IGU/UNECE NGV Report 2009 - 2012

Economic and Social Council

Economic Commission for Europe

Committee on Sustainable Energy

Working Party on Gas

23rd Session

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NGV Report 2009 – 2012
produced by Study Group 5.3

(Utilization of Gas for Transportation),

IGU Working Committee 5

(Utilization of Gas)

and

UN ECE NGV Expert Group

(est. March 2010)

88 Experts from
65 Companies
30 Countries
Contributed to
IGU/UN ECE NGV Report

327 Pages
169 Pictures
24 Tables
Info from 75 sources
80 + Mb Word format

NGVA Europe

NGV Global

NGVRUS

ANGVA

NGV America

Why Natural Gas

An endless snake of trucks, Port of Antwerp, Belgium

A Typical Weekdays' Evening in Prague, Czech Republic

Methane is the only hydrocarbon commercial fuel available today with unique blend of advantages. It is clean, safe, cheap, reliable, multipurpose, flexible, abundant and renewable

Structure of the IGU/UN ECE NGV Report

- ACKNOWLEDGEMENTS
- INTRODUCTION
- EXECUTIVE SUMMARY
- MARKET PROFILE: WORLD, CONTINENTS, COUNTRIES
- MINIMUM REFUELLING INFRASTRUCTURE NEEDS FOR EUROPE
- EU EMISSIONS POLICIES AND ITS IMPACT ON THE EUROPEAN NGV MARKET
- FUELLING OF LNG/L-CNG VEHICLES
- SYNERGY OF BIOMETHANE AND NATURAL GAS
- NATURAL GAS BLENDS TECHNOLOGY: GAS–HYDRO

Structure of the IGU/UN ECE NGV Report

- PROMISING NGV RELATED TECHNOLOGIES TO ENHANCE EFFICIENCY AND SAFETY
- RFID SAFETY SYSTEM
- APPENDIX I: COUNTRY DATABASE
- APPENDIX II: BLUE CORRIDORS ON OUR PLANET
- APPENDIX III: WORLDWIDE NGV STATISTICS
- ABBREVIATIONS
- REFERENCES

