



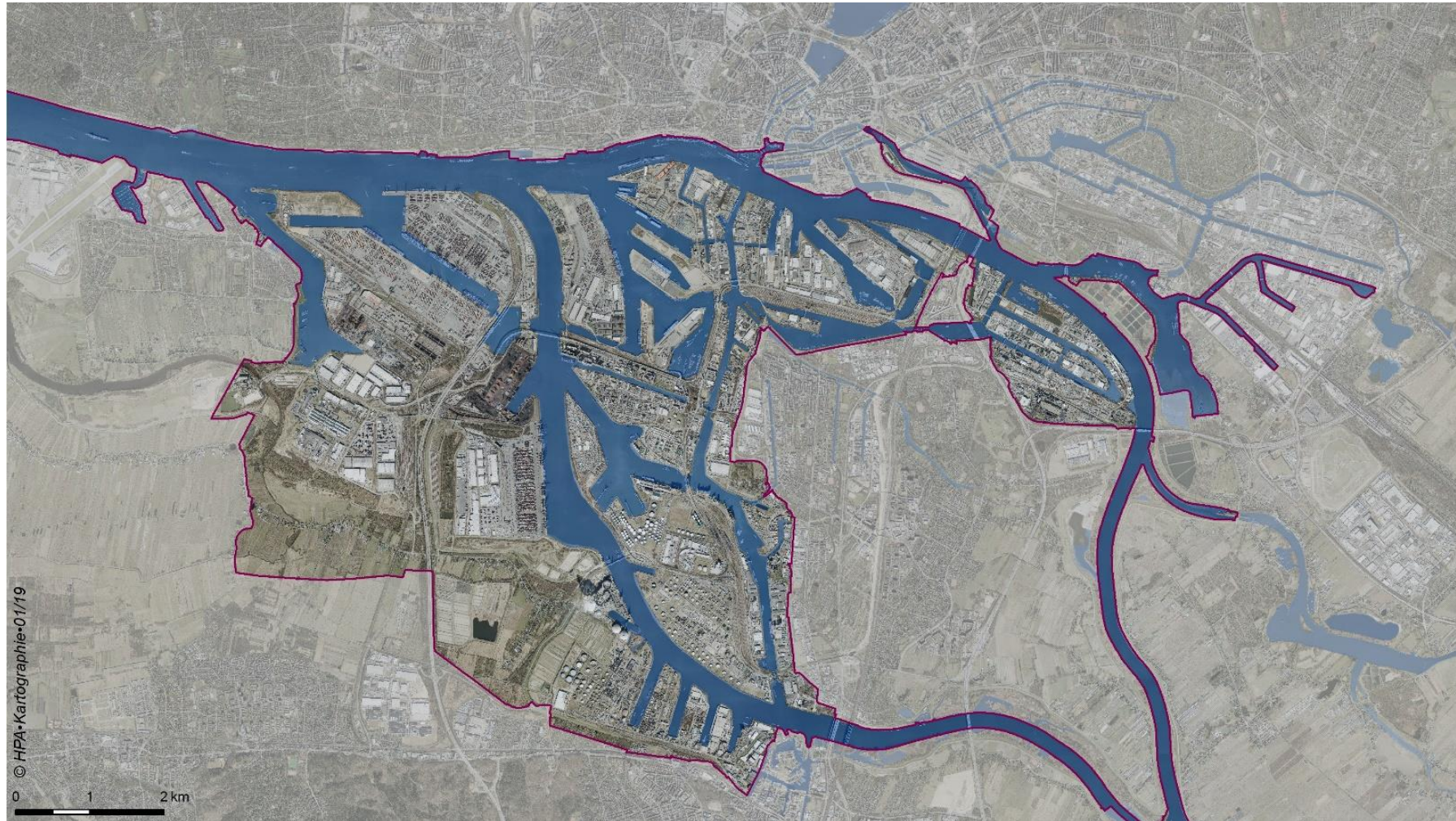
Projects on Shore-Side Electricity – challenges and lessons learnt

