EAS Congress/WP/2010/23

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WORKSHOP ON GREENER PORTS IN THE ASEAN REGION

23 November 2009

Partnerships in Environmental Management for the Seas of East Asia

Chair: **Mr. Hector E. Miole**
Port District Manager
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The East Asian Seas Congress 2009

"Partnerships at Work: Local Implementation and Good Practices"

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INTRODUCTION

"Climate Change: A challenge to the maritime industry too!" is becoming a popular adage among maritime and port personnel. According to a recent study conducted by the International Maritime Organization (IMO) in 2009, exhaust gases are the primary source of emissions from ships. Toxic emissions from ships and port-operations represent a danger to public health and a long-term threat to the economy.

While millions of people in the region live and work in close proximity to port facilities, the direct exposure to harmful levels of shipping and port-related emissions is causing increased concern on their health impacts.

It is also evident that governments and maritime industries are developing interventions to protect public health by way of regulations, incentive programmes, award and recognition schemes, comprehensive plans and policies, research and cross-interest collaborations.

Based on a study conducted in Hongkong, it was evident that ships and ports are taking steps to reduce emissions, including sulphur dioxide (SO_2), nitrogen oxide (NOx) and particulate matter (PM), from their operations. Hong Kong and other ports in the Pearl River Delta (PRD) region have begun to implement initiatives to reduce their impact on air pollution in the region.

Nonetheless, the port industry in general has been faced with sustainability issues – compliance to international and national regulations vis-à-vis demands for bigger port capacity and increased productivity without compromising environmental quality.

With this in view, the seminar on Greener Ports examined various efforts and examples of green policies, regulatory enforcements, researches, proactive approaches including the drivers for investments in environmental initiatives. Examples and experiences within and outside the ASEAN region were reviewed with the end in view of identifying good practices and lessons learned to promote port sustainability and environmental stewardship in the region.

PORT SUSTAINABILITY AND ENVIRONMENTAL STEWARDSHIP

According to the United States Environmental Protection Agency (US EPA), "sustainability" is defined by the Bruntland Commission as "the ability to meet today's global economic, environmental and social needs without compromising the opportunity for future generations to meet theirs." In addition, EPA emphasized that the critical element to sustainability is "environmental stewardship — where all parts of society actively take responsibility to improve environmental quality and achieve sustainable results. Such principle of environmental stewardship has been recognized by the American Association of Ports and Harbours (AAPA) including its stakeholders. AAPA has gained significant achievements towards this goal. Similarly, the International Association of Ports and Harbours (IAPH) has demonstrated its commitment to port sustainability by placing high priority on environmental considerations in managing its business.

In a study conducted by Civic Exchange-Hongkong entitled "*Green Harbours: Hongkong and Shenzen — Reducing Marine and Port-related Emissions*", it was revealed that regulations that demand cleaner operations is needed for industries to implement green practices. Without regulation, it is difficult to implement greener practices, as these may put operators at a competitive disadvantage.

In addition to the need for increased regulation, the study presented that there are several other issues that appear across the marine and port sector. These include availability of incentives to encourage green practices, cost and availability of clean fuel, the need to do more research on green technologies, use of shoreside power, and designating emission control areas.

In response to the issues raised, recommendations were put forward such as: (1) developing a comprehensive strategy for reducing emissions from marine and port-related activities; (2) developing clean fuels initiatives supported by energy policy offering clean fuel incentives and improved distribution networks for clean fuel; (3) implementing training programmes for industry; and (4) conducting research focusing on emissions inventory and health effects of pollutants.

STRATEGIES AND APPROACHES

The seminar recognized that a combination of regulatory enforcement and voluntary proactive approaches is an effective mechanism for advancing port sustainability and environmental stewardship.

Some examples of these strategies and approaches are the following:

US-EPA Sector Strategies Program works with representatives of the Ports sector and other stakeholders to assess opportunities to improve environmental performance while reducing regulatory burden. The program's work focuses on four priority areas:

1. Implementing the “Strategy for Sustainable Ports;”
2. Planning for climate change impacts at U.S. ports;
3. Documenting and imparting information on best practices for developing port emissions inventories; and
4. Developing emission reduction incentives, and to promote environmental management systems (EMS).

Specific activities of ports towards environmental stewardship include environmental management for existing and new facilities, measuring and reporting on continuous improvement in environmental performance, addressing community concerns such as human health, environment and quality of life and responding to climate change.

The **World Ports Climate Initiative** (WPCI) initiated by the International Association of Ports and Harbours (IAPH) is supported by 55 major ports in the world with the objective of reducing greenhouse gas emissions through developing a GHG emissions inventory and developing a collaborative approach toward collecting information, estimating emissions and developing plans to reduce the footprint of port operations. The mission of the WPCI is to:

- raise awareness in the port and maritime community of need for action;
- initiate studies, strategies and actions to reduce GHG emissions and improve air quality;
- provide a platform for the maritime port sector for the exchange of information thereon; and
- make available information on the effects of climate change on the maritime port environment and measures for its mitigation.

