CENTER *for* BIOLOGICAL DIVERSITY

VIA OVERNIGHT MAIL w/ATTACHMENTS

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

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

Re: Comments on FEIR/S for Berths 136-149 Container Terminal Expansion Project, State Clearinghouse No. 2003061153

November 27, 2007

Dear Dr. Appy:

The Center for Biological Diversity (the "Center") submits these comments in response to the Final Environmental Impact Report/Environmental Impact Statement ("FEIR/S") for the Berths 136-149 Container Terminal Expansion Project ("Project"), State Clearinghouse No. 2003061153. The Center is a non-profit organization with offices in San Francisco, Los Angeles, and Joshua Tree, California, Phoenix and Tucson, Arizona, Silver City, New Mexico, Portland, Oregon, and Washington, D.C. The Center is a national membership organization with over 35,000 members in the United States, including the City of Los Angeles. The Center's mission is to ensure the preservation, protection, and restoration of biodiversity, native species, ecosystems, public lands and waters, and public health. Because climate change from society's production of greenhouse gases is one of the foremost threats to the earth's biodiversity, the environment, and public health, the Center's Climate, Air, and Energy Program works to reduce greenhouse gas emissions in order to protect these resources. The Center has advocated in local, state, and federal forums for the reduction of greenhouse gas emissions. The Center has petitioned to have some of the first species to be threatened by global warming listed under the U.S. Endangered Species Act, including the polar bear, staghorn and elkhorn corals in the Caribbean, twelve of the world's penguin species, the American pika, and the Kittlitz's murrelet, a small seabird that feeds at the base of tidewater glaciers in Alaska. These species will not survive unless the United States substantially reduces its greenhouse gas emissions. The Center submits these comments on behalf of itself and its adversely affected members.

We are encouraged that the Port considered the comments submitted by the Center and others and has put in place some additional mitigation measures to reduce greenhouse gas emissions. We do however have some remaining concerns regarding the Port's response to

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issues raised in our comments as well as additional issues, such as the potentially significant impact of black carbon on global warming, which the FEIR/S does not address.

I. Every Effort Must Be Made to Fully Mitigate Greenhouse Gas Emissions From Marine Vessels, Which Are a Significant Contributor to Global Warming

The FEIR/S properly acknowledges that California is predicted to experience severe impacts from global warming, including loss of 30-90% of the Sierra snowpack, and 6-20 inches of sea level rise. It is abundantly clear that anthropogenic emissions of carbon dioxide and other greenhouse gases are the principal driver of global warming on the planet. Indeed, on November 17, 2007, the International Panel on Climate Change ("IPCC") released its synthesis report detailing the present and projected future impacts of climate change in forceful and specific terms.[1] To minimize the catastrophic impacts posed by global warming, government at all levels must ensure that greenhouse gas emissions and other warming agents are drastically reduced from all sectors of the economy. Because marine vessels emit a significant share of the pollutants causing global climate change,[2] it is critical that all feasible steps be taken to reduce emissions from the shipping sector.

1. Carbon Dioxide

Taken together, carbon dioxide emissions from international shipping exceed the greenhouse gas emissions of most nations listed in the Kyoto Protocol as Annex I countries.[3] Only six countries in the world emit more carbon dioxide than the world's fleet of marine vessels: the United States, China, Russia, India, Japan and Germany.[4] Ocean-going ships are responsible for moving 80 percent of all goods shipped into and out of the United States.[5] The sheer number of these ships, coupled with operating practices that use fuel inefficiently and poor government oversight, results in carbon dioxide emissions estimated to be between 600 to 900 million metric tons per year (546 to 818 million short tons per year),[6] equivalent to the emissions from roughly 130 to 195 million cars for one year.[7] Carbon dioxide emissions from shipping

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[1] IPCC, Summary for Policymakers for the Synthesis Report of the IPCC Fourth Assessment Report (Draft) (Nov. 16, 2007), *available at* http://www.ipcc.ch/press/index.htm.

[2] Veronika Eyring and Jim Corbett, *Comparing Fuel Consumption, Carbon Dioxide and Other Emissions from International Shipping and Aircraft: A Summary of Recent Research Findings*, DLR-Institute of Atmospheric Physics, (2007), *available at* http://www.pa.op.dlr.de/SeaKLIM/Fuel_Emissions_International_Shipping.html.

[3] International Council on Clean Transportation (ICCT) (Mar. 2007) *Air Pollution and Greenhouse Gas Emissions from Ocean-Going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth* at 34, *available at* http://www.theicct.org/documents/MarineReport_Final_Web.pdf [hereinafter "ICCT"] (submitted with comments on DEIR/S).

[4] United Nations, Department of Economic and Social Affairs, Statistics Division, *Carbon Dioxide Emissions, Thousands of Metric Tons, available at* http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=749 (August 1, 2007) based on 2004 data from Carbon Dioxide Information Analysis Center, *available at* http://cdiac.ornl.gov/trends/emis/tre_tp20.htm.

[5] ICCT, *supra* note 3 at 7 (figure given is by weight of cargo).

[6] Eyring and Corbett, *supra* note 2.

