

# MariGreen

## Stahl vs. Kunststoff

Green Shipping innovation workshop

## Staal vs. kunststof

Green Shipping innovation workshop

**Thursday the 17th November 2016**

**14.00 till 17.30 Hours at:**

-Hajé Hotel

Schans 65, Heerenveen

and

-Solicam

Minerva 42, Heerenveen



# Program:

- 14.00**      **Welcome**
- 14.15      Report on the current situation in MariGreen – Leo van der Burg, FME
- 14.40      Current overview about the expansion of Fiberglass Reinforced Plastics (FRP) in shipbuilding – Teun de Vries, TEUN
- 15.20      Low Pressure LNG Tank and Bunker Storage Solutions – Ekkehard Nowara, ABH Ingenieur-Technik GmbH
- 15.50      Form-free FRP Tank Construction – Christopher Maltin, Biomethane Ltd
- 16.40      Discussion and Questions for the Speakers
- 17.00      Tour of the facilities at Solicam- Martinus Wijma
- 17.30      Drinks, snacks and networking



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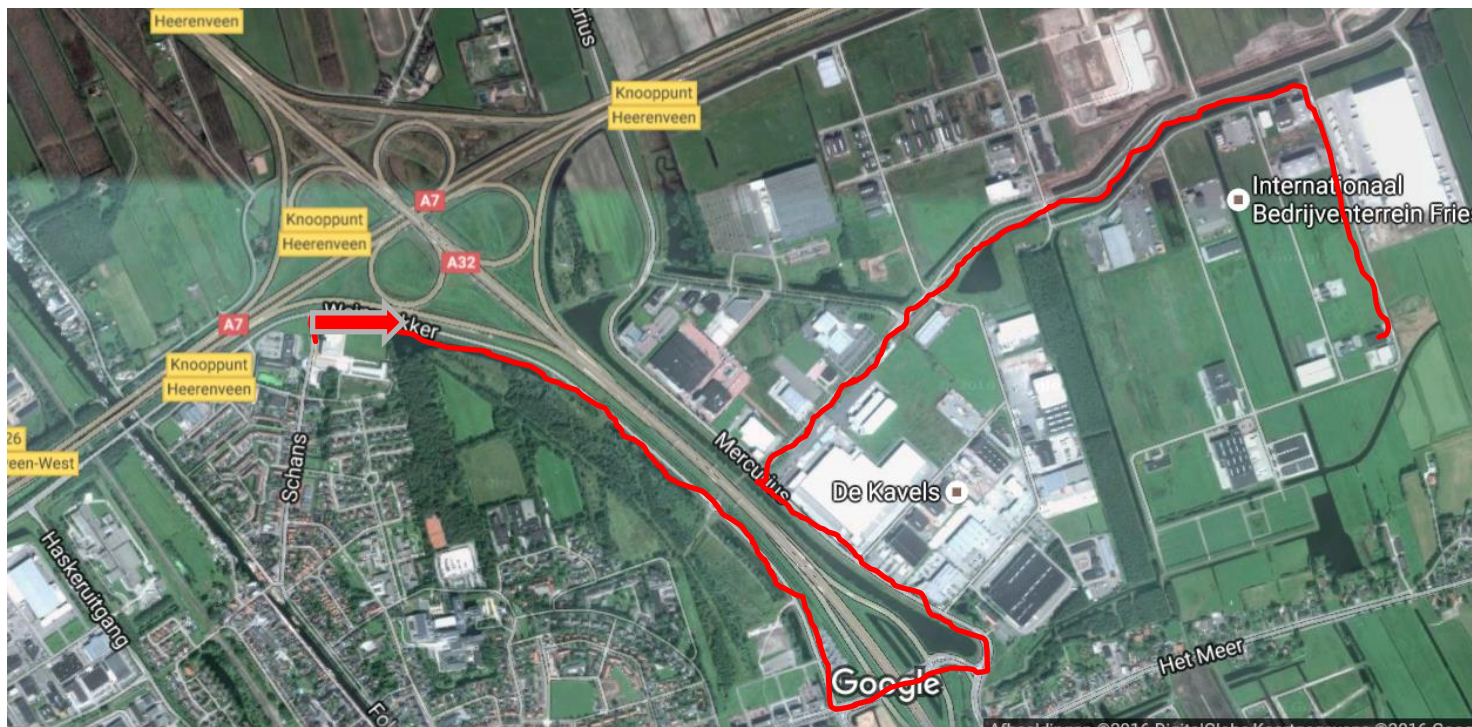


