
California Sustainable Freight Action Plan: Pilot Project Ideas

Bay Area Air Quality Management District

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Project Title: Sail technology

Project Location: Seaports, refineries, San Francisco Bay, California coastal waters

Project Summary:

Sail technologies can be installed on ocean-going vessels to provide power-assistance that will reduce the use of a vessel's propulsion engine(s) and will lower: fuel consumption, operating costs, and vessel emissions. The project will consist of two phases. Phase 1 will be a demonstration of sail technology on cargo vessels in the San Francisco Bay and as they approach and depart the bay. The demonstration phase will collect data on the vessel, fuel consumption and sail operations in the region and will also involve emissions testing to quantify the air quality and greenhouse gas reductions from the technology. Phase 2 would follow a successful demonstration, and would deploy the sail technology on other ocean-going vessels that call at Bay Area ports. A successful deployment of this technology will provide air quality benefits along California's shore, and greenhouse gas reductions from sail use at sea.

Project alignment with goals and components of the Sustainable Freight Action Plan:

- Air quality improvement and toxic risk reduction
- Greenhouse gas reductions
- Increase in the use of renewable energy in the transportation sector
- Reduction in fuel consumption which will improve the competitiveness of vessels utilizing the technology
- Promotion of an advanced technology

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Project Costs:

The cost for the Phase 1 demonstration is estimated to be \$7.5 million. Phase 2 deployment costs could be \$4.5 - \$5 million per unit.

Project Timeline:

The sail technology is currently available and has been tested on smaller ships. The technology could be demonstrated on an ocean-going vessel between 2016 and 2025.

Means for measuring progress toward meeting goals over time:

A successful project will demonstrate the sail technology on ocean-going vessels and quantify the reduction of: fuel-consumption, operating costs, and emissions. The ultimate measure of success for this project will be the number of shippers that deploy the sail technology onto the vessels in their fleet.

Description of the potential roles of the interagency partners:

The Bay Area Air Quality Management District, CARB, and U.S. EPA are potential funding partners for this project. Other coastal air districts could also be approached for funding a portion of the demonstration phase or deployment phase, and also as supporting partners for the demonstration. The U.S. DOT/MARAD, U.S. Coast Guard, American Bureau of Shipping (ABS) would be engaged for technical and regulatory support. An emissions testing contractor would also be contracted to verify emissions data from the demonstration.