



Germany and India



# Partners in Green Hydrogen<sup>+</sup>



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**Lili Navitas**  
GREEN ENERGY

## Introductory Remarks



“

Born Indian, it is for me the biggest pleasure and honor to help bring India and Germany together in achieving climate targets and become self-sufficient in their energy needs.

**Kiran Bhojani - Founder and CEO**



**Kiran Bhojani**

Founder & CEO

- 
- 17 years Executive Vice President at E.ON
  - 10 years Investment Banking
  - 4 years Green Hydrogen



**Gerd J. Lamers**

Executive Director  
Green Technology

- 
- 15 years in Renewables
  - 5 years in Green Hydrogen
  - Evaluated over 200 Green Hydrogen Projects - Worldwide



**Jan Andreas**

Anleg – Founder & CEO  
Hydrogen Technology

- 
- 30 years of Hydrogen experience
  - Green Technology Expert
  - Hydrogen Mobility Specialist



**Marc Schwarzlose**

Sundronix – MD  
New-Technology

- 
- Green-Technology Entrepreneur
  - Diverse Portfolio (Carbon Capture, Solar Manufacturing, Pyrolysis)
  - Airline Pilot & Instructor & Quality Officer



# Our Core Competencies



## Project Developer for Green Hydrogen

- Part of the Team which built the first 100% Renewable Hydrogen Power Plant in Europe
- Simulation Systems for the whole Hydrogen Value Chain



## Import Green Ammonia from India to Europe

- Off-Taker and Value Chain prepared for Green Ammonia from India



## Cooperations with major Utilities and Hydrogen Players in Germany

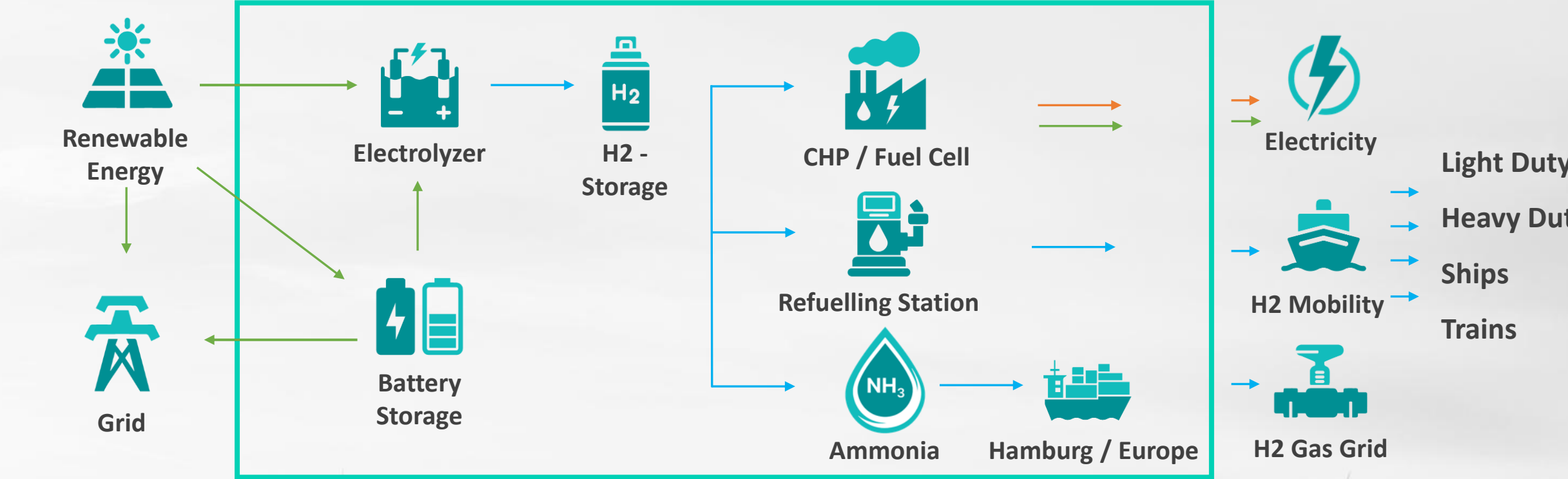
- Top Management Contacts to speed up all your Requirements



