



KLAIPĖDA LNG FORUM 2019

LNG FOR INLAND WATERS



**WESTERN BALTIC
ENGINEERING**

BLRT GRUPP

**STATYKIME
ATEITIES
LAIVUS
KARTU**



WBE 2019 05 15





Agenda

- **Environment**
- **Possibilities at Lithuanian Inland Waters**
- **LNG for Inland Waterway Transport**
- **LNG Feasibility Study for IWT**



Environment

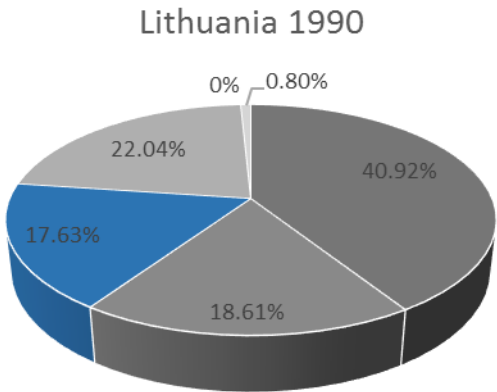
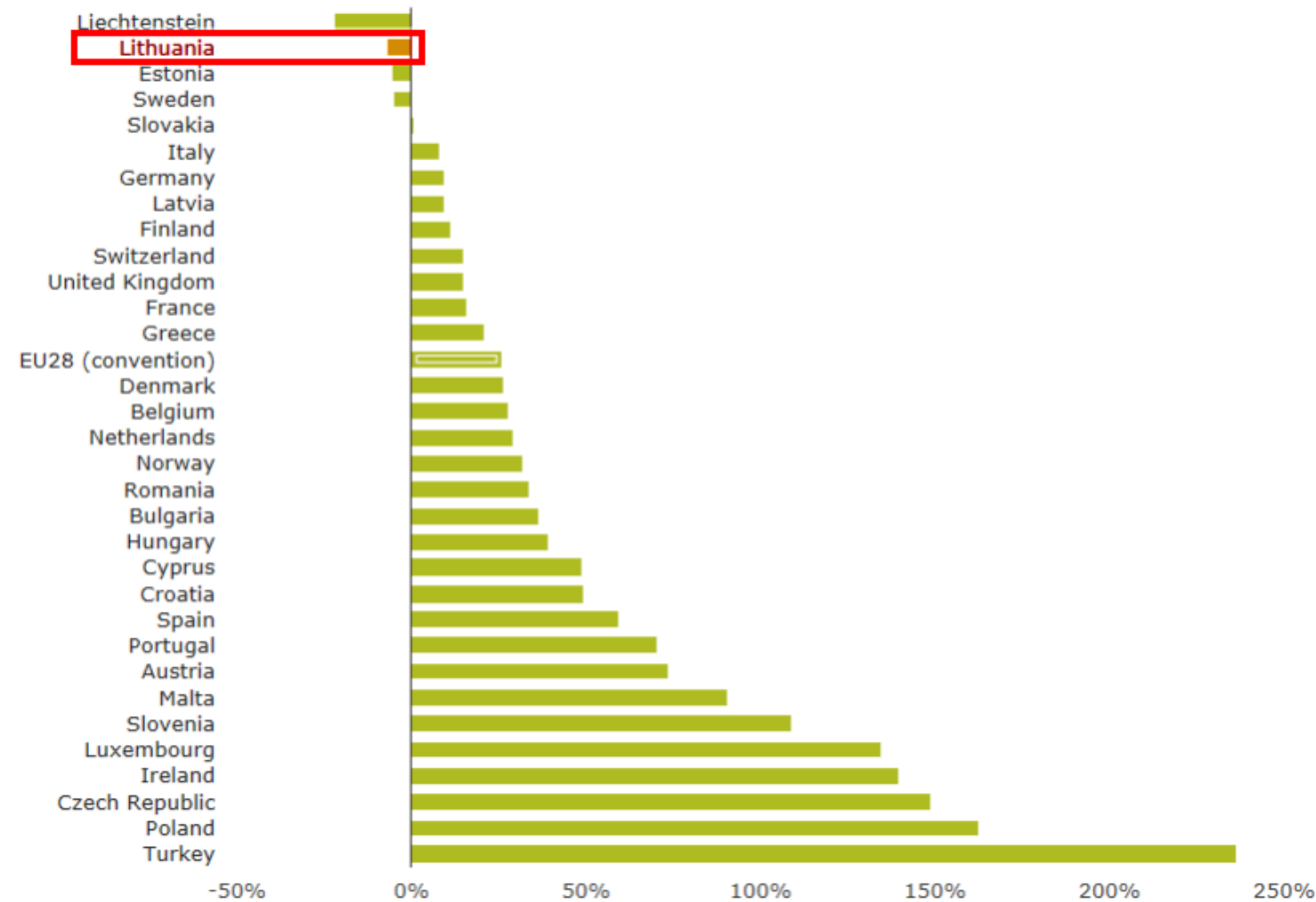
- The transport sector is one of the most energy consuming and highest emission causing sectors.
- Under continuing business as usual these emissions are expected to grow by approximately 40% until 2030.
- In order to counteract this circumstance, the European Commissions sets a target of 60% reduction of green house gas emissions from transport by 2050.