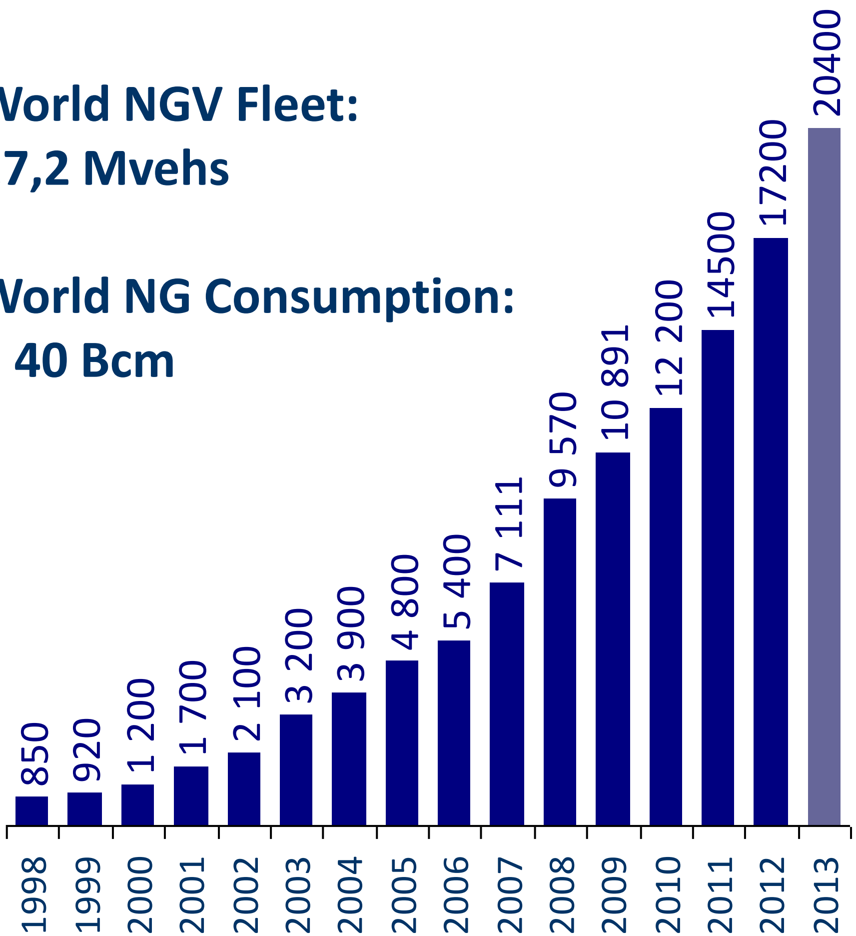
GAZPROM EXPORT

World NGV Population

World NGV Fleet in 1998 - 2012

World NGV Fleet:
17,2 Mvehs

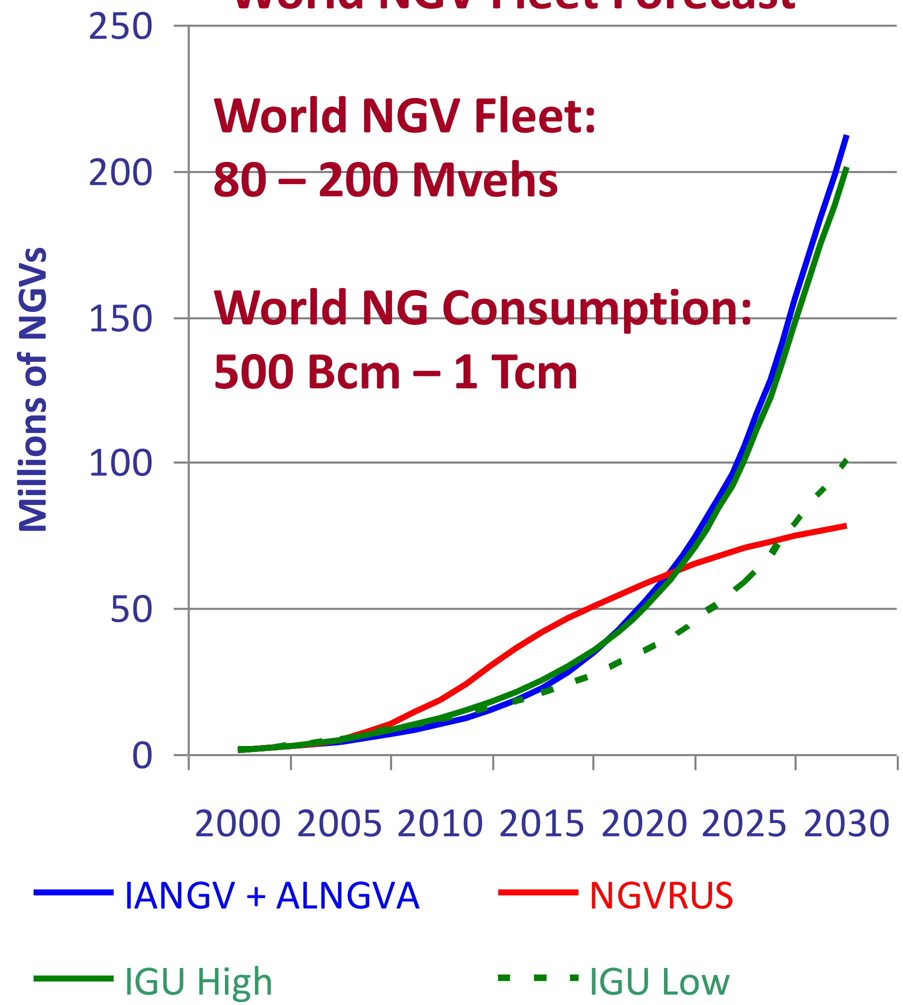
World NG Consumption:
≈ 40 Bcm



World NGV Fleet Forecast

World NGV Fleet:
