

Docking into the Digital Network: Looking at Ports for a Sustainable Internet

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Sustainable Subsea Networks

Pacific Telecommunications Council

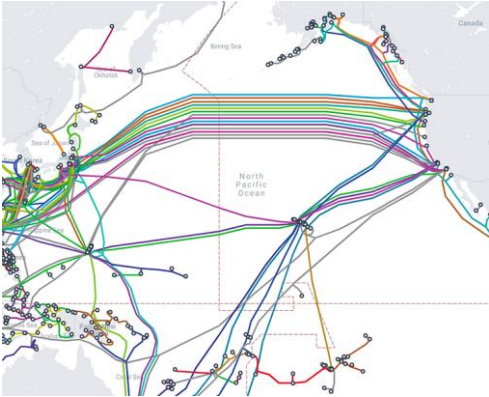
Today's Talk

- Measuring the Sustainability of the Internet
- Marine Technologies and Telecommunications
- Shore Power
- Future Energy Carriers
- Towards a Collaborative and Parallel Approach
- Marine Technologies to Decarbonize Marine Transport
- Marine Technologies for the Subsea Cable Industry
- Conclusions and Recommendations

Measuring the Sustainability of the Internet



SUSTAINABLE SUBSEA NETWORKS



Telegeography

Subsea telecommunications cables carry 99% of transoceanic data traffic

Seven grams of carbon dioxide equivalents are potentially released for every ten thousand gigabit kilometers (Donovan 2009)

Subsea cables have a low carbon footprint

Marine Technologies and Telecommunications



Global Marine

“It’s really difficult for our industry to change... we are hamstrung because we sunk a lot of CAPEX into equipment and technology which is decades old... The price point investment has not moved far enough.”

Bruce Neilson-Watts, CEO
Global Marine

Relationships between port authorities and subsea cable vessel carriers can leverage mutually beneficial resources to reach sustainability goals with fewer costs.

Digital Infrastructure and Sustainability



Novva



AP/Rick Bowmer

In 2008, data centers were responsible for 1.5% of all US electricity consumption (US EPA, 2008)

Carbon footprinting: efficiency or degrowth models

Leveraging differences to mitigate emissions using existing sector structures like regulations, climate, and economy offers an opportunity to reconsider the role between ICT and the environment (Pasek et al., forthcoming).

Shore Power

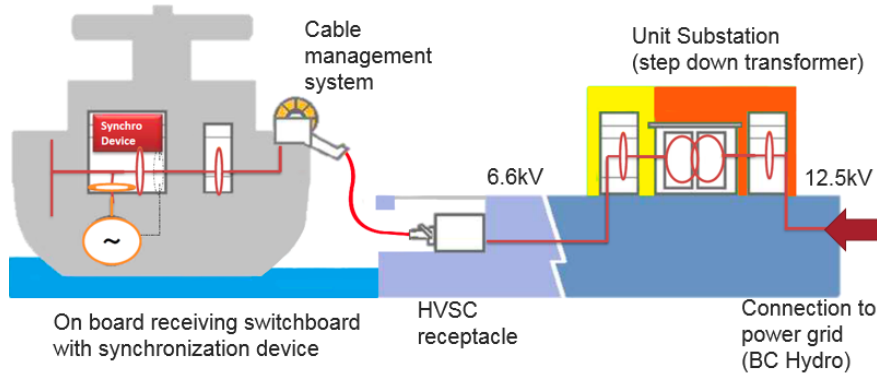


Image provided by Cavotec

"It is always our preference to be on shore power in port, especially when sitting in standby for longer periods of time"