## Eco system for the entire Hydrogen Mobility Sector

- Application Integration for all Hydrogen Mobility
- Top Technology Provider looking for Indian Partners

# Project Development along the Value Chain



Design > Project Development > Planning > Purchasing > Construction > Commissioning > Operation



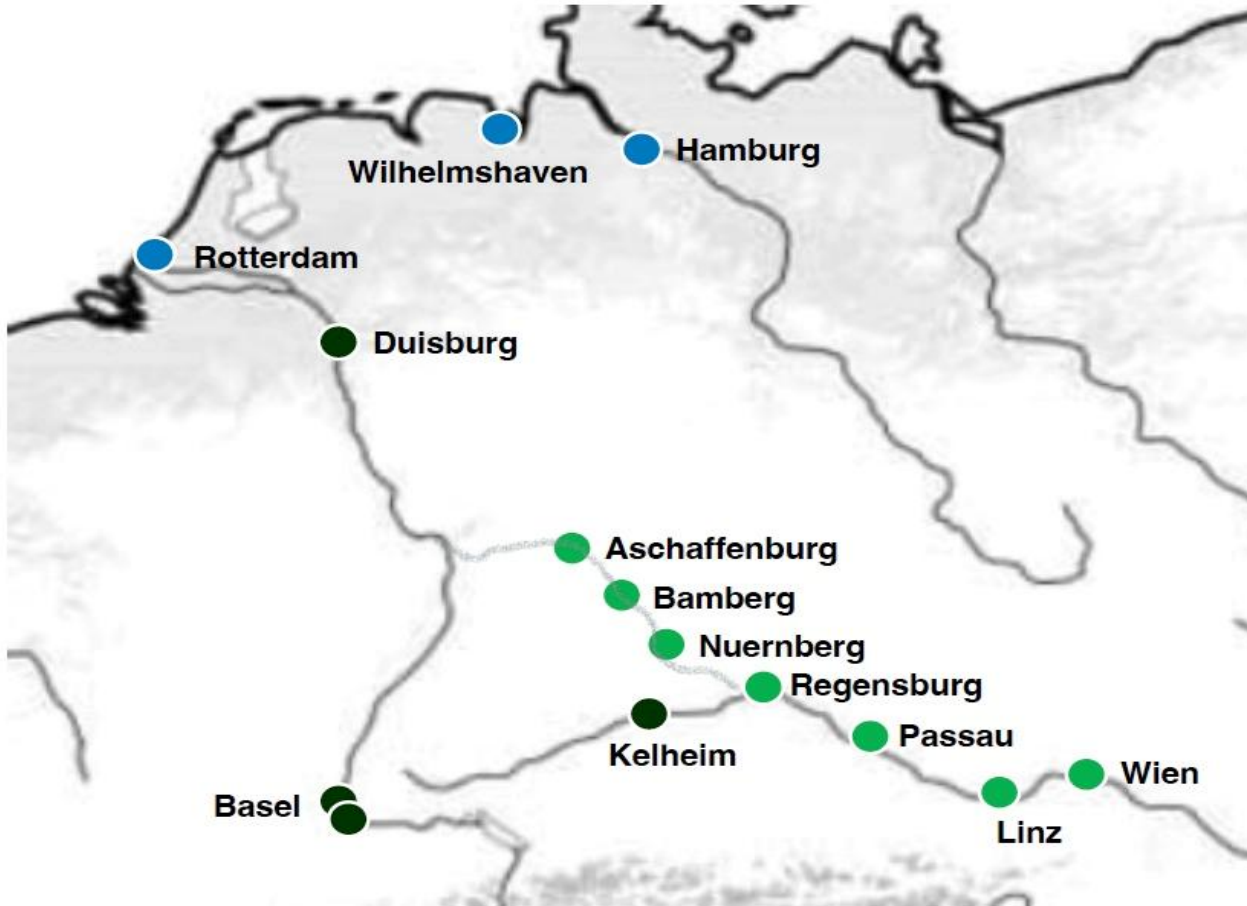


## One-Stop-Shop for Green Ammonia





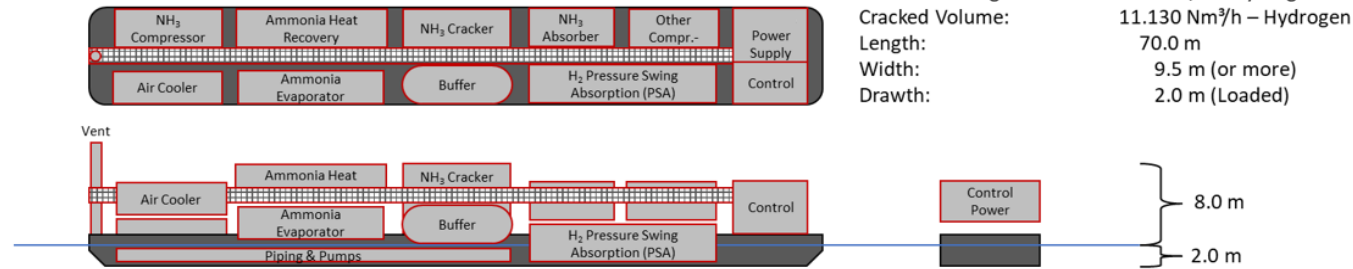
# Sundronix – The Door to Europe



## Integrated Project from FOB India to the Customers in Europe

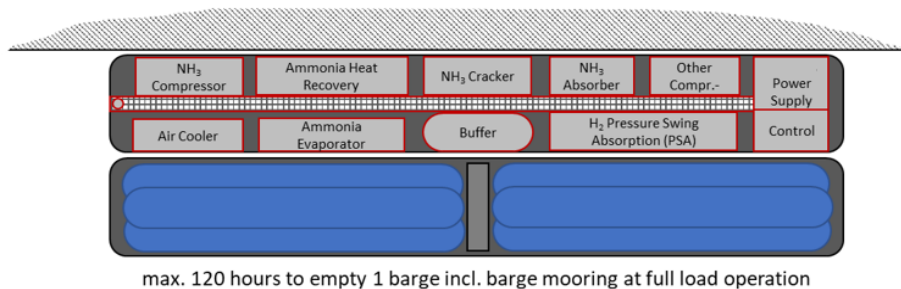
- Integrated Ammonia Supply Chain:
  - Green Ammonia Sourcing
  - Storage
  - Ocean Shipping
  - Inland Shipping
  - Decentralized Ammonia/H2 Cracking Technology at point of consumption
  - Generates Local Industrial H2 Offtake
- Strategic partners for the Development: Laeisz Shipping, Duiker

## Ammonia Cracking Barge (Draft)



## Hightech to solve the Problems of early technology Adopters

- Cracker landside or seaside (Barge or Ship)
- Integrated Technology
  - NH<sub>3</sub> as Energy Source
  - **No additional Electricity needed**
- In-House Floating Cracker Technology
  - Higher Permission Rate
  - Higher Flexibility
  - Easer to integrate in existing Infrastructure



## Ammonia Cracking Barge

&

## Refrigerated Ammonia Tank Barge

moored inland port



# Ammonia Supply Chain Solutions



## Built for Scale

- All aspects of the Value Chain on Scale
  - Production
  - Shipping
  - Conversion
  - Distribution
- Access to the European Market
- Strategic Partners to Scale with You