80 – 200 Mvehs

World NG Consumption:
500 Bcm – 1 Tcm



Source: IGU

Geneva, 22.01.2013

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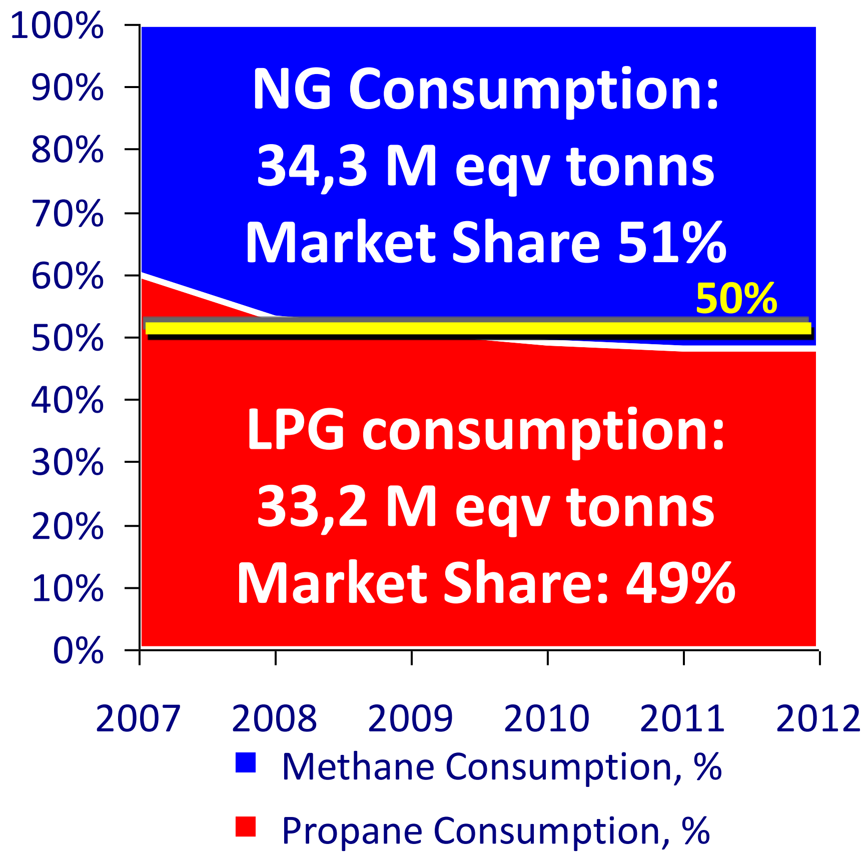
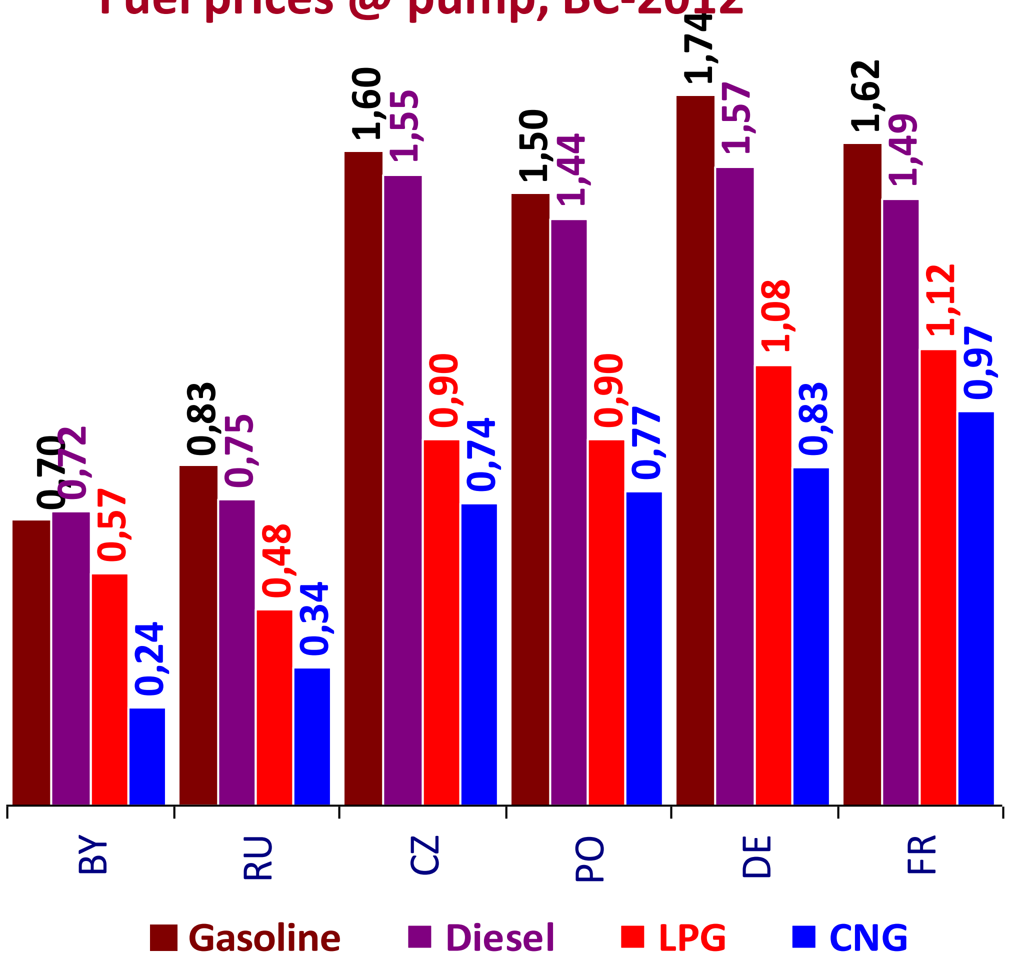
Natural Gas among other alternatives