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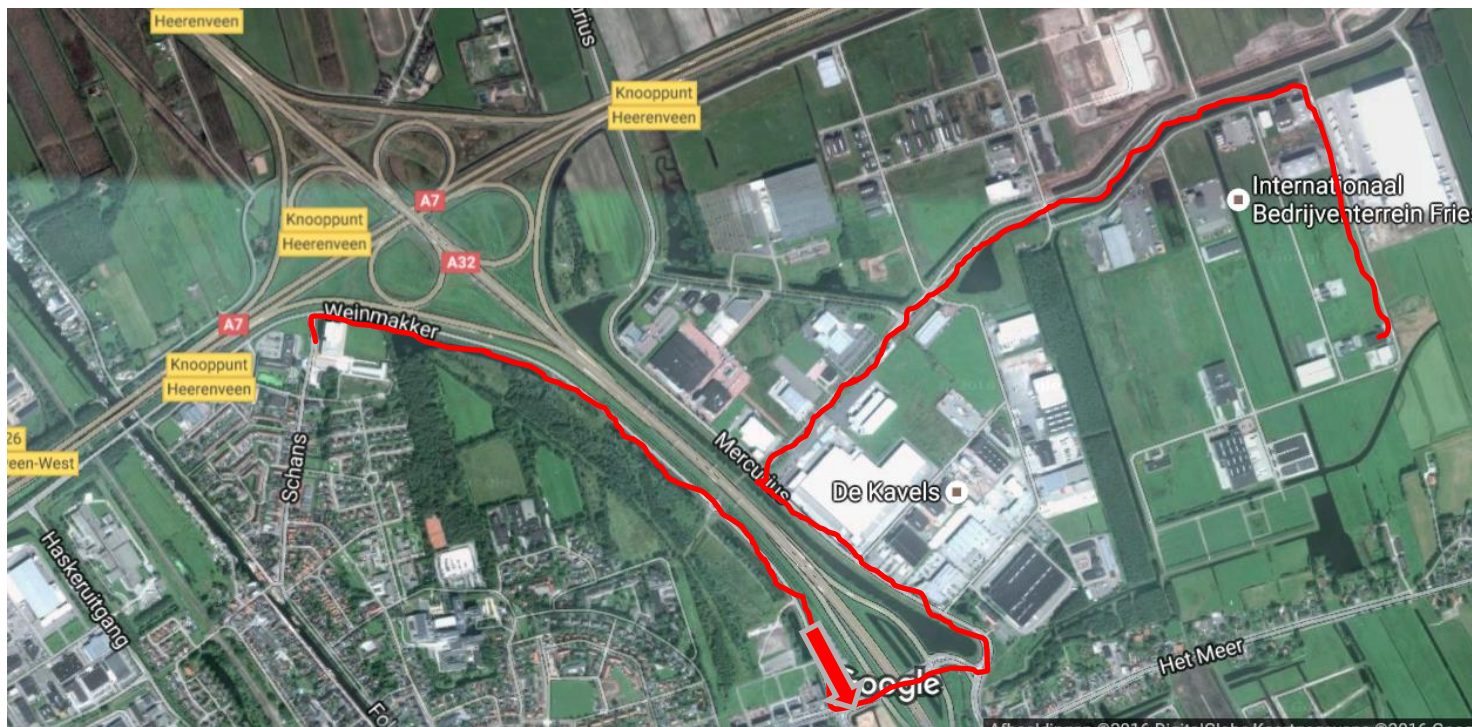
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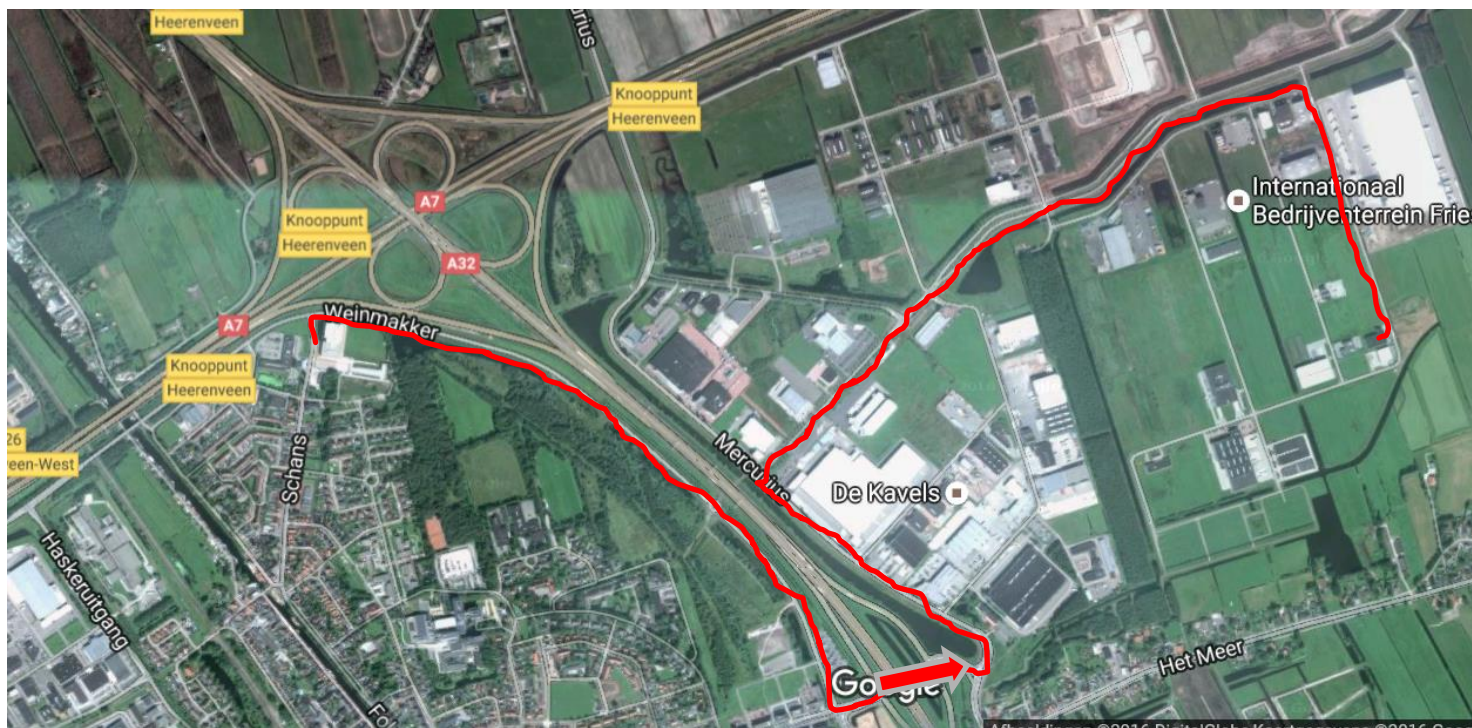