# One-Stop-Shop for Green Ammonia



**Customers and Technology ready**



**Transportation and Storage organised**



**Fully Deployed Value Chain**

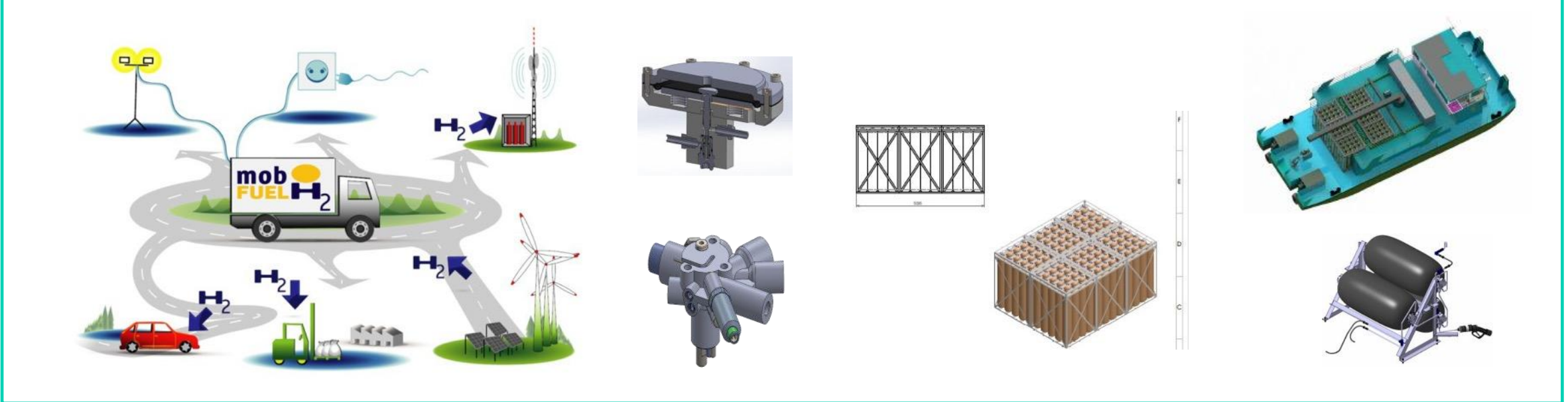




## Partners for Green Hydrogen Mobility







# Proven Technology for World Class Players

BIG in JAPAN:  
Argo-Anleg delivers innovative H2 tank system “ICE”  
for groundbreaking KEYOU-Komatsu project in Japan

World première:  
H2 wheel loader from Liebherr with technology from  
Argo-Anleg



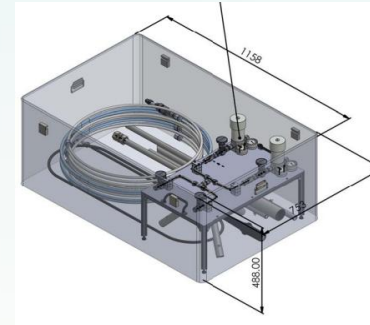


# Refueling Stations Stationary & Mobile



## Mobile Refueling and Overflow-Module

- Overflow-Module for 100% Flexibility
- Mobile Refueling for any Application



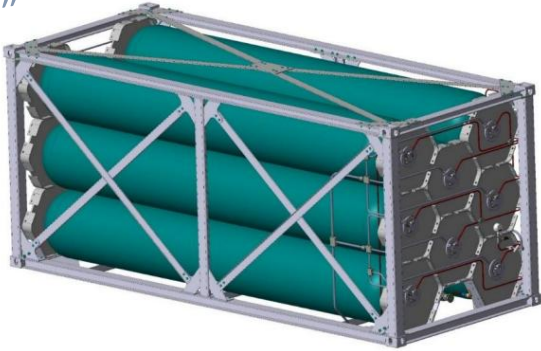
## Stationary Refueling Stations

- Designed, Engineered and Built for Best-in-Class Operators
- Different Technology/Products available



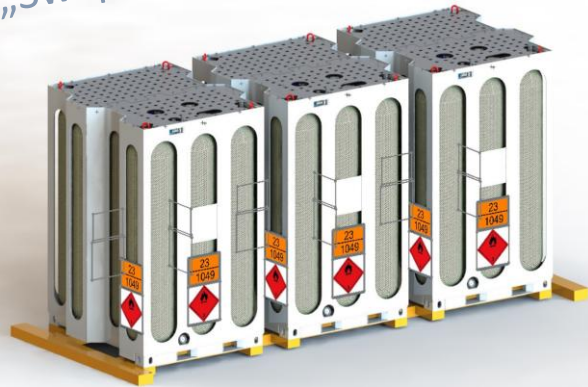


„Swappable solution“



Source: Argo-Anleg GmbH

„Swappable solution“



Source: Argo-Anleg GmbH



MEGC, MEGC 20", 500kg @  
**500bar**, ADR, ADN approval  
pending

Total per truck: 2 units (1.000kg)

