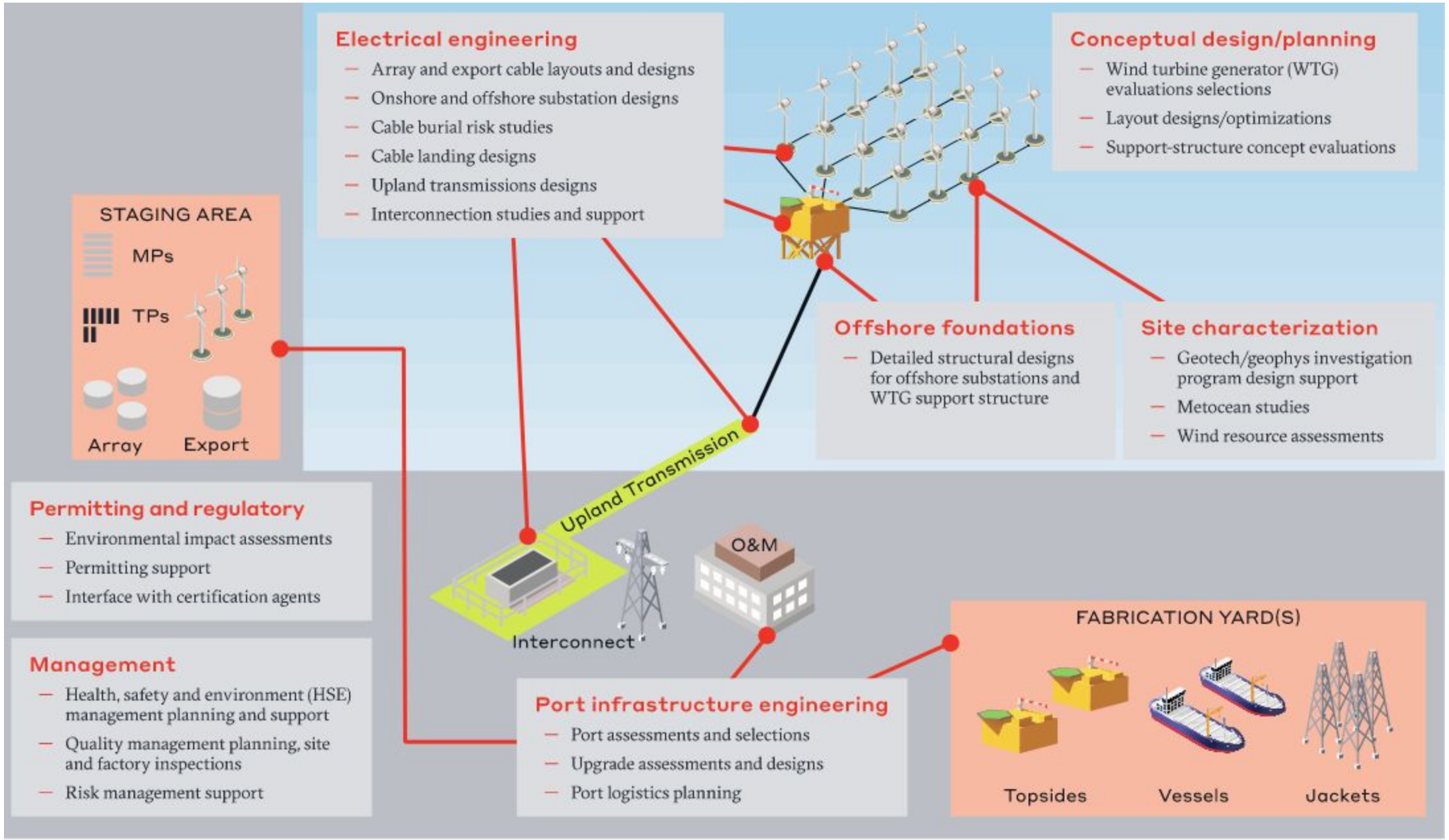
Preparing for the OSW Supply Chain

- NY OSW Master Plan
- Fabrication of Hulls

Markus Wernli

November 17, 2023

WSP Contributions to Offshore Wind Supply Chain



New York State Master Plan for Development of OSW

- Prepare state to reach OSW development goals set by state
- Provide guidance to BOEM on most favorable lease sites
- Reduce cost/risk for developers to encourage OSW developments and ultimately reduce cost for ratepayers
- Provide guidance for an environmental sensitive and sustainable development of OSW
- Identify opportunities for new economic development and mitigation measures for negative impact on existing industries and communities