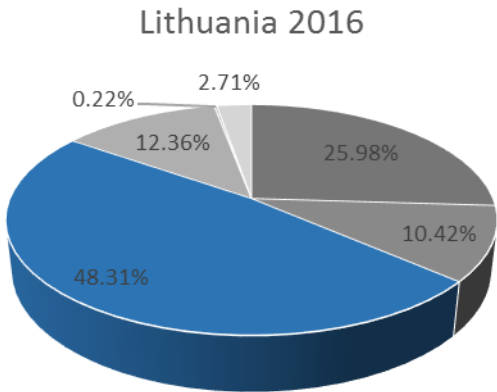
2015 BSR	➔	SECA
2021 BSR	➔	NECA

Possibilities at Lithuanian Inland Waters

Change 1990-2016 – Change in total greenhouse gas emissions from transport



Energy industries
Other sectors
Manufacturing industries
Other
Transport
Fugitive Emissions



Energy industries
Other sectors
Manufacturing industries
Other
Transport
Fugitive Emissions

Possibilities at Lithuanian Inland Waters

COMMERCIAL TRANSPORTATION BETWEEN MAIN PORTS:

- ❑ KLAIPEDA STATE SEAPORT
- ❑ KAUNAS MARVELĖ WHARF

ROUTE INFORMATION

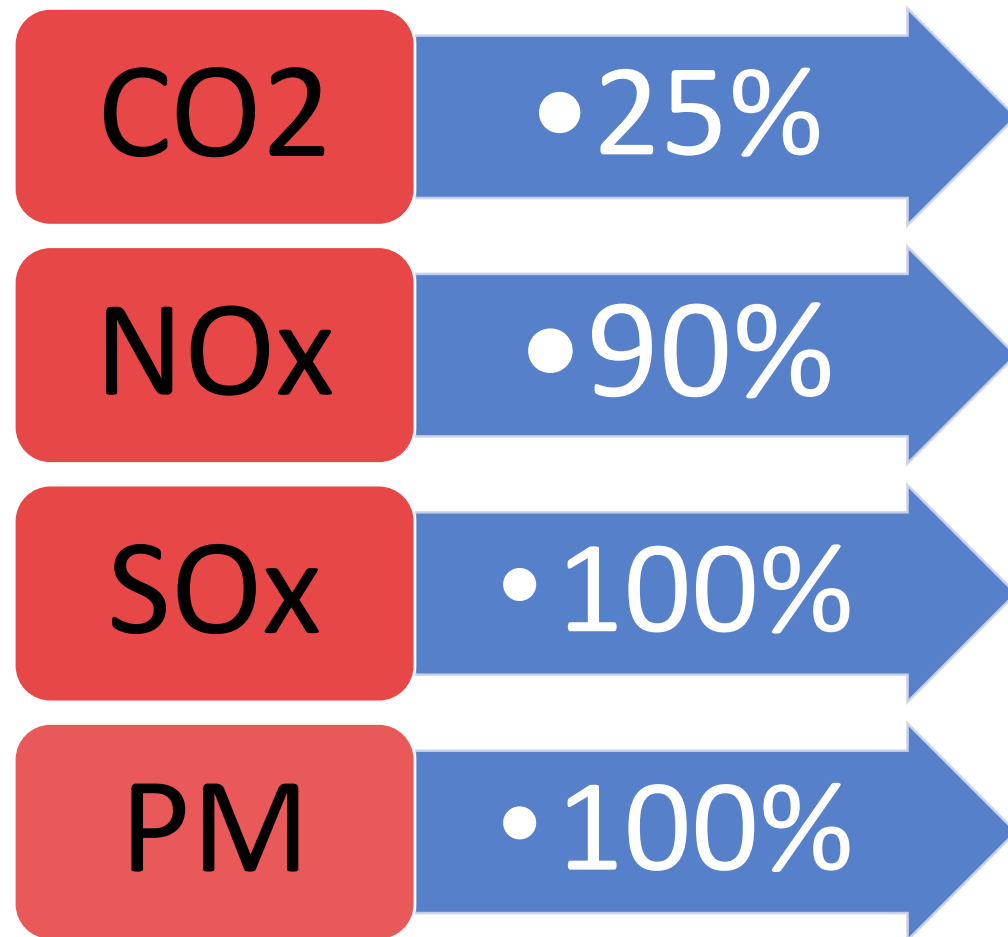
- Total length – 291,2km
- Min. depth – 1,2m
- Min. breadth – 30m
- Min. turn radius – 250m