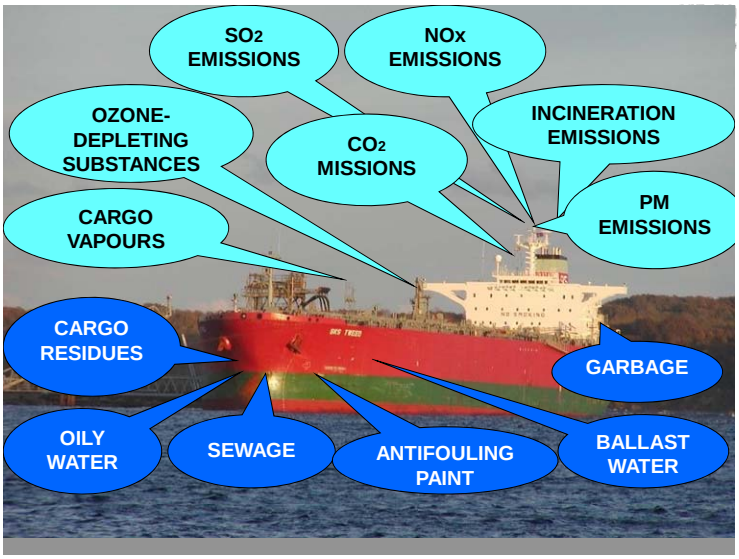
In support of this mission, the WPCI has developed a website and formed subgroups focusing on “themes” that will provide guidance to ports looking to monitor and reduce their GHG emissions. These themes currently include:

- Carbon Footprinting and Modeling Tools

- On-shore Power Supply
- Environmental Shipping Index
- Cargo-handling Equipment
- Intermodal Transport
- Lease Agreement Template

Sustainable Port Development in the ASEAN Region, a project of GTZ (German Technical Cooperation) in collaboration with the ASEAN Ports Association (APA), is aimed to assist selected ports to comply with relevant international safety, health and environmental codes, standards and conventions and improve their safety health and environmental management systems. Hence, the project was initiated to address some of these environmental concerns illustrated in Figure 1.

Figure 1. Environmental Issues Related to Shipping and Ports.



The project will cover the following components: capacity development through application of proven tools, systems and best available practices, development of modular training program on Port safety, health and environmental (SHE) management, adapting national legislation to international regulations, codes of practice and standards and cooperation with other organizations and programmes. Activities lined up for 2010 include development of model port SHE regulations, conduct of air emission inventory, conduct of study on access control/traffic management implementation of Port Safety, Health and Environmental Management System (PSHEMS) in collaboration with PEMSEA.

TOOLS AND METHODOLOGIES FOR IMPROVING ENVIRONMENTAL PERFORMANCE

The various tools and methodologies developed and implemented in the USA, Europe, Hongkong and ASEAN countries may serve as good resources for the region as follows:

Clean Ports USA, an incentive-based, innovative program designed to reduce emissions from existing diesel engines and non-road equipment at ports. The engines and equipment used at ports, including cargo handling equipment, trucks, locomotives, tugboats, ferries and ships, can contribute significantly to the levels of fine particulates (PM 2.5), sulfur oxides (SOx) and ozone-forming nitrogen oxides (NOx) in the air. Because EPA's regulations only apply to newly manufactured diesel engines, the Clean Ports USA program was developed to help ports and fleet owners to reduce emissions from the older engines that are currently in port operation today. Different emissions reduction strategies include switching to cleaner fuels, retrofitting; replacement; rebuilding; repowering; and operational strategies. The significant progress made toward this goal is attributed to the following strategies such as engaging partnerships, fostering innovative technologies and providing funding assistance to accelerate the introduction of clean diesel technologies.

SmartWay^{SM} Transport is an innovative collaboration between US-EPA and the freight transport industry, designed to improve energy efficiency, reduce greenhouse gas and air pollutant emissions, and improve energy security. The SmartWay program provides information or tools that quantify costs/benefits of operational and technology options, identifies clean and efficient vehicles/equipment, provide financial programs for deployment of fuel-saving technologies and offers freigth transport performance evaluation, trackiing and recognition.

The US-coordinated regulatory strategy for vessel emissions applies the new international emission standards based on amendments to MARPOL Annex VI. More stringent limits for engines, fuel sulfur for vessels that operate within the emission control area (ECA) are applied.

EMS as a Tool for Improving Environmental Performance and Advancing Port Sustainability was initiated by US EPA in partnership with the American Association of Port Authorities (AAPA). An EMS primer for ports was developed in January 2008 to assist ports in implementing EMS.

The **Port Safety, Health and Environmental Management System (PSHEMS)** was developed by the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) aimed to provide the ports a methodology to improve port's operational performance through a comprehensive and coordinated approach to safety in port operations, protection of human life, property and the environment. Two ports in the region have successfully implemented the system such as Bangkok Port of Thailand and Port of Tanjung Pelepas of Malaysia.

PEMSEA is providing technical support to ports implementing the PSHEMS by way of training port personnel on the six phases of PSHEMS development, reviewing the ports-documented safety, health and environmental management system as well as assessing its SHE performance in accordance to the requirements of the PSHEM Code — the standard developed by PEMSEA that enables an organization (port authority/port operator) to measure the performance of its operation with regard to quality, safety and health of port workers and the protection of the environment.

To address air quality issues, the *Current Methodologies in Preparing Mobile Source Port-related Emission Inventories* was developed as a result of the study conducted by US EPA.

In response to increasing focus on climate change, a technical paper entitled "Planning for Climate Change Impacts at US Ports" was developed.

CONCLUSIONS AND RECOMMENDATIONS

Some of the recommendations raised during the seminar were as follows:

1. Considering that East Asia is the marketplace for shipping, it is recognized that ports provide a significant economic contribution to national GDP. Therefore, the need for sustainable port planning, development and operation is imperative.

2. Encourage the port sector to be pro-active and engage in voluntary approaches to greener ports.

3. There are existing models, practices, guidelines and programs that can be accessed within and outside the region to promote port sustainability and environmental stewardship.

4. There is a need to develop green policies supported by incentives to encourage ports to implement green practices.

5. Green practices in the marine and port sector would need collaboration with other sectors (ex., air quality concerns, etc)