

*San Pedro Bay Ports
Technology Advancement Program*

2018 Call for Project Concept Papers

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Port of
LONG BEACH
The Green Port

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INTRODUCTION

The Technology Advancement Program (TAP) was developed in 2007 under the San Pedro Bay Ports Clean Air Action Plan (CAAP)¹, which aimed to significantly reduce the health risks posed by air pollution from the ships, trucks, harbor craft, cargo handling equipment, and rail locomotives that serve the Port of Long Beach and Port of Los Angeles (Ports).

To achieve our CAAP goals, operators of port-related sources will need to implement technologies that reduce criteria pollutants and greenhouse gases (GHG). Thus, the TAP seeks to accelerate the commercial availability of new, clean technologies for port equipment, in order to support the move towards continued reduction of emissions. The TAP is focused on testing and evaluating the performance of emerging technologies through in-service demonstrations. The TAP's goal is to nurture nascent emission-reduction technologies so they can be commercialized and deployed port wide.

In the past, the TAP has typically accepted unsolicited proposals on an ongoing basis; however, in the interest of encouraging additional proposals, making the review and selection process more efficient, and prioritizing use of limited funding, the TAP is now soliciting projects under a new process. This 2018 Call for Projects (CFP) solicits a variety of projects across a wide range of port source categories. At this initial step, short 3-page Concept Papers are requested for the initial screening. Project concepts warranting further consideration will be invited to submit a full proposal² for funding consideration.

1.0 ELIGIBILITY

1.1 Eligible Applicants

Any public or private entity is eligible to submit a Concept Paper. The proposer must include contact information for the project's demonstration partner that operates at one or both of the Ports (i.e., a terminal operator, shipping line, etc.).

¹<http://www.cleanairactionplan.org/>

² Instructions for a full proposal will be provided upon notification by Port staff, but are available in the TAP Guidelines at: <http://www.cleanairactionplan.org/documents/tap-guidelines.pdf>

1.2 Eligible Projects

All TAP projects must meet the following requirements:

- Technology will result in a reduction of air emissions from mobile equipment used in port-related operations;
- Technology has the potential to result in reductions of diesel particulate matter (DPM), nitrogen oxides (NO_x), sulfur oxides (SO_x), or GHG;
- Technology is beyond the conceptual and/or research and development (R&D) phase and already exists as a prototype³. Exceptions for R&D will be made for ships, harbor craft, and locomotives; and
- Equipment must operate in one or both of the Ports for the duration of the demonstration.

Projects may target either new equipment or the retrofit of existing equipment.

The Ports' TAP is focused on clean technologies specifically for maritime related mobile sources that operate in and around ports. The Ports have identified the following mobile source applications for TAP funding priority:

- Zero or near-zero emissions on-road drayage trucks;
- Zero or near-zero emissions cargo-handling equipment;
- Locomotive technologies;
- Harbor craft technologies; and
- Ship technologies.

For the project types listed above, the Ports seek projects that can demonstrate the following and will give preference accordingly:

- **Trucks:** Zero emissions (no tailpipe emissions and 100% diesel fuel displacement) or near-zero emissions (for the purposes of this solicitation, this is considered to be 0.02 g/bhp-hr NO_x or better); for non-certified near-zero-emission trucks, preference will be given to hybrid vehicles with capacity to operate in all zero-emissions mode.
- **Cargo-handling equipment:** Zero emissions (no tailpipe emissions and 100% diesel fuel displacement) or hybrids and near-zero emissions (for the purposes of this solicitation, this is considered to be 0.02 g/bhp-hr NO_x or the off-road equivalent, or better); for near-zero emissions equipment, preference will be given to hybrid equipment with capacity to operate at least some of the time in zero-emissions mode.

³ A prototype is a fully designed and constructed piece of equipment that is not yet commercially available. A technology may be considered a prototype if it exists at a smaller scale than what is required by port operations or in a similar application.

- **Locomotives:** Zero emissions (no tailpipe emissions and 100% diesel fuel displacement) or hybrid and near-zero emissions engine technologies or alternative fuel.

In 2017, the Ports released two separate RFPs for at-berth technologies for unregulated ships and harbor craft technologies; however, proposals for both ships and harbor craft will still be considered under the 2018 CFP as long as the following are met:

- **Ships:** Alternative fuel and/or engine technologies resulting in NO_x emission levels *better than* Tier 3, or, technologies that can be applied to existing ships (i.e., retrofit) to achieve Tier 3 emission levels or better. Additionally, projects that demonstrate optimized fuel efficiency.
- **Harbor craft:** Hybrid, alternative fuel, and/or engine technologies resulting in NO_x emission levels better than Tier 4 standards, or, technologies that can be applied to existing harbor craft (i.e., retrofit) to achieve Tier 3 or Tier 4 emission levels.

The following project types are not eligible for TAP funding:

- Technologies that are not applicable to port-related mobile equipment;
- Fuel additives;
- Technologies in the conceptual or R&D phase (with the exception of ships, harbor craft, and locomotives);
- Energy management or energy demand reduction technologies⁴; and
- Transport Refrigeration Unit (TRU) technologies.

1.3 Eligible Costs and Match Funding

The following costs are eligible for TAP funding:

- Design and engineering;
- Materials and equipment;
- Construction;
- Systems integration;
- Data tracking equipment and software;
- Emissions testing;
- Fueling infrastructure to support the demonstration;
- In-use demonstration costs, including staff time to track and report data; and
- Project management not to exceed 10% of the total project cost.

⁴ Applicants with energy-related projects can apply to the Port of Long Beach's Energy Technology Advancement Program (ETAP). More information can be found at www.polb.com/energyisland.