New York State OSW Master Plan – Timeline

Jan. 2016
Announcement of Master Plan

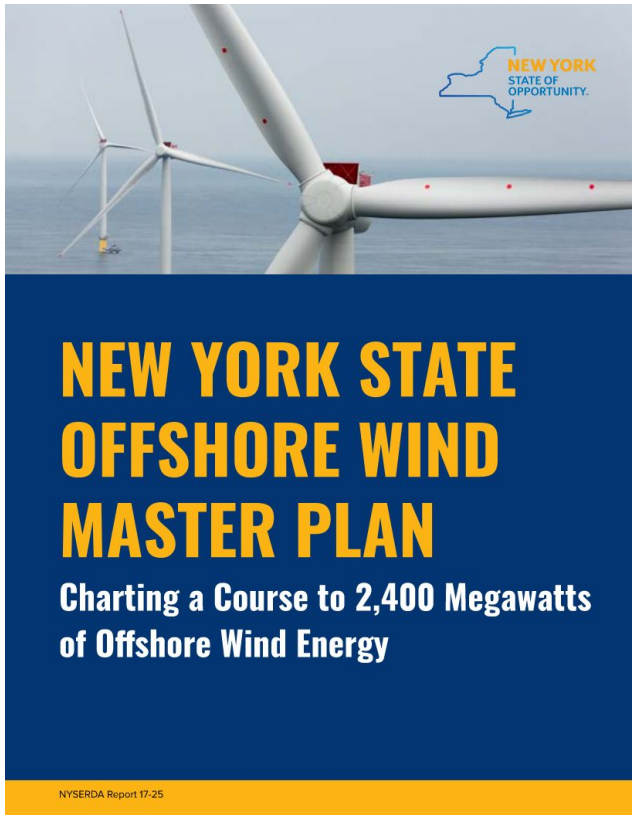
Aug. 2016
Clean Energy Standard on renewable energy

Sep. 2016
Blueprint

Jan. 2018
Master Plan 1.0

2024
Master Plan 2.0

New York State OSW Master Plan 1.0



January 2018

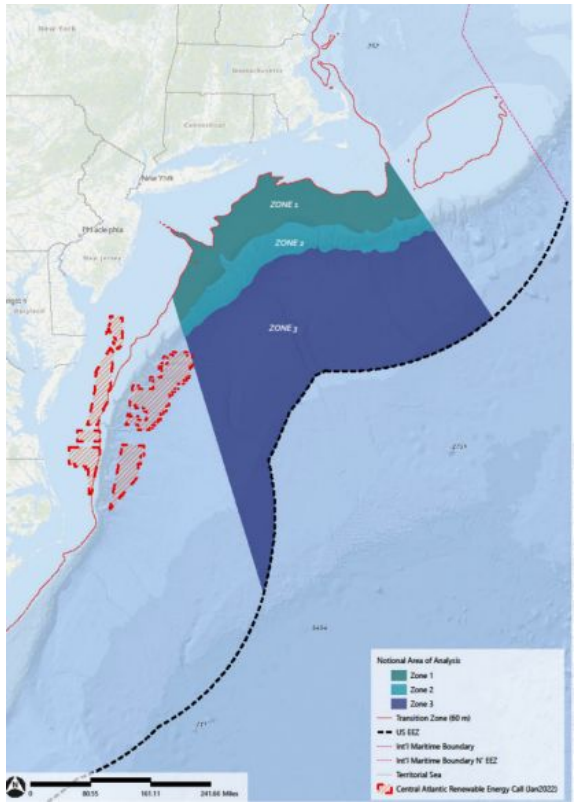
Work done:

- Extensive stakeholder Engagement
- 20 Studies of environmental, social, regulatory, economic, **ports infrastructure, and workforce and supply chain issues**

Key takeaways on supply chain:

