

IAPH / WPSP

Sustainability Awards

Onshore Power Supply (OPS) in the Port of Hamburg
Application by the Hamburg Port Authority AöR (HPA)

Hannes Hansen, Project Manager Shore Power HPA

May 2021

Overview of our Major Shore Power Projects

City of Hamburg



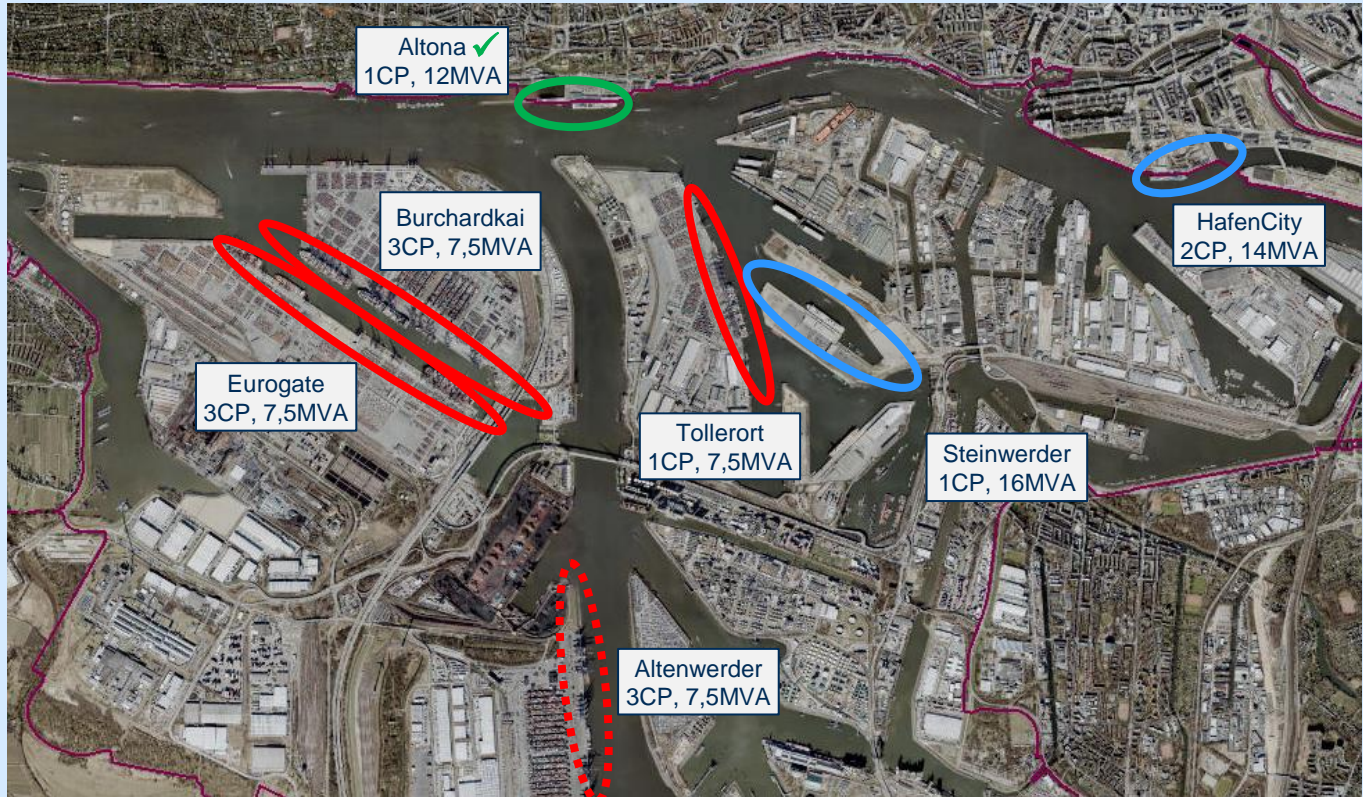
↖ prevailing wind direction: south-west (towards city)

Project Budgets

Altona (2016)	10 Mio.€
Current projects	75 Mio. €
Altenwerder	TBD Mio. €
Others	TBD Mio. €

Completion:

