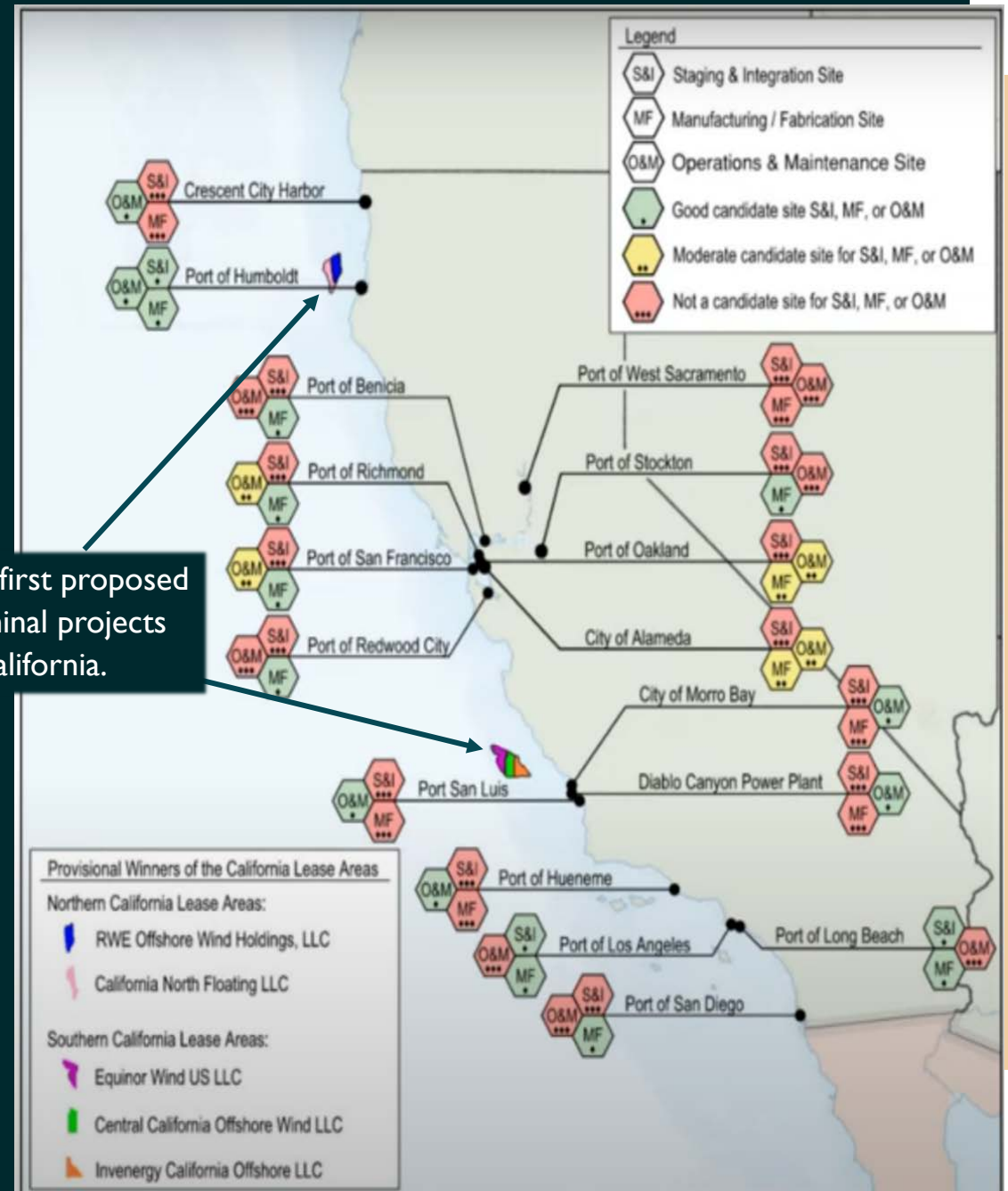


Figure 7. S&I, MF, and O&M candidate status for each port

HOW will Humboldt Bay be involved in Offshore Wind Farming?

A completely new Industry will be created.

EXAMPLE:

- 2,841 miles of mooring lines will need to be created.
- 5,000 blades
- 1M feet of towers;
- 1,667 floaters AND turbine/nacelles
- ??? miles of transmission cables - TBD