USP's - all H2Tank-Tainer supplied with:

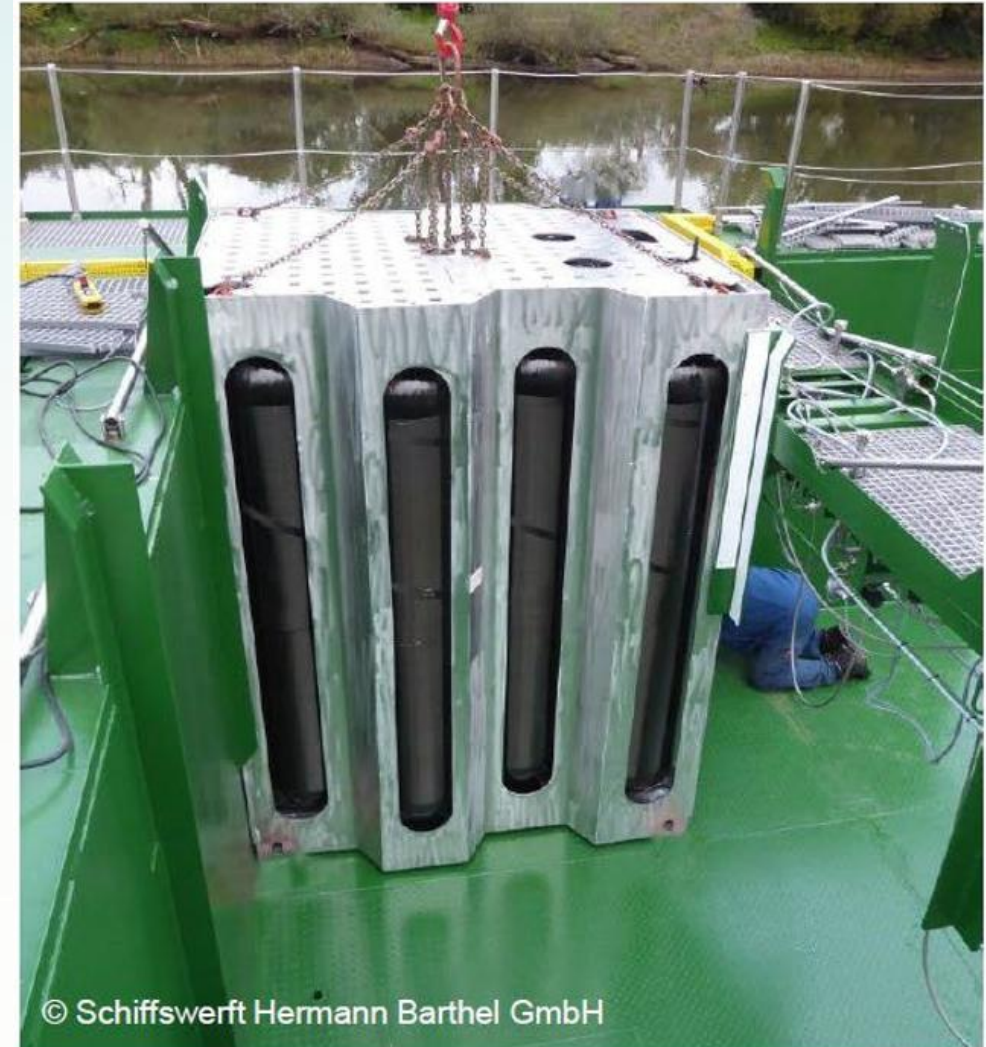
- ✓ MOTV's
- ✓ TPRD's
- ✓ TT's
- ✓ PT's
- ✓ Shock sensor
- ✓ Angle sensor
- ✓ Controller with software /cloud monitoring  
(integrated in ATEX proofed box)
- WiFi, 4/5G SIM card, GPS



