

Long Beach and Los Angeles Ports: Combating Global Warming

Introduction

The scientists finally came to conclusion: unmonitored and uncontrolled carbon dioxide emissions into the atmosphere, air pollution, and other anthropogenic factors are, probably, the major reasons of global warming. The threat of global warming is recognized by all world countries and nations. The early signs of global warming are in – the periods of unusually warm weather, earlier spring arrival, heat waves, ocean warming, coastal flooding, sea-level rise, Arctic and Antarctic warming, spreading diseases, coral reef bleaching, glacier melting, droughts and fires, heavy snowfalls, flooding and downpours, animal and plant range shifts as well as population and climate changes. The modern civilization makes up its mind to find the answer on how can we combat global warming. The warning signs make clear that the world countries have to make meaningful cuts in global warming pollution, thus reducing the risk of severe climate changes. The United States is, probably, one of the most active participants among all world countries, as it consistently strives for curbing global warming. Although the task is quite difficult to perform, the U.S. encourages all kinds of initiatives aimed to reduce air pollutions and to reduce emissions into the atmosphere. Are these measures effective? While the others are up to their necks in the heated debates, the United States, the ports of Long Beach and Los Angeles are already doing their best to combat global warming, and their actions are influencing other ports, thus turning the drop in the ocean into a powerful flow able to make meaningful cuts in global warming pollution, and reduce the risk of drastic climate changes in the nearest future.

The Ports of Los Angeles and Long Beach: The Lowenthal bill

The Los Angeles-Long Beach port complex has the highest pollution rates in Southern California (Governor Should Sign Law, 2004). According to The Clean Ports bill authored by State Assemblyman Alan Lowenthal (D-54), the ports of Los Angeles and Long Beach were required to hold their pollution at the 2004 year's level, despite the growth of cargo throughput. The situation was warning, as the Los Angeles-Long Beach port complex accounted for almost 25% of the particulate matter pollution in the South Coast region, the U.S. region with the highest pollution level (Governor Should Sign Law, 2004).

Los Angeles and Long Beach cities supported the Lowenthal bill in 2004. Therefore the Los Angeles-Long Beach port complex emitted "as much diesel exhaust as 16,000 tractor-trailers idling their engines twenty-four hours a day" (Governor Should Sign Law, 2004) and the consequences were terrific as the residents of the neighboring areas, San Pedro, Wilmington and Long Beach were plagued by acute and chronic respiratory diseases, such as bronchitis and asthma. Apart from that, the neighboring areas reported the highest cancer risk in the Southern California region.

The Lowenthal bill was the only possible way to achieve a 50% cut in air pollution, as the cut in carbon dioxide emissions into the atmosphere could be achieved only by cutting air emissions at the port complex. The Lowenthal bill was aimed to protect public health and to monitor air emissions with no limiting the Los Angeles-Long Beach port complex expansion. Apart from that, the bill allowed the authorities of the Los Angeles-Long Beach port complex to choose the most cost-efficient emission reduction technologies they could use for locomotives, trucks, ships, and dock equipment at their port facilities. Moreover, as it was already mentioned,

the cut in air emissions was also aimed to make cuts in global warming pollution, and reduce the risk of drastic climate changes.

The Ports of Los Angeles and Long Beach and the Natural Resources Defense Council

Apart from that, The Natural Resources Defense Council offered a range of activities aimed to decrease the level of pollution and atmospheric emissions. In their report (August, 2004), The Natural Resources Defense Council noted that the Los Angeles-Long Beach port complex is indeed the major hub of economic activity, and, at the same time, the major source of pollution. The subject at issue was that the ships, trucks, and locomotives were using the dirtiest fuel available, and the activities at the Los Angeles-Long Beach port complex were causing an array of environmental impacts that had a negative impact on the environment, thus being conducive to increased pollution levels. These negative consequences ranged from the increased risks of illnesses, to the increases in regional smog, degradation of water quality, and increased carbon dioxide emissions into the atmosphere, being conducive to worsening global ecologic situation, and global warming in general. Therefore, the NRDC, as the Earth's best defense, decided to offer a range of initiatives and activities able to improve the situation and to reduce pollution levels.

In March 2004, CCA and NRDC issued report cards for the Los Angeles-Long Beach port complex and other U.S. ports on their efforts to monitor and control pollution (Report, 2004). In the short period of time the port authorities started to make successful steps to reduce port pollution. The Natural Resources Defense Council has proved that air pollution and health is influenced by port operations. According to the report, the diesel engines were widely used in the Ports of Los Angeles and Long Beach, thus affecting the health of the residents and workers, and

contributing to the air pollution and global warming (Board, October, 2000; Bagley, 1996).