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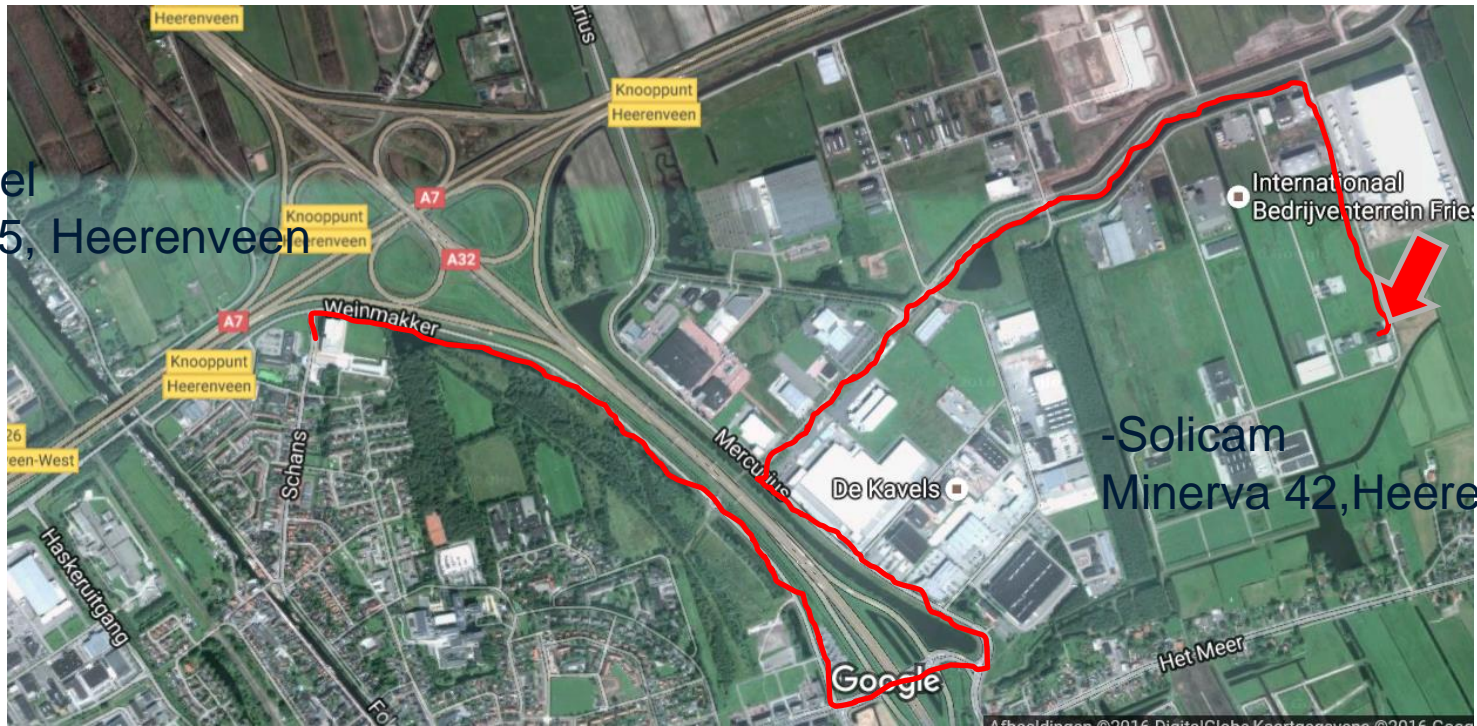
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Schans 65, Heerenveen