Paul Hebert, Marine Technical Manager at IT International Telecom

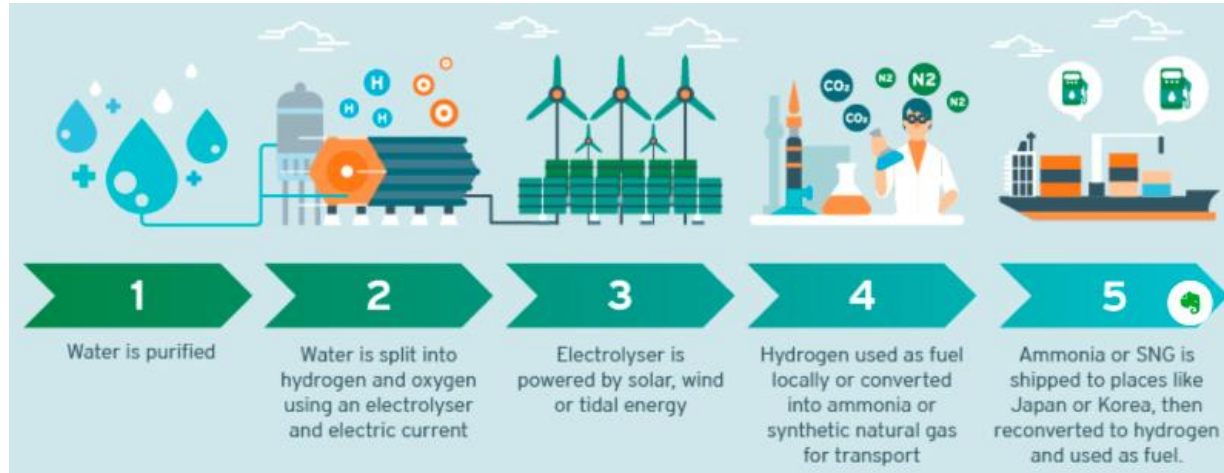
"Shore power...absolutely produces emissions benefits."

Morgan Caswell, Manager of Air Quality Practices at the Port of Long Beach

“Making improvements to their vessels to allow for these capabilities can help us as a port. We’re not going to make a substantial capital investment in infrastructure if the demand isn’t going to be there.”

Alvaro Zayas, Environmental Specialist at
PortMiami

Future Energy Carriers: Hydrogen, Ammonia, Methanol



Green Car Congress

“There is discussion but no clear candidate. Probably what will be in the future is a mix, so what we are doing is preparing ourselves with facilities in the port that will accommodate these future fuels that we’ll be transitioning to in the future.”

Hector Calls, Head of Environmental Sustainability at the Port of Barcelona

Towards a Collaborative and Parallel Approach

1. Companies across the ICT sector can include reduction targets in their contracts with ship owners and include ship emissions in companies' carbon accounting
2. The subsea telecommunications cable industry can consider ways to implement marine technologies within their own operation

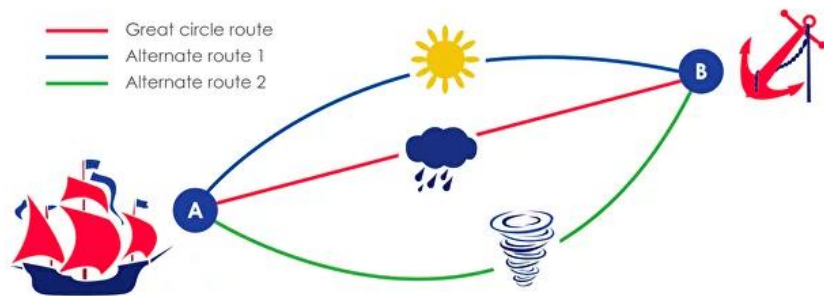
A bilateral relationship between port authorities and the subsea cable industry will make reaching sustainability goals easier at a lesser cost.

Increased collaboration across the port and subsea cable sectors can further sustainability efforts through mutual financial investments in marine vessel technologies. Coordinated efforts in sustainability minimize the cost of experimental technologies by maximizing on already existing resources.

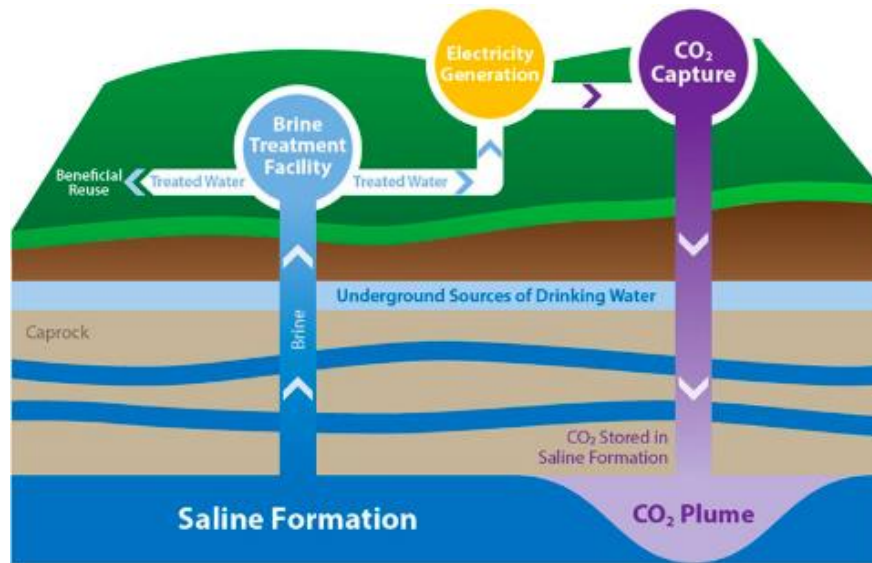
Marine Technologies to Decarbonize Marine Transport

