Request for a recommendation on the use of hydrogen fuel cells for the propulsion of the vessel "Rhenus Mannheim"

Transmitted by the Government of the Netherlands
Rhenus Hybrid Container Convoy
• Container line for Contargo between Rotterdam, Mannheim and Wörth
• Fuel Cell and battery system for zero emission energy supply
• Noise reduction
Formation – Container convoy "Rhenus Mannheim I+II"

Motor vessel with one barge
- Deadweight up 4,799 to. at 2,90m draught

Motor vessel
- 105,00 m x 11,45 m
- 192 TEU

Barge
- 88,00 m x 11,45 m
- 192 TEU

Additional use with three barges
- Deadweight up 9,318 to. at 2,90m draught
- Flexible container capacity from 384 TEU bis 768 TEU
- Minimum draft scenario to maintain capacity at low water periods
Formation – Container convoy "Rhenus Mannheim I+II"

Motor vessel with one barge

- Wheelhouse and accommodation at the aft
- Flat bow form
- Engine room for energy production at the front
- Side height of both motor vessel and barge, 3,40m
- MV: Three-Rudder System, Flex tunnel, spud pole, 4-Channel bow thruster
- Barge: spud pole, Flettner rotor bow steering, 4-Channel bow thruster
Hybrid propulsion concept I

- 84x EST Floattech Octopus High Power Batteries
- Divided into two rooms
- 840 kWh Capacity

- 4x 20ft H2-Tanktainer
- 500kg H₂ @ 500bar

- 400 kW installed Power
- 2x 200 kW Ballard FCwave
- Preparation for 2 further FCwave
Fuel cell system

- ZKR Recommendation
- Space for the fuel cell
Fuel cell system

- Four H2 Container
- H2 gas control line above deck
Fuel cell system

- Vent-Mast
- Fire protection system
Fall-back energy converter

- Vink Diesel PACCAR MX-13 Euro VI
- Stamford Generator
- Constant RPM, high efficiency
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