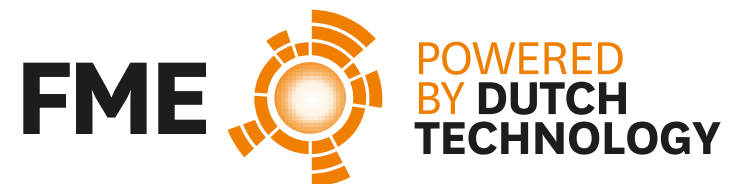
-Solicam  
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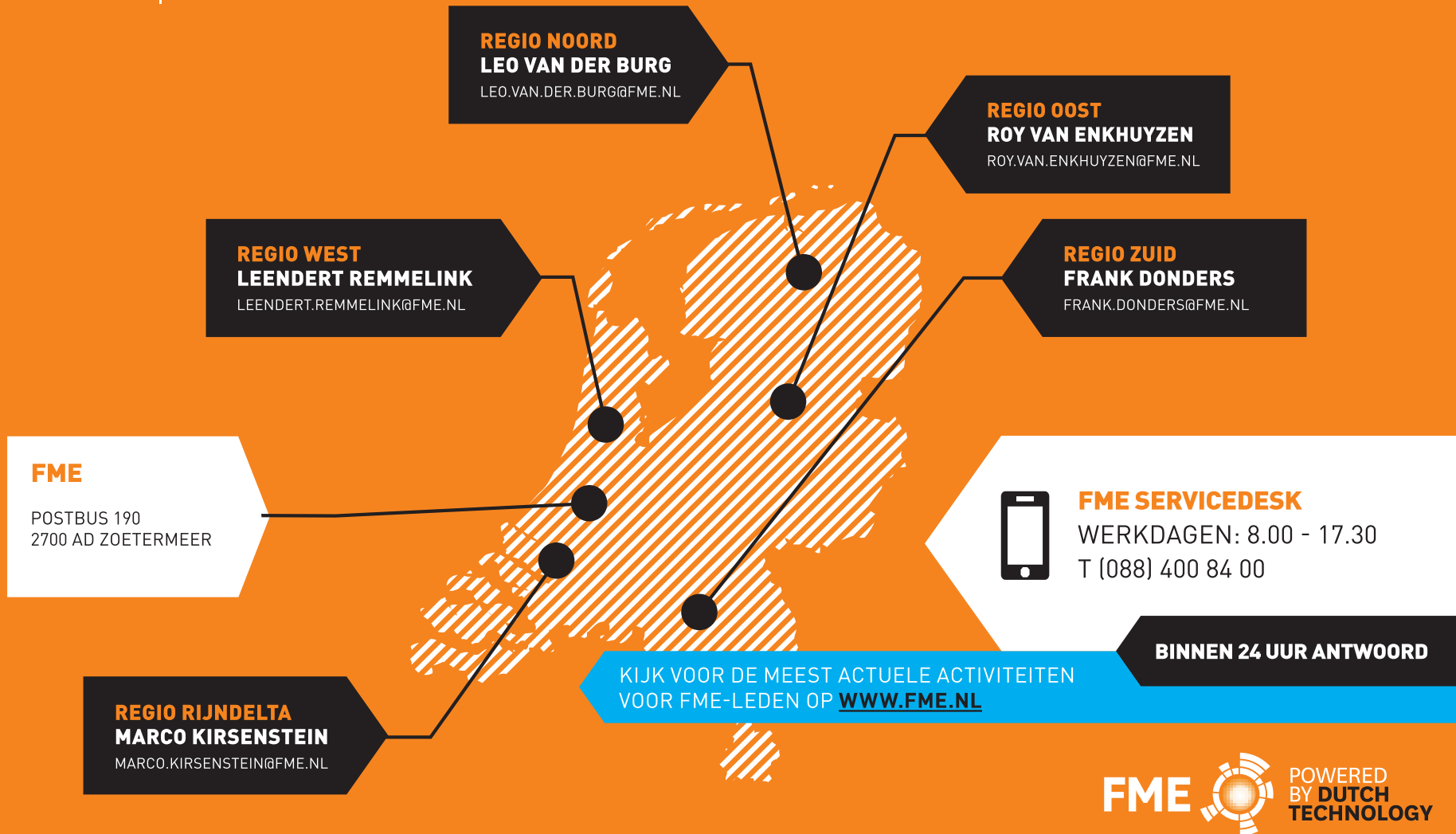


