



 **Port of Hamburg – smartPORT and Partner in green logistics**

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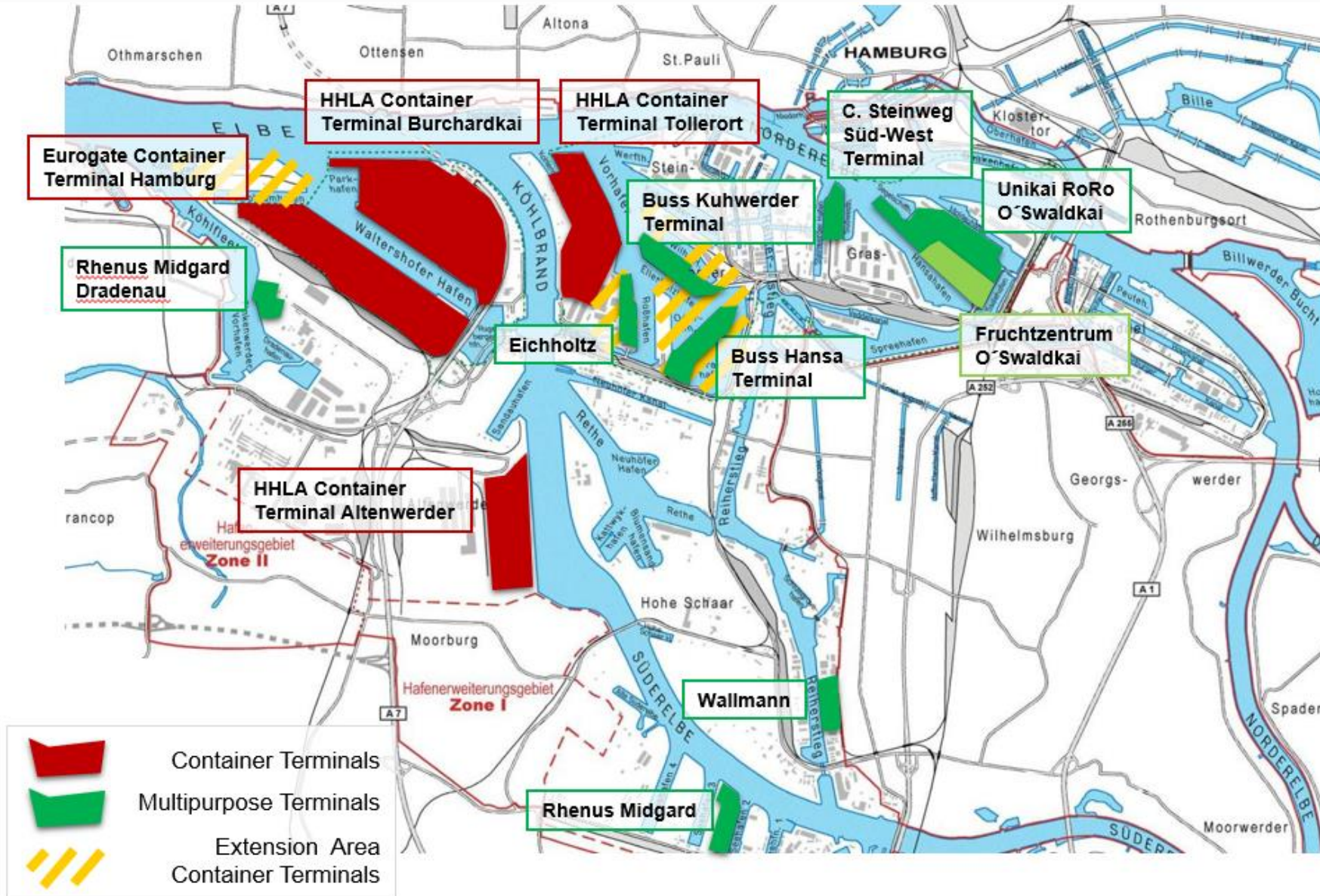
 Port of Hamburg: In the Heart of Europe