[7] Calculated at http://www.usctcgateway.net with data from EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005*, (2007), at 1-2, *available at* http://www.epa.gov/climatechange/emissions/downloads06/07CR.pdf.

worldwide are estimated to make up almost three percent of global greenhouse gas emissions.[8] In fact, a single container ship emits more pollution than 2,000 diesel trucks.[9]

Of even greater concern is the projected growth in carbon dioxide emissions from shipping. Over the last three decades, the shipping industry has grown by an average of five percent per year.[10] By 2050, one study predicts total carbon dioxide emissions from ships will grow to about 1700 million metric tons per year (1874 million short tons per year), roughly double their present levels.[11] However, this study "makes some judicious simplifying assumptions that tend to underestimate rather than overestimate fuel consumption and emission levels."[12] Thus, the International Maritime Organization may present a more realistic picture of future carbon dioxide emissions from shipping in projecting a 72 percent increase between 2000 and 2020, assuming a three percent annual rate of growth.[13] Even the IMO study may be too conservative. If fuel consumption increases at the rate forecast by current studies, shipping emissions may double 2002 levels by 2020 and triple them by 2030.[14]

Even when only U.S. emissions are considered, ships account for a significant portion of total carbon dioxide. For example, based on national fuel consumption statistics, ships in the United States emitted nearly 100 million metric tons (110 million short tons) of carbon dioxide in 2005.[15] In all, marine engines contributed about five percent of the total U.S. carbon dioxide emissions from transportation-related fossil fuel combustion.[16]

2. Nitrogen Oxide

Ships are beyond a doubt a significant source of nitrogen oxide emissions. Ships contribute as much as 30 percent of the world's nitrogen oxide emissions, an estimated 27.8 million tons per year.[17] In the United States, the EPA has already determined that marine engines and other nonroad engines and vehicles are a "major source" of nitrogen oxides. 59 Fed. Reg. 31,306, 31,307 (June 17, 1994). Recent EPA estimates show nitrogen oxide emissions

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[8] Eyring and Corbett, *supra* note 2.

[9] Sean Poltrack. *The Maritime Industry and Our Environment: The Delicate Balance of Economic and Environmental Concerns, Globally, Nationally, and Within the Port of Baltimore*, (2000), 8 U. BALT. J. ENVTL. L., 51, 64.

[10] As measured by the increase in metric ton-kilometers of cargo transported. ICCT, *supra* note 3, at 7.

[11] *Id.* at 36, fig. 13.

[12] *Id.* at 36.

[13] International Maritime Organization (IMO) *Study of Greenhouse Gas Emissions from Ships: Final Report to the International Maritime Organization* at 17, Table 1-5, (2000) (modeling future fuel consumption) *available at* http://unfccc.int/files/methods_and_science/emissions_from_intl_transport/application/pdf/imoghgmain.pdf.

[14] Friends of the Earth International (FOEI), *Prevention of Air Pollution from Ships: Recent Findings on Global Warming Justifying the Need for Speedy Reductions of Greenhouse Gas Emissions from Shipping*, submitted to Marine Environment Protection Committee, IMO, (May 4, 2007), at p.2.

[15] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005*, (2007), *available at* http://www.epa.gov/climatechange/emissions/downloads06/07CR.pdf [hereinafter EPA Inventory] at 3-8 – 3-9, Table 3.7 (based on ship consumption of residual fuel oil, distillate fuel oil, and gasoline).

[16] *See id.* (total CO_2 emissions from the transportation sector were 1995.1 million metric tons in 2005).

[17] FOEI, *supra* note 14, at 3.

from ships make up 9.1 percent of all U.S. mobile source nitrogen oxide emissions and 5.2 percent of U.S. nitrogen oxide emissions from all sources. 72 Fed. Reg. 15,938, 15,963, Table II-3 (Apr. 3, 2007) (figures include NO_x emissions from all categories of marine engines). Moreover, based on national fuel consumption statistics, EPA estimates that ships in the United States emitted approximately 2000 metric tons (2205 short tons) of nitrous oxide in 2005.[18]

The contribution of ships to nitrogen oxide emissions is also projected to grow substantially in the coming decades. One EPA study forecasts that nitrogen oxide emissions from ocean-going ships in United States waters will increase by almost 300 percent above 1996 levels by 2030.[19] Moreover, EPA's own modeling indicates that nitrogen oxide emissions from marine engines will grow to over 30 percent of all U.S. mobile source nitrogen oxide emissions by 2030 and will then account for 12.8 percent of total U.S. emissions of nitrogen oxides. 72 Fed. Reg. 15,938, 15,963, Table II-3 (Apr. 3, 2007) (figures include NO_x emissions from all categories of marine engines). At the international level, emissions of nitrogen oxides from ships are projected to nearly double by 2050 and to increase their share of total nitrogen oxide emissions relative to other sources as well.[20]

These gases have a significant impact on the global climate, both through the formation of ozone and as nitrous oxide. Thus, given the large quantity of nitrogen oxides that ships emit, it is not surprising that marine engines' emissions of these pollutants play a significant role in climate change. In fact, nitrogen oxide emissions from ships are believed to have a net warming effect potentially equivalent to the warming effect from ship carbon dioxide emissions.[21]

3. Black Carbon

A product of inefficient combustion, black carbon, also known as soot, consists of microscopic solid particles of incompletely burned organic matter.[22] As explained further below, black carbon is a potent warmer, exerting effects on the global climate both while suspended in the atmosphere and when deposited on snow and ice. In fact, one study estimates that a given mass of black carbon will warm the air between 360,000 and 840,000 times more than an equal mass of carbon dioxide.[23] The most pernicious characteristic of black carbon from a climatic perspective is its dark color and correspondingly low albedo, or reflectivity. Because of this dark coloring, black carbon absorbs heat from sunlight.[24]

When suspended in the air, black carbon warms by trapping heat in the top of the

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[18] EPA Inventory, *supra* note 15 at 3-31, Table 3-24.

