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Clean Energy
North America's leader in clean transportation

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Commander
U.S. Army Corps of Engineers
Los Angeles District
c/o Dr. Spencer D. MacNeil
P.O. Box 532711
Los Angeles, California 90053-2325

Dr. Ralph Appy
Director Environmental Management Division
Port of Los Angeles
425 South Palos Verdes Street
San Pedro, CA 90731

Re: Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Berth 136-147 (TRAPAC) Container Terminal Project

Dear Commander and Dr. Appy:

Clean Energy applauds the leadership efforts of TraPac to address air quality impacts of the proposed Container Terminal Project. As noted in the recently released 2005 emissions inventory for the Port of Los Angeles (POLA), air quality improvements are being achieved. However, there are still challenges ahead in achieving healthy air.

The purpose of our comments are to draw your attention to the role that natural gas technology can play in improving air quality at POLA and specifically with respect to the Container Terminal Project. Natural gas technology offers a uniquely beneficial solution because no other fuel has all of these benefits:

- Reduces toxic diesel emissions in Port communities
- Reduces emissions of NOx by 33% to over 90%
- Provides a greenhouse gas (GHG) benefit of up to 20%
- Diversifies the fuel supply
- Supports energy independence with a renewable fuel that is 97% domestic, and is moving rapidly into renewable biogas sources

Natural gas engines have already achieved significant emission reduction numbers, and these trends will continue into the future. One natural gas engine, the Cummins Westport ISL-G, is the first and only engine to meet the 2010 emission standards – 3 years ahead of deadlines. In addition to eliminating or greatly reducing diesel particulate matter, natural gas engines have much lower NOx ratings compared to new diesel engines:

	On-Road Engines			
	2007-09 On-Road Diesel	2007 Westport HPDI Natural Gas	2008 Planned Westport HPDI Natural Gas	2007 Cummins Westport ISL-G Natural Gas
NOx (g/bhp-hr)	Target is 1.2. Cap is 2.0 under the EPA Phase-In Standard, and 4.0 under the Phase-Out Standard	0.8	0.6	0.2
Reduction Compared to the Phase-In Standard	0	33% to 60%	50% to 70%	83% to 90%

Natural gas fuel has many applications in port operations such as trucks and vehicles, cargo handling equipment, marine vessels, and cold ironing. Our comments on specific mitigation measures are provided below.

MM AQ-6 Alternative Marine Power:
AQ-6 involves using shore power from the electric grid to supply ship power requirements while at berth. The phase-in schedule extends to 2020. Shore power provided by the electric grid may eventually power all of the ships while at berth. However, there is another option that can play either a transitional role or provide a long-term solution for certain situations. Shore power from a natural gas fueled mobile generator has been shown to accomplish significant emissions reductions. The mobile generator system offers a flexible solution that can be deployed today with no infrastructure cost in electrifying the berth. Ship modifications to connect to the generator have only a modest cost. This solution can accelerate the benefits of shore power.

Testing was performed in July of this year on a container ship to demonstrate system functionality and emissions reductions. The system performed flawlessly and provided continuous reliable power to the ship for the duration of the test. Emissions reductions from the test compared to ship emissions were reported as follows (http://www.cleanairmarinepower.com/about_us):

- NOx reduced by 90%
- SOx totally eliminated
- PM_{10} eliminated by > 99%
- CO_2 reduced by 57%
- CO was reduced by 35%

There are two specific potential applications to the Container Terminal Project:

- **Transitional Solution**: Natural gas fueled mobile generators can be immediately deployed for early emissions reductions. The generators can "fill the gap" in powering ships while berth electrification and ship modifications are performed. Over time, as berths are electrified, ships will transition to using shore power from the utility grid.

- **Long-Term Solution**: There could be situations in which shore power from the utility grid will not be feasible. In these cases, natural gas generators can solve the problem by providing the flexible, low cost solution for emissions reductions.

MM AQ -7 & 8 Cargo Handling Equipment: The mitigation measure calls for using either alternative fueled or diesel fueled yard tractors. It is important to know that natural gas engines are significantly cleaner than their diesel counterpart. In fact, the Cummins Westport ISL-G engine is the first and only engine to achieve compliance with the 2010 standard – 3 years ahead of schedule. Deploying a fleet of natural gas yard tractors will completely eliminate diesel particulate matter, and significantly reduce NOx and greenhouse gases. NOx emissions are reduced by **over 90%** compared to a new 2007 on-road diesel engine:

On-Road Engines	NOx (g/bhp-hr)
2007 Cummins Westport ISL-G, natural gas	0.2
2007 Cummins ISB, diesel	2.2

Deploying natural gas yard hostlers today with the ISL-G engine will accelerate the benefits of the 2010 standards – even with the assumption that diesel engines will actually be able to comply with the 2010 standards. It should be noted that the 2010 standards allow engines up to 0.5 NOx by using fleet averaging and emission credits. With the natural gas engine, you know exactly what you are getting – low emissions today.

MM AQ-9 Heavy Duty Trucks: The mitigation measure calls for progressive deployment of 2007 diesel trucks. Under the EPA phase-in rules, a 2007 through 2009 diesel truck can have NOx emissions up to 2.0 g/bhp-hr with a target level of 1.2 g/bhp-hr. However, natural gas trucks have significant emission reductions benefits:

2007-09 Diesel, NOx Cap	2.0 g/bhp-hr
2007-09 Diesel, NOx Target	1.2
2007 Westport HPDI Natural Gas, NOx	0.8
2008 Westport HPDI Natural Gas, NOx (planned)	0.6

Natural gas engines reduce NOx by between 33% and 70% compared to the standards. Diesel particulate matter is reduced by 95% and greenhouse gas is reduced by up to 20%.

The 2005 emissions inventory shows that NOx emissions from trucks have increased by 36% at the Port of Los Angeles since 2001 and by 45% at the Port of Long Beach since 2002. While progress has been made in reducing emissions from other port operations, emissions from trucks are growing with container volume. The ports are projected to triple their container shipping volume. Natural gas engines can play a key role in reducing diesel truck emissions while goods movement increases.

Summary: Clean Energy appreciates the opportunity to submit comments and again applauds TraPac's leadership efforts to improve air quality. Clean Energy is willing to do our part to help implement clean air solutions. Should natural gas technology play a role in the project, Clean Energy is prepared to provide the natural gas fuel infrastructure. With air pollution at critical levels in the port area, we urge decision makers to seriously consider the air quality benefits offered by domestic natural gas fuel.

Sincerely,

Greg Roche
Director, Business Development

CC:
Port of Los Angeles Harbor Commissioners
Geraldine Knatz, Executive Director, Port of Los Angeles