LNG for Inland Waterway Transport

- Inland Waterway Transport (IWT) is actually known as an environmentally friendly mode of transport.
- But most engines of IWT does not meet any emission standard.
- IWT PM, CO₂, NO_x & Sox emissions impact are higher for environment over the road transport.
- **Liquefied Natural Gas (LNG)** may offer an effective solution to solve the issue.
- **LNG** is also considered as an **alternative fuel** in the Commission Communication on a European alternative fuel strategy.

EMISSION REDUCTION. LNG VS MDO



LNG Feasibility Study for IWT

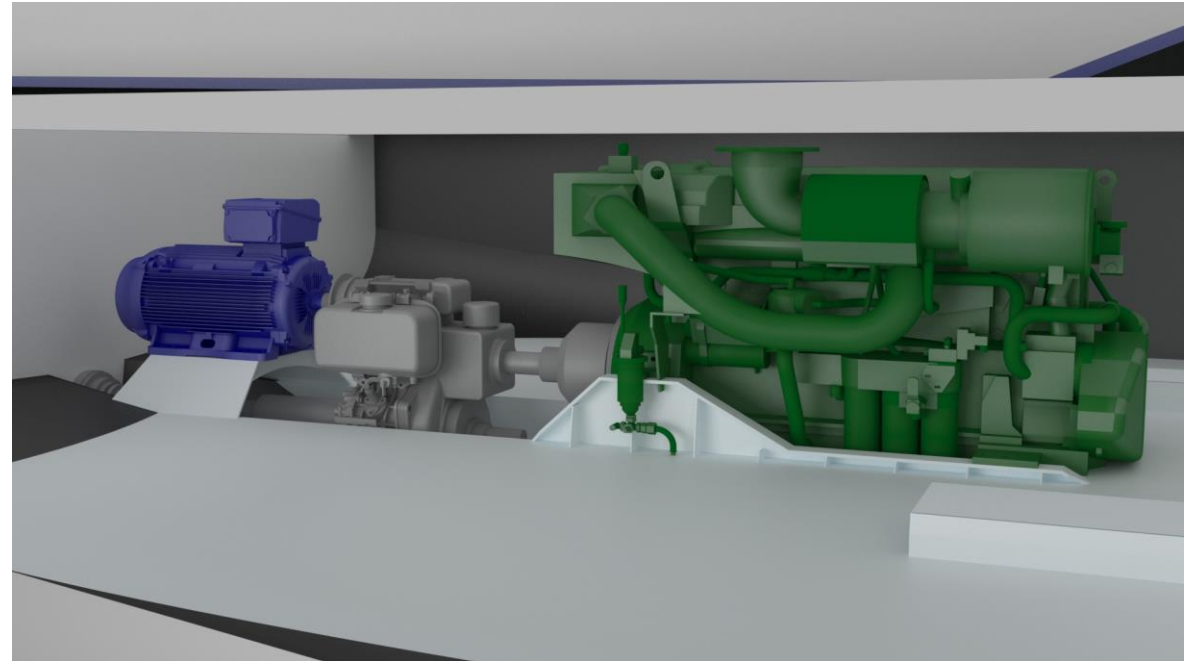
TRANSPORT TYPE:

- Self propelled barges;
- Car ferries;
- Dredgers;
- Tugs;
- Etc.