# FME Association





## Business Development Manager at FME:



# Our mission

- Mobilisation and connection
- We mobilise and connect the technology industry in order to meet every
- FME is the number one employers' organisation in the technology industry.
- FME promotes its members' interests in The Hague, Brussels, and around the globe.
- FME also supports its member companies with regard to all aspects of business operations, from employment-law matters to environmental issues, and from innovation processes to the promotion of exports. In addition, FME works hard to promote the interests of its 80 affiliated trade associations.
- **Key figures**
- 2,200 member companies, employing 220,000 employees in total
- yearly turnover totalling € 70 billion
- direct export totalling € 37 billion
- 181 employees at FME
- support to 80 trade associations

FME



POWERED  
BY DUTCH  
TECHNOLOGY

# MariGreen

- 12 Innovation projects in 4 areas





- Groningen**
- 6 Ankerbeer B.V. (Kolham)
  - 10 Blue Architect
  - 1 Dorhout Advocaten N.V.
  - 2 3 Conoship International B.V.
  - 2 Hanze Hogeschool
  - 12 NTTA B.V.
  - 2 8 R.R. Maritime Engineering B.V.
  - 10 Rijksuniversiteit Groningen
  - 2 SMB - NAVAL Architects Et Consultants (Glimmen)
  - 10 Target Holding B.V.

- Delfzijl**
- 3 Wijnne Barends B.V.
  - 12 ALERT

- Schwentinental**
- 8 DW-ShipConsult

- Norddeich**
- 1 8 AG Reederei Norden Frisia

- Emden**
- 1 6 8 abh INGENIEUR-TECHNIK GmbH
  - 6 Coaster Services
  - 10 Hochschule Emden/Leer
  - 6 8 MFH Marine Faserverbundtechnik
  - 1 Nordseewerke Emden Shipyards

- Leeuwarden**
- 6 NHL Hogeschool

- Franeker**
- 2 Scheepswerf Talsma B.V.

- Roden**
- 2 ENGIE West Industrie

- Harlingen**
- 1 De Boer en de Groot ceiviele werken B.V.
  - 3 Damen Ship Repair B.V.
  - 1 Reederij Doeksen
  - 2 Maritieme Academie Harlingen

- Ihlow**
- 11 BE4ING

- Bremerhaven**
- 11 German Dry Docks AG

- Heeg**
- 2 Electric Ship Facilities B.V.

