



## Shipowners Perspective on ECA and LNG



**1.) Introduction**

**2.) International Legislation**

**3.) LNG**

## Who is speaking ?

- Captain Wolfram Guntermann
- Director Environmental Fleet Management, Hapag-Lloyd Ship Management
- Sailing Career began in 1979
- Masters and Engineers Licence, sailing as Ship Operation Officer
- Master on several Hapag-Lloyd Vessels
- Assignments to positions ashore in London, New York, and Hamburg





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Is this public perception of California ?



Or rather remembering these folks?



## Took a rolemodel worldwide



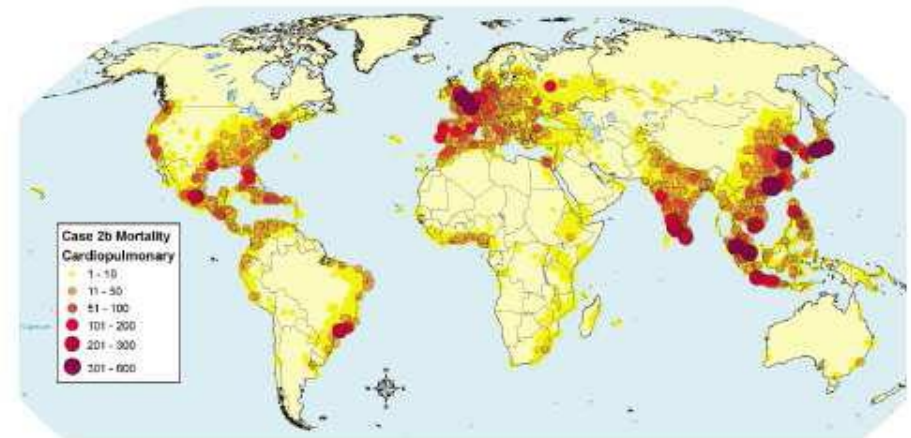
## Some programs initiated in California

- Serious public health issues in the San Pedro Basin triggered political activity
- MOA for vessel speed reduction program already pursued in the Nineties
- Jan 01 2007 introduction for low sulfur fuels with 0.5 % for auxiliary engines
- Since July 2009 vessels calling Californian Ports have to use DMA/DMB with 0.5 % Sulfur at a distance 24 nm off the coast.
- Reduction to 0.1% Sulfur on Jan 01 2014
- Cold Ironing Project launched ten years ago, as from 2014 it is mandatory for 50% of vessels calling Californian Ports
- High degree of compliance by all stakeholders

## Growing Awareness

- The International Maritime Organisation (IMO) has released the third Green House Gas Study
- Increased air emissions in densely populated and industrialized areas.
- GHG emissions from ships reduced by 20 % in 2012 compared to 2007
- Maritime contribution to total global emission dropped from 2.8% to 2.2%
- The proven GHG reduction accomplished during the last years is not truly honored – Environmentalists do expect a deterioration
- EEDI (Energy Efficiency Design Index) and SEEMP (Ship Energy Efficiency Management Plan) were already introduced Jan 01 2013
- Continuous activity at IMO MEPC

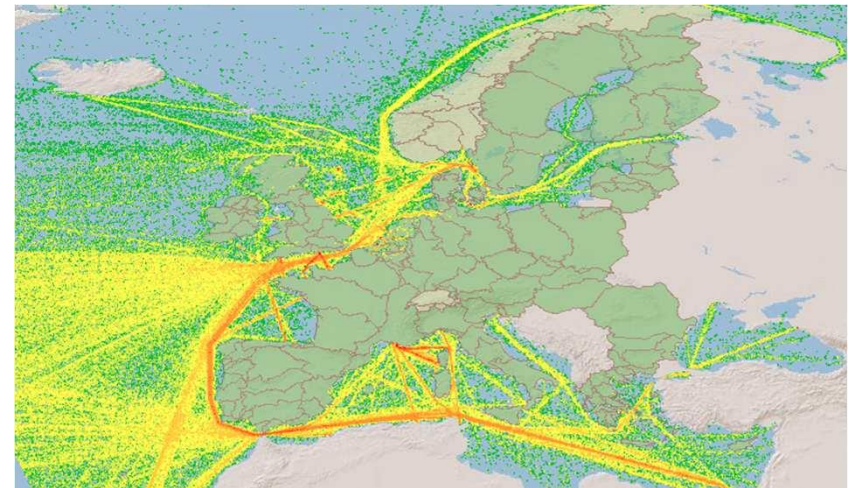
## Emissions on a Global Level



## Development of Regulations

- Implementation of Baltic SECA already in May 2006
- North Sea followed in August 2007 with currently 1.0 % Sulfur
- EU Sulfur Directive Jan 01 2010 using 0.1%S at berth
- 0.1 % Sulfur in ECA as from Jan 01 2015
- Will there be an ECA for EU Ports in the Mediterranean Sea ?
- What is going to happen at the Pearl River Delta Ports and Hong Kong ?
- EU Sulfur Directive implementation for 0.5%S in EU EEZ already as from Jan 01 2020 ( no fuel availability review as IMO)

