



PowerCon



PowerCon A/S

Shore power systems





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## PowerCon

- Converter Development
- Test Equipment
- Shore Power Systems

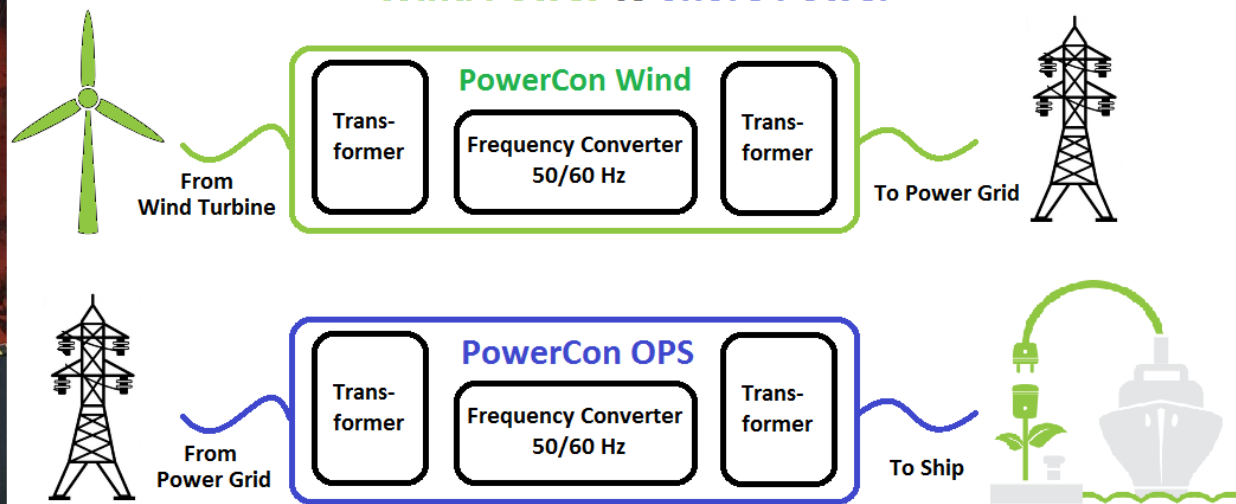






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## From Wind Power to Shore Power







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IEC/ISO/IEEE 80005-1

## INTERNATIONAL STANDARD

Utility connections in port –  
Part 1: High Voltage Shore Connection (HVSC) Systems – General requirements

### DIRECTIVES

DIRECTIVE 2014/94/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 22 October 2014

on the deployment of alternative fuels infrastructure

(Text with EEA relevance)

**DIRECTIVE 2014/94/EU, requires ports in Europe, to installed shore power as a priority no later than December 2025.**

**.... Such shore-side electricity supply shall be installed as a priority in ports of the TEN-T Core Network, and in other ports, by 31 December 2025, unless there is no demand and the costs are disproportionate to the benefits, including environmental benefits.**

**.....Member States shall ensure that shore-side electricity supply installations for maritime transport, deployed or renewed as from 18 November 2017, comply with the IEC/ISO/IEEE 80005-1 standard...**



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IEC/ISO/IEEE 80005-1

## INTERNATIONAL STANDARD

Utility connections in port –  
Part 1: High Voltage Shore Connection (HVSC) Systems – General requirements

- All OPS systems must follow the standard
- Plugs, safety, communication and power capacity
- Benefits proven in Norway
- Facilities for cruise must be 16MVA to 20MVA
- Include future charging of cruise vessels





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## **Shore Power – Enviromental benefits**

- Cheapest way to reduce emissions
- Electricity will become zero/low emission in all countries
- Removes all exhaust types
- Removes noise/vibrations from engines



## Shore Power – Economic Benefits

- Fuel, Crew, Engine maintenance
- Surprising extra savings
- Cleaner fuels improves economy for shore power !







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## Shore Power – How can it Thrive

- European tax exemption for shore-side electricity
- Price of electricity should never exceed the price of diesel  
(Preferably fuel cost should include environmental damage)
- Shore Power needs a stable and predictable investment environment
- Utility Companies should embrace Shore Power







## Shore Power – Tendering

- There are standard solutions
- Make design competition to find best value
- Reduced planning cost – more bang for the buck!







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## Shore Power – Make the Changes Now

- Shore power can be built in less than one year
- Focus on near future wins and adapt solution later
- Look for solutions that can be adapted and scaled, like mobile solutions