- Dwingeloo**
- 2 Astron

- Enkhuizen**
- 12 Enkhuizer Zeevaartsschool

- Emmeloord**
- 12 TvK Instructie B.V.

- Zwolle**
- 3 4 Wärtsilä

- Sellingen**
- 7 Pronk Maritiem

- Alphen aan den Rijn**
- 3 Cryonorm Systems B.V.

- Utrecht**
- 2 Schipco B.V.

- Espekkamp**
- 6 Naue GmbH

- Zoetermeer**
- FME (Co-Partner)

- Enschede**
- 1 IMOTEC B.V.

- Stellendam**
- 3 Maaskant Shipyards

- Nieuwegein**
- 5 INNOVAM

- Wageningen**
- 1 9 MARIN
  - 7 Meteo Group

- Borken**
- 6 BOMA Maschinenbau GmbH

- Hamburg**
- 1 Marine Service
  - 6 DNV GL
  - 7 SevenCs

- Leer**
- 12 MARIKO GmbH (Leadpartner)
  - 1 Ahlers Et Vogel
  - 11 Briese Schifffahrts GmbH
  - 6 Fehn Ship Management
  - 2 6 Harms Elektromaschinen
  - 3 4 5 6 7 8 9 11 Hochschule Emden/Leer
  - 6 JPW Privatretrehand
  - 6 Lais Nord
  - 6 10 Regenerative Antriebstechniken
  - 6 SEC GmbH Et Co. Shipperservices KG

- Rotterdam**
- 4 Koedood Dieselservice B.V.
  - 1 Lloyd's Register EMEA
  - 4 Emigreen B.V.

- Duisburg**
- 2 5 7 DST

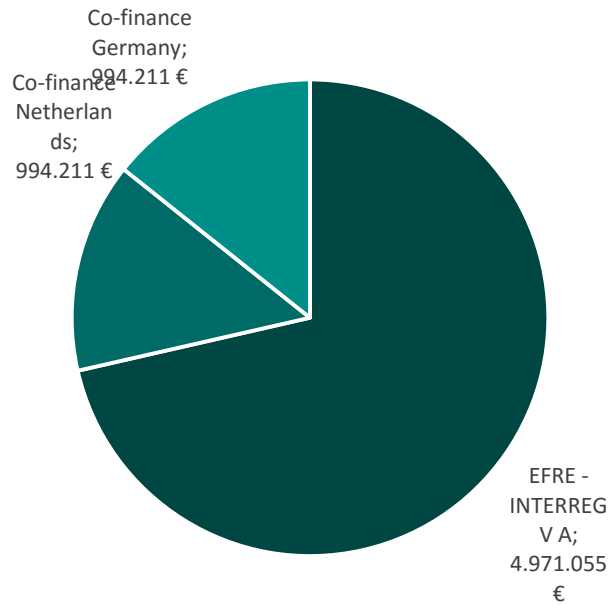
- Eindhoven**
- 2 Techn. Universiteit Eindhoven

- 1 Low Pressure LNG Tank and Bunker Storage Solutions
- 2 Plug and Play Energypack for inland and short sea shipping
- 3 Standard modular LNG system for fishing and short sea vessels
- 4 Methan catalyst for LNG engines
- 5 Training technologies for the use of LNG
- 6 Windship Engineering and Design
- 7 Windship Modelling and Voyage optimization
- 8 Green Water Taxi
- 9 HEWIS - High Efficient Windfarm Installation System
- 10 Simulating transport in a collaborative co-modal logistic environment
- 11 Optimizing vessel condition and condition based maintenance
- 12 Maritime Safety Cluster

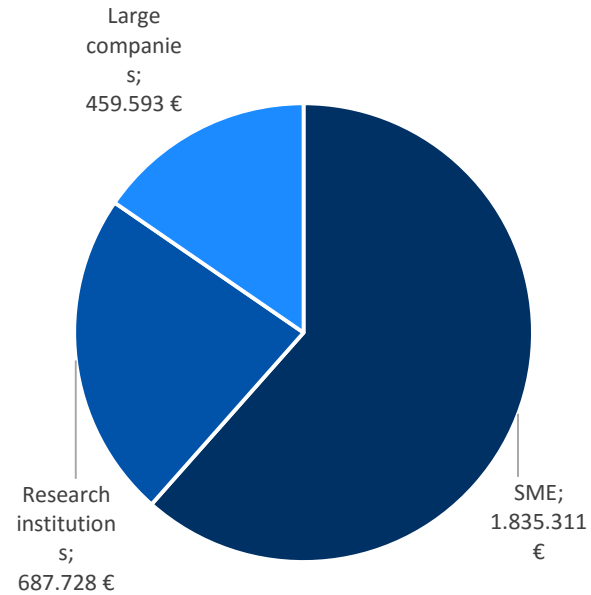
# 2.2 Finance of MariGreen

Total budget: 9,9 m €

Funding (70 %)

