KLAIPĖDA LNG FORUM 2019
LNG FOR INLAND WATERS
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.
Possibilities at Lithuanian Inland Waters

Change in total greenhouse gas emissions from transport

Lithuania 1990
- Manufacturing industries: 40.92%
- Transport: 17.63%
- Other: 18.61%
- Fugitive Emissions: 22.04%

Other sectors:
- Other: 0.80%

Lithuania 2016
- Manufacturing industries: 25.98%
- Transport: 12.36%
- Other: 28.31%
- Fugitive Emissions: 10.42%

Other sectors:
- Other: 0.22%
- Fugitive Emissions: 2.71%
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

Inland waterways (51 gCO₂/tkm)
Road (140 gCO₂/tkm)
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, NOx & 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

- CO2: 25%
- NOx: 90%
- SOx: 100%
- PM: 100%
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 m³
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 = 7 hours at 6kt

2 sets of 25m³ LNG tanks:
Voyage = 76 hours at 10kt
LNG Feasibility Study for IWT
Let’s create future projects together

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