Diesel exhaust, as it was confirmed by over 30 human epidemiological studies, increases cancer risks (Bhatia, 1998), and is conducive to asthma. In addition, it was found out that the major air pollutants from diesel engines used at the Ports of Los Angeles and Long Beach that have negative effect on human health, include “particular matter (PM), volatile organic compounds (VOCs), nitrogen oxides (NO_x), and sulfur oxides (SO_x)” (Report, 2004).

Despite of the rich abundance of other sources of pollution (that may also be conducive to pollution and changes in climate on the long-term scale) such as power plants, cars, and refineries, the air pollution that comes from marine ports (the Los Angeles and Long Beach port complex, in particular) exceeds these sources significantly (Mitchell, 2001). For example, in the Los Angeles area, the activity in the port that includes harbor tugs, oceangoing ships, and commercial boats (i.e. passenger ferries) "emit many times more smog-forming pollutants than all power plants in the Southern California region combined” (Report, 2004). In addition, the growth forecast dated 2004 was predicting trade to reach three-time increase by the year 2025 in Los Angeles area, meaning that “smog-forming emissions and diesel particulate pollution could severely increase in an area already burdened by the worst air quality in the nation” (Report, 2004). These warning signs made the government to be concerned with the problem of emissions and forced them to find solutions able to reduce port pollution levels to the lowest possible levels. Evidently, the ports in Los Angeles and Long Beach should be regulated like other large sources of pollution in order to combat air emissions and global warming.

Air pollution is not the only source of pollution, as Los Angeles and Long Beach port operations also cause damages to water quality (as well as to the marine ecosystems, marine life,

and human health). Apart from that, there were the land use problems at Los Angeles and Long Beach ports. As far as the highly industrialized operations in Los Angeles and Long Beach port complex were very close to residential areas, they created hazards and nuisances for the neighboring communities. At the same time, the land use at Los Angeles and Long Beach ports also required to be improved, as, if compared to the Port of Singapore, Long Beach marine port was four time less efficient (while being the most efficient in terms of land use). This problem, therefore, also had to be addressed, as it both directly and indirectly influenced the level of pollution and, to a certain extent, global warming.

The Ports Of Los Angeles And Long Beach: What Are They Doing About Pollution And Global Warming?

The Ports of Los Angeles and Long Beach were recommended to use a wide range of measures to decrease the impacts on ecosystems and local communities. According the researchers, these measures were quite effective as they were employed to clean up operations in the ports, to use cleaner fuels, and equipment. Marine vessels in the ports of Los Angeles and Long Beach were required to clean up their harbor equipment (i.e. tugboats) through retrofit and repower programs. They were also required to limit idling of tugboats and oceangoing vessels by “providing electric power at docks” (Report, 2004) and obliged the tugboats and ships to ‘plug in’ to the shoreside power during their staying at berth. The ships in the Ports of Los Angeles and Long Beach were required to use the cleanest possible grade of diesel (this restriction was also applicable to the oceangoing vessels), with a sulfur content of 15 to 2,000 parts per million (Report, 2004). The ports also were encouraged to create incentives and promote the use of emission controls on the oceangoing vessels.

What concerns cargo-handling equipment, the ports were required to retire any kind of cargo-handling equipment, which is 10 and more years old. Instead, the Ports of Los Angeles and Long Beach replaced it with the best and cleanest available equipment and fuel choices. Apart from that, they were required to retrofit the equipment that was less than ten years old in order to make it operate on the best control technology (including diesel particulate filters (DPFs) with lean NOx catalysts (LNCs) and, if not feasible, with diesel oxidation catalysts (DOCs) (Report, 2004). The ports authorities were also asked to use cleaner diesel fuels for the port operations (i.e. low-sulfur fuels with sulfur content less than 15 to 2,000 parts per million and diesel emulsions (Report, 2004).

The port authorities were also required to reexamine their policies and regulations concerning on-road trucks. Therefore, the Los Angeles-Long Beach port complex developed a range of incentive programs aimed to encourage the retirement of old trucks and old on-road truck equipment, fleet modernization, and to replace the retired trucks with the modern and lower-emitting vehicles. The other initiatives included installation of pollution controls, including DPFs with LNCs or, if not feasible, with DOCs (Report, 2004). They were also required to use significantly cleaner fuels like low-sulfur diesel or diesel emulsions for off-site trucks, and to reduce to minimum truck idling by use of idling limits (or by installation of the idle shutoff controls).

The Los Angeles-Long Beach port complex was also required to repower (or even replace) the existing switching locomotives that fail to meet the EPA Tier Standards (Environmental Protection Agency). These locomotives were replaced with alternative-fuel and electric-hybrid engines, where it was possible. They also installed several engine emissions

control where it was possible to monitor and control the levels of emissions. In addition, the automatic engine shutoff controls used in the Los Angeles-Long Beach port complex were required to reduce unnecessary idling to minimum. The Los Angeles-Long Beach port complex authorities also decided to use cleaner fuels (like on-road grade diesel) in locomotives to reduce emissions to the lowest possible level, thus being conducive to combating pollution and global warming.