Share of LPG and CNG/LNG in the world alternative fuel basket



Fuel prices @ pump, BC-2012



 Source:

Universal Drivers of NGV Market

Governmental and municipal policies towards cleaner environment, decarbonisation, oil independence, and energy sustainability and self-sufficiency

Financial support for conversions, OEM NGV acquisition, infrastructure development

Overwhelming commercial success of NGV projects

Biomethane, renewable energy

Investment, NGV and components production

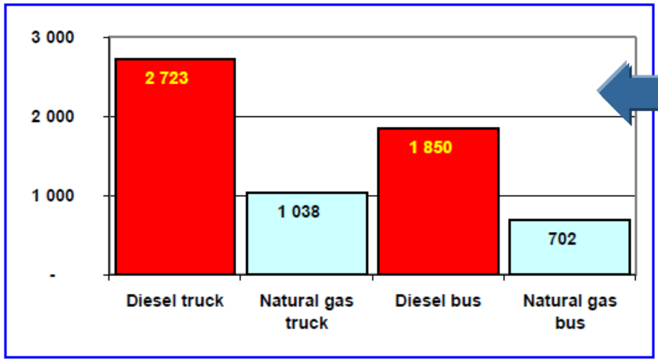
Availability of resources and affordable technologies

Steady growth and expansion of NGV industry

Development of LNG infrastructure market for medium and long distance MD and HD NGVs

GAZPROM EXPORT

World NGV Diversity



Emissions, kg * t of exhaust:
oil fuel vs natural gas

Anything can be driven by clean, safe and cheap natural gas. World industry offers NGVs from factory.