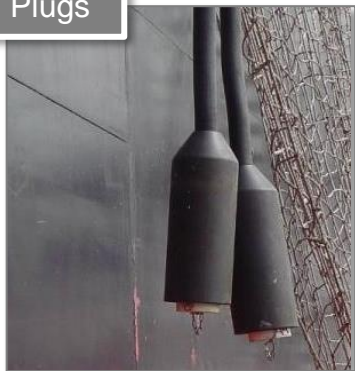
Altona (Cruise)	since 2016
Steinwerder (Cruise)	2022
Eurogate (Container)	2022
Burchardkai (Container)	2022
Tollerort (Container)	2022
HafenCity (Cruise)	2024



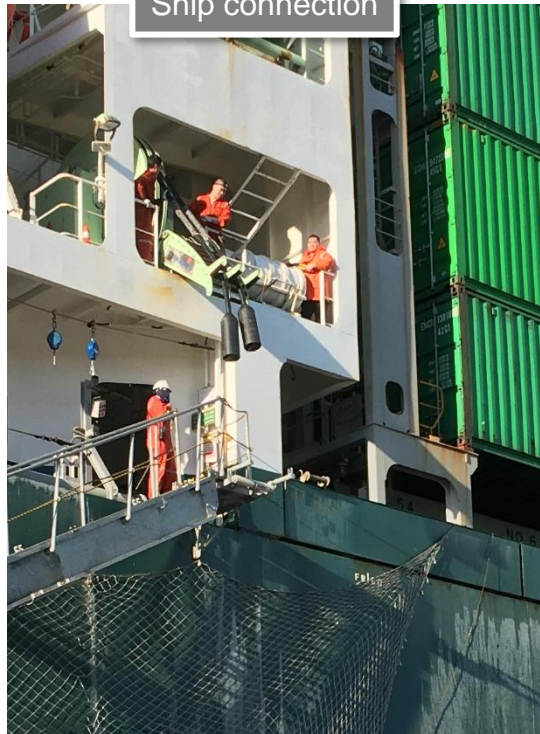
© HPA

Technical Challenges

Plugs



Ship connection

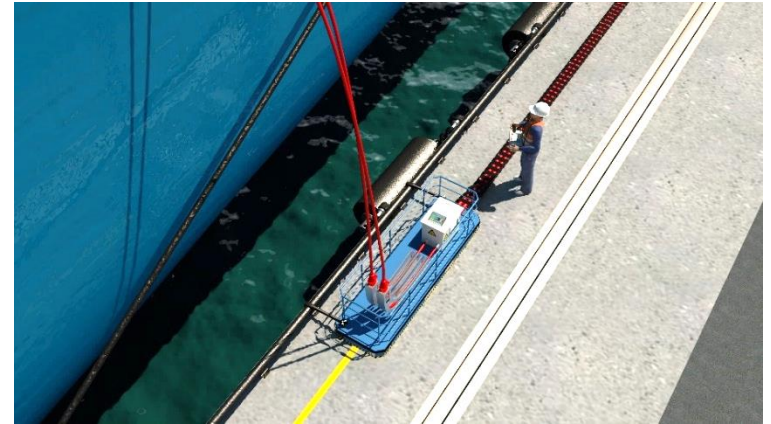


Connection Point (CP)



© HPA

Connection Point Concepts at Container Terminals



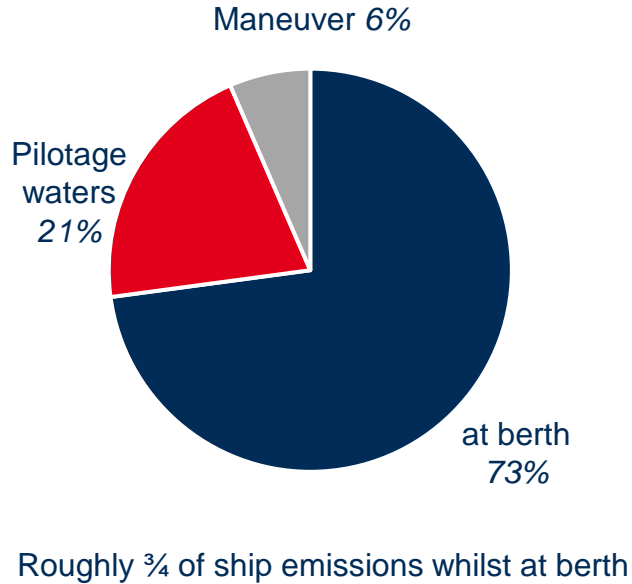
Connection on top of flood control installation



