



# Baltic Sea Parliamentary Conference

6th Session of the BSPPC Working Group on Integrated Maritime Policy

June 20, 2011

# Contents

- Introduction of MEYER WERFT and NEPTUN WERFT
- Shipbuilding Process
- Building Program
- Actual Air Emission Legislation
- Discharge of Solid Waste
- Cold Ironing
- Rules and Regulations

# Shipyard – Locations

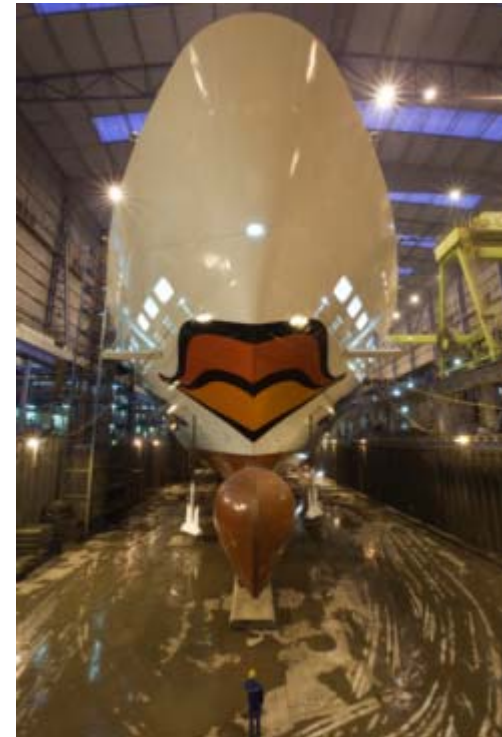






# MEYER WERFT - Papenburg

- 10 production halls
  - 2 covered building docks
  - 4 halls for block construction
  - 4 halls for laser welding systems
- Biggest covered shipbuilding hall in the world (504m x 125m)
- Europe's largest Laser centre
- Crane capacity of up to 800t per crane
- Own cabin production





# NEPTUN WERFT - Warnemünde



# NEPTUN WERFT - Warnemünde



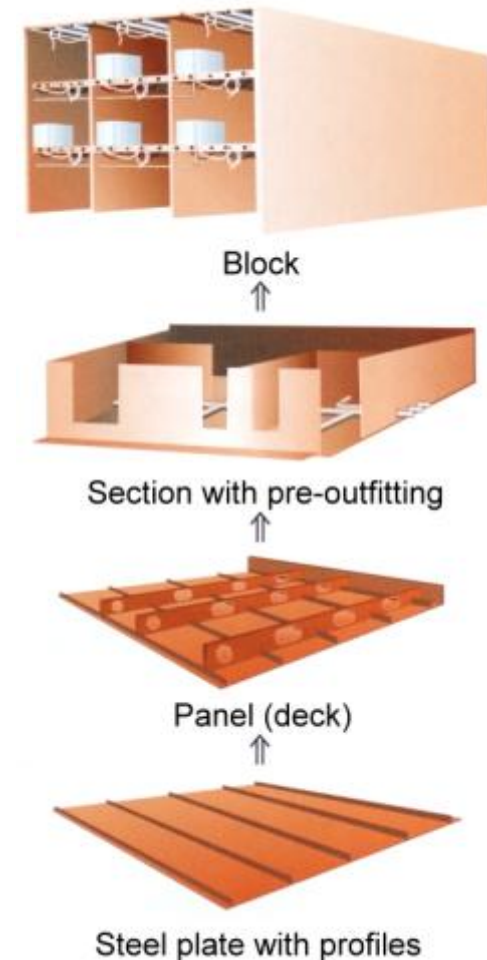
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# Shipbuilding Process

- Modern shipbuilding process rely on standardization and industrialization.
- Most yards employ the “LEGO” principle
- Sections may be finished several weeks before installation in the block
- Therefore careful planning for delivery and installation of equipment is required













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# Product Portfolio and Order Book

## Cruise Ships



**Ships:** 30 (+9)

## River Cruisers



**Ships:** 15 (+7)

## Cruise Ferries



**Ships:** 2

## Passenger Ships



**Ships:** 24

## Ferries



**Ships:** 28

## Island Ferries



**Ships:** 28 (+1)

## Gastanker



**Ships:** 55 (+1)

## Livestock Carriers



**Ships:** 27

## Container Ships



**Ships:** 4



# Order Book



**S. 690 Delivery 2012**

**S. 695 Delivery 2013**



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**S. 688 Delivery 2012**



**S. 679 Delivery 2011**

**S. 691 Delivery 2012**



**S. 678 Delivery 2013**

**S. 692 Delivery 2014**



**S. 697 Delivery 2014 (RCI)**

**S. 698 Delivery 2015 (RCI)**

# Order Book



**S. 519 Delivery 2012**  
**S. 520 Delivery 2013**  
**A-ROSA**



**S. 517 Delivery 2011**  
**S. 521 Delivery 2012**  
**S. 522 Delivery 2012**  
**S. 523 Delivery 2012**  
**S. 524 Delivery 2012**  
**Viking**