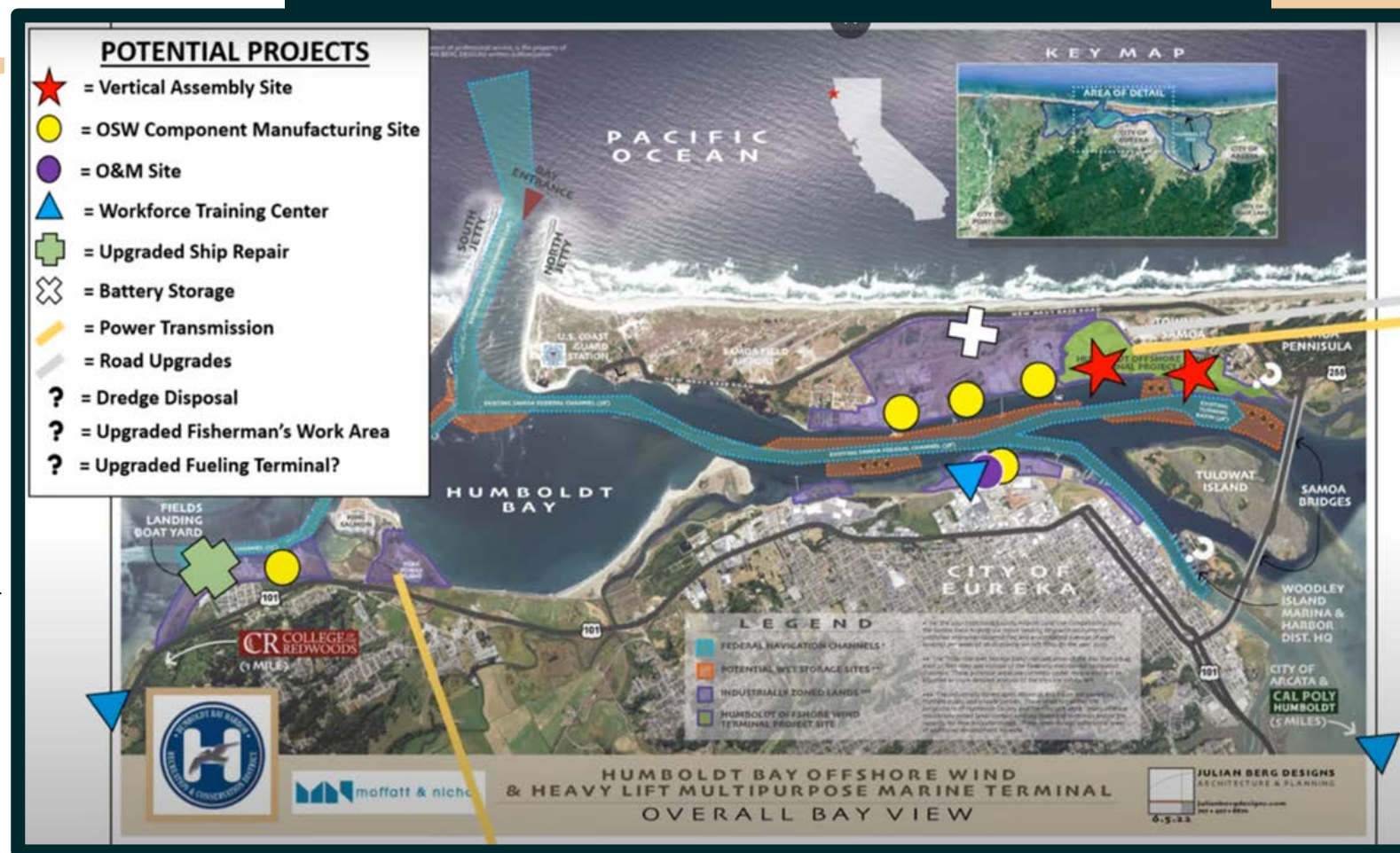
These activities will be port related manufacturing:

Supply Chain Activities

- Project development and management
- Manufacturing
 - Nacelle, hub, and assembly
 - Blades
 - Tower
 - Foundation supply
 - Array cable supply
 - Onshore and offshore substation supply
 - Operational infrastructure

- Installation
 - Turbine installation
 - Foundation installation
 - Array cable installation
 - Export cable installation
 - Other installation

- Operation, maintenance, and service
 - Wind farm operation
 - Turbine maintenance and service
 - Foundation maintenance and service
 - Subsea cable maintenance and service
 - Substation maintenance and service
- Decommissioning



WHO is involved in the Humboldt Bay Offshore Wind Farm Project?



Project Type 1:
The Operation of a Power Plant

Offshore wind companies –
BOEM (bureau of ocean energy mgmt) & Energy Co to maintain and operate

Project Type 2:
The Manufacturing and Assembly
of Equipment



Humboldt Port & Port Operators to only construct and sell to offshore wind companies.



Project Type 3:
Power Transmission

Upgrading and re-assembling the electrical grid

WHEN does the Humboldt Bay Offshore Wind Farm Project Commence?

Resources to Stay Informed

- **HUMBOLDTBAY.ORG** – Harbor District Website to keep informed on the latest developments.
- **WWW.CROWLEY.COM** Crowley Wind Services will be developing and operating the wind terminal – transport/towing as well.
- **schatzcenter.org/publications/** Schatz Energy Research Center - regarding the wind farm publications
- **GOHUMCO.COM** – Humboldt Economic Development Council

Plans



- Identify strategy to support as many call areas as possible
- Determine needs/options for wet storage
- Stakeholder and public engagement
- CEQA
- NEPA
- Permits
- >30% design
- Channel tow-out modeling
- Finalize field surveys
- Acquire construction funding
- Stimulate additional projects throughout Humboldt Bay