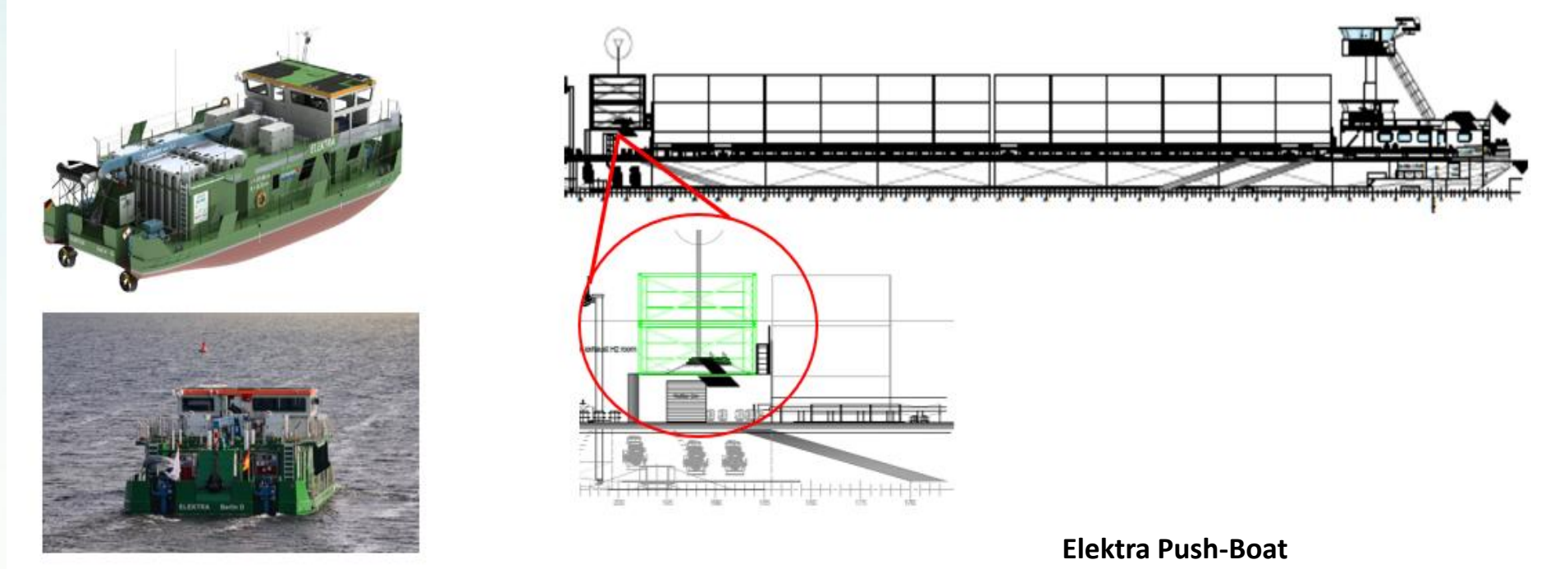
MEGC, 126kg @ 500bar,  
Transport via 20" ISO adapter  
ADR approval pending

Note:

Storage of 3x H2Tank-Tainer on 1x20ft adapter  
Total per truck: 6 units (750kg)



© Schiffswerft Hermann Barthel GmbH



## Elektra Push-Boat

- Modular H2 bunkering (6x125 kg @500 bar)
- Modules crate-able
- Refueling onshore
- Can supply different harbors

## Elektra Push-Boat

- Multi Energy Supply System (400 kW Fuel Cell Modules, H2-ICU retrofit, H2-rotary engine swap)
- Multi-fuel options
- Systems designed for 24/7 operation



# Integration of tank-systems into Platform vehicles 40to and busses



## **MAN Truck Tank-System**

development of Tank-System  
Gas Handling Unit

**Energy Management of  
3 x Fuel Cells, including the  
recharge strategy of the Batteries**

- On Tank Valve
- Fire Safety-Solutions
- Increase of security of the H<sub>2</sub>- supply
- New communication with the refueling station