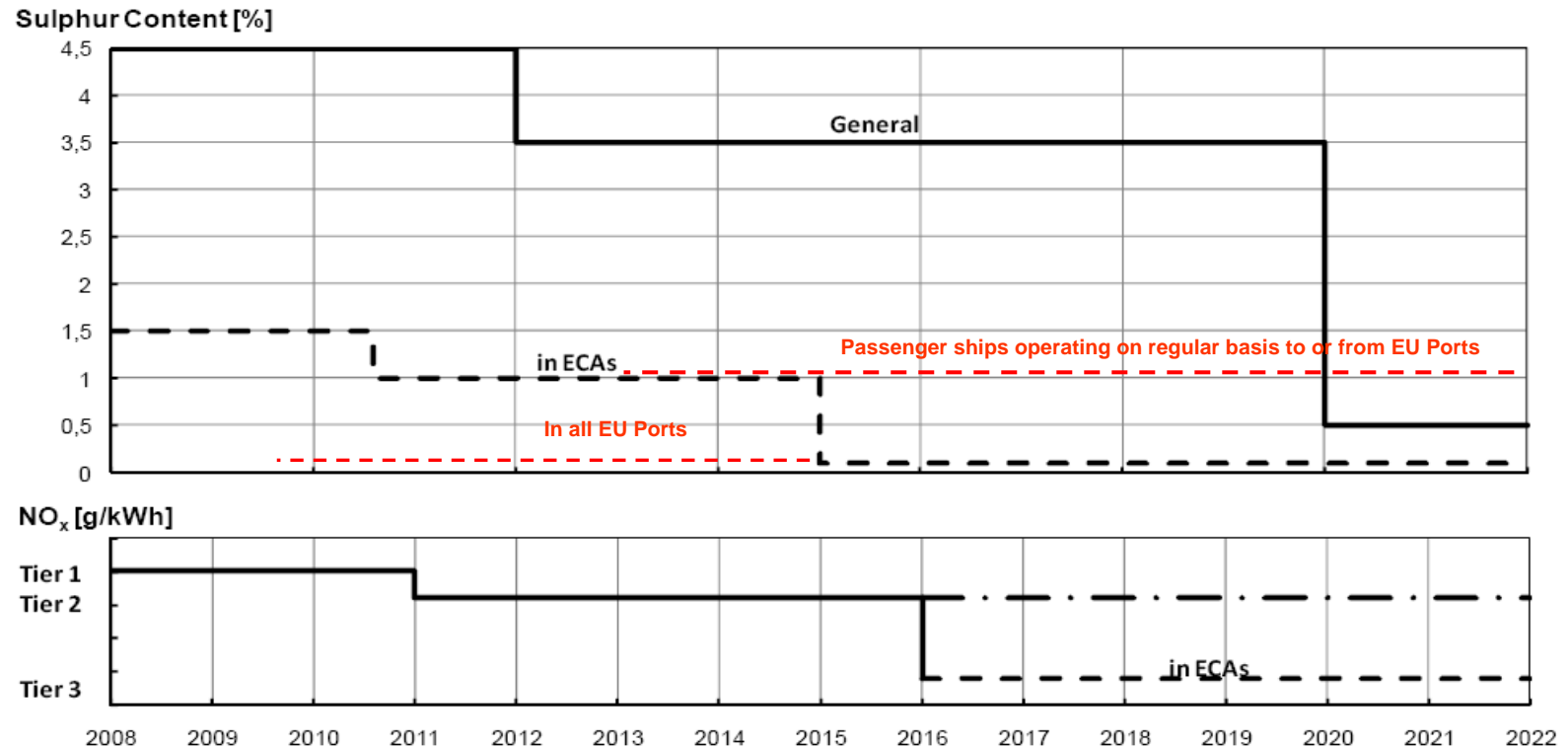
**S. 518 Delivery 2011**  
**W.D.R**

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# Actual Air Emission Legislation



--- EU Directive 2005/33EC

How to achieve the air emission legislation ?

