Electrical Innovation & Green Marine

Making Maritime Applications Greener 2018

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A Dynamic Energy Service Company

International energy service company, supplying a wide range of solutions and technology

Products & Services
- Shore Power
- Converters
- Hybrid Battery Solutions

Headquarter & facilities in western Norway, additional facilities in Liverpool (UK)
Pollution reductions & cost savings

Noise Pollution
Public area regulations- houses are getting built close to the existing industry

The industry have strict requirements regarding noise = leads to poor utilization of the port

Savings reported 3.600 Euro / day.
1000kW Shore Power
Shore Power in Norway by PSW Group

40 MVA installed in harbours and offshore bases in Norway
70 connection points including major cities like Bergen, Tromsø, Ålesund, Kristiansund

Upgrade to 3MVA static converter solution for Norwegian Navy

1MVA Shore Power Rental in Indonesia

9MVA Rental pool serving shipowners, yards and test facilities
Funding

ENOVA
- Energy efficiency scheme
- Promotion of energy from renewable sources
- 5243 projects granted support from 2012-2017, sum of € 1.3B
- 75-90% of investment costs

The NOx Fund
- NOx reducing measurements
- 1141 projects granted support from 2008-2018, sum of € 69.5M

Project Examples
- Havila Foresight, battery container and shore power, € 560 000
- CCB Ågotnes, shore power, € 1.65M
- Ålesund, Shore Power 4 ships € 625.000
Hybrid Battery Solutions

- Enhance overall operation of rig / vessel
- Optimized engine operation & fuel savings
- Reduced maintenance & increased performance
- Safer operation
- Spinning reserve
- Power back-up
- Peak-Shave
Electric Innovation
Ongoing projects

Mongstad Base
- 5x837kVA Shore Power for offshore vessels.
- 5 x Cable management in containerized movable solution
- Budget € 2.5mill
- Fundings by Enova 90%

Ålesund / Kristiansund Harbour
- 1000kVA for 4 ships outlets
- Substation - 1000kVA container
- Plug Outlets – Installation – Cable management
- Budget € 700.000
- Fundings by Enova 80%

Hybrid Battery Retrofit
- Rolls-Royce // SEACOR
- Hybrid battery retrofit on 8 PSV's
- Container solution "Plug & Play"
- 1800kVA Peak Power / 680kWWhrs
Example Savings. Rig client alongside for 12 months

- Diesel costs w/o shore power
- Total costs shore power
- Savings

- 3 months: €120,632
- 6 months: €370,421
- 12 months: €840,315
Key numbers

Typical consumption in harbour

- Supply/Offshore vessel. 80-120m 180 - 400kW
- Live fish carrier 80m 120 - 150kW
- Tug-fish-Cargo 30-50m 30 - 50kW

1ltr diesel produce 3.7kW/Hrs onboard

Typical cost for 1000kVA/800kW Shore Power System

- 1000kVA/800kW Container with Shore Power for 2ships and 2 quay side outlets  
  € 220,000 - 300,000
- Installation cost container, cabling, mounting.  
  € 30,000 - 150,000
- New Substation 1000kVA  
  Total cost € 85,000
- Cable Management  € 30,000 - 200,000

Ålesund/Kristiansund had budget for 1000kVA/4ships. Approx € 700,000
Questions?