



# Getting Plugged In!

## Emissions From Docked Ships Would Disappear

**P**eople living and working in and around the Port of Long Beach will soon be able to breathe a little easier.

The Port has begun a historic collaboration with a subsidiary of energy giant BP that will allow oil tankers to shut down their main engines, plug into dockside electricity and “cold-iron” in Long Beach. This will eliminate potentially harmful diesel exhaust emissions from these vehicles while they are berthed.

Diesel emissions from vessels at dock have been identified as a significant contributor to local air quality problems and the team-up with BP West Coast Products LLC is one part of a much larger effort by the Port to address such impacts on the surrounding community.

### Green Port

The five members of the Long Beach Board of Harbor Commissioners have made clear that they want the Port to be as environmentally friendly as possible.

“It is in the best interest of the community, the best interest of international trade and the best interest of our continued success, for the Port of Long Beach to be as “green” as possible,” said Harbor Commissioner Mario Cordero.

In August, hard on the heels of a Port study that said cold-ironing would make sense for certain vessels, Harbor Commissioners voted unanimously to launch

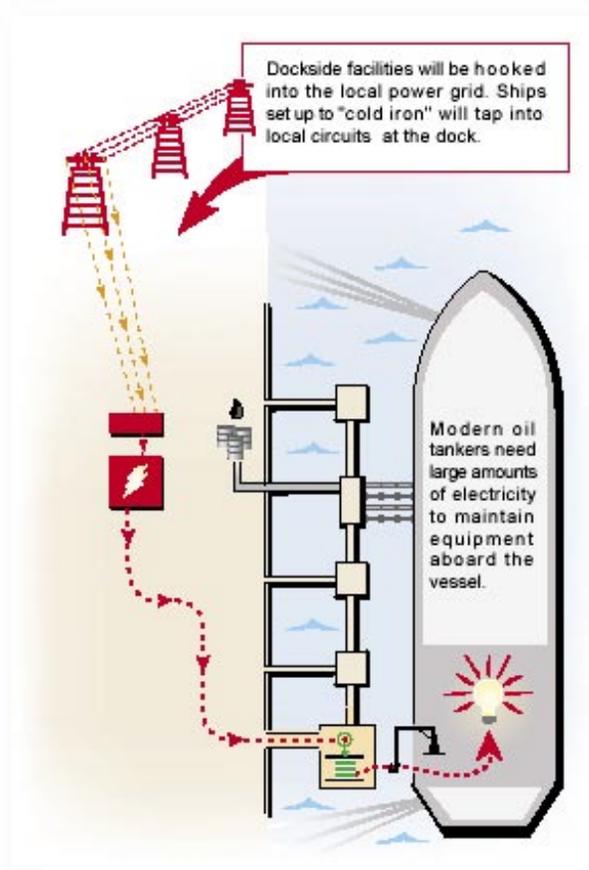
the cold-ironing program at BP’s Berth T121 oil terminal on Terminal Island. Completion of the cold-ironing facility, the first of its kind in the Port, is set for late 2006.

“The community has asked us to reduce pollution and address air quality without slowing down commerce or eliminating transportation-related jobs,” said John R. Calhoun, president of the Board of Harbor Commissioners. “It is not an easy task, but with help from BP, we are answering the call.”

### Major Investments

The board has earmarked \$2.5 million for development and construction of the cold-ironing facilities at Berth T121. BP, which leases the terminal from the Port, will retrofit two tankers at an estimated cost of \$2 million (\$1 million for each tanker).

While at berth, vessels need power for refrigeration, lighting, pumping and other ship functions. Typically, this power comes from running auxiliary diesel and steam engines or main engines. According to the South Coast Air Quality Management District (AQMD), approximately one-third



(Left) A tanker docks at the oil terminal where the Port of Long Beach and BP West Coast Products are investing in a system that will allow vessels to use shore-side electricity.

of all vessel emissions in the region occur while ships are at berth.