# LNG as fuel for Passenger Ships

## Why LNG?

- NO<sub>x</sub> Reduction ~ 90%
- SO<sub>x</sub> None
- CO<sub>2</sub> Reduction ~20%
- PM ~None
- Useable for combustion engines, turbines, fuel cells, ...
- Highest energy efficiency due to thermal use
- Exceeds coming regulation
- Simpler and easier technique compared to conventional exhaust cleaning techniques (e.g. maintenance, operation)



## Why Passenger Ships?

- Berthing in urban areas
- Sailing in sensitive areas
- Sailing in nature reserve
- In focus of public interest



# Current Situation

- Upcoming regulation on SOx, NOx, PM and CO2 emissions require adequate changes in ship propulsion. LNG or CNG as fuel is one solution to cover all mentioned pollutants.
- Available Infrastructure
  - Large scale terminals and shipping
  - Regional LNG distribution networks (e.g. Norway)
  - Few number of small LNG Carriers for supply
- Missing Infrastructure
  - Satellite terminals close to bunkering locations
  - LNG feeder ships with sufficient capacity
  - Bunker ships/barges/vessels





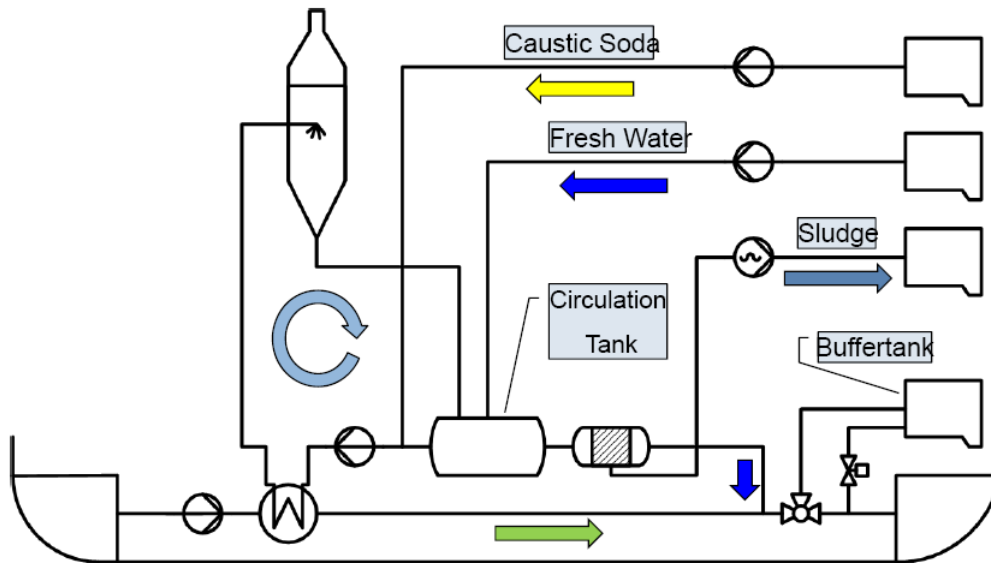
# Challenges

- Bunkering arises as a key issue:
  - LNG bunkering must be competitive respectively comparable to normal fuel oil bunkering
    - Regional supply
    - LNG bunker vessel is a flexible and cost efficient solution
- The major challenge of a bunker system is the economical and safe LNG transfer within normal port limits and during normal operation of the vessel to be bunkered

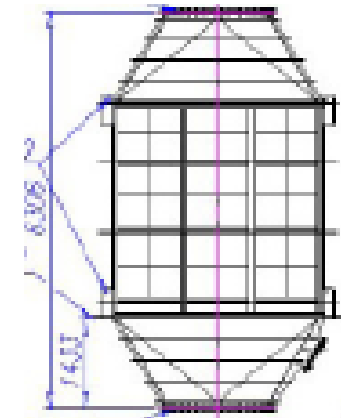


# Reduction of Air Emissions

## Scrubber



## Catalyst (SCR)



### Impacts:

- Additional space requirements
- Additional weight
- Additional investment costs

## Challenges

- Discharge of scrubber sludge
- Infrastructure for supply of caustic soda for scrubber
- Infrastructure for supply of urea for catalyst