[19] EPA, *Final Regulatory Support Document: Control of Emissions from New Marine Compression Ignition Engines at or Above 30 liters per Cylinder*, (Jan. 2003), EPA420-R-03-004, at 4-14, Table 4.3-1.

[20] ICCT, *supra* note 3, at 35, figs. 11 & 12.

[21] *Id.* at 34.

[22] *See* W. Chameides and M. Bergin, *Soot Takes Center Stage*, 297 SCIENCE 2214 (Sept. 27, 2002), (explaining that "BC is produced through incomplete combustion of biomass, coal, and diesel fuel").

[23] Mark Z. Jacobson, *Control of Fossil-Fuel Particulate Black Carbon and Organic Matter, Possibly the Most Effective Method of Slowing Global Warming*, 107 JOURNAL OF GEOPHYSICAL RESEARCH 4410 (2002) at 10.

[24] Chameides and Bergin, *supra* note 22, at 2214 (noting that while "greenhouse gases warm by absorbing infrared or terrestrial radiation," "BC warms by absorbing sunlight").

atmosphere.[25] The IPCC estimates that atmospheric black carbon exerts a positive radiative forcing effect of +0.2 W/m^2.[26] This direct warming leads to feedback effects which magnify the global warming contribution of black carbon.[27] For example, as black carbon particles absorb sunlight, they warm the air around them, decreasing the relative humidity of the air and thus the liquid water content of other particles suspended in the air.[28] The drying out of these other particles reduces *their* reflectivity, and as they absorb more sunlight the air warms even more.[29] Further, the water evaporated from such particles remains in the air as water vapor, which is itself a greenhouse gas.[30]

When deposited out of the air onto a lighter surface, the darker black carbon causes the surface to absorb more of the sun's energy. Thus, when deposited on snow or ice, black carbon can reduce the snow's reflectivity and accelerate the melting process.[31] As when suspended in the atmosphere, black carbon's deposition onto ice and snow creates positive feedback effects that lead to even greater warming. For example, as snow and ice around them melt away, the deposited black carbon particles can become even more concentrated on and near the surface, further reducing the reflectivity of the remaining snow and ice.[32] Thus, although the IPCC estimates the radiative forcing effect of black carbon deposition on snow and ice to be +0.1 W/m^2, it acknowledges that the radiative forcing metric may not accurately capture the climatic impacts of black carbon deposition on snow and ice. In the words of the IPCC, "the 'efficacy' may be higher" for black carbon radiative forcing, as it produces a temperature response 1.7 times greater than an equivalent radiative forcing due to carbon dioxide.[33]

Because it can accelerate the melting of snow and ice, black carbon may play a particularly important role in Arctic climate change. Moreover, the radiative forcing of suspended black carbon particles may be amplified at the poles, where there is more light reflected from the Earth's surface, and thus more light available for the black carbon particles to absorb.[34] Because the Arctic has warmed at around twice the rate of the rest of the world over the last 100 years,[35] controlling and reducing black carbon emissions is particularly important.

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[25] M. Shekar Reddy and Olivier Boucher, *Climate Impact of Black Carbon Emitted from Energy Consumption in the World's Regions*, 34 GEOPHYSICAL RESEARCH LETTERS L11802 (2006) at 1 (stating that "Black carbon (BC) exerts a positive forcing at the top of the atmosphere").

[26] *See* Solomon, S., et al., *Technical Summary, Working Group I*, (2007), at 29, *available at* http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_TS.pdf.

[27] Jacobson, *supra* note 21, at 6-8 (discussing twelve ways in which suspended BC affects climate).

[28] *Id.* at 6.

[29] *Id.*

[30] *Id.* at 7.

[31] Reddy and Boucher, *supra* note 23, at 2.

[32] Flanner, Mark G., et al., *Present-Day Climate Forcing and Response from Black Carbon in Snow*, 112 JOURNAL OF GEOPHYSICAL RESEARCH D11202 (2007) at 2.

[33] IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, Forster, P., et al. *Changes in Atmospheric Constituents and in Radiative Forcing* (2007) at 184-85.

[34] *See* Forster, *supra* note 31, at 163 ("Additionally, the presence of BC in the atmosphere above highly reflective surfaces such as snow and ice, or clouds, may cause a significant positive RF").

[35] IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE

The impacts of black carbon are not limited to the Arctic, however. Black carbon may be responsible for as much as 25 percent of observed global warming.[36] Thus, the overall contribution of black carbon to global warming may be substantial, perhaps second only to that of carbon dioxide.[37]

Marine engines account for a significant share of black carbon emissions. Black carbon is a component of the particulate matter emitted from ships and other engines. In fact, approximately 66 percent of anthropogenic black carbon emissions come from the burning of fossil fuels.[38] Ships emit between 50,000 tonnes and 71,400 tonnes of back carbon per year.[39] Thus, in 2000, shipping contributed between 0.4 and 1.4 percent of global black carbon emissions.[40] Moreover, shipping is responsible for all black carbon released over the oceans.[41] Although black carbon from shipping is emitted mainly to the air above the oceans, plumes of black carbon can also travel great distances and deposit on areas far away from the initial emission site. For example, plumes of black carbon from Asia are believed to deposit on snow in the Arctic.[42]

II. The FEIR/S Must Analyze the Project's Impact on Global Warming from Black Carbon Emissions

As discussed above, black carbon is a significant contributor to global warming. Moreover, unlike carbon dioxide, which persists in the atmosphere for over a century, black carbon persists in the atmosphere for a matter of days.[43] Consequently, black carbon reductions can offer immediate benefits to the climate and public health. Currently, the FEIR/S does not discuss, much less analyze the black carbon produced as a result of the Project, either from the increased vessel traffic the Project will create, or from diesel engines used in construction and on-land transport. The Center asks that the Port fully analyze and mitigate the impacts of black carbon from the Project.

