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Bardex Corporation comments to the CEC Workshop for AB 525

Additional submitted attachment is included below.

The California central coast has been Bardex's home for over 60 years. We offer decades of offshore experience, including mooring systems and heavy load handling systems including launch and recovery of large floating structures. Bardex supports a broad range of floating offshore wind development and port infrastructure activities. As an example, we delivered our first shiplift in 1967 and many of our systems have been in continuous use for many decades.

We believe in supporting the local workforce in the areas where our equipment is installed and depended upon for mission-critical use. We establish partnerships to support users locally with maintenance and spare parts. We will provide training opportunities on our systems to the port(s) and local tradesmen and women during the installation and commissioning of each system.

We whole-heartedly believe that offshore wind should be developed in a manner that protects coastal and marine ecosystems as well as improving the lives of the people that live near them. Our systems do not introduce any pollutants to the water unlike floating dry docks, barges, graving docks and wire rope winch systems. Additionally, our systems can all be operated from grid electricity to achieve green port status towards the goal of Net ZERO.

Upon thorough review of AB 525 Volume I: Overview of AB 525 Strategic Plan, we have the following comments humbly submitted for consideration.

Underserved Communities: Overview of Impacts and Strategies

New port infrastructure for building, launching, and maintaining offshore wind turbines can provide valuable workforce skills that are transferrable to multiple industries such as crane operators, carpenters, electricians, technicians, welders, electrical engineers, etc. Maritime technical skills may also attract new business opportunities such as the refit and maintenance of military vessels or megayachts. This could attract high revenue visitors to California who do not normally bring their vessels due to lack of services available in the region. Furthermore, wind farm boat tours represent another tourist attraction that is gathering interest on the east coast and Europe. Additional revenue sources like these will help to support and provide funding for programs benefiting underserved communities.

National Defense: Overview of Impacts and Strategies

Considering the large commercial scale floating wind farms planned for Korea and Japan, one potential benefit of commercial scale wind power off the California coast is to provide a similar training ground for the US Navy to prepare for what they may encounter offshore East Asia.

A Bardex OmniLift™ system integrated into an Offshore Wind port, designed to launch and retrieve Floating Offshore Wind platforms, can be designed to simultaneously support emergency vessel repair and servicing for the US Navy and Military Sealift Command (MSC).

Port Infrastructure

It is unlikely that importing large subcomponents of floating foundations will be economically feasible. Each foundation will weigh between 4,000-6,000 metric tonnes and measure in the range of 80-120m across for the smallest of the turbines being considered. At industrial scale, we will need hundreds of these, so transporting them from Asia will be cost prohibitive and schedule prohibitive. There simply aren't enough heavy lift vessels to do this, never mind the CO_2 emissions from such transportation costs.

Subcomponent manufacturing facilities already exist in California at Mare Island and NASSCO for primary steel. There are many additional local manufacturers that can produce secondary steel components. Companies such as Bardex can produce specialized equipment for specific functions (e.g. mooring). Bardex is headquartered in California and can also provide equipment and solutions that fully support environmental goals. LEAN Manufacturing assembly can be applied with Bardex transfer systems to maximize efficiency for delivery of one or more floating platforms per week.

Currently, for fixed global wind farms, 30% of the cost of energy produced goes to Operations and Maintenance (O&M). To reduce CO_2 emissions and the waste of wind produced energy, vessel repair yards with dry docking facilities should be close to the O&M port, not miles away requiring the vessels to wait in line to be serviced costing a lot of money and wasting a lot of time. For floating OSW, vessels will need to travel further offshore to support turbine servicing. Having the dry dock for vessel repairs miles from the O&M port exacerbates the problem, and this also means more redundant vessels will be needed - driving up O&M costs, LCOE and CO_2 emissions. Having a Bardex lift system in the O&M port provides new industry for the ports, new skills for the local workforce, and the ability to service the port's own vessels. Strategically, the Bardex lift can be designed to accommodate Naval vessels and MSC vessels for emergency servicing. These lifts can also be designed to provide vessel servicing support to other local and regional vessel owners not involved in OSW, improving their turn around times, improving their bottom lines, and bringing new skilled jobs to the port and, more broadly, to the state.

Choosing infrastructure that can support a diverse range of needs provides ports with the means to stabilize cyclic economic trends and help maintain employment numbers.

Learning from California's Fossil Fuel History

The draft document does not appear to address decommissioning at the end of life or extension of life planning for the floating turbine foundations. We should not make the same mistake twice that was made with offshore oil and gas platforms. Those platforms had no realistic end of life planning, for which Californians are still facing the consequences of. The Bardex OmniLift™ can retrieve the floating platforms for these purposes later in life, providing a viable plan for the future as well as value to the ports who will be making these capital investments. As a bonus, the Bardex lift systems can be used for decommissioning oil and gas platforms.

Potential Impacts of Offshore Wind: Advancing Port Development

Only electrified solutions should be considered for port improvements. California does not need any more diesel driven cranes, SPMTs, and other equipment polluting the air while we are supposed to be installing wind generators to get away from these heavy carbon emitters.

In Conclusion

California is home to a diverse range of businesses ready and able to support the state's energy transition through 2030 and beyond. The Bardex OmniLift™ integrated in the Assembly port can launch *and* retrieve the floating assets back onto dry land. Bardex solutions can launch and retrieve a *complete* floater with tower, nacelle and blades installed, saving BILLIONS in CAPEX and OPEX, significantly

reducing project schedule and risk, setting the bar for CO_2 reduction and meeting EPA regulations for every FLOW platform installed.

Investing in a technology/developer agnostic system now will accommodate current technology developments and support newer technologies as they are developed through 2045 and beyond.

The Bardex team appreciates the opportunity to comment on Assembly Bill 525: Draft Strategic Plan for Offshore Wind Development.

Sincerely,

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