- Engagement of Tier 1 and Tier 2 fabricators across the region
- Promotion of and investment in port infrastructure
- Investment in workforce development

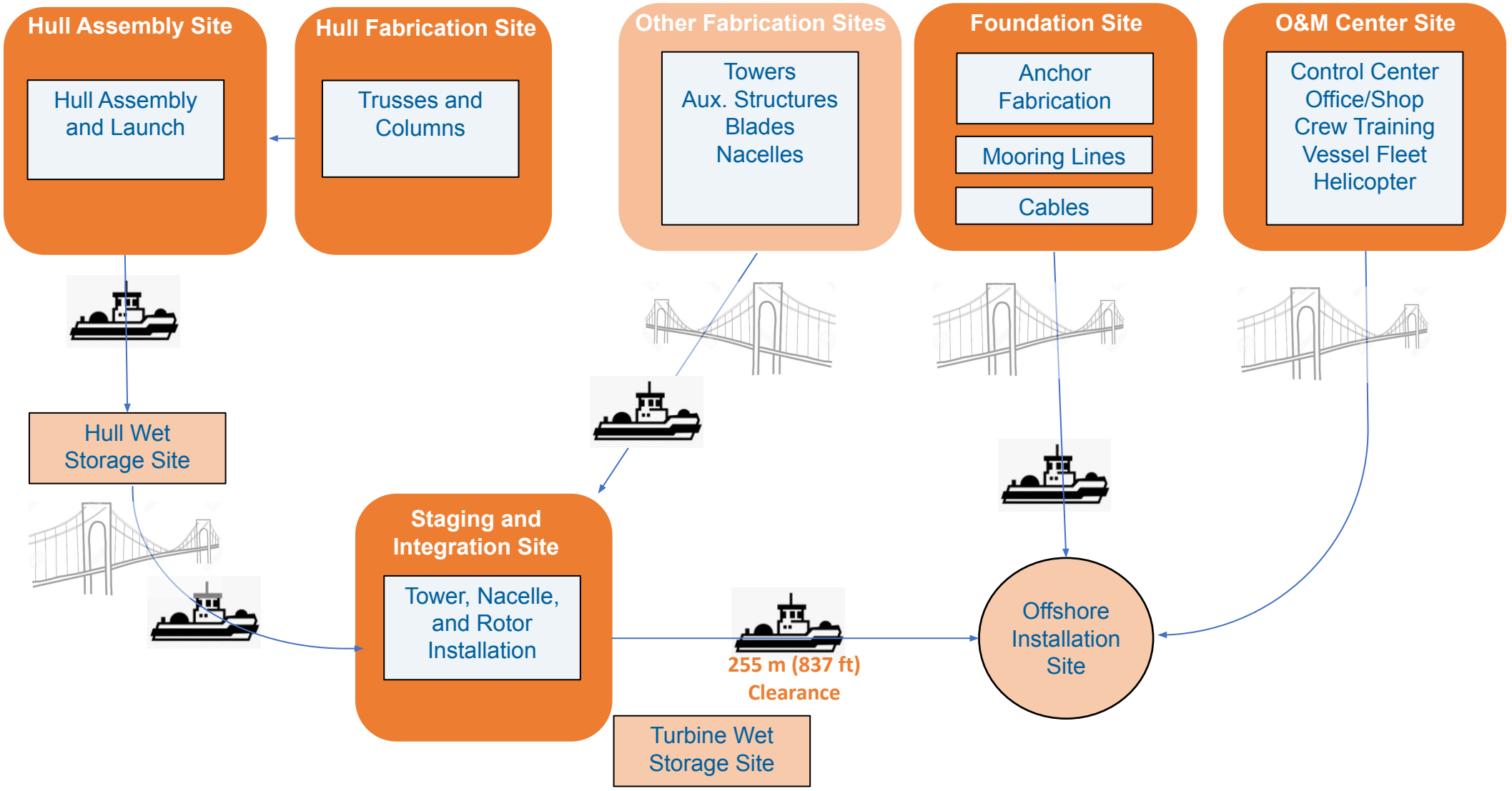
New York State OSW Master Plan 2.0 – Deepwater