III. Outstanding Issues Regarding the Port's Response to Comments

A. CBD-4, 5

FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, Trenberth, K.E, et al. *Observations: Surface and Atmospheric Climate Change* (2007) at 237.

[36] ICCT, *supra* note 3, at 34.

[37] Chameides and Bergin, *supra* note 22, at 2214.

[38] Reddy and Boucher, *supra* note 25, at 1.

[39] FOEI, *supra* note 14, at 4.

[40] A. Lauer, et al., *Global Model Simulations of the Impact of Ocean-Going Ships on Aerosols, Clouds, and the Radiation Budget*, ATOMS. CHEM. PHYS DISCUSS., 7, (2007) 9419 -9464.

[41] Reddy and Boucher, *supra* note 25, at 1.

[42] Joseph R. McConnell, et al., *20th-Century Industrial Black Carbon Emissions Altered Arctic Climate Forcing*, 317 SCIENCE 1381 (2007) 1383.

[43] *See, e.g.*, Mark Z. Jacobson, Testimony for the Hearing on Black Carbon and Arctic House Committee on Oversight and Government Reform, United States House of Representatives. The Honorable Henry A. Waxman, Chair (Oct. 18, 2007).

The Center respectfully disagrees with the Port's contention that AB 32 limits CEQA's analysis of emissions resulting from the Project to those within California. AB 32 is complementary to, and in no way lessens or displaces CEQA's independent mandate to analyze all of a project's potentially significant impacts, including greenhouse gas emissions. As AB 32 states, "[n]othing in this division shall relieve any person, entity, or public agency of compliance with other applicable federal, state, or local laws or regulations, including state air and water quality requirements, and other requirements for protecting public health or the environment." (Health & Safety Code § 38592(b).) In addition, the obligation to analyze greenhouse gases under CEQA was not created by AB 32. As noted in the legislative bill analysis for SB 97, "[t]he analysis of GHG impacts under laws like CEQA, and its federal counterpart NEPA, is not new, nor did it commence with the passage of the California Global Warming Solutions Act of 2006." Thus, AB 32 cannot be interpreted to constrain the scope of an impacts analysis required under CEQA. Unlike the types of Project referenced in the Port's response to comments, the Port expansion will directly result in an increase in greenhouse gas emissions outside California's borders by creating the capacity for addition marine vessel trips from China. The resulting emissions will potentially impact California along with the rest of the world. Accordingly, the EIR/S must analyze the emissions generated from the entire vessel trip length. As NEPA is also a statute designed to look at impacts to the "biosphere," and is certainly not curtailed by AB 32, the EIR/S' truncated emissions analysis under NEPA is also deficient.

The Center is also unpersuaded by the Port's bare assertion that "[o]rigin and destination data for out-of-state emissions over the life of the Project do not exist and would be speculative." Under CEQA, an agency must "use its best efforts to find out and disclose all that it reasonably can." Guidelines § 15144; *see also* Guidelines § 15151 (an EIR must disclose what is "reasonably feasible"). In its comments, the Center proposed using existing port-of-origin data and growth projections to determine the average trip length for the vessels arriving at the Port. In its response, the Port made no comment as to the infeasibility of this approach. Here, the Project would result in an increase in annual ship calls from 246 to 334. (DEIR/S at 2-3.) In a report available on the Port's own website, the Mercator Transport Group breaks down the port of origin of ships berthing at the Port, with the vast majority originating in various ports in China.[44] With this data, the Port/USACE could reasonably have estimated emissions from the entire vessel trip length. By truncating trip length at the California border, the EIR/S drastically understates increased ship emissions generated as a result of the Project.

In calculating the greenhouse gas and black carbon emissions generated from trans-pacific vessel traffic, the EIR/S should consider whether ships utilizing the Port use the same fuel for their entire voyage or only switch to cleaner fuel when approaching the Port.[45] Data on the extent to which ships visiting the Port may utilize dirty fuel for the bulk of their voyage is critical information for decision makers and the public and can inform the effectiveness of potential mitigation measures. For example, if ships are only switching to cleaner fuels as they approach

[44] Mercator Transport Group, Forecast of Container Vessel Specifications and Port Calls Within San Pedro Bay, Final Report (Feb. 22, 2005).

[45] Greenwire, Proposed Shipping Emission Limits Flawed, Group Says (Nov. 27, 2007) (noting that "[f]or commercial reasons, most ship owners and operators prefer burning less expensive, dirtier fuel when sailing outside a zone such as a port that has environmental rules.").

the Port, other types of mitigation, like environmentally differentiated fees set in part by the type of fuel used during the entire trip length are needed to encourage the use of cleaner fuels for the entire voyage length.[46]

B. CBD 8,-9

In its recent decision, *Center for Biological Diversity v. National Highway Traffic Safety Administration*, No. 06-71891, 2007 U.S. App. LEXIS 26555, at * 115 (9th Cir. 2007), the Ninth Circuit invalidated an Environmental Assessment that only quantified emissions and did not conduct a cumulative impacts analysis of greenhouse gas emissions on the grounds that "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct." Like the NHTSA in *Center for Biological Diversity*, the Corps only opted to provide data on emissions without conducting a cumulative impacts analysis. Under *Center for Biological Diversity*, the Corps' failure to analyze the cumulative impacts of the project renders the EIS inadequate. Further, as set forth in CBD's original comments, the lack of established significance thresholds does not exculpate the Corps' failure to analyze the significance of the Project's cumulative impacts. Accordingly, a revised EIS must be prepared that adequately analyzes the cumulative significance of the Project's greenhouse gas (and black carbon) emissions on global warming.