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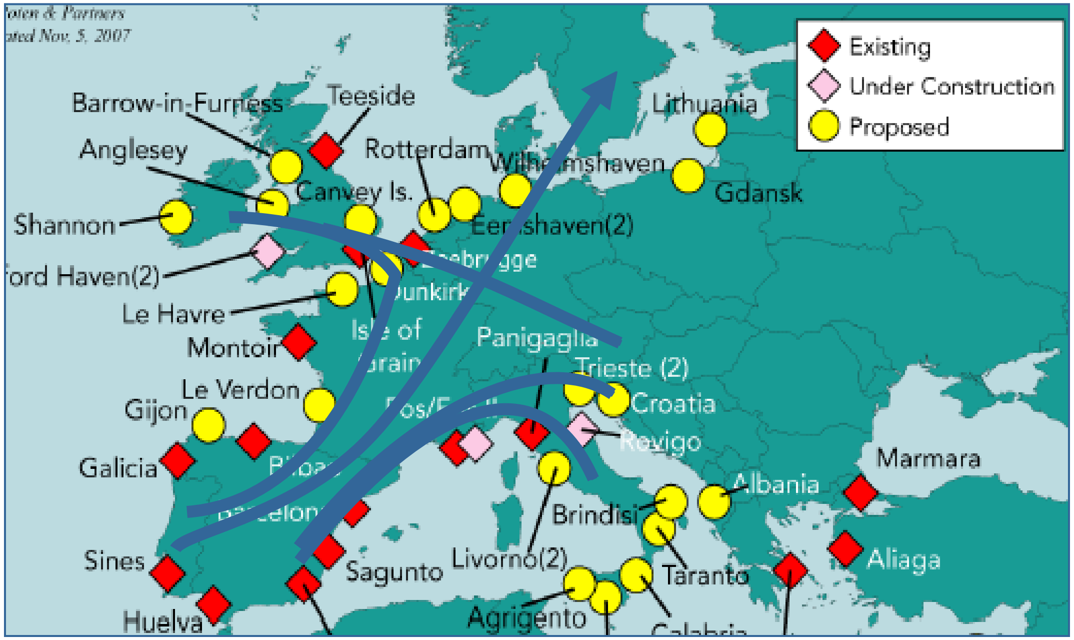
Blue Corridors

The Concept of Blue Corridors is expanding since approval by UN ECE in 2003.

NGVA Europe presented a project to the FP-7, to develop the European LNG Blue Corridors.



LNG Blue Corridors project

GC.SST.2012.2-3. Demonstration of heavy duty vehicles running with liquefied methane

Call: FP7-TRANSPORT-2012-MOVE-1

Content and scope:

The overall objective is to perform **large-scale demonstration** in order to facilitate a broad market development for heavy duty trucks running with liquefied methane. The specific objectives for the project should be:

- To **optimize the complete powertrain and storage system of LNG heavy duty vehicles** with respect to energy efficiency and pollutant emission, by fully utilizing the technical potential of liquefied methane in an optimized fuel-engine system.

LNG for Emission Control Areas - ECAs

Major ports and lines in the Baltic and Northern Seas

Blue Corridor-2012


Berlin


Brussels


Paris


Prague


Warsaw


Minsk


Moscow

Length: 6100 km Duration: 18 days NGVs: 18 Round Tables: 10

What slows NGV market development

Lack of balance between 'pleasure & pain' ('carrot & stick')	new regulations need new incentives
Inadequate development of CNG filling network, except for Germany and Italy	no stations = no NGVs
Inconvenient location of CNG/LNG filling stations	hard to find; extra mileage
Different filling nozzles in different countries	adapters are needed = reduced safety, extra costs
Different measuring units in different countries - cubic meters or kilograms	confusion for customer

What slows NGV market development

Different gas composition	L-gas = shorter range, extra costs
Payment options: cash, credit cards, company cars	Inconvenience for customer if limited
Prohibition of self service	Inconvenience for customer
Almost no LNG infrastructure in place	Slow market development
Limited range on CNG in some NGV models	Frequent fillings
Few road signs to CNG filling stations	Hard to find

Conclusions

NGV cooperation between UN ECE and IGU in 2009 – 2012 was successful and efficient.

