Green ports policies, coastal shipping and inland waterways

November, 2013
Incheon

KMI 한국해양수산개발원 KOREA MARITIME INSTITUTE

CONTENTS

KMI 한국해양수산개발원 KOREA MARITIME INSTITUTE

1. Background

Why do we need sustainable development ?

- **Treat against the existence of human race due to weather disasters and ecological destruction**
- **Economic loss predicated if energy mass consumption system continues : 5-20% of annual world GDP**
- **Shortage of energy resources and increase in price**
  - **Caused by economic development of new developing countries and continuous growth in world population**
- **Enforce international regulation & cooperation for GHG emission**
- **World CO_2 emission : 31.2Gt (2011)**
  - **Power generation and heating : 41.6%**
  - **Transportation : 22.1%**

1. Background

Why do we reduce GHG **emission from logistics** sector ?

▪ Increasing demands reducing carbon emissions

- Reducing carbon emissions : Global consensus & target
- Pressure to construct environmental friendly logistics system
- ✓ EU : All ships entering EU should be use Less than 0.1% sulfur content fuel since 2010
- ✓ International Maritime Organization (IMO) under the UN adopted the technical regulation guidelines to reduce greenhouse gas emission from ships (MARPOL annex IV)

▪ SCM need reducing GHG emissions

- Increasing pressure reducing GHG to logistics companies and manufactures
- ✓ Need information for GHG emission on whole SCM process
- Necessity to cooperate between policies on Modal shift, multimodal transportation
- ✓ Ports, coastal shipping & inland waterways are key factors reducing GHG emissions

▪ International convention : UNFCCC

- International discussion & protocol for reducing GHG
- ✓ Rio 21(1992), Kyoto Protocol(1997, 2005, 2012), Bali roadmap(2007), Durban platform(2011)

2. Green ports policies

Joint cooperation between C40 cities & C40 world ports

C40 cities climate leadership group : From 2005

- Network of the world's megacities committed to addressing climate change
- C40 world ports climate conference(WPCC)

An active international discussion is under way to cut carbon emissions in port areas

- Port areas didn't take priority so far when it comes to reducing carbon emissions. However, as Europe strengthens regulations on greenhouse gases, particularly in the shipping and aviation field, port areas are pursuing similar policies.
- For example, the C40 World Ports Climate Change Conference was held in Rotterdam, the Netherlands in 2008 with IAPH (The International Association of Ports and Harbors) playing the key role. At the conference, 55 ports from around the world agreed on the C40 WPCC Action Plan

The world ports climate declaration

- Reduction of GHG emissions from ocean-going shipping
- Reduction of GHG emissions from port operations and development
- Reduction of GHG emissions from hinterland transport
- Enhancement of the use renewable energy
- Development and auditing of CO2 inventories

2. Green ports policies

World port climate initiative

World port climate initiative (IAPH)

- Fifty-five of the world's key ports, acknowledging their unique capacity as key hubs in global supply chains, have come together in a commitment to reduce their greenhouse gas emissions while continuing their role as transportation and economic centers

Chief goal

- Deepen the support for WPCI among the world's ports
- Promote information sharing
- Establish a framework for CO2 footprint inventory and management
- Establish Environmental Ship Indexing and increase support for this measurement
- Organize global support for WPCI goals among regional and global organizations

Mission statement

- 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
- Make available information on the effects of climate change on the maritime port environment and measures for its mitigation

2. Green ports policies

Action plan(project in progress)

Intermodal transport

- Intermodal transport reduces cargo handling as well as improves security and reduces damages and loss
- Intermodal transport allows cargo to be transported more efficiently and thus reduces transportation cost, congestion on the roads, and air emissions

Lease Agreement Template

- A Lease Agreement Template includes a sustainability approach in lease contracts for the ports' tenants and includes the requirements related to control measures to combat climate change
- The use of Lease Agreement Template at the ports would result in the reduction of GHG emissions and improve air quality. It will also raise awareness in the port and maritime community

Cargo-handling Equipment

- **To reduce the amount of pollutants emitted from ports, ports are beginning to retrofit these equipment types with emissions control systems, replace older equipment with newer cleaner equipment, or use cleaner fuel technologies, such as electrification**

LNG-Fueled Vessels

- LNG is of interest to both ship operators and ports because it reduces or eliminates many of the emissions targeted by current and future IMO measures to make shipping cleaner. (For example, LNG eliminates sulphur & particulate matter emissions are close to zero and also reduce NOx by 80-90% and CO2 emissions by 26%)

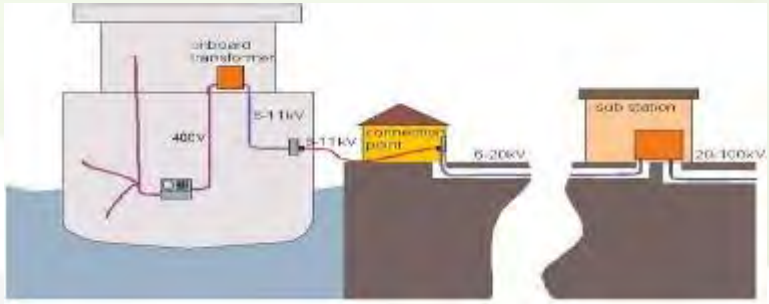
. Green ports policies

orts Policies

pply(OPS)

is one of the strategies
ort Climate Initiative for
impact of seagoing vessels in

Power)



Index(ESI)

dex (ESI) identifies seagoing ships
cing air emissions than required
ndards of the International
Environmental Ship Index
unt of GHG from ship and own

eau of IAPH

g

used to determine emissions sources, track emission trends, and provide
rmine where ports can focus efforts to reduce their greenhouse gas (GHG)

mount of GHG emissions an individual, organization or event directly or indirectly
period