## Major Tradelane in European Waters





## Enforcement of Limits

- The Emission Control Area (ECA) North America with a max. of 1% sulfur is being enforced since August 1<sup>st</sup> 2012
- As of Jan 01 2014 US Caribbean Islands and Puerto Rico followed
- ECA Sulfur Content Cap is now 0.1% as from Jan 01 2015
- California had implemented a review period
- USCG, EPA and Transport Canada do follow a stringent enforcement regime

## Area of North American ECA



## Be proactive

- LS Tanks already installed in 1998 on board our London Express Class.
- Retrofitting and provision of designated LS Tanks necessary due to higher LS demand
- Pricegap between LS fuel and HFO still 50 %
- Huge cost impact being addressed with our customers by our Sales Organisation
- Intentional fraudulent non-compliance has been raised by the Trident Alliance
- Hapag-Lloyd joined Trident in Oct 2014

## MS London Express



## A level Playing Field should be safeguarded

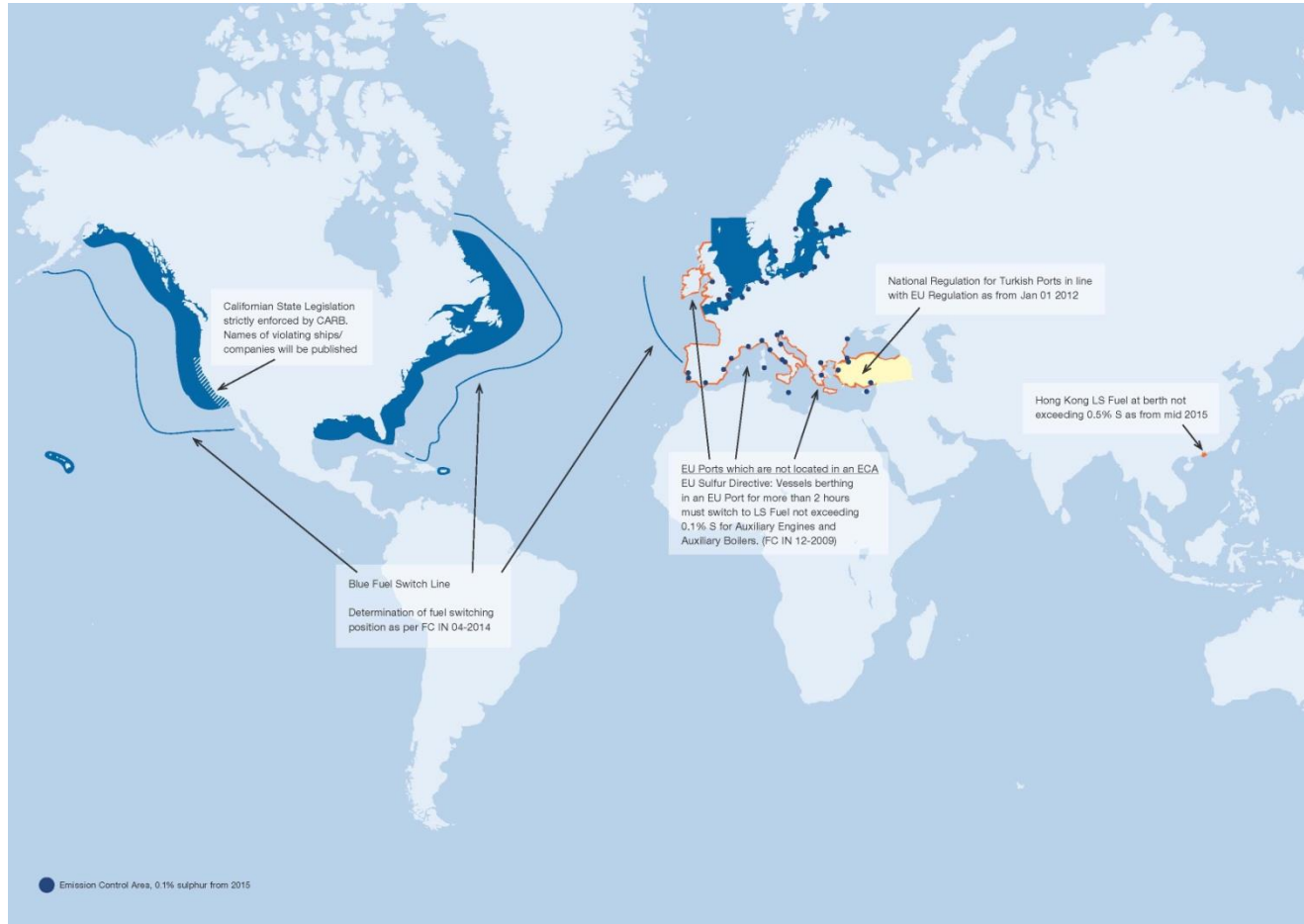


### Why it was created

- Enforcement level: weak in N Europe ECA
  - Never too late to start
- 2020/2025 global cap concern
  - Longer term perspective, global issue
- Temptation to cut corners on compliance
  - Unacceptable business risk
- Level playing field: business imperative
  - Need robust enforcement



## Visual Guidance of Regulations



EU Sulfur Directive implementation for 0.5%S in EU EEZ (yellow) as from Jan 01 2020



