Site: The Port of Long Beach worked in partnership with Carnival Cruise Lines to make OPS a reality.

System Design: OPS was commissioned in 2011 using a design very similar to that in Seattle. The system can provide both 6.6kV and 11kV at 60Hz using a dual voltage transformer to step down the high voltage local utility. Additionally, this system is equipped with a Cable Positioning Device (CPD) with an extended boom option, allowing for greater flexibility to support differing cruise ship configurations.

Cost: OPS became a possibility in Long Beach in large part because of the Carl Moyer Program, which provided 50% of the overall costs associate with the procurement and installation. The total cost of the system was approximately $8M.

Impact: The system in Long Beach was the most frequently used cruise ship shore power system in the world in 2012, with just under 100 connections documented, accounting for roughly 800 hours of connection time and approximately 3.6M kWH used.

Solution Provider: Cochran Marine

Shore power system lineup in Long Beach, CA.

Shore power system lineup in Long Beach, CA.

Site: San Francisco

System Design: This was the first system installed and commissioned in the state of California. The dual voltage system (providing both 11kV and 6.6kV power) is equipped with two fixed Cable Positioning Devices (CPD) that can accommodate separate cruise ship berthing locations.

Cost: The $5.2 million San Francisco shore power project was a collaborative effort by the Port of San Francisco ($1 million), San Francisco Public Utilities Commission ($1.3 million), the Bay Area Air Quality Management District ($1.9 million), the Environmental Protection Agency ($1 million), Holland America Line and Princess Cruises.

Impact: Currently the system is not receiving calls due to preparation for America's Cup which is being held in San Francisco in 2013

Solution Provider: Cochran Marine

Site: Vancouver

System Design: Commissioned in 2009

Cost: Thanks to the cooperative efforts to plan and fund the $9M investment, Port Metro Vancouver became the 1st port in Canada to offer shore power to cruise ships, and 3rd in the world. Other parties paramount to the project were Government of Canada, the British Columbia Ministry of Transportation and Infrastructure, Holland America Line, Princess Cruises, and BC Hydro.

Impact: The second full year of operations of the award-winning shore power installation at Canada Place was the 2011 season. During this season, 35 vessels connected to the Port's shore power facilities, reducing greenhouse gas emissions by 1,318 tonnes. The number of connections continues to climb, with 63 in 2012, and 88 scheduled for 2013.

The Canada Place Shore Power Installation was awarded the Association of Professional Engineers and Geoscientists of BC's (APEGBC) 2010 Environmental Award of Excellence.

Solution Provider: Cochran Marine

Links: http://portmetrovancouver.com/en/about/cruiseandtourism/shorepower.aspx


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Site: San Diego

System Design: Commissioned in 2010

Cost: The total investment came to $7.1M, of which $2.4M was covered by the Carl Moyer Program. Other parties paramount to the project were Government of Canada, the British Columbia Ministry of Transportation and Infrastructure, Holland America Line, Princess Cruises, and BC Hydro.

Impact: In the first 4 months of operation, Holland America's Oosterdam connected 22 times resulting in a reduction of 448 tons of greenhouse gases and 22 tons of pollutants. Each time the ship connects, it is equivalent to taking 400 cars of the rode for one day in pollution reduction and 1,300 cars off the road for greenhouse gases.

Solution Provider: Cochran Marine

Links: http://www.portofsandiego.org/environment/2552-data-shows-shore-power-system-reducing-tons-of-air-pollutants.html