Shore Power in Europe:

Status and Lessons Learned

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AGENDA

1. SHORELINK IN BRIEF
2. DEFINING ONSHORE POWER SUPPLY (**OPS**)
3. INDUSTRY STATUS AND CHALLENGES

SHORELINK

- A technology company providing tailored shore power and shore charging solutions
- Headquarters in Tallinn, Estonia
- Production facility near Tallinn, Estonia
- Founded in **2019**

SHORELINK

- Major projects internationally in the segments of:
  - Cruise
  - RoRo / Ro Pax
  - Service vessels and bulk carriers
  - Special vessel

Representation in **France, Italy, Spain, Portugal, Greece and India.**

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DEFINING ONSHORE POWER SUPPLY (OPS)

- Also known as Alternative Maritime Power (AMP)
- While in port, ships use their Auxiliary Engines to produce electricity
- OPS allows the ships to shut down their engines while berthed
- Ship’s power load is transferred to the onshore power supply without disruption to onboard services

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Port of Tallinn

- Project in Tallinn’s Old City Harbour completed and taken into use in 2020
- Cable management systems for RoPax and passenger vessels
- Six connection points at six different berths
- Estimated reduction of around 120 tons of CO_2 per month

Dispenser type CMS

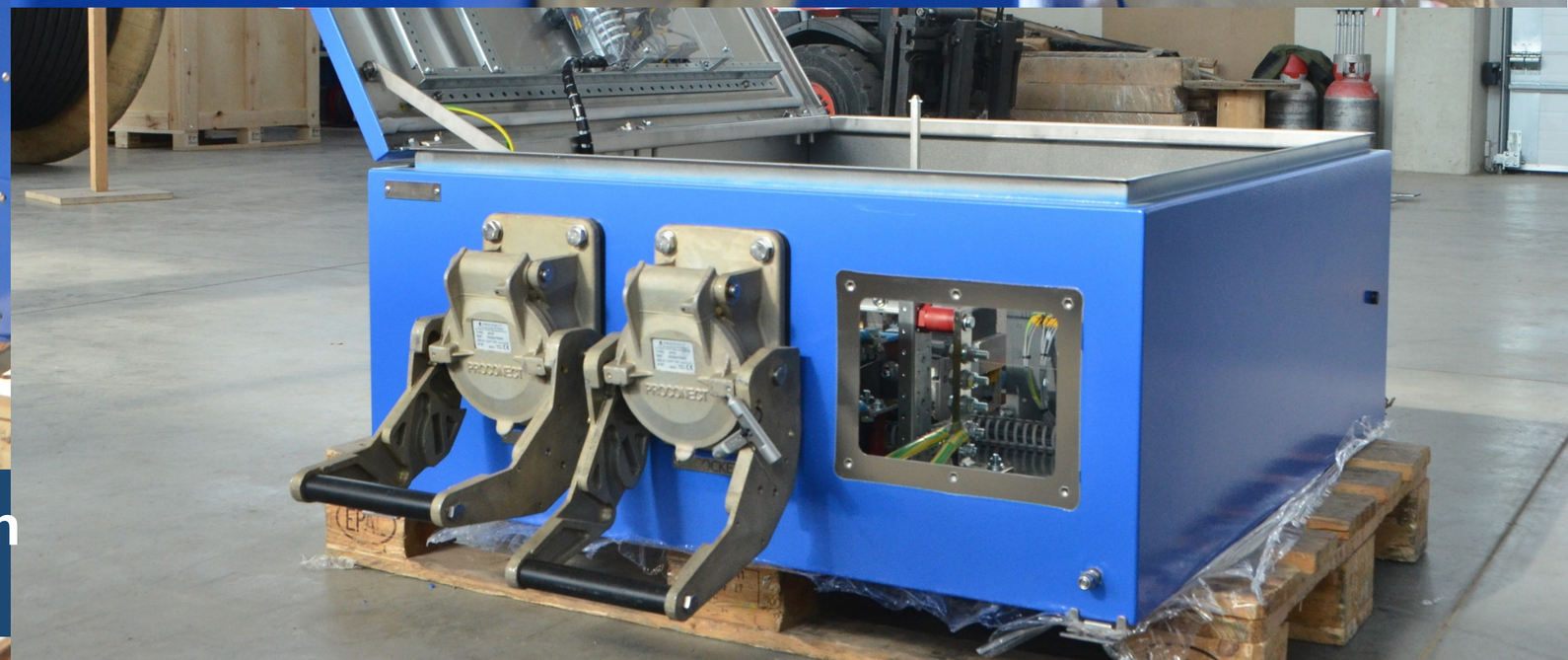
References: Port of Tallinn

Dispenser type CMS

References: Port of Rotterdam

Cable-reel type CMS

References: Abu



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Vessel and Shore – side Connection Cabinet

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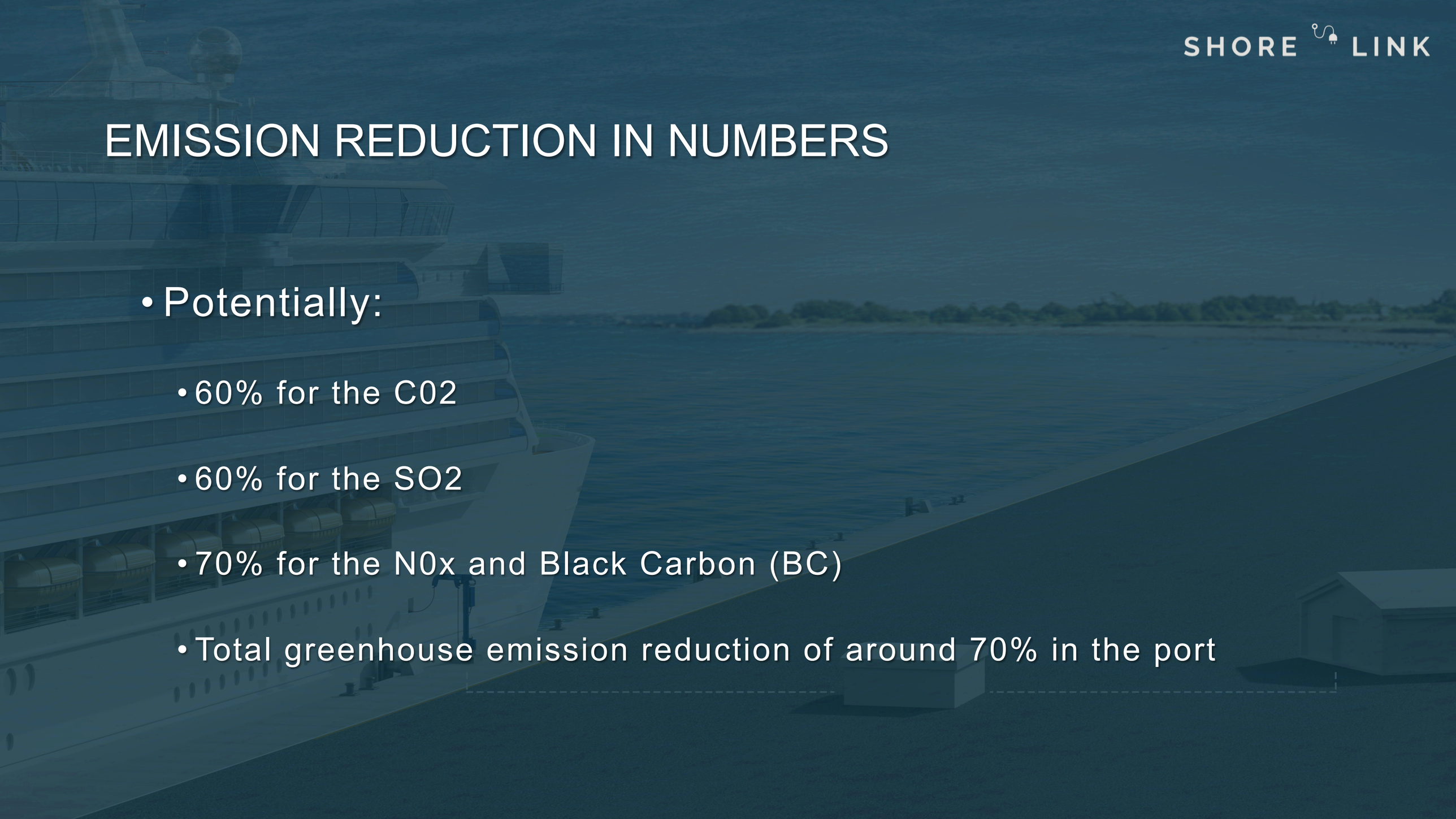
SHORE POWER USAGE FOR VESSELS AND PORTS