POWER PLANT TYPE:

- Gas powered;
- Gas – liquid fuel;
- Gas – electric



LNG Feasibility Study for IWT

“WESTERN BALTIC ENGINEERING” APPROACH

- Innovative conceptual prototype
- Retrofit existing vessel to hybrid **LNG – Electric** power plant



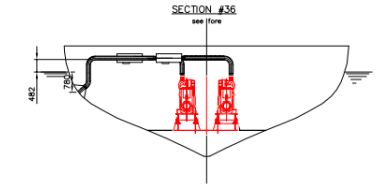
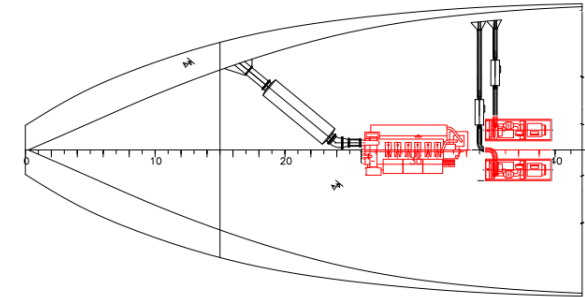
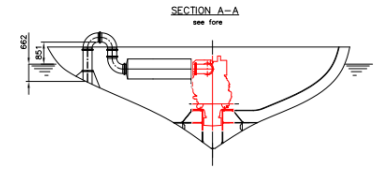
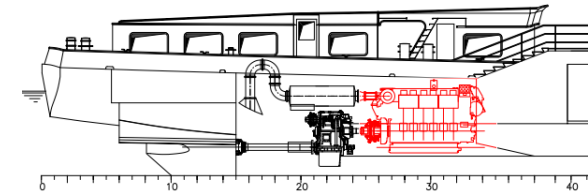
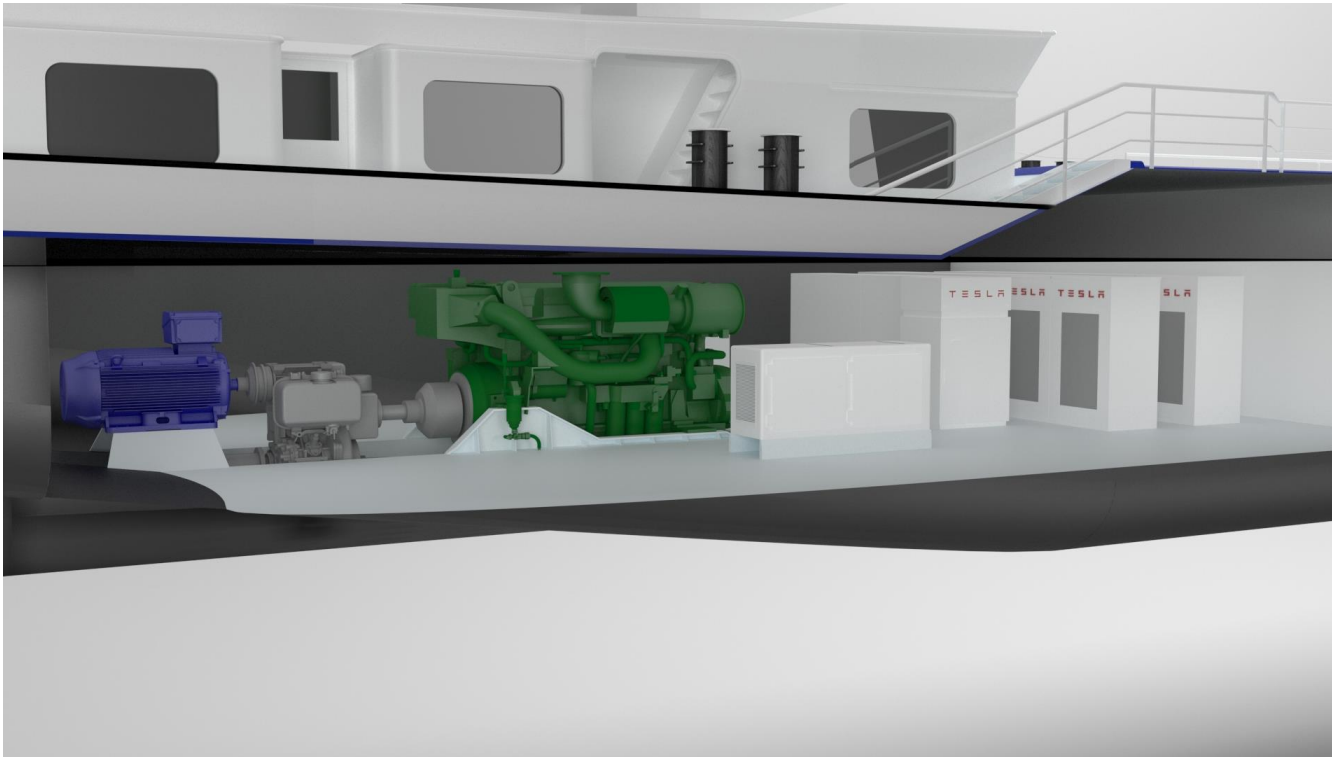
CHEMICAL TANKER