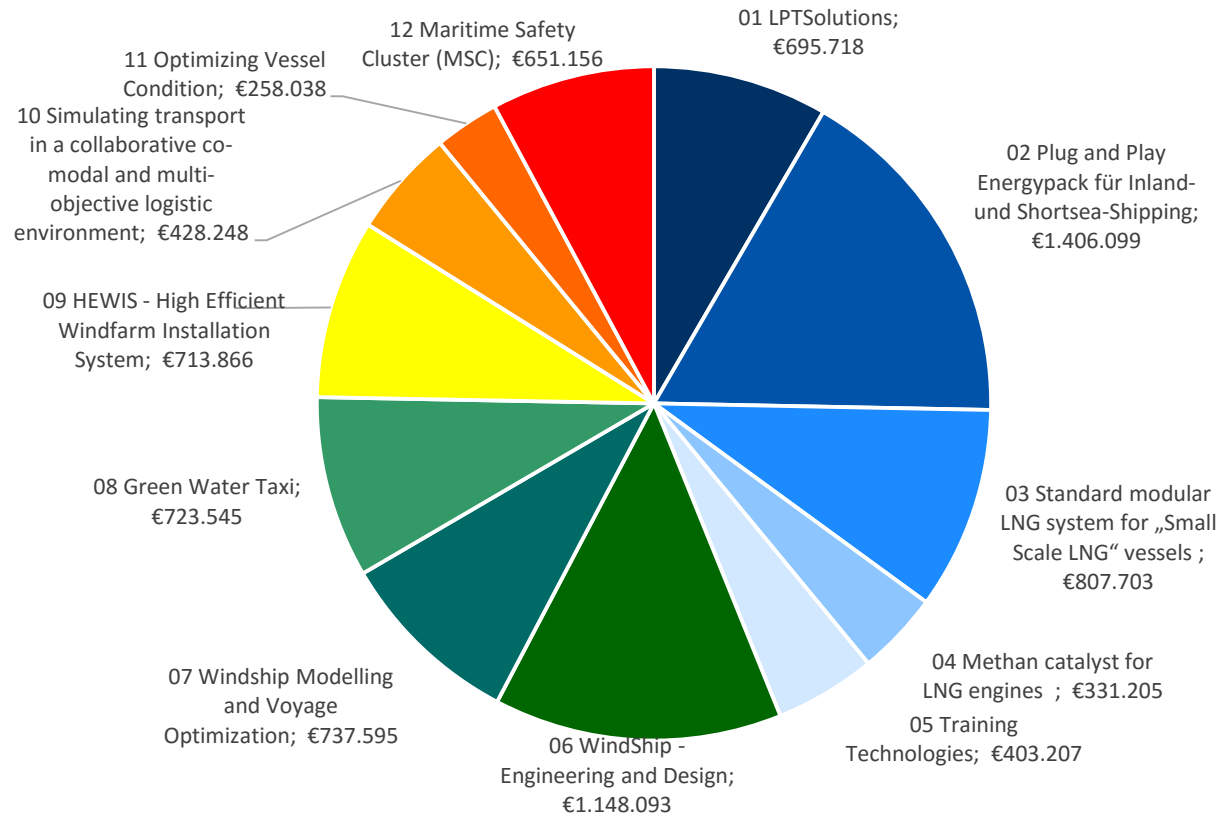


Own resources (30 %)