- Sustainability - Protecting the Marina
- Reduced noise pollution
- Increasing lifetime of engines
- Business case for the ports
- Improving working conditions
- Following the rules and regulations



EMISSION REDUCTION IN NUMBERS

- Potentially:
  - 60% for the C02
  - 60% for the SO2
  - 70% for the N0x and Black Carbon (BC)
  - Total greenhouse emission reduction of around 70% in the port

INDUSTRY STATUS – Rules and Regulations

- **By 2025**
  - OPS shall be installed as a priority for ports of the TEN-T Core Network, unless there is no demand, and it is not feasible.
- **By 2030**
  - Ships must use OPS or other zero emission technology above 5.000 GT travelling to, from or at berth in ports in the EU. (exempt is naval, fishing and ships with non-mechanical propulsion)
    - Port calls not considered: port calls under 2 hours, unscheduled calls for reasons of safety or saving life at sea.
    - Exemption for islands not connected to the grid.

INDUSTRY STATUS
Cruise

- ✓ **Around 65 ports are listed within the TEN-T network as having HV OPS systems:**
  - 329 ports in the TEN-T network
  - Over 1,200 major and minor ports in Europe

- ✓ **According to CE (Cruise Europe) and industry leaders in technology:**
  - Over 40% of global cruise fleet is equipped to use OPS
  - The ports are extremely behind

- ✓ **According to Active OPS database by CE:**
  - 23 ports from 10 European countries listed as being OPS ready, or to be within the next 5 years
  - Baltic-Adriatic and Scandinavian-Mediterranean Corridors dominating the list

CMS for cruise ships
References: Port of Stockholm

CMS for cruise ships
References: Port of Stockholm

CMS for cruise ships

References: Port of

CMS for cruise ships

References: Port of Aarhus

INDUSTRY STATUS - Challenges
Based on actual projects

- Project design/Plan not up to par
- Technical uncertainty
- Underestimating critical components of the OPS system

CHALLENGES

Design project not up to par

- Outdated specifications
- Outdated financial figures
- Heavy technical and commercial influence of a specific service / product supplier

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CHALLENGES
Technical uncertainty

- Lack of critical details in the documentation
- Lack of responsiveness and communication
- Under budgeting
- Over dimensioning
- No involvement of the vessel-side

LESSONS LEARNED

Underestimation of critical components of the OPS system

Cable Management System (CMS)

- Uncertainty of the type
- Underestimating financially
- Underestimating technically
- Basing requirements heavily on an existing installation elsewhere
- Underestimating how much the volume of civil works depends on the type of CMS

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CONCLUSIONS

- Despite slow pace and largely unfulfilled market, the knowledge and know-how is there
- References for both, well and badly executed projects are there
  - Mistakes can be avoided thanks to numerous examples
- Implementing OPS is not technically complicated

NOW IS THE TIME TO ACT!


SHORE LINK
Thank You for Your Attention!
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