MAIN DIMENSIONS

• LENGTH O.A.	86.00	m
• BREADTH O.A.	11.44	m
• BREADTH MLD.	11.40	m
• DEPTH	4.80	m
• DRAUGHT	3.00	m
• CARGO HOLD CAPACITY	2114	m ³

LNG Feasibility Study for IWT

“WESTERN BALTIC ENGINEERING” APPROACH



POWER PLANT SET UP

Main engine – Rolls-Royce C26:33L6A

Power output – 1401kW

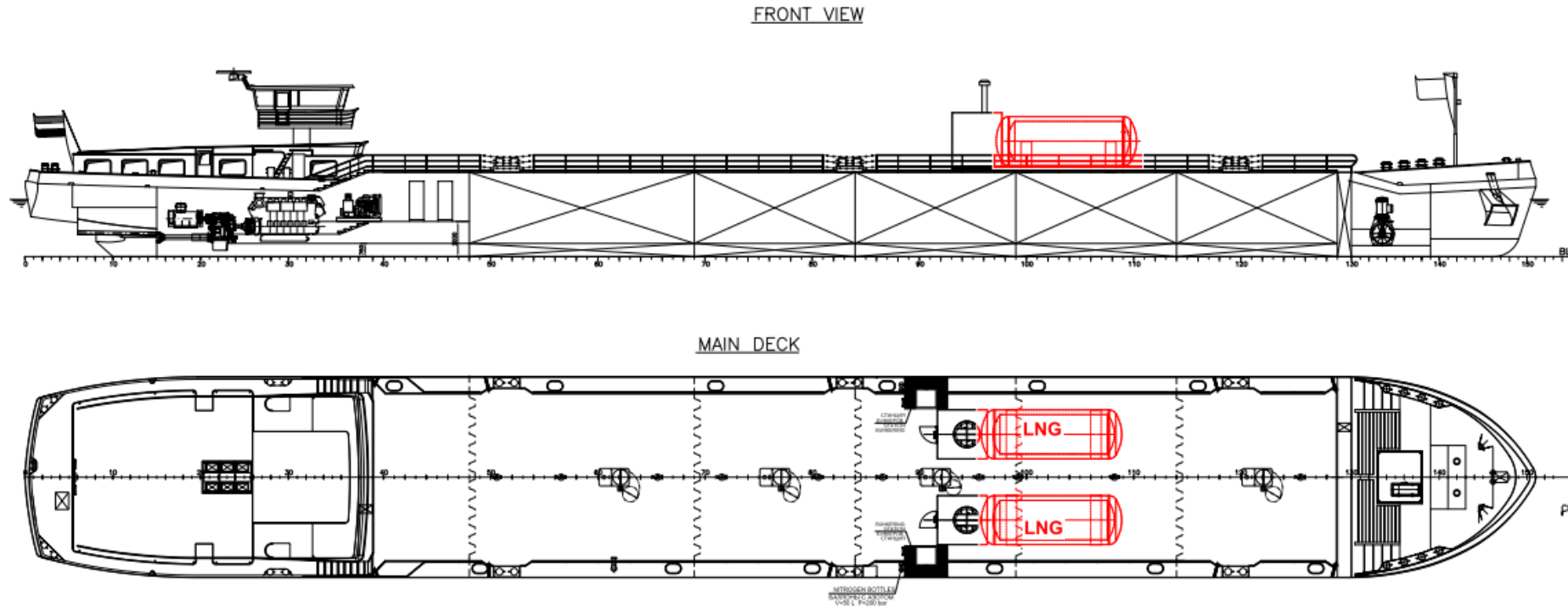
AUX GAS Generators – 2 Cummins EG 250B

Power output – 250kW each

10 battery sets – 210kWh each