C. CBD 11, 15

The Port/USACE's response is inadequate because it only discusses refrigerant impact on ozone and does not address the separate issue of the global warming impact of refrigerants as discussed in the Center's comments. For example, while the response to comments notes that the R134a refrigerant adopted for all new MOL vessel builds has an ozone deletion coefficient of zero, it neglects to state that this same refrigerant has a global warming potential (GWP) 1,300 times that of carbon dioxide. (EPA, Global Mitigation of Non-CO_2 Greenhouse Gases (2006) at IV-40 (attached to CBD DEIR/S comments). Indeed, due to its high global warming potential, the European Union has issued a directive phasing out the use of R134a, as well as other refrigerants with a warming potential above 150. (*Id.*) In its comments on the DEIR/S, the Center included an EPA report which looks at a number of alternatives to high GWP refrigerants like R134a. CBD asks the Port to examine the feasibility of these alternative refrigerants and mitigation options as the use of R134a as a refrigerant for new vessel builds would have significant global warming impacts. *See Los Angeles Unified School Dist. v. City of Los Angeles*, 58 Cal.App.4th 1019, 1029 (1997). ("[A]n adequate EIR must respond to specific suggestions for mitigating a significant environmental impact unless the suggested mitigation is facially infeasible. While the response need not be exhaustive, it should evince good faith and a reasoned analysis.")

Because the response to comments does not acknowledge the global warming impact of R134a and other HFC refrigerants, the comment fails to adequately address the feasibility of measures to reduce the use of these refrigerants both for new vessels and those docking at the Port as set forth in the Center's comments on the DEIR/S. While the response to comments

[46] Use of environmentally differentiated fees would avoid potential jurisdictional conflicts were the Port simply to mandate use of cleaner fuels for the entire voyage length. *See* ICCT, *supra* note 3.

asserts that "according to TraPac, refrigerated containers are checked 2-3 times a day for leaks and repaired immediately if a leak is detected" (Response to Comments at 2-113), this is a restatement of a discretionary practice by a lessee, not an enforceable mitigation measure. To make this measure enforceable, mandatory leak inspections and repair of all refrigerated containers entering the Port should be a condition of Project approval.

D. CBD 18

Thank you for installing additional on-site solar panels. While amendments to this mitigation measure are included in the response to the Center's comments, unlike other revisions to the DEIR/S, the provision for additional on-site solar panels does not appear in the document "Modifications to the Draft EIR/S". Please ensure that amendments to measure AQ-22 appear in the Final EIR/S as well as the response to comments.

In addition, while CBD appreciates additional on-site solar power, it is unclear from the amended mitigation measure if on-site solar power will now be installed as part of the Project to the extent feasible. Please clarify the area and expected megawatt production contemplated as part of the additional mitigation and the extent to which other opportunities to capture on-site solar energy may exist and if so, why these opportunities are also not being taken advantage of.

E. CBD 21

While the Port states that it has declined to reduce the Project's greenhouse gas emissions through offsets on the grounds that "the Port cannot verify or guarantee that the credits actually result in GHG emissions reduction," verifiable programs can and have been implemented. For example, in a recent settlement with the Attorney General regarding the mitigation of greenhouse gas emissions from a proposed refinery expansion, ConocoPhillips Co. agreed to make a one-time payment of $7 million to a carbon offset fund created by the Bay Area Air Quality Management District "to achieve verifiable quantifiable reductions in GHG emission, with priority given to projects near" the project area.[47] The Settlement also provided $2.8 million to fund reforestation and conservation projects and $200,000 for restoration of the San Pablo Bay wetlands. Once all feasible mitigation has been implemented to reduce greenhouse gas emissions at their source, offsets can further reduce the Project's greenhouse gas impacts. Here, the Port has not adequately explained why a carefully tailored offset program, perhaps developed with a local air district, could not yield real and verifiable reductions in greenhouse gases. Before concluding that offsets are infeasible, the Port should examine working with SCAQMD or another state/local agency to establish a fund for GHG reduction projects, with emphasis on projects with close proximity to the Port. Offsetting GHG emissions in the project area could also yield corollary benefits, such as reductions in criteria pollutants.

In the event partnering with a local agency to offset emissions is not feasible, real and verifiable offset funds verified by independent third parties are available to offset the Project's emissions. For example, in offsetting emissions from its annual Environmental Law Conference, the Environmental Law Section of the California Bar partnered with Carbonfund.org, "a

[47] Settlement Agreement between ConocoPhillips Co. and the California Attorney General. Sept. 10, 2007.

nationally recognized 501(c)(3) corporation that funds clean-energy and conservation projects ranging from wind turbines to reforestation projects...because it is a nonprofit (maximizing conservation return on offset dollars); it has offset projects in California; and it has been highly rated by third-party evaluators of offset programs."[48] In addition, the Chicago Climate Exchange also offers a mechanism to offset emissions with independent third party verification.[49]

IV. Additional Mitigation

Managing Hull Resistance: Following the submission of comments on the DEIR/S, the Center learned of additional mitigation to increase vessel efficiency, reduce inefficient consumption of fuel, and reduce GHG emissions by managing hull resistance. This method involves an evaluation of ship performance data to determine the extent of resistance on a ship from fouling on the hull and propeller and ascertain the point where ship maintenance (such as hull cleaning) would be economically beneficial.[50] A rough hull (though use of poor quality paints and algae growth) requires additional power (and thus more fuel) to move.[51] Fleet monitoring for hull efficiency is a service provided in the Los Angeles area.[52] Requiring the monitoring of hull efficiency, use of low-resistance hull paint, and hull cleaning when called for by the results of a ship's performance analysis would reduce fuel consumption, and consequently, emissions of greenhouse gases and criteria pollutants from the excess and needless burning of fuel.