Voyage Optimization

Marine Digital



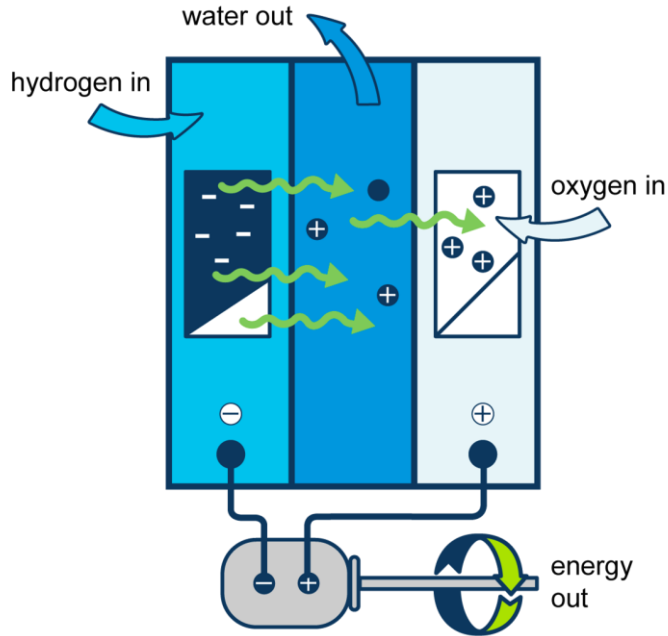
Carbon Capture and Storage



National Energy Technology Laboratory

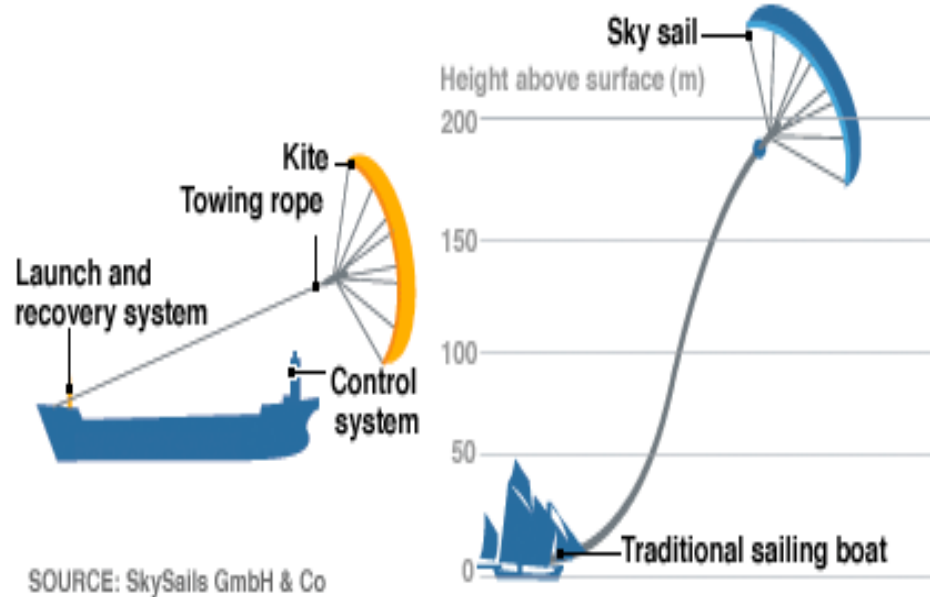
Marine Technologies for the Subsea Cable Industry

Fuel Cells



US Energy Information Administration

Power Kites



"The investment in new port facilities and greener vessels is expensive for both port operators and vessel owners but eventually it is something that will have to be done...Where possible we want to avoid port owners investing in fuelling infrastructure that is not aligned with shipowners future vessel investment plans."

Bruce Neilson-Watts, CEO Global Marine

Conclusions and Recommendations

- Shore Power
- Future Energy Carriers
- Reduction targets on subsea cable vessels
- Collaboration across sectors on sustainable marine technologies with ports



Thank you!