“Plugging in our ships will cost us more per visit, but the increased costs are relatively small when you consider the environmental benefits from the project,” said Tim Scruggs, BP Carson business unit leader/refinery manager.

A Port-commissioned 2004 study found that frequent visits and high electrical demands by cargo vessels are necessary to make cold-ironing cost-effective. BP determined that two of its vessels under construction would meet the cost-effective threshold, and that its Long Beach facility is one of the few that has adequate existing electrical power to make cold-ironing possible.

The Port will construct all landside improvements associated with bringing the power from an existing electrical substation on the BP terminal to the wharf, as well as providing the gear needed to connect power cables to the vessels. During construction, the Port will ensure that Berth T121 remains functional. BP will be responsible for the long-term operation and maintenance, future improvements at the berth, and the cost of the shore-side power.

## Healthy Harbor

The BP project is one component of the Port’s Healthy Harbor Long Beach environmental initiative. Launched in 2003, the comprehensive initiative aims to improve air quality, water quality, and wildlife habitat in the harbor area.

Since regulatory authority over the environment rests largely with other local, state, federal and international agencies, the Port staff is exploring voluntary and/or incentive programs as a means of reducing emissions from vehicles, trains and vessels within the Port of Long Beach – programs such as the BP agreement.

“This environmental partnership with BP will be closely monitored by the shipping industry worldwide as the bellwether of where this industry and the future of international trade is inevitably headed,” said Richard D. Steinke, executive director of the Port of Long Beach.



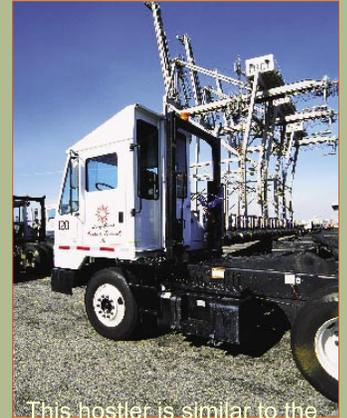
The Port of Long Beach is investing \$2.5 million to bring electricity from an existing substation so that vessels berthed at BP’s T121 terminal can plug into dockside power.

# Port Testing LNG Trucks

Although hardly the cleanest fuel, diesel is cheap, powerful and commonplace in industrial settings. What fuel can replace diesel in the demanding conditions of a marine terminal? Can clean-burning liquefied natural gas (LNG) substitute for diesel?

The Port of Long Beach has teamed up with an LNG importer, a major marine terminal operator, and a leading environmental advocacy group to test the effectiveness of port equipment powered by LNG.

With the Port and LNG promoter Sound Energy Solutions splitting \$600,000 in costs, the six-month demonstration project will study three first-of-their-kind “yard hostlers” designed specifically to operate on LNG. Hostlers are small “off-road” trucks used to ferry containers within a container cargo terminal. The project will monitor emissions from the LNG hostlers during daily operations at Long Beach Container Terminal’s Pier F facility. Standard diesel hostlers will also be monitored.



This hostler is similar to the kind being custom built for the Port of Long Beach’s LNG pilot project at LBCT.

## Emission Reductions

The nearly 600 diesel-powered hostlers used at Port marine terminals – together with ships and “on-road” trucks — are a major source of air emissions. The Port provided more than \$1 million for a recent exhaust retrofit program that added emission reduction equipment to nearly every Port hostler. The Port also has encouraged some of its customers to use a cleaner-burning diesel fuel in their terminal equipment. Diesel engines using the alternative fuel and the exhaust reduction devices produce 50 percent less particulate matter and 20 percent less nitrogen oxides, which contribute to smog.

## Testing Needed

In some situations LNG burns much cleaner than diesel, but the fuel has not been used in high-load marine terminal equipment before.

The three LNG hostlers are set to be delivered in mid-2005 and the project will run through the end of the year. A final report will evaluate the LNG hostlers and the feasibility of using the equipment elsewhere.

The LNG hostler project is one of more than a dozen ongoing components of the Port’s comprehensive Healthy Harbor environmental enhancement initiative that was inaugurated in March 2003.