CONCLUSION

Please do not hesitate to contact Matthew Vespa at 415-436-9682 x 309 or mvespa@biologicaldiversity.org if you have any questions regarding these comments. We look forward to working with the Los Angeles Harbor Department and the Army Corps of Engineers now and in the future to reach our shared goals of reducing greenhouse gas emissions and protecting biological diversity, public health, and our environment. Thank you for your time and consideration of our concerns.

Yours Very Truly,

Matthew Vespa

Enc: The following references are included in the accompanying CD for your review and inclusion in the administrative record.

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[48] Environmental Law Section of the State Bar of California, Environmental Law Conference at Yosemite, Program Schedule at 3 (2007).

[49] *See,* Chicago Climate Exchange, Overview, *available at* http://www.chicagoclimateexchange.com/content.jsf?id -821

[50] Toren Munk, Fuel Conservation Through Managing Hull Resistance (2006).

[51] IMO. Study of Greenhouse Gas Emissions From Ships, Part 5. Technical and Operational Measures to Reduce Greenhouse Gas Emissions from Ships, Issue No. 2-32 (Mar. 2000) at 72.

[52] *See* www.propulsiondynamics.com.

ATTACHED LITERATURE

EXHIBIT A: Chameides,W & Bergin, M., *Soot Takes Center Stage*, 297 SCIENCE 2214 (Sept. 27, 2002), (explaining that "BC is produced through incomplete combustion of biomass, coal, and diesel fuel").

EXHIBIT B: Eyring, V. & and Corbett, J., *Comparing Fuel Consumption, Carbon Dioxide and Other Emissions from International Shipping and Aircraft: A Summary of Recent Research Findings*, DLR-Institute of Atmospheric Physics, (2007), *available at* http://www.pa.op.dlr.de/SeaKLIM/Fuel_Emissions_International_Shipping.html.

EXHIBIT C: Flanner, Mark G., et al., *Present-Day Climate Forcing and Response from Black Carbon in Snow*, 112 JOURNAL OF GEOPHYSICAL RESEARCH D11202 (2007).

EXHIBIT D: Friends of the Earth International (FOEI), *Prevention of Air Pollution from Ships: Recent Findings on Global Warming Justifying the Need for Speedy Reductions of Greenhouse Gas Emissions from Shipping*, submitted to Marine Environment Protection Committee, IMO, (May 4, 2007)

EXHIBIT E: International Maritime Organization (IMO) *Study of Greenhouse Gas Emissions from Ships: Final Report to the International Maritime Organization* at 17, *available at* http://unfccc.int/files/methods_and_science/emissions_from_intl_transport/application/pdf/imoghgmain.pdf.

EXHIBIT F: International Panel on Climate Change (IPCC), Summary for Policymakers for the Synthesis Report of the IPCC Fourth Assessment Report, Dec. 16, 2007, *available at* http://www.ipcc.ch/press/index.htm.

EXHIBIT G: Jacobson, M., *Control of Fossil-Fuel Particulate Black Carbon and Organic Matter, Possibly the Most Effective Method of Slowing Global Warming*, 107 JOURNAL OF GEOPHYSICAL RESEARCH 4410 (2002) at 10.

EXHIBIT H: Jacobson, M., Testimony for the Hearing on Black Carbon and Arctic House Committee on Oversight and Government Reform, United States House of Representatives, The Honorable Henry A. Waxman, Chair (Oct. 18, 2007).

EXHIBIT I: Lauer, A. et al., *Global Model Simulations of the Impact of Ocean-Going Ships on Aerosols, Clouds, and the Radiation Budget*, ATOMS. CHEM. PHYS DISCUSS., 7, (2007) 9419–9464.

EXHIBIT J: McConnell, J. R. et al., *20th-Century Industrial Black Carbon Emissions Altered Arctic Climate Forcing*, 317 SCIENCE 1381 (2007) 1383.

EXHIBIT K: Mercator Transport Group, Forecast of Container Vessel Specifications and Port Calls Within San Pedro Bay, Final Report (Feb. 22, 2005).

EXHIBIT L: Munk, T., Fuel Conservation Through Managing Hull Resistance (2006).

EXHIBIT M: www.propulsiondynamics.com (CASPER brochure)

EXHIBIT N: Reddy, M.S. & Boucher, O., *Climate Impact of Black Carbon Emitted from Energy Consumption in the World's Regions*, 34 GEOPHYSICAL RESEARCH LETTERS L11802 (2006) at 1 (stating that "Black carbon (BC) exerts a positive forcing at the top of the atmosphere").

EXHIBIT O: Settlement Agreement between ConocoPhillips Co. and the California Attorney General, Sept. 10, 2007.

EXHIBIT P: Mercator Transport Group, Forecast of Container Vessel Specifications and Port Calls Within San Pedro Bay, Final Report (Feb. 22, 2005).