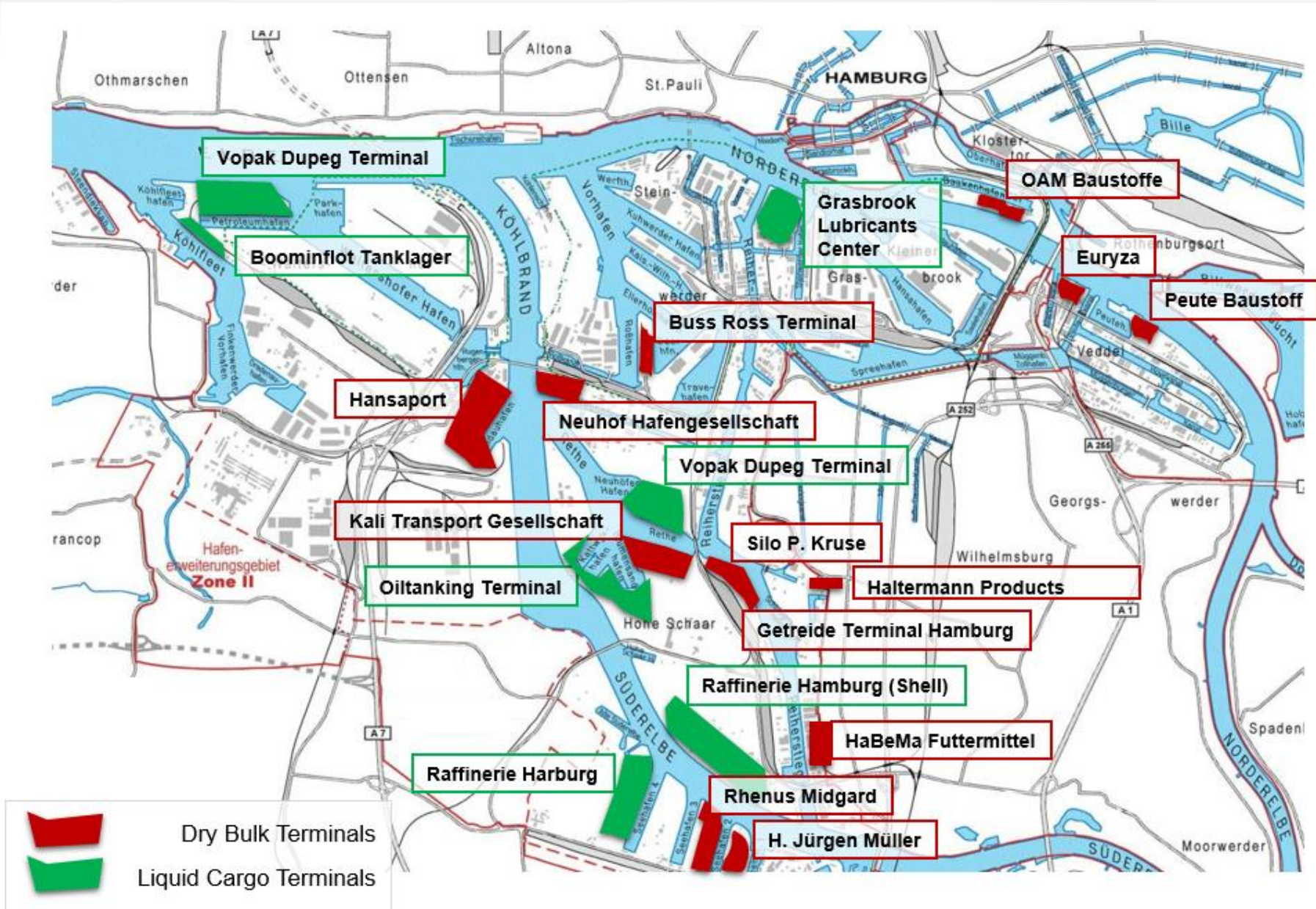
● Hamburg

IDEALLY LOCATED IN THE HEART OF EUROPE

General Cargo Terminals – Container & Multipurpose Terminals



Bulk Cargo Terminals – Dry Bulk & Liquid Cargo Terminals



Heading into a greener Future: smartPORT





The strategy for intelligent and green port development



smartPORT
energy

smartPORT

smartPORT
logistics

Lower energy use and environmental impact

Efficient use of energy and infrastructures

Optimized supply chain and transportation networks



Driving forces behind current developments in the port



High cargo volumes in limited areas

2000: 85 million tons
2015: 138 million tons



Increasing traffic



Limited parking areas



Larger vessels & cargo loads

2000: 126 ships
2015: 617 ships



Increased environmental awareness



Road traffic

Port road management,
drivers, road maintenance



Environment

Disaster control,
city-port and citizens



Ocean transport

Shipping lines, pilots,
ship traffic control, bridges



Terminals

Port operators



Rail traffic

Railway companies



Public authorities

Construction, civil
engineering



smartPORT energy





Development of innovative technology

Reducing dependency on conventional energy sources



Improved energy efficiency

Reducing emissions



Innovative transportation planning

Reducing energy use and costs



**Onshore power supply facility in
the Hamburg Cruise Center Altona**



**Floating liquid gas power plant
LNG Hybrid Barge "Hummel"**

Landside power supply for cruise ships reduces emission compared to ships' generators –
reduction of air pollution, CO2 and noise emission



LNG PowerPac[®]

Alternative for shore power supply for moored ships

Two units of the size of 40” containers are loaded onto the ships and will supply those with LNG generated power

Generators of ships can be turned off

No cables from shore to ship

First PowerPac[®] in the Port of Hamburg in 2017



**Wind turbines
in the port area**



**Solar energy plants
in the port area**

Alternative power production instead of conventional power plants reduces air pollution and CO2



smartPORT logistics





**Optimized transportation
management & use of traffic
networks**

CO₂

**Long-term reduction of emissions and
air pollution**

More efficient use of
existing infrastructures

Development of new
intelligent infrastructures

Optimization of the flow of
traffic and goods traffic

Digital networks link
all processes and
participants



Future Port Traffic Center



Existing IT Platforms



Optimizing the flow of traffic and goods –
Customers (forwarders, logistics providers, and freight agents)
can choose the most efficient transport mode (added value)



BURCS

K LINE

K LINE

COSCO

MA SHIPPING

UASC

COSCO

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EVERGREEN

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Port Monitor

Control station software for the port vessel traffic center

Collection, processing, and presentation of information from various data collection and communication systems in the port

Comprehensive and up-to-date overview of vessel traffic in the port



transPORT rail

Information system to link all data on railcars and cargo for rail transport companies, Hamburg Port Authority, and terminals

Optimal train scheduling

Increased efficiency in rail transport



CHINA SHIPPING LINE

CSCL VENUS

NO SMOKING

HARBURG
Einsteigen, sparen und woh...



smartSWITCH

Real-time information system to monitor the condition of rails and switches via sensors

more effective use of the rail infrastructure

early warning on traffic conditions and malfunctions

better planning of maintenance



Port Road Management

Traffic control system based on detectors and sensors in the port road network

optimizes the flow of traffic through intelligent traffic management LED message boards

dynamic traffic control in case of congestion and to improve use of parking spaces

reduces fuel consumption and emissions



smartPORT Logistics (SPL) App

Online traffic management application for truck traffic in the port

traffic information

routing

expected time of arrival

information on parking spaces

information on construction sites

closure times for moveable bridges

interfaces for further applications



Thank you for your attention!