Connection point installed on top of autonomous vehicles w/ & w/o cable reel

© Fichtner

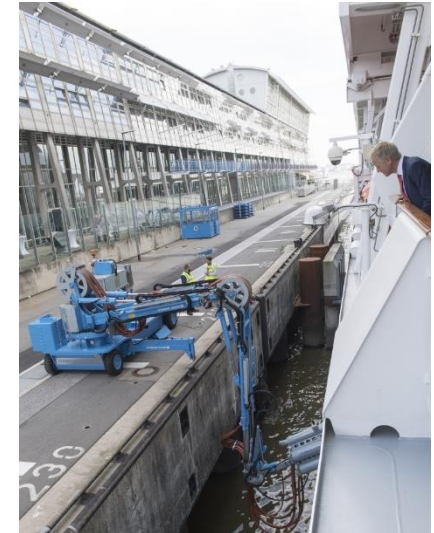
CO₂-Emissions by Seagoing Vessels



Projected OPS-ready calls by 2025

Container vessels: 23%

Cruise vessels: 40%



Shore Power Facility at the Cruise Terminal Altona



© HPA - Andreas Schmidt-Wiethoff

Autonomous Connection System - Altona



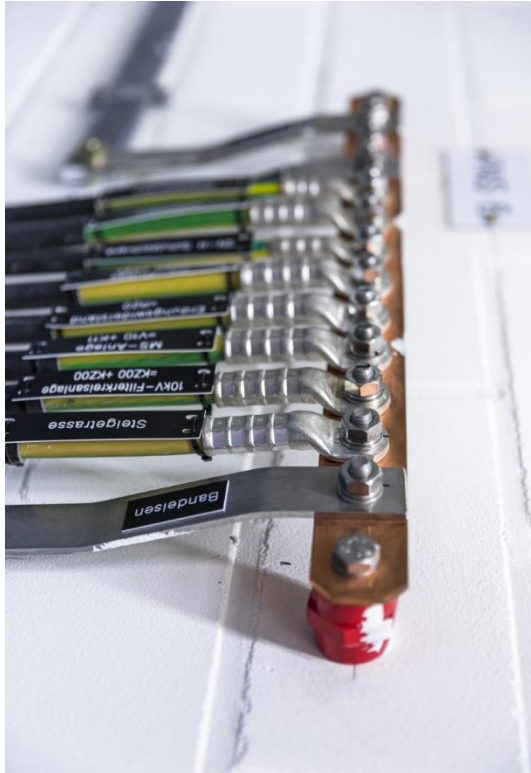
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Technical Building - Altona



© HPA - Andreas Schmidt-Wiethoff

Vessel Integration and Error Tracing



© HPA - Andreas Schmidt-Wiethoff

Key Challenges



Emission of Air Pollutants: Reduction Targets 2025



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United Nations Sustainable Development Goals



By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air [...] pollution and contamination.



Provision of 100% CO₂-neutral green energy at a competitive price for vessels at berth.



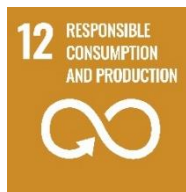
Achieve higher levels of economic productivity through diversification, technological upgrading and innovation. Decoupling of economic growth from environmental degradation.
Creating more sustainable tourism (cruise).



Development of reliable, sustainable and resilient infrastructure to support economic development and human well-being. Upgrade of existing infrastructure to make it sustainable, with greater adoption of clean and environmentally sound technologies.



Reduction of environmental impact of cities by paying special attention to air quality.
Support positive economic, social and environmental links between urban, per-urban and rural areas by strengthening national and regional development planning.



Substitution of fossil fuels through renewable energies.



Integration of climate change measures into national policies, strategies and planning.



Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals.

Business Case

- CAPEX

- 85 Mio. € Infrastructure Investments
- Realization by HPA
 - Collaboration with local power grid provider (Stromnetz Hamburg GmbH)
- Fully funded by
 - The Federal Ministry for Economic Affairs and Energy (50%)
 - The Hamburg Ministry for Economics and Innovation (50%)



- OPEX

- Operation by HPA
- Non-Profit Business case
- Competitive electricity price for 100% renewable energy
 - Cooperation with local energy supplier (Hamburg Energie GmbH)
 - Renewables Surcharge Reduction for shore power by the Federal Renewable Energy Sources Act 2021



By pursuing the energy transition, Germany is heading towards a future with a secure, economic and environmentally-friendly energy supply.

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Further questions? Feel free to contact us!

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