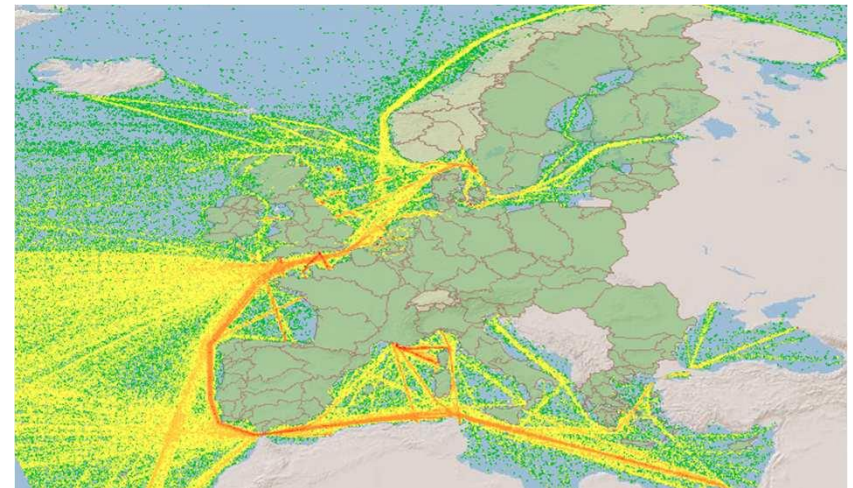


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## Situation in Europe

- Implementation of stricter Sulfur Limit of 0.1 % in ECA did not trigger a shift from short sea shipping to road transport.
- High traffic density on major tradelanes remains, some studies predict more growth
- LNG is on top of the agenda as an alternative
- Maritime Media reported about some pioneers using LNG in short sea shipping
- Prominent example is a ferry connection between Stockholm and Turku
- Local shipping in countries as Norway do not have the obstacle of long distance haul for LNG supply.
- A German company developed the new concept of an LNG Power Barge for Cruise Vessels.
- Since there is no LNG Terminal in Hamburg, trucks have to carry the LNG Tanks from Zeebrugge / Belgium

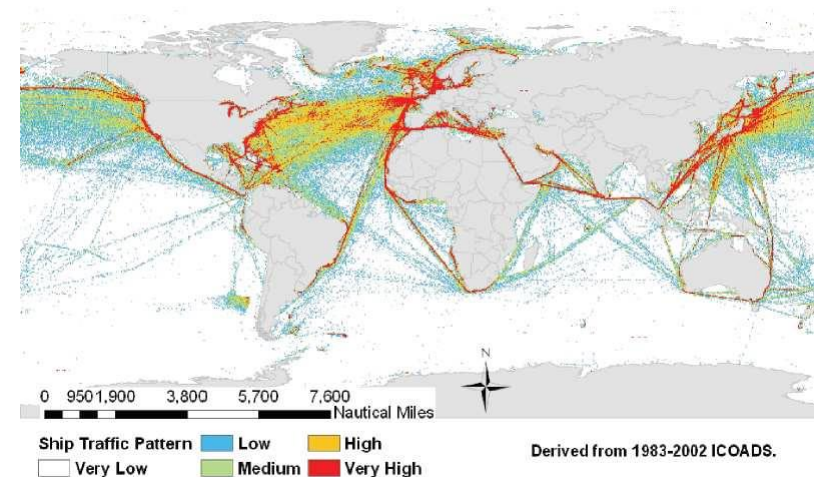
## Major Tradelanes in European Waters



## Global Situation

- The high traffic density which can be compared to motorways is also valid on a global scale
- Legal uncertainty about implementation of the Sulfur Cap of 0.5 % in 2020 or 2025
- Will there be a global implementation or a regional regime in the European EEZ ?
- Shipowners will continue to seek alternatives
- Lloyd's Register conducted a LNG Bunkering Infrastructure Survey in 2014
- 22 ports responded positively :
  - 3 Asian Ports
  - 4 North American Ports
  - 15 European Ports