Proposals:

- **Continue NGV Study into 2012 – 2015**
- **Establish joint WPG/WC5 study group**
- **Consider the NGV 2009 – 2012 completed**

Thank you for your attention

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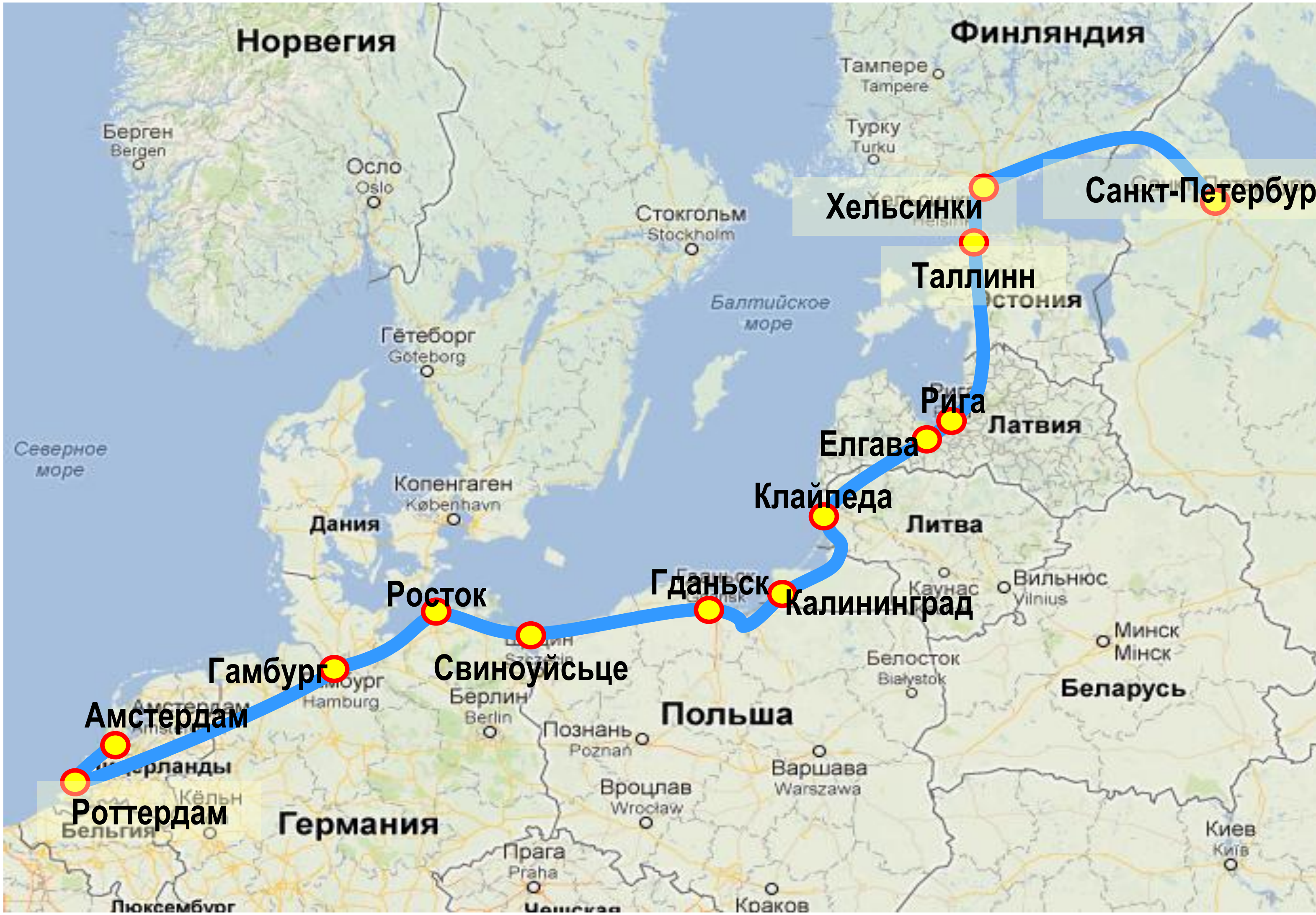
Blue Corridor-2013 /draft/



Geneva, 22.01.2013