LNG FOR RAIL-
LNG HYBRID SHUNTING LOCO

Bergen, 2018
COMPANY PROFILE:

- MAINLINES LOCOS
- SHUNTING LOCOS
- RAILCARS FOR MAINTENANCE
- FREIGHT AND PASSENGER WAGONS
- COMPONENTS FOR ROLLING STOCK

1. PRODUCTION
2. OVERHAUL
3. MODERNIZATION
MAIN FIGURES

**Employers**: 1050

**Annual Turnover**: ~50M EUR

**Shareholder – Lithuanian Railways**: 100%

EXPERIENCE

**Implemented 15 Different Project**: 75

**Produced**: 75

**Modernized**: 100
PROJECT ACTUALITY:

Nowadays most part of industrial locomotives are diesel powered, business still cannot propose alternative solutions to fulfill high requirement for exhaust emission, we need to create modern solution and solve issue now and for future
LNG powered vessels number going up:
- 2013 – 50 units,
- 2017 – 110 units.

- VW group By 2025, plans to produce 1 million electric cars, TESLA the same by 2020.
- Norway plans to ban diesel and petrol engines in light transport by 2025
OUR TASK:

VLRD as leading project partner should create and integrate in locomotive high-efficient and ecological hybrid power traction system.

1. WITH LNG ENGINE
2. WITH ENERGY STORAGE SYSTEM
3. SYSTEM CONTROL & MONITORING
PROJECT DURATION—

27 months
EU requirements to reduce air pollution

Gothenburg protocol oblige EU members till 2020 reduce:
- Nox – 42%, SO₂ – 42%, solid particles – 22%

Innovation design in Railways using „green“ technology

EU harbors, terminals
- Operates about 9,000 shunting locos
- Most part of them is diesel powered
- Most of harbors located in city areas

Performance enhancement for Lithuanian and other EU companies
PROJECT SUPPORT:

Government recognizes Project as strategical

Finance confirmed by end-Customer

First Customer – state owned company Lithuanian Railways
SHUNTING LOCO OF THE FUTURE

LOCOMOTIVE WITH HYBRID TRACTION SYSTEM, THAT CONSIST OF LNG ENGINE AND ENERGY STORAGE SYSTEM

WHY LNG?

1. Not possible to construct catenary in harbors and cargo terminals
2. Expenses for fuel less 20%
3. Emission of solid particles – 0
4. NOx reduction – 85%
5. CO2 reduction – 25%
6. LNG engine – less noise
TODAY:

We make new steps every day

1. TECHNICAL DESCRIPTION
2. PREPARATION OF LOCO FOR MODERNIZATION IN PROCESS
3. BASE DRAWINGS
4. DESIGNING OF TRACTION CONTROL SYSTEM
OPEN POINTS:
To establish relationship with LNG system producers and together find solutions

1. SUITABLE LNG ENGINE WITH ALTERNATOR (700kW)
2. TRACTION AND AUXILIARY SYSTEMS INVERTERS
3. LNG ONBOARD STORAGE AND SUPPLY SYSTEM
4. PROJECT AUDIT FOR SAFETY ASPECTS
5. COMMON ENGINEERING JOB, SHARING INFO AND TRUST
PROJECT GAIN FOR PARTNERS

- Possibility to test product in railway application
- VLRRD gives the test platform on locomotive base
- Improving engineering experience in new field
- Project implementation with well-known in Baltics railway company
- Unique opportunity to enter “1520” market
- Export possibilities in future