# 2.2 Finance of MariGreen

## 12 innovation projects





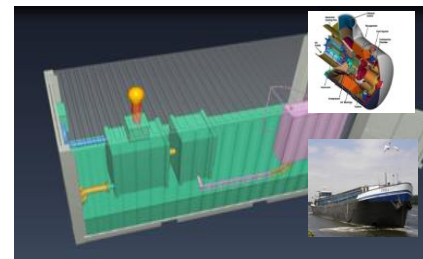
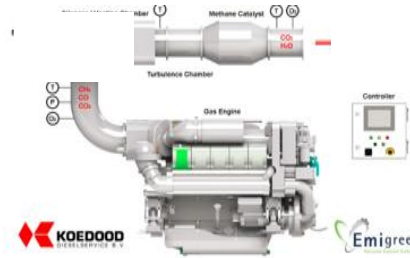
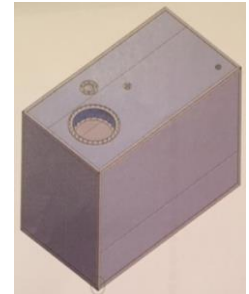
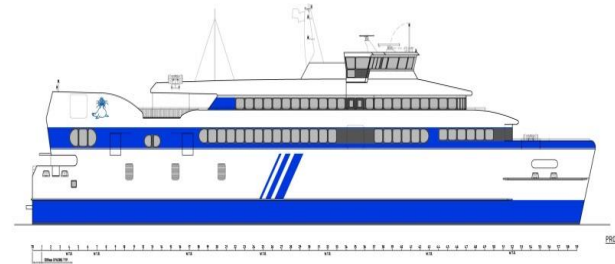
# LNG Market Uptake

## Innovation projects

- Low pressure LNG tank
- Plug and Play Energypack
- Standard modular LNG system
- Methan catalyst for LNG engines
- Training technologies

## Objective

- Cost reduction for small scale LNG propulsion
- Reducing emissions of LNG propulsion
- Development of new training technologies



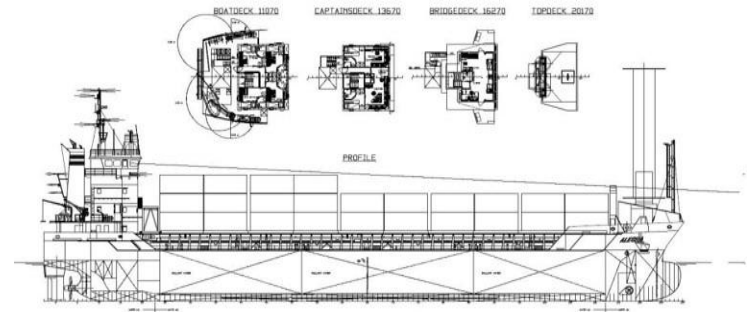
# Wind Propulsion in Commercial Shipping

## Innovation projects

- Windship – Engineering and Design
- Windship Modelling and Voyage Optimization
- Green Water Taxi

## Objective

- Development and testing of market-ready wind propulsion systems
- Improvement of prediction tools
- Integration of wind propulsion in route planning and optimization
- Development of small scale wind assisted ship concepts







# Green logistics and resource awareness

## Innovation projects

- HEWIS – High Efficient Windfarm Installation System
- Simulating transport in a co-modal logistic environment
- Optimizing vessel condition and condition based maintenance

## Objective

- Reduction and shifting traffic to ships
- Improvement of operating time and maintenance of the fleet
- Cost- and time reduction in the installation of offshore wind parks





# Maritime Safety

## Innovation projects

- Maritime Safety Cluster

## Objective

- Development of new safety courses in a cross-boarder network of training facilities
- Improvement of quality through cooperation and exchange of knowledge



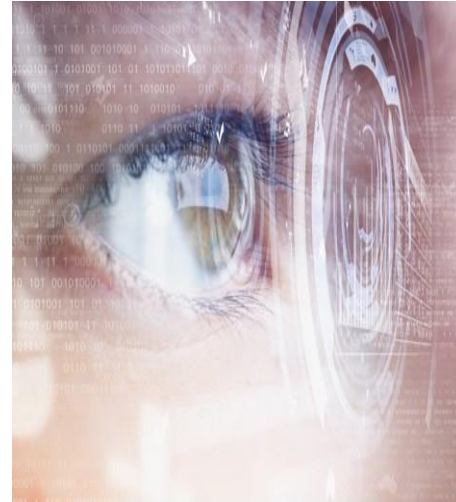


# Accompanying measures

- Knowledge transfer
- “Fachkräfteinitiative”

## Objective

- Improvement of the cross-border network and exchange of knowledge in green shipping technologies
- Raising awareness of (potential) young professionals for the issues of green shipping



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