Natural gas as a vehicle fuel
“the need for speed in Europe”

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Gazprom activity in Russia and abroad

- The largest natural gas exporter to the EU
- A major player in the international oil trade
- A major player in electric power generation in Russia
- Key promoter of natural gas as a vehicle fuel

Gazprom revenue structure

1993

- Gas 100%
- Electricity and heat 5%
- Liquid hydrocarbons 29%
- Other 3%

06/2014

Hydrocarbons search and geological exploration
Gas and gas condensate production
Oil production
Projects of methane production from coal beds
Raw hydrocarbons processing

Gas transportation
Gas underground storage
Electric power and heat generation
Spot sales of LNG
Sales of gas, supplied by gas trunk pipelines

Gas sales to end consumers
Oil and gas condensate sales
Refined products sales
Electricity sales
Oil products distribution through gasoline stations network

Other 3%

The largest natural gas exporter to the EU
A major player in the international oil trade
A major player in electric power generation in Russia
Key promoter of natural gas as a vehicle fuel
NGV is developing rapidly
... also in Europe?

Source: NGVA Europe

2nd Session Group of Experts on Gas, Geneva, 20/01/2015 - 21/01/2015
Europe is in a heterogeneous state of development … need for coherent supporting action

1,9m NGVs in Europe
1,1m NGVs in the EU 27

Source: NGVA Europe
Europe is missing out on a significant potential to reduce efficiently emissions – the transportation sector.

**Greenhouse Gas Emissions EU-28**
Development since 1990 until 2012 in %, 1990 = 100%

- **GHG transport**: + 14%
- **GHG other**: - 23%

Source: Eurostat
Natural gas offers lowest CO₂ emissions from all conventional fuels.

Greenhouse Gas Emissions „from Well-to-Wheel“ of alternative fuels in comparison to diesel and petrol (in gCO₂ eq./km)

- **Petrol**: 164 gCO₂ eq./km
- **Diesel (with particle filter)**: 156 gCO₂ eq./km
- **LPG**: 141 gCO₂ eq./km
- **Natural Gas (EU Mix)**: 124 gCO₂ eq./km
- **Natural gas with 20% bio-methane**: 100 gCO₂ eq./km
- **100% bio-methane**: 114 gCO₂ eq./km
- **Ethanol**: 95 gCO₂ eq./km
- **Bio-diesel**: 174 gCO₂ eq./km
- **Hydrogen (EU Electricity Mix)**: 75 gCO₂ eq./km
- **Hydrogen (100% Wind power)**: 8 gCO₂ eq./km
- **E-Mobility (EU Electricity Mix)**: 75 gCO₂ eq./km
- **E-Mobility (100% Wind power)**: 5 gCO₂ eq./km

* Reference: Petrol engine: 7 l/100 km

Source: German Energy Agency, dena
We believe in the potential of natural gas as a fuel … but there is still a way to go

- Light duty vehicles and personal cars with continuing growth in CNG
- Buses and local distribution will continue to facilitate CNG growth, with LNG entering the picture
- LNG growth facilitated by international heavy duty transport and bunkering
Support by policy makers and stakeholders needs to result in dedicated action

- Introduce cross border energy tax harmonization and relief on natural gas as motor fuel
- Introduce “high efficiency vehicle schemes”, for preferential treatment of efficient vehicles (equal support of alternative fuels)
- Ensure SECA compliance in the maritime sector (clarify enforcement principles)

- Introduce uniform reference basis for fuel prices at filling stations, establishing consumer-friendly energy pricing transparency
- Introduce harmonized price labeling preferably in gasoline equiv.

- Develop and introduce standardized permitting procedures for the construction and operation of ssLNG storage and refilling infrastructure

- Push stronger alignment of automotive, maritime and gas industry for the timely introduction of more competitive natural gas vehicles to customers
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<th>Key messages to remember!</th>
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<tr>
<td><strong>Natural gas is clean, abundant and available</strong></td>
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<td><strong>Vehicles and refuelling technology are proven, safe and reliable</strong></td>
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<td><strong>Market potential for natural gas as fuel for road transport and marine fuel is significant</strong></td>
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<td><strong>CNG and LNG are complimentary fuels covering almost all transport sectors</strong></td>
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<td><strong>As market is still developing, policy measures are required to motivate investors and end users to switch to natural gas as fuel</strong></td>
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<td><strong>Gazprom is ready to contribute to market development by providing investment and reliable supplies of natural gas</strong></td>
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