EXHIBIT Q: EPA, *Final Regulatory Support Document: Control of Emissions from New Marine Compression – Ignition Engines at or Above 30 liters per Cylinder* (Jan. 2003), EPA 420-R-03-004

EXHIBIT R: IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, Forster, P., et al. *Changes in Atmospheric Constituents and in Radiative Forcing* (2007)

EXHIBIT S: Environmental Law Section of the State Bar of California, Environmental Law Conference at Yosemite, Program Schedule at 3 (2007)

EXHIBIT T: Chicago Climate Exchange, Overview, *available at* http://www.chicagoclimateexchange.com/content.jsf?id=821

EXHIBIT U: Greenwire, Proposed Shipping Emission Limits Flawed, Group Says (Nov. 27, 2007)

Response to Comments: Center for Biological Diversity Comments on the Berth 136-147 Final EIR

I. (1) *CO_2*

Thank you for you comments. The Port agrees that greenhouse gas emissions should be reduced and has included mitigation as a condition of Project approval to reduce such emissions. As shown in Table 3.2-32 on p. 3.2-103 of the Draft EIS/EIR, in 2038, it is estimated that ships will emit 145,730 metric tons of CO_2 as compared to 62,861 metric tons of CO_2 in 2003 (CEQA baseline). As discussed on p. 3.2-109, mitigation measures (AMP and VSRP) reduce these emissions to 59,147 metric tons a year. (See Table 3.2-34.) Therefore, CO_2 emissions from ships are lower in the proposed Project as compared to the baseline. Additionally, as discussed in the Final EIR, the Port will include additional mitigation (MM AQ-13) to further reduce CO_2 emissions from ships.

I. (2) *NO_x*

Thank you for your comments. The Port agrees that nitrogen oxides (NO_x) emissions should be reduced. As discussed in the EIR, the Port has recently released the Clean Air Action Plan (CAAP), which represents a comprehensive effort to reduce emissions, including NO_x. As shown in Table 3.2-25, after mitigation (MM AQ-6 through MM AQ-24), the proposed Project emits 6,499 lbs/day of NO_x as compared to 13,472 lbs/day in 2003 (baseline) representing more than 50% reduction. In regards to ships, despite increasing the ship calls from 246 in 2003 to 334 in 2038, NO_x emissions from ships are less in 2038 as compared to 2003 (2,388 lbs/day versus 3,551 lbs/day).

I. (3) and II. *Black Carbon*

Thank you for your comment on black carbon. As discussed above, the Port agrees that both criteria pollutants and greenhouse gas emissions should be reduced and has included mitigation as a condition of Project approval to reduce such emissions.

The Draft EIR/EIS provides discussion of black carbon within Chapter 3.2. Page 3.2-8 describes components of primary PM 2.5 which includes diesel soot. Page 3.2-9 of the Draft EIS/EIR identifies diesel particulate matter (DPM) as a mixture of solid and volatile compounds, including elemental or black carbon. The air quality analysis in the Final EIS/EIR focused on the impact of Project DPM emissions to public health in proximity to the Port. Mitigation measures proposed in the Final EIS/EIR would substantially reduce Project DPM emissions and hence emissions of black carbon. As discussed in Section 3.2, DPM is a component of PM. As shown in Table 3.2-25 in the Draft EIR, after mitigation, PM 10 is reduced to 506 lbs/day in 2038 as compared to baseline levels of 1,022 lbs/day. PM 2.5 is reduced to 243 lbs/day in 2038 from the baseline level of 831 lbs/day.

The Intergovernmental Panel on Climate Change (IPCC) indicates that there is a low level of concensus in the scientific community on the effects of black carbon. The IPCC also notes that there are significant uncertainties regarding the true radiative forcing of black carbon and the

proportionate effects of anthropogenic versus natural black carbon. (Intergovernmental Panel on Climate Change 2007a) As noted in the 2007 Working Group III report, "The uncertainty concerning the effects of black carbon and organic carbon on the change in radiative forcing and hence global warming is still high." (Intergovernmental Panel on Climate Change 2007b). The IPCC is a scientific intergovernmental body set up by the World Meteorological Organization and by the United Nations Environment Programme to provide decision-makers and others interested in climate change with an objective source of information about climate change.

References

- Intergovernmental Panel on Climate Change. 2007a. Climate Change 2007
  - The Physical Science Basis - Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.
- Intergovernmental Panel on Climate Change. 2007b. Climate Change 2007
  - Mitigation of Climate Change - Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

II. A *Borders*

As lead agency, the Port has discretion to define the scope of its impact analysis, as long as that scope is reasonable in light of substantial evidence. The EIR/EIS's analysis of greenhouse gas (GHG) emissions was guided by standards set out in California's GHG legislation and regulation as well as documentation from the Intergovernmental Panel on Climate Change (IPCC). On November 26, 2007, the California Air Resources Board presented a staff report on determining California's level of GHG emissions in 1990 for reporting GHGs. The staff report stated that calculation of the 2020 target level accounted for international shipping, *but only in the jurisdictional waters of California*. Furthermore, the IPCC's 2006 Guidelines for National Greenhouse Gas Inventories recommend that national GHG inventories exclude international transit from emissions calculations. Thus, the Port's GHG analysis is consistent with recent State and International guidance on GHG reporting.