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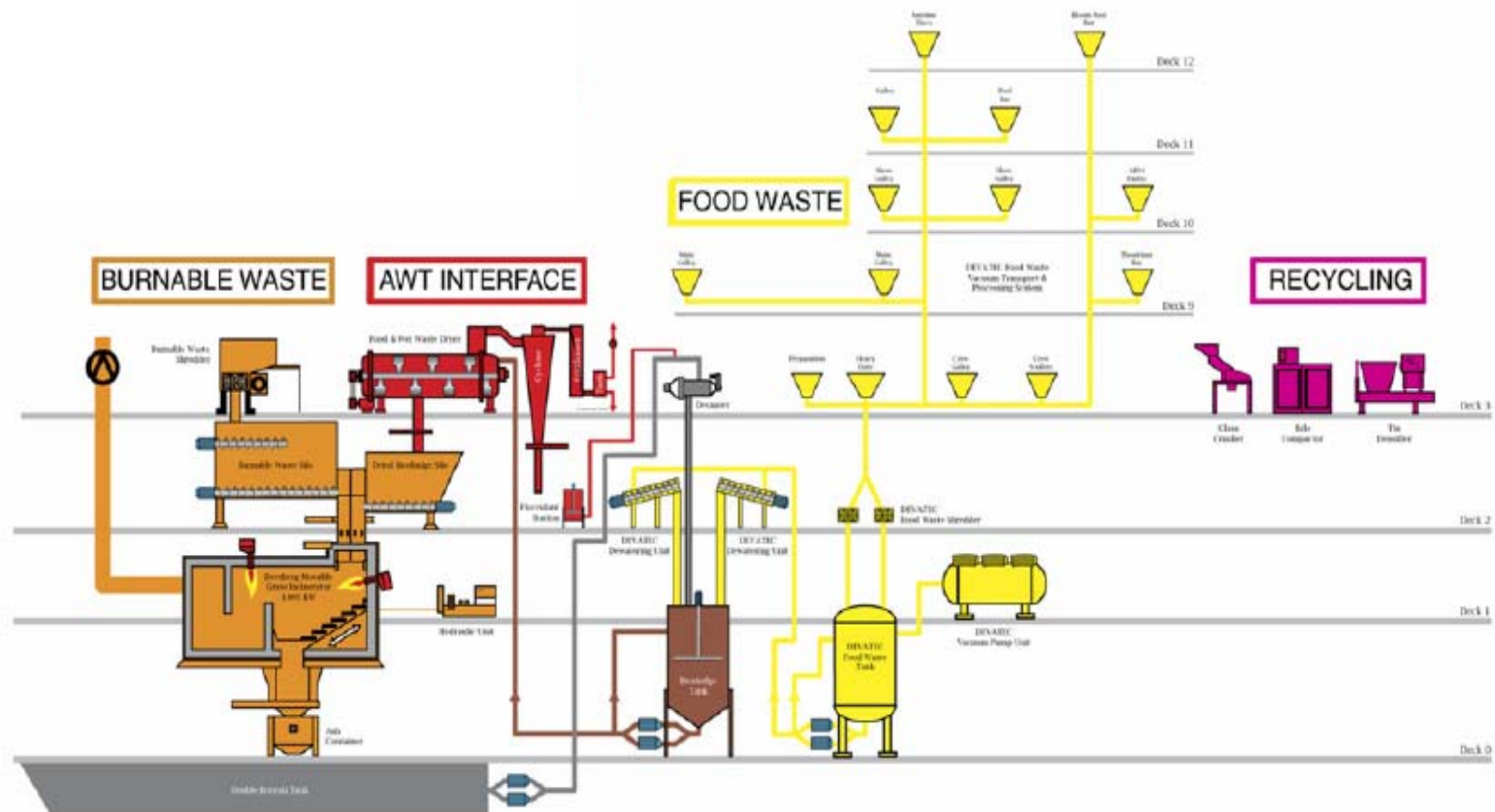
# Solid Waste

- Burnable waste
- Recyclable waste
- Food waste



# Solid Waste

## Basic principle



# Solid Waste

## Challenges

- Discharge of sanitary sewage
- Discharge of recyclable waste



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- **Shore connection**
- Rules and Regulations



# Shore connections

- Voltage, frequency and grounding of the supplying network and ship network
- Continuous and temporary power demand
- Cable management systems
  - On shore
  - On board
- Location of ship berth
- Location of shore connection point on board



# Shore connection

## Challenges

- Grid strength on shore
- Electrical infrastructure on the ship
- Electrical infrastructure in ports: Built in modules to fit all type of ports
- Safe connection
- Seamless transfer of power
- Control system for metering and for monitoring onboard as well as onshore
- Under which conditions is the power generated?
- Green power ??



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# Rules and Regulations

## **Air emission and discharge to sea legislations:**

- Different regulations in Baltic Sea countries (e.g. IMO / Helcon, NOx tax system in Norway)
- Different regulations between port authorities

## **Challenges:**

- Standardization of legislations for air emissions and waste water treatment





Thank you! June 2011

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