Workshop on Alternative Fuels and Power Solutions for Shipping in Ports

Jochen Homann

20th of October 2022

The Port of Hamburg - Location



The Port of Hamburg – Facts & Figures



More than 800 calls
by vessels from a length of
330m and/or a beam of 45m



Approx. 43km
of quay walls



About
280 berths
for seagoing vessels



Germany's
second largest inland port



Roughly 120
bridges



More than **200** freight trains
move over **5,500** wagons every day



Europe's third
largest seaport

Total cargo throughput from
over 126 million tonnes



Flotte GmbH
Approx. 50 ships



Inland vessel calls
about **7,000**



Europe's
largest port rail hub
about 300km of rail tracks



Over 160 railway
undertakings



About 7,000ha
of port area



**Cruise Gate
Hamburg**
3 cruise terminals

More than 140 km
of public roads



Some 1,800
employees



Stand: 2020

Port of Hamburg is a Frontrunner in Onshore Power Supply

- First OPS installation for cruise vessels in 2016
- First OPS installation for containerships in 2023
- Large OPS expansion until 2025
 - all cruise terminals (in total 4 connection points)
 - all container terminals (in total 10 connection points)

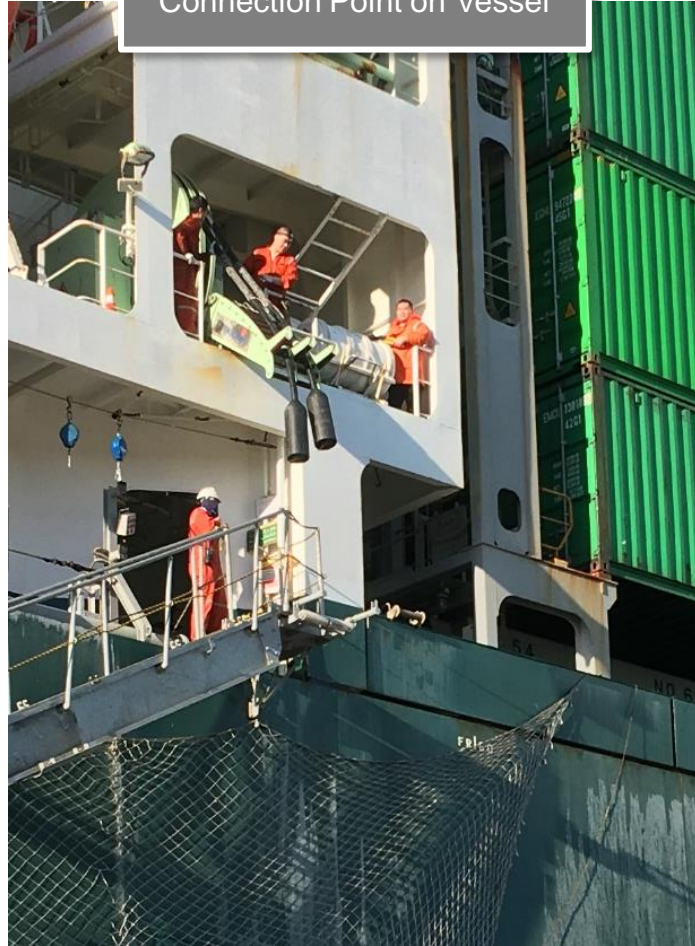