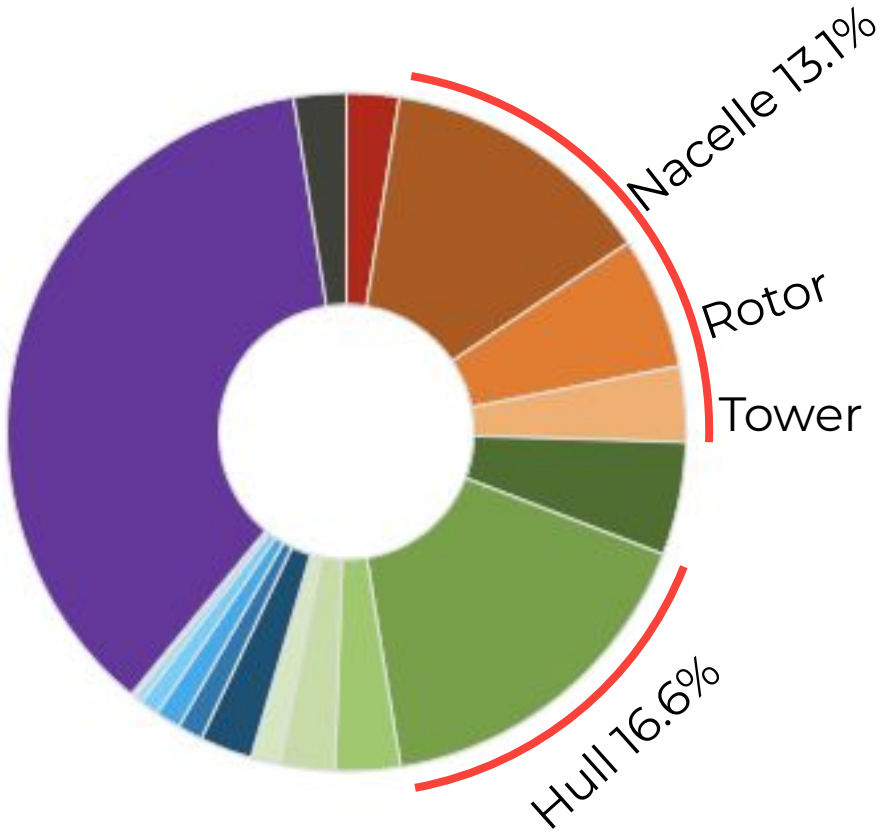
2024

- Stakeholder Engagement
- Site assessment and new lease areas
- Transmission and Interconnection
- Empowering Disadvantaged Communities and Environmental Justice Communities
- Technology Assessment
- Ports, Vessels and Supply Chain
- Workforce Development
- Environmental Concerns
- Considering Fishing
- Maritime Activities