The Los Angeles-Long Beach port authorities also placed emphasis on better stormwater management. They prepared a stormwater pollution prevention plan for all terminals in their ports, offered all port tenants to develop the model stormwater programs, as well as the inspections and monitoring of the individual marine terminals in order to assure these terminals implement the appropriate recommended programs and measures, as well as provide proper education and training of their terminal staff concerning stormwater management. In addition, the authorities of the Los Angeles and Long Beach ports were required to analyze potential problems related to water pollution, monitoring of water quality, as well as to develop, enhance, and implement best management practices available for the prevention, monitoring, control, and treatment of stormwater runoff (Report, 2004). Additional measures, such as traffic mitigation, water quality initiatives, noise, land use, and light abatement, as well as improved operations in the ports, were also implemented.

In addition to the required measures, the authorities of the marine ports of Los Angeles and Long Beach have done additional efforts to reduce pollution, and to make their contribution to combat global warming. For example, in 2006 they united on proposal to fight air pollution. They offered to crack down on the trucks, diesel-powered ships, and trains that are reported to

pollute the atmosphere over the United States' trade gateway to Asia (Los Angeles, Long Beach ports unite on proposal to fight air pollution, 2006)

In November 2006 the Los Angeles-Long Beach port complexes have approved San Pedro Bay Ports Clean Air Action Plan aimed to reduce pollution to the lowest possible levels. This \$4 billion plan embraces all port-related emission sources and influences not only Los Angeles and Long Beach ports, but also other U.S. ports as well. The plan was created with the help of California Air Resources Board, the South Coast Air Quality Management District, and U.S. Environmental Protection Agency.

In February 2007 the Los Angeles-Long Beach port complexes have issued yet another joint request for Proposals (RFP) for a new Liquefied Natural Gas (LNG) Truck Program. According to them, a truck fleet using the Liquefied Natural Gas may help the port complexes to reduce particulate matter (PM) and oxides of nitrogen (NOx) by 80 to 90% (Ports of Los Angeles and Long Beach Issue RFP for LNG Truck Fleet, 2007). This measure is one of the components of the San Pedro Bay Ports Clean Air Action Plan that was approved in November 2006. Geraldine Knatz, Ph.D., executive director at the Port of Los Angeles considers that these initiatives will be very successful, and adds that “replacing the thousands of dirty diesel trucks that call at our ports on a daily basis is a major component of the San Pedro Bay Ports Clean Air Action Plan” (Ports of Los Angeles and Long Beach Issue RFP for LNG Truck Fleet, 2007).

According to James Hanka, President of the Long Beach Harbor Commission, by 2020 the container traffic through the ports of Los Angeles and Long Beach is expected to increase from 15.8 million TEU (twenty-foot equivalent units) to 36.1 million TEU. Therefore, it is very important to undertake all possible efforts to reduce air pollution, while fostering the

development of the ports. The vehicles funded under the LNG Truck Program are equipped with electronic monitoring units and GPS (global positioning system). This system is installed prior to delivery of the vehicle, and before the vehicle is released the verification should be provided to the port. In order to receive the maximum possible award under this initiative the vehicle is required to report “48,000 annual miles with at least 75% of these miles occurring within the South Coast Air Quality Basin, and trucks must make at least seven trips to the Ports per week” (Ports of Los Angeles and Long Beach Issue RFP for LNG Truck Fleet, 2007).

Naturally, the actions undertaken by the ports of Long Beach and Los Angeles influence other ports as well. As it is claimed by Los Angeles Mayor Antonio Villaraigosa and Long Beach Mayor Bob Foster, “Long Beach and Los Angeles continue to lead the world in pushing for cleaner air and healthier environment with our shared goal of having the cleanest ports in the world” (Long Beach agrees to ban old diesel trucks from port, 2007). The U.S. ports join their efforts to reduce pollution levels and to turn from competition to cooperation. The leaders of Long Beach and Los Angeles plan to reduce pollution levels by approximately 40-450% in the next five years (San Pedro Bay Ports Clean Air Action Plan). Other U.S. ports are also involved in pollution reduction initiative, and undertake their efforts to support Long Beach and Los Angeles ports and to reduce air releases from chemical storage, air pollution that comes from construction activities and port operations, including toxic particulate pollution and smog, contamination from wastewater and stormwater discharges, and other pollution-related issues. Although the global warming occurs not solely due to pollution from from construction activities and port operations, in case U.S. ports continue to implement the initiatives and recommendations, they will be able to reduce port-related pollution that affects marine environments, seaside communities, thus helping the world to combat global warming.

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