



PORT OF OAKLAND CARGO HANDLING EQUIPMENT PLANNING PROVIDES ROAD MAP FOR ZERO-EMISSIONS FUTURE

In March 2023, the Port of Oakland’s Board of Commissioners adopted a revised environmental ordinance that requires its tenants, the shipping and logistics companies operating on the Oakland Harbor, to produce a written inventory of all cargo handling equipment (CHE) used on the Port’s property and develop implementation plans that outline how tenants will convert CHE to zero- or near-zero emissions. All 16 of the Port of Oakland’s tenants completed CHE implementation plans in 2023.

Tenants’ Plans Show Commitment to Battery Electric Equipment

The 16 plans submitted by the Port of Oakland’s tenants cover 574 total pieces of CHE. Notably, of the 339 CHE that has been evaluated for conversion, 246 are slated for battery electric and 80 for hydrogen, with a much smaller number, only 13 or about 2%, planned for battery diesel or diesel exhaust fluid. Only 21 pieces of CHE at the Port of Oakland are currently electric. Plans to increase the number of electric CHE to 246 indicate a large portion of CHE is on track for electrification.

Recommendations for Addressing Remaining Gaps in Tenants’ Plans

Port tenants are still evaluating the conversion of another 235 pieces of CHE. Additionally the Plans lack an assessment of power needs for equipment upgrades. The following sections outline a path forward for the Port and its tenants to address these planning gaps.

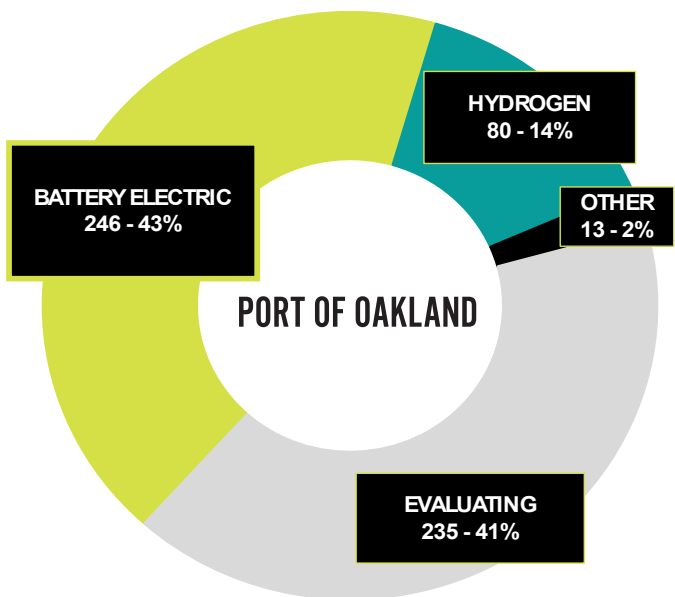
1. Pursue electrification of the equipment still under consideration

Several CHE still being evaluated for conversion at the Port are overwhelmingly planned for electric conversion by other tenants and already have commercially available battery electric options.

Tractors: For example, tenants are collectively planning for 145 battery electric tractors. Given this interest, the 80 tractors still being evaluated should also convert to battery electric in light of the over 50 models currently available.¹

Forklifts and top handlers: According to the Coalition For A Safe Environment’s April 2024 zero-emissions survey, there are also currently 109 models of electric forklifts² and 18 models of electric top handlers³ commercially available. The conversion of the top handlers and forklifts that tenants are still evaluating to battery electric technology is feasible given this commercial availability.

TENANTS’ PLANS FOR ALL EQUIPMENT



¹ See e.g., <https://en.byd.com/truck/terminal-tractor/> (BYD motors has several electric tractor models).

² See e.g., <https://en.byd.com/forklift/ecb16/> (BYD Motors has over 13 electric forklift models).

