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# Case Study of the San Pedro Bay Ports' Clean Air Action Plan (CAAP)

## TECHNOLOGIES AND PRACTICES: DEVELOPMENT AND DEPLOYMENT

### About the Case Study

The Clean Air Action Plan (CAAP) at the Ports of Los Angeles and Long Beach, collectively known as the San Pedro Bay Ports (SPBP), is a groundbreaking program. The *Case Study of the San Pedro Bay Ports' Clean Air Action Plan 2006-2018* provides a summary of the CAAP's background and history followed by three focused discussions on environmental justice and levers of community influence; technologies and practices for development and deployment; and the 2017 Clean Truck Program. Best practices and lessons learned presented in the case study include the importance of community-port collaboration; conducting emission inventories, setting quantified emissions targets, and supporting technical innovations; and developing partnerships with industry and government.



### Stimulating Technology Advancements

The San Pedro Bay Ports have successfully spurred the development of new clean air technologies through local funds/leveraged resources (i.e., through the Technology Advancement Program [TAP]), demonstrations, and—most recently—formal technology assessments. Ports and communities, as well as other levels of government, have leveraged civic pride by celebrating local, homegrown clean technology developers and manufacturers, recalling Southern California's industrial history and reinforcing the idea that economic development and environmental protection are compatible rather than mutually exclusive. Currently, the SPBP and partner agencies are supporting the development and deployment of both low-nitrogen oxide (low-NOx) and zero-emission equipment.

#### Technology Advancement Program (TAP)

The TAP evaluates, demonstrates, pilots, and incorporates new technologies into the suite of existing CAAP standards and control measures. This initiative builds on the successes and synergies among the Ports and their tenants, federal and state government agencies, and other stakeholders. From 2007-2017, the Ports committed almost \$15 million to over 30 projects, many of which have led to commercialized technologies now used throughout the SPBP complex.

### The Challenge to Achieving Zero Emissions

Clean air technology choice is a complex issue in Southern California port and regional air quality contexts, with strongly held views on all sides. The major debate focuses on balancing near-term emission reductions by implementing low-NOx natural gas or diesel technologies with accelerating the transition to zero-emission technologies to achieve the Ports' zero-emission goals. Community members point out that committing to natural gas fuels, even for the short term, would require preserving and expanding fossil fuel infrastructure, with possible impacts that include increased GHG emissions and health effects on nearby communities. In the 2017 CAAP Update and subsequent technology assessments, the Ports note that if immediately reducing air emissions is a priority, then low-NOx technologies are necessary for now, as few zero-emission technologies are commercially available.

The full case study is on the [EPA Ports Initiative website](#).  
For more information on the case study, contact [talkaboutports@epa.gov](mailto:talkaboutports@epa.gov).

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The specific pathway to zero emissions in Southern California ports is still unclear, but the technological and policy dividends are apparent. With ports and numerous other agencies and organizations devoting financial and human resources to this problem, technology development, demonstration, and deployment is proceeding at an accelerated (if somewhat uneven and unpredictable) pace. Ports and communities outside of this region may be able to take advantage of this accelerated development to “leapfrog” to cleaner technologies based on the work done in Los Angeles and Long Beach, with the additional option of modeling policy structures after those at the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD).

### Lessons Learned for Ports

Ports can use several strategies to support the development and deployment of low- and zero-emissions technology.

#### Ports can:

- Identify interim or alternative air pollution mitigation technologies that may provide more flexibility in planning permanent technology upgrades.
- Work with industry leaders and equipment manufacturers to develop uniform specifications so that consistent infrastructure built by various manufacturers can be installed throughout the port complex.
- Build partnerships with new technology developers and equipment manufacturers along with local utility companies and regulators.
- In addition to—or instead of—directly providing financial resources, work with tenants to host or provide space or other in-kind resources for technology demonstrations.

### Lessons Learned for Communities

Community advocates can also play a key role in spurring technology advancements and holding ports accountable for delivering on their clean air promises.

#### Communities can:

- Monitor and publicize the state of various zero-emission technologies to ports, port industries, and policymakers to contest assertions that technologies are not commercially available or not yet feasible.
- Push port and agency staff to consider alternative pathways to zero-emission adoption even if those pathways diverge from current operational practices.

### Additional Resources

[EPA's Ports Initiative](#) provides technical resources to help ports assess reduction strategies, including the *Shore Power Technology Assessment at U.S. Ports*, the *National Port Strategy Assessment: Reducing Air Pollution and Greenhouse Gases at U.S. Ports*, and findings from the *EPA and Port Everglades Partnership: Emission Inventories and Reduction Strategies*. See [Technical Resources for Ports](#) for these documents.