Very limited space at the terminal

Cable



Connection Point on Vessel

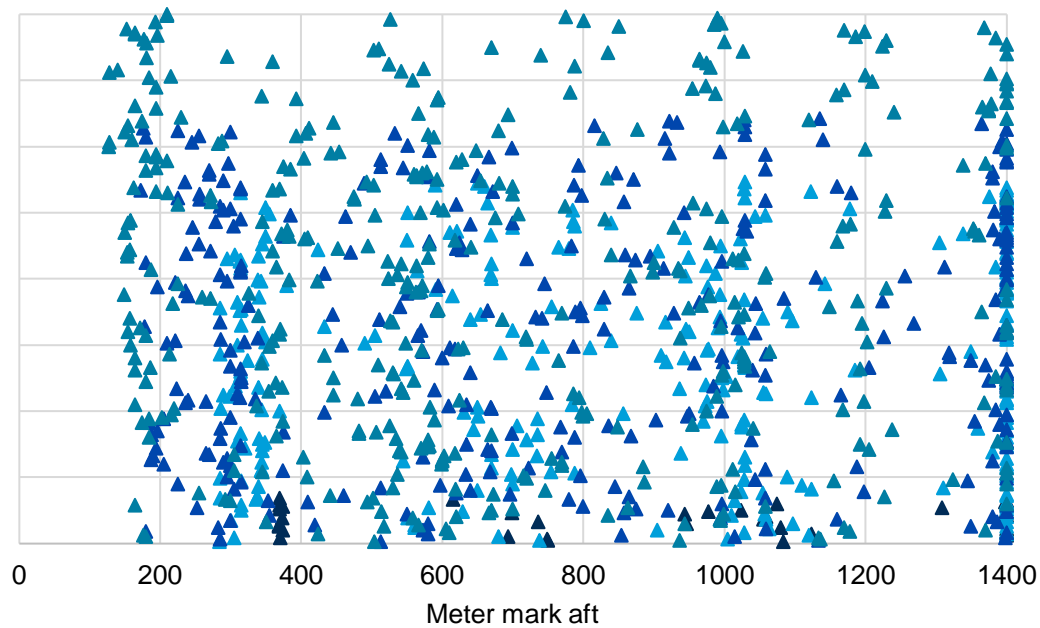


Space for connection point on terminal



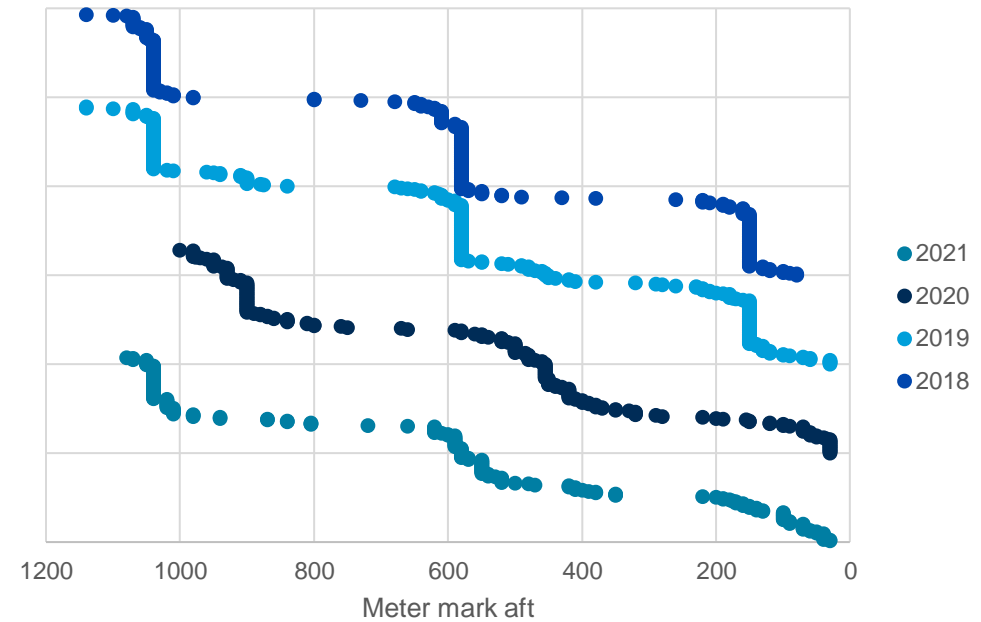
Variety of mooring positions

Container terminal A



→ All kind of vessel sizes

Container terminal B



→ Vessels > 300 m

→ Year to year comparison

High voltage & low voltage vessels at the same berth



Data availability

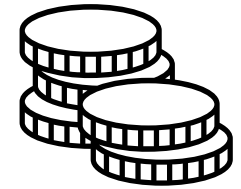
- OPS readiness of vessels
- Positioning of cables on board
 - starboard and/or portside
 - aft or before
- Energy demand at berth in specific ports



Two possible connection points on each side
Usually just one of these 4 options is equipped

Financial

- Willingness to pay
- Cheap fossil fuel vs. expensive green electricity



Regulatory

- Obligation vs. 280 berths
- What to do between now and 2030?



Lessons learnt

- National regulation did not meet shore power requirements and needed to be adjusted
- Heterogeneous demand side and willingness to pay
- Energy price pushes previously already challenging business model close / over the edge
- Terminal commitment and commitment on board crucial
- Being an early mover is a constant uphill battle

Thank you!