CARB Reporting: http://www.arb.ca.gov/cc/ccei/meetings/nov_26_workshop_slides.pdf

In regards to fuel use, mitigation measure AQ-11 requires ships to use low sulfur fuel between 40nm of Point Fermin and the berth. The EIR does not assume ships switch to low sulfur fuel during the entire voyage. As discussed in the Final EIR, low sulfur fuel At today's cost, low sulfur (0.2%) costs approximately $350 more per ton than bunker fuel (currently, bunker fuel is approximately $400 per ton, while low sulfur fuel is $750 [www.bunkerworld.com accessed 10/10/07]). Assuming a round trip voyage from Asia to Berth 136-147, a container ship would use approximately 2,600 tons of fuel in main and auxiliary engines and boilers. Based on this scenario, low sulfur fuel (0.2%) will cost approximately $910,000 per ship more than the use of HFO. At 243 ship calls a year, this fuel would cost the tenant $221,130,000 more than the use of HFO. While the Port does support use of cleaner fuels, based on the significant costs associated with the fuels, the Port believes this effort should happen at a larger national and international scale. For example, the Port has been involved in and actively supports efforts to form a Sulfur

Emissions Control Area (SECA) for the North American West Coast. However, to require such a mitigation measure on one terminal alone would be cost prohibitive for the customer.

II. B *NEPA Scope*
Comment has been forward to the USACE.

II. C *Refrigerants*

The replacement refrigerants recently adopted by MOL (R134a (GWP 1,300)) have substantially smaller ozone depleting potentials and global warming potentials (GWPs) compared to refrigerants previously used by MOL, such as R-12 (GWP 2,400) and halons (EPA 2007a and 2007b). As discussed on Page 3.2-77, in 2038, greenhouse gas emissions from refrigerants increase as compared to the baseline (for example, HFC134a equals 0.29 metric tons in 2038 as compared to 0.11 metric tons in 2003). These increases are largely from expected refrigerant losses over time. As part of the Project and as discussed in the Final EIR refrigerated containers are checked 2-3 times a day for leaks and repaired immediately if a leak is detected mainly to ensure the product being refrigerated does not spoil. This practice reduces refrigerant losses below what was assumed in the Draft EIR.

However, to ensure refrigerated containers are routinely checked, the Port has included an additional Mitigation Measure MM AQ-26:

> ***MM AQ-27*** *Refrigerated Containers: The tenant shall, as part of the Environmental Plan required through the Port of Los Angeles's Leasing Policy, develop a system to check all refrigerated containers on the Berth 136-147 backlands on a daily basis to check for refrigerant leaks. If a leak is detected, the tenant shall fix the leak immediately*.

References

- EPA. 2007a. Ozone-depleting Substances.
  Web site http://www.epa.gov/ozone/science/ods/index.html.

- EPA. 2007b. Global Warming Potentials of ODS Substitutes.
  Web site http://www.epa.gov/ozone/geninfo/gwps.html.

II. D *Solar Panels*

It is unknown at this time how many megawatts will be produced with the use of solar panels but it is estimated that approximately 104,000 watts would be generated from solar panels on the Administration building with another 20,000-50,000 watts from other solar panels on the terminal. As discussed in the EIR, solar panel will be placed on LEED-certified buildings (all administrative buildings) to the maximum extent feasible As discussed in the EIR, solar panels will be placed on LEED-certified buildings (all administrative buildings) to the maximum extent feasible. In addition, solar panels will be mounted on stanchions in the parking lots. Because the proposed Project cannot undergo final design until the EIR has been certified, the final design has not yet been completed. The Port will continue to explore the feasibility of additional solar

panels throughout the Port. Such a larger project will require additional planning and development and cannot be relied upon as a feasible mitigation measure for purposes of this project at this time.

II. E *Offsets*

The Port has chosen to focus on reducing emissions at their source, that is, on construction and operation of the proposed project. Currently, voluntary carbon offset programs are not strictly regulated and the Port cannot verify or guarantee that the credits actually result in GHG emission reductions. There are currently no widely accepted standards on carbon offsets or credits. As discussed in the Draft EIS/EIR, the Port is an active member of the California Climate Action Registry (CCAR). CCAR is developing a Project registry to provide high quality, verifiable offsets for its members. This registry is expected to be available within the year. The Port, through its Port-wide GHG inventory, expects to participate in this program when it is finalized.

The Port thanks the Center for its suggestions regarding Carbonfund.org and the Chicago Climate Exchange. As noted, the Port focuses its efforts on direct reduction of emissions from project operation and construction and, in light of the uncertain effectiveness of carbon offsets, has chosen not to participate in an offset program for this project at this time.

References
Clean Air Planet (December 2006), Trexler Climate and Energy Services

IV. *Managing Hull Resistance*

Shipping companies have a financial interest in and spend a significant amount of resources on hull maintenance. As noted, clean hulls reduce drag, thereby reducing the amount of energy needed to move the ship through waters. MOL is already implementing the measures for hull maintenance suggested by the Center. For example, one goal of MOL's Environmental Policy (http://www.mol.co.jp/csr-e/environment/management/air/index.shtml), is continual study and implementation of measures for maintaining and improving the vessel performance (i.e. Maintain and control quality level of engines and auxiliary equipment, ship bottom cleaning, and sandblasting while in dry-dock). In addition, MOL is developing and introducing various energy-saving technologies (i.e. Propeller Boss Cap Fins (PBCF) system, wind/water resistance reducing designed vessels, use of combustion improver, etc.) to further reduce energy needs, thereby reducing greenhouse gas emissions. Beyond MOL's implementation of these measures, the Port is not in a position to require hull maintenance for each and every ship that calls at the Port. In order to allow Port tenants to remain competitive in the marketplace, the Port must allow tenants some leeway in implementation of hull maintenance requirements.