



TOOL BOX FOR PORT CLEAN AIR PROGRAMS ***Improving Air Quality While Promoting Business Development***

AIR QUALITY AND MARITIME OPERATIONS

Ports continue to bring economic health and prosperity around the world. With the global increase in goods movement comes the need to accommodate port growth and development. In the last decade, it has become more apparent that ports need to do a better job at balancing growth and development with environmental considerations.

Air emissions from port-related activities are increasing and may increase as result in the growth in goods movement unless important steps are taken. Air pollution is a shared concern in various port communities around the world. International regulations have been developed to address emissions from ocean-going vessels, in particular oxides of nitrogen (NO_x) with the implementation of IMO's MARPOL ANNEX VI. However, this regulation is not effective enough to curb vessel emissions to meet local air quality concerns in several important port cities where port-related emissions contribute significantly to the air problems for these regions.

More and more, ports are recognizing the importance of “Green” goods movement and understand that in order to *think globally* they need to *act locally*. Today, ports are taking important steps to address air quality issues by reducing the negative impact diesel emissions has on the environment and public health. Most port/maritime operations depend on the durability and strength of diesel engines in trucks, cargo handling equipment, locomotives, harbor craft and ocean-going vessels. As a result, port/maritime-related activities are a source of diesel emissions. Some ports are located near urban areas that are densely populated. Depending on the topography and meteorology of the area and location relative to other sources of air emissions, air pollution from ports can potentially impact local communities.

Diesel engines are significant sources of diesel particulate matter (DPM), especially fine particulate matter. Diesel emissions also contain ozone-forming oxides of nitrogen (NO_x) and other harmful pollutants such as hydro carbon (HC), carbon monoxide (CO) and green house gases (GHG). DPM and ground level ozone pose serious risk to human health and can cause lung damage and aggravate respiratory diseases such as asthma.

Increasingly, health authorities classify DPM as an air toxic, which has created a unique dynamic for ports in that region. The new dynamic of health risk reduction is based on the assumption that all emissions are NOT equal, and that type of source and proximity to populated areas is now increasingly critical when prioritizing which emissions to reduce first. On top of reducing potential health risk, mass emissions reduction targets may have to be met as well.

With dependence on the diesel engine coupled with the need to protect public health and the environment, there is a special call to action to reduce air pollution at ports.