The following costs are not eligible for TAP funds:

- Fuel and other consumables;
- Labor to operate the equipment or vehicle during the course of normal business operations;
- Administrative overhead, including office space, utilities, insurance, personnel not directly related to project implementation;
- Travel; and
- Marketing or promotional costs.

Match funding is a TAP requirement. Up to 50% of a project's costs may be funded by the TAP. Of the technology provider's minimum 50% cost share, a minimum of 10% must be in the form of a direct cash contribution to the project. All costs, including match funding, will be tracked and documented in accordance with contract requirements.

Although TAP funds cannot be used to pay for labor to operate the equipment or vehicle in the course of normal business operations or fuels and other consumables, these costs can be used to meet match funding requirements in the form of in-kind contributions to the project.

2.0 CONCEPT PAPER SUBMITTAL PROCESS

Proposers should be aware that all documents submitted to the Ports are considered public record.

2.1 Concept Paper

Proposers must fill out the 2018 Call for Projects cover sheet in Appendix A, which requests basic summary information about the project. Additionally, proposers must attach a 2-page project description to the cover sheet to create a 3-page Concept Paper. The Concept Paper should include the following details:

- Technology (scientific explanation of how it works and its current use in other applications, if applicable);
- Description of the proposed demonstration, including duration, objectives, project partners, and cost estimates;
- Projected emission reductions and the basis for those projections (for the project itself, not an extrapolation to larger scale implementation); and
- Plans for agency approval (i.e., verification or certification) and commercialization, if applicable.

2.2 Concept Paper Submittal Instructions

Submit the Concept Paper via email to the following Port staff by COB Tuesday, May 22, 2018:

Teresa Pisano
Port of Los Angeles
tpisano@portla.org

and

Rose Siengsubcharti
Port of Long Beach
rose.sieng@polb.com

In advance of submittal, proposers are encouraged to review the documents listed in Appendix B, which include testing protocols and duty cycle reports, as applicable.

2.2 Initial Screening

Port staff will perform an initial screening of each Concept Paper, based on the following questions:

- Does the proposed project meet all eligibility criteria, including commitment of a port partner to participate in the project?
- Is the technology feasible in a port-related environment?
- Does the technology have significant potential benefits relative to the Ports' clean-air goals, specifically, does the technology address a sizeable portion of the fleet or show promise for significant emission reductions?
- Has the proposer adequately justified the funding request (i.e., is the request reasonable in terms of the ratio of port to project funds, and/or does the project cost match the scale of potential benefits/applicability)?

The Ports will perform this screening in consultation with the Ports' TAP Advisory Committee (TAP AC), which is comprised of representatives from each Port, the United States Environmental Protection Agency, the California Air Resources Board, the California Energy Commission, and the South Coast Air Quality Management District. The TAP AC serves in an advisory role to the Ports for screening, reviewing, and recommending projects that merit further evaluation and development.

2.3 Next Steps

Upon completion of this initial screening, the Ports may take one of the following actions on the proposal:

- Reject the project Concept Paper because it did not pass the initial screening review;
- Request additional information;
- Request submittal of a full proposal; and
- Issue an RFP for projects related to the Concept Paper topic.

Notification will be made via email for each concept paper received.

2.4 Full Proposal

Project concepts warranting further consideration will be invited to submit a full proposal. Instructions for a full proposal will be provided upon notification by Port staff, but are available in the TAP Guidelines at:

<http://www.cleanairactionplan.org/documents/tap-guidelines.pdf>

APPENDIX A – 2018 CALL FOR PROJECTS COVER SHEET

Project Concept Title:

Company Name, primary contact, address, phone and email:

Demonstration Partner Company Name, primary contact, address, phone and email:

Brief Summary of Project Concept:

Project Concept Cost: _____

TAP Funding Request: _____

Call for Projects Due Date: **Tuesday, May 22, 2018**

Submittal Date: _____

Attach a 2-page project description that includes the following information:

- Technology description (how it works and its current use in other applications, if applicable)
- Description of the proposed project/demonstration, including duration, objectives, project partners, and cost estimates
- Projected emission reductions and the basis for those projections (for the project itself, not an extrapolation to larger scale implementation)
- Plans for agency approval (i.e., verification or certification) and commercialization, if applicable

APPENDIX B – RESOURCES

San Pedro Bay Ports Technology Advancement Program

<http://www.cleanairactionplan.org/technology-advancement-program/>

San Pedro Bay Ports Fleet

Port of Long Beach: *<http://www.polb.com/environment/air/emissions.asp>*

Port of Los Angeles: *https://www.portoflosangeles.org/environment/studies_reports.asp*

Duty Cycle Reports

Drayage Trucks

<http://www.cleanairactionplan.org/documents/drayage-truck-chassis-dynamometer-test-cycle-final-report-9-30-11.pdf>

<http://www.cleanairactionplan.org/documents/hdv-drayage-truck-duty-cycle-final-report-revised-3-10-11-with-modal-data.pdf>

Yard Trucks

<http://www.cleanairactionplan.org/documents/development-of-a-yard-hostler-activity-cycle-final-report.pdf>

<http://www.cleanairactionplan.org/documents/development-of-a-yard-hostler-activity-cycle-2-summary-report.pdf>

TAP Final Reports

<http://www.cleanairactionplan.org/technology-advancement-program/completed-projects/>

Test Protocols

Drayage Trucks

<http://www.cleanairactionplan.org/documents/san-pedro-bay-ports-zero-near-zero-emissions-drayage-truck-testing-demonstration-guidelines.pdf>

Yard Trucks

<http://www.cleanairactionplan.org/documents/yard-tractor-test-protocol-final-draft.pdf>

Emission Reduction Calculations

Use the methodology for the Carl Moyer Program:

https://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_appc_20151218.pdf