LNG Feasibility Study for IWT

WESTERN BALTIC ENGINEERING APPROACH

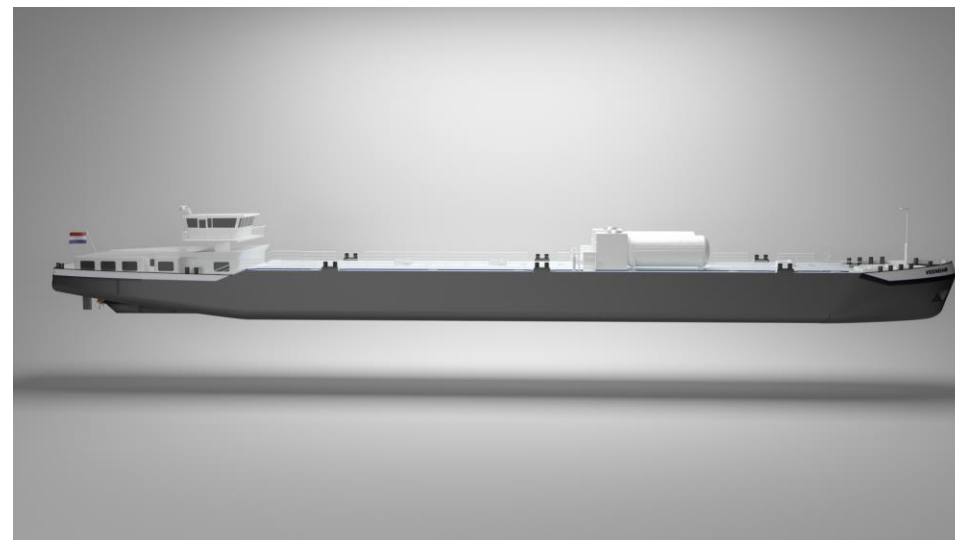
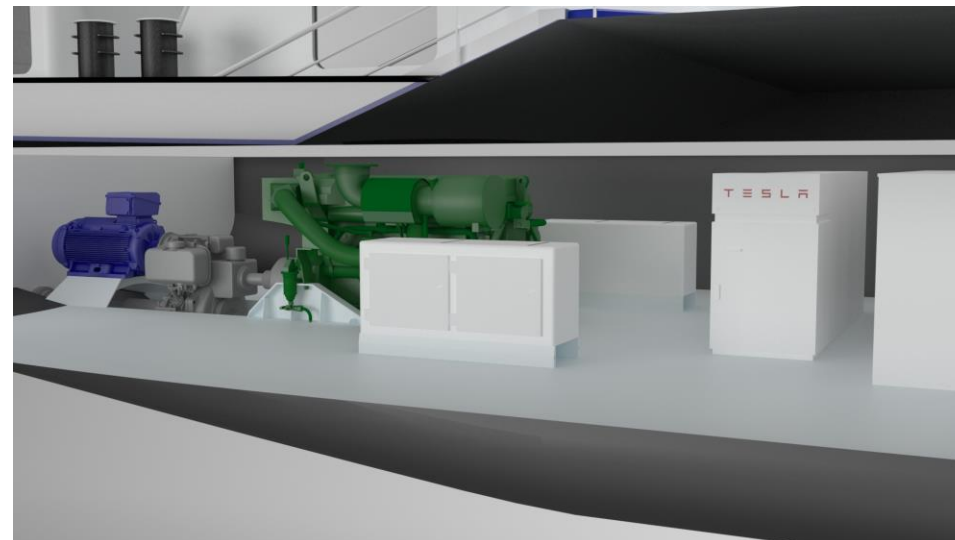


10 battery sets of 210kWh each:
Voyage = 7hours at 6kt

2 sets of 25m³ LNG tanks:
Voyage = 76hours at 10kt



LNG Feasibility Study for IWT





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***LET'S CREATE FUTURE PROJECTS
TOGETHER***

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