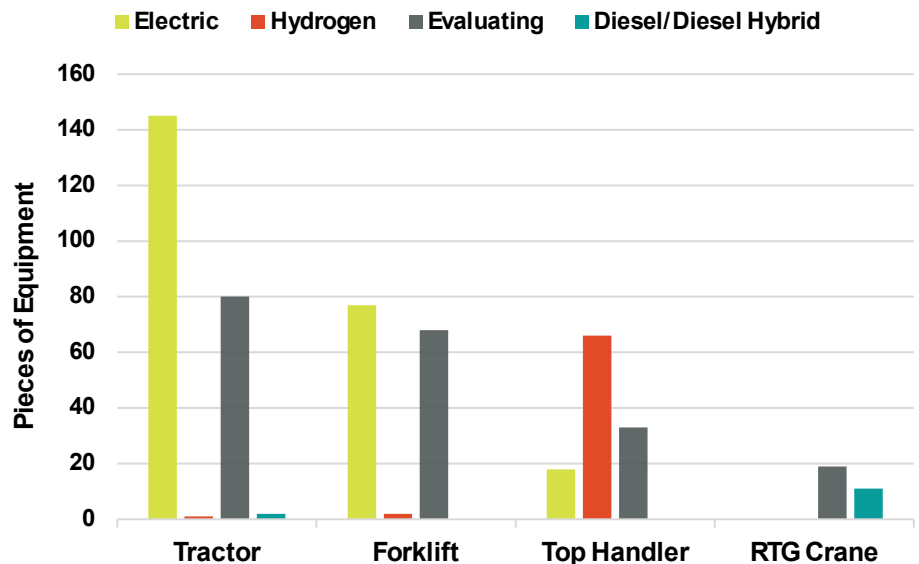
RECOMMENDATIONS FOR TENANT CHE IMPLEMENTATION PLANS

Rubber tire gantry cranes: Similarly, while most tenants are still evaluating conversion of their RTG cranes, electric RTG cranes are also commercially available and already replacing diesel models at other California ports like San Diego,⁴ and some Oakland tenants have previously committed to converting hybrid RTG cranes to electric models.

Given widespread tenant interest and commercial availability of battery electric CHE, proactive electrification infrastructure planning will ensure efficient use of energy resources and a rapid transition away from polluting fuel sources.

2. Reject false and dead-end solutions

The Port and its tenants should exercise caution pursuing false solutions like hydrogen, because hydrogen cannot match the scalability of electricity due to supply constraints. Consensus on battery electric technologies will facilitate the rapid and equitable zero-emissions transition the Port and its frontline communities need. Investing in hydrogen or diesel infrastructure and CHE is counterproductive as the momentum builds toward battery electric alternatives. In fact, the California Air Resources Board is amending existing CHE regulations to set an implementation schedule for zero-emissions technology. Wide tenant interest in battery electric conversions correctly anticipates the inevitable direction of the Port's energy future. This future is reflected in recent federal grant programs via the Biden Administration's Inflation Reduction Act and Bipartisan Infrastructure Law, such as EPA's Clean Ports Program and the Federal Highway Administration's Reduction of Truck Emissions at Port Facilities Program, that have prioritized awards for battery electric equipment.



The results of the first rounds of CHE plans demonstrate the need for the Port to adopt a comprehensive electrification plan that will set long-term and interim zero-emissions goals for the Port. An electrification plan will then position the Port to map out necessary infrastructure upgrades that will facilitate efficient battery electric conversions.

3. Require a comprehensive electrification plan

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4. Align grant applications with tenant CHE plans

The Port should align tenant data and tenants' stated interest in battery electric technology with its grant applications to take better advantage of significant federal and state funding available now. The Port should continue to seek funding for electrification infrastructure and battery electric equipment, rather than invest in alternative fuels that do not align with tenant interests.

5. Create a workforce plan

The Port should create a workforce development plan that can develop skills training workshops for anticipated battery electric equipment and infrastructure. Preemptive planning will ensure the Port can adopt a people-centered approach to electrification that includes long-term, permanent jobs for battery electric equipment operation and maintenance.

³ See e.g., <https://taylorforklifts.com/products/electric-lift-truck> (Taylor Machine Works has 8 top handler models).

⁴ Erik Anderson, "Port unveils new electric cranes, the first in North America," KPBS (July 19, 2023), <https://www.kpbs.org/news/environment/2023/07/19/port-unveils-new-electric-cranes-the-first-in-north-america>.