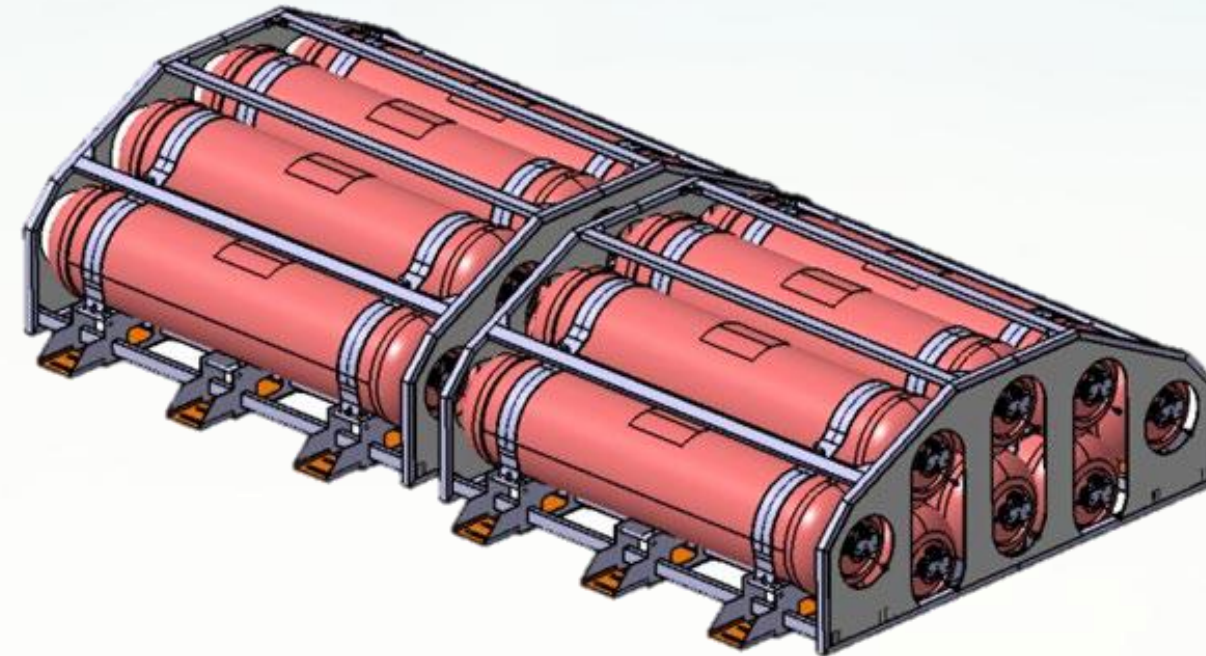


# Complete Tank-System for Trains



## Integration of Tank-Systems in Trains

- Tank-Systems
- Gas Handling Unit
- On Tank valve, MOTV



# References

Delivered solutions for our customers

- **Liebherr & Keyou-Komatsu-Project**
- **MAN Truck, Ursus-Bus, Daimler Truck, Volvo Truck**
- **GM** On Tank valve and Gas Handling Unit
- **Magna Steyr:** Tanksystem B-Class
- HDW: H2 Submarine, ATI-Küste: Deep Sea - submarine
- Mobile Filling Station 350 / 700 bar
- Filling Station for hydride storage tanks
- Proton Motor: Tanksystem for H2 Bus, H2 supply for **Linde** Fork Lifter
- Hydrogenics: Fuel Cell Bus Components
- DLR: Test Rigg components for Ariane Espace engine test rig

## ZBT Testbenches for H2 projects:

- ZSW-Ulm: Special differential pressure regulator for H2 of APU
- **Air Liquide, Air Products, Linde**
- **OPEL** solutions for fuel cell driven cars: GHU / OTV
- **AUDI, VW, Volvo Car**, Symbio Fcell, Green GT
- **Siemens** Train: H2 tank-system
- FutureE
- Amsterdam Ship
- Military Projects
- MUV-Range Extender



**DAIMLER  
TRUCK**

**SIEMENS**



**ZODIAC  
AEROSPACE**







**Project Developer along the Value Chain**



**• Import Green Ammonia from India to Europe**



**Fully developed Hydrogen Mobility Systems & Solutions**