Overview of Ports Facilities and Supply Chain for FOSW



Contribution of Major Cost Elements on Lifetime of a 450 MW FOSW Farm in UK

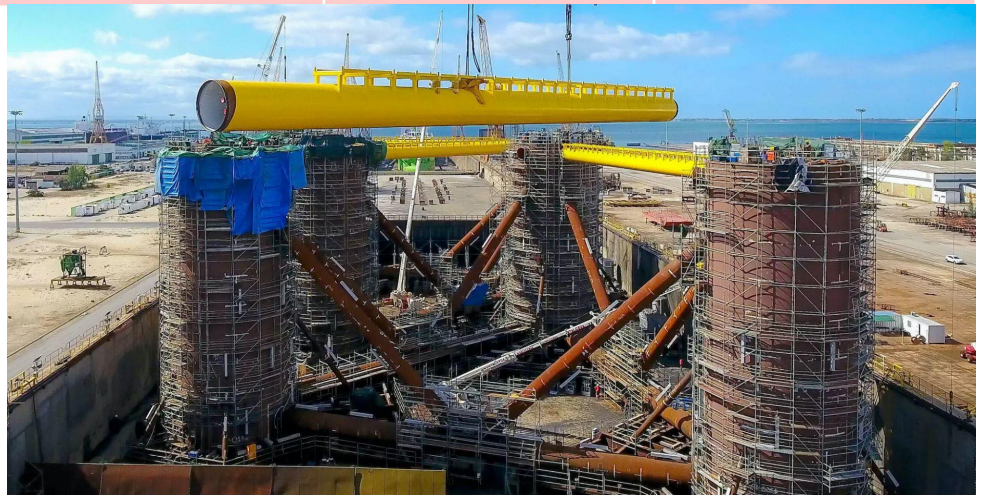


- Development and project management **2.5%**
- Turbine nacelle **13.1%**
- Turbine rotor **6.3%**
- Turbine tower **3.6%**
- Cables **5.4%**
- Floating substructure **16.6%**
- Mooring systems **3.1%**
- Offshore substation **2.6%**
- Onshore substation **1.4%**
- Cable installation **2.5%**
- Mooring and anchoring pre-installation **1.2%**
- Floating substructure - turbine assembly **1.2%**
- Floating substructure - turbine installation **0.9%**
- Offshore substation installation **0.4%**
- Other installation **0.2%**
- Operations and maintenance **36.6%**
- Decommissioning **2.5%**

BVGAssociates 2023 –
https://guidetofloatingoffshorewind.com/

Workforce Demand for Steel Hull Fabrication

Project Size	Turbines	Total Steel Weight (ton)	Skilled Labor Hours	Months of Fabrication	Skilled Work Force (FTE)
Prototype 8 MW	1 x 8 MW	2,000	100,000	6	100
Research Array 90 MW	6 x 15 MW	24,000	1,200,000	12	600
Utility Scale 1000 MW	66 x 15 MW	264,000	13,000,000	18	4,500



Labor hours based on 50 hrs/ton of steel and fabrication of up to 1 hull per week (utility scale)

West Coast Port Infrastructure for OSW Use

Challenges

- Large distance between OSW lease sites
- OSW lease sites at distance of large industrial centers
- Only few sites suitable for staging and integration
- New OSW port manufacturing and staging sites not available before 2032

Opportunities

- Collaboration between existing concrete and steel fabricators
- Job creation – local content through engagement of local fabricators
- Investment in infrastructure – new industrial development in regions most affected by offshore wind
- Build-up of local knowhow, supply chain, and technology

Contact Information

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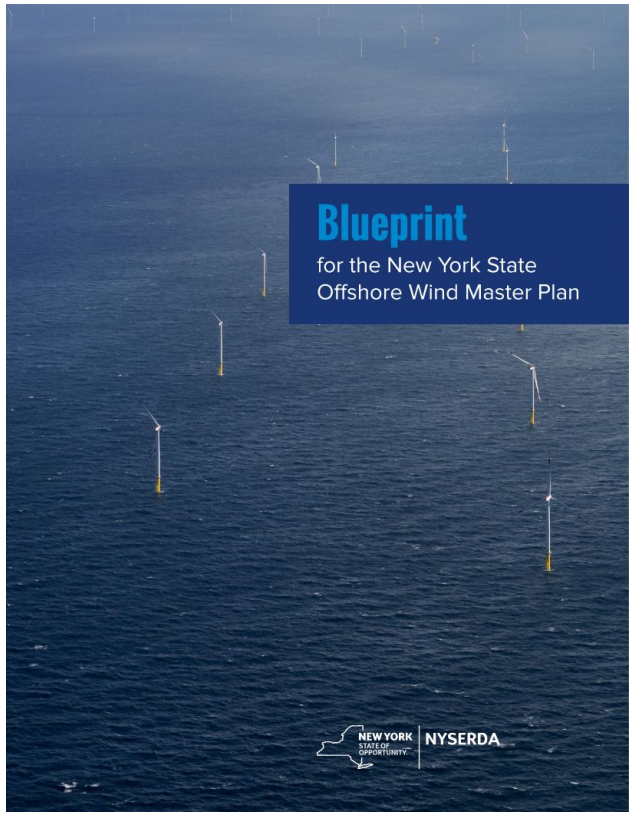
West Coast BOEM OSW Lease Call and Port Sites
Industrial Centers

New York State OSW Master Plan – Blueprint



September 2016

- Definition of process of development of Master Plan
- Outline of OSW strategy
- Benefits of OSW development
- Definition of collaboration of Sate entities
- Identification of stakeholders
- Identification of challenges and opportunities to be addressed by Master Plan
- Outlining of actions to be taken