## Major Tradelanes Worldwide





## Volatile Bunker Market

### National Natural Gas Market Overview: World LNG Landed Prices

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

### World LNG Estimated June 2015 Landed Prices

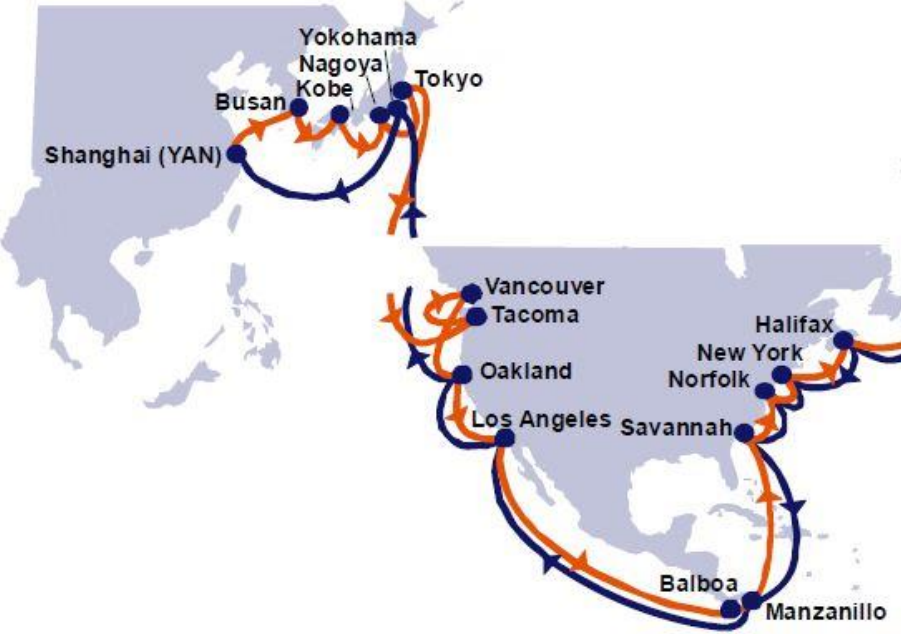


Source: Waterborne Energy, Inc. Data in \$US/MMBtu. Landed prices are based on a netback calculation.  
 Note: Includes information and Data supplied by IHS Global Inc. and its affiliates ("IHS"); Copyright (publication year) all rights reserved.

Updated: September 2015

PP1 Service

PA 1 Service



## LNG Bunkering Challenge

- Let's assume we have just picked up a rental car at San Francisco for a long holiday trip across the USA
- How are we selecting the gas stations ?
- It is by the price we have to pay.
- We do the same situation when purchasing bunker fuels for our ships.
- Today, there is a much wider possibility of choices for bunker prices and locations for HFO replenishment than for LNG
- It will be a long way to reach a world wide coverage of LNG bunker ports

## San Francisco



## Hapag-Lloyd Activities

- Partner in the Maritime LNG Platform, the German National LNG Initiative
- The Maritime LNG Plattform has 70 members consisting of industry, ports, and associations
- Partner and Focal Point for the German Government about LNG related issues
- Development of LNG as alternative fuel is emphasized in the German Coalition Contract and the MKS
- MKS stands for Mobility and Fuel Strategy by the German Government
- Hapag-Lloyd participates at MKS together with the German Shipowners Association VDR since its inauguration in 2012
- Positive example of proactive collaboration between industry and Government

## MV Chicago Express



## How can we move ahead ?

- Besides finding solutions for the global LNG Bunker Supply situation, there are many more questions to be answered
- International and national regulations for bunkering LNG have to be passed
- Will it be possible to embark or disembark passengers during bunkering ?
- Will be possible to continue cargo operations including handling Dangerous Goods while bunkering LNG ?
- Continue a constructive partnership with Government Agencies seeking a fruitful dialogue to develop feasible solutions for the wellbeing and sanity of the citizens affected.

## Taejongdae Lighthouse



감사합니다!

Thank you very much for your attention !

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