



Nord Stream: Secure gas supply for Europe

Jens D. Müller, Communications Manager, Nord Stream AG
Russian Gas in Europe – Warsaw, 26 June 2008

Key facts about Nord Stream

- **1,200 kilometre** offshore pipeline across the Baltic Sea
- **Directly connecting Russia** with its largest available gas reserves in the world to **European gas networks**
- Can deliver **25% of additional gas import** needs of EU 25 in 2015
- Transport capacity: **55 bcm per year in 2012**



Company structure



51,0%



■ BASF Group

20,0%



20,0%



9,0%

Nord Stream AG

----- SUPERVISORY LEVEL -----

Shareholders Committee

----- MANAGEMENT LEVEL -----

Managing Director

Technical
Director

Commercial
Director

Financial
Director

ADDITIONAL SUPPLY ROUTE TO EUROPE

- Nord Stream will provide capacities for additional gas supplies
- Existing pipelines will not be affected
- From Germany, gas can be transported to Denmark, the UK, the Netherlands, Belgium, France, Italy, Czech Republic and other countries



Answers to questions | 1

Is there a common understanding of security of supply in Europe?

Common understanding for European energy needs

- **Security of supply**

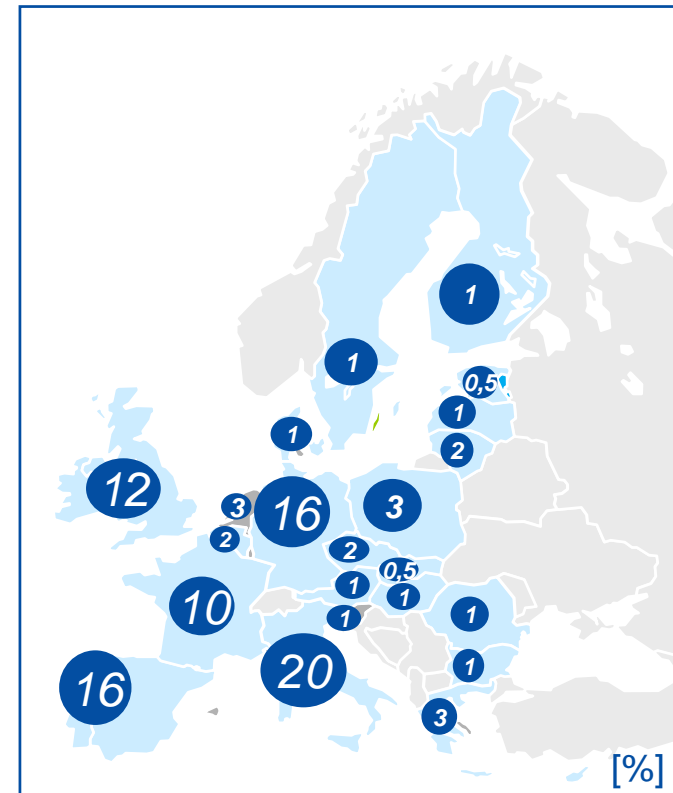
- 75% of European gas to be imported in 2015, compared to 59% in 2005
- Domestic European supplies of natural gas decline
- Transportation network to be expanded to sustain business by matching new supplies to market demand

- **Diversity**

- Diversification of sources
- Diversification of transportation routes
- Each major supplier of gas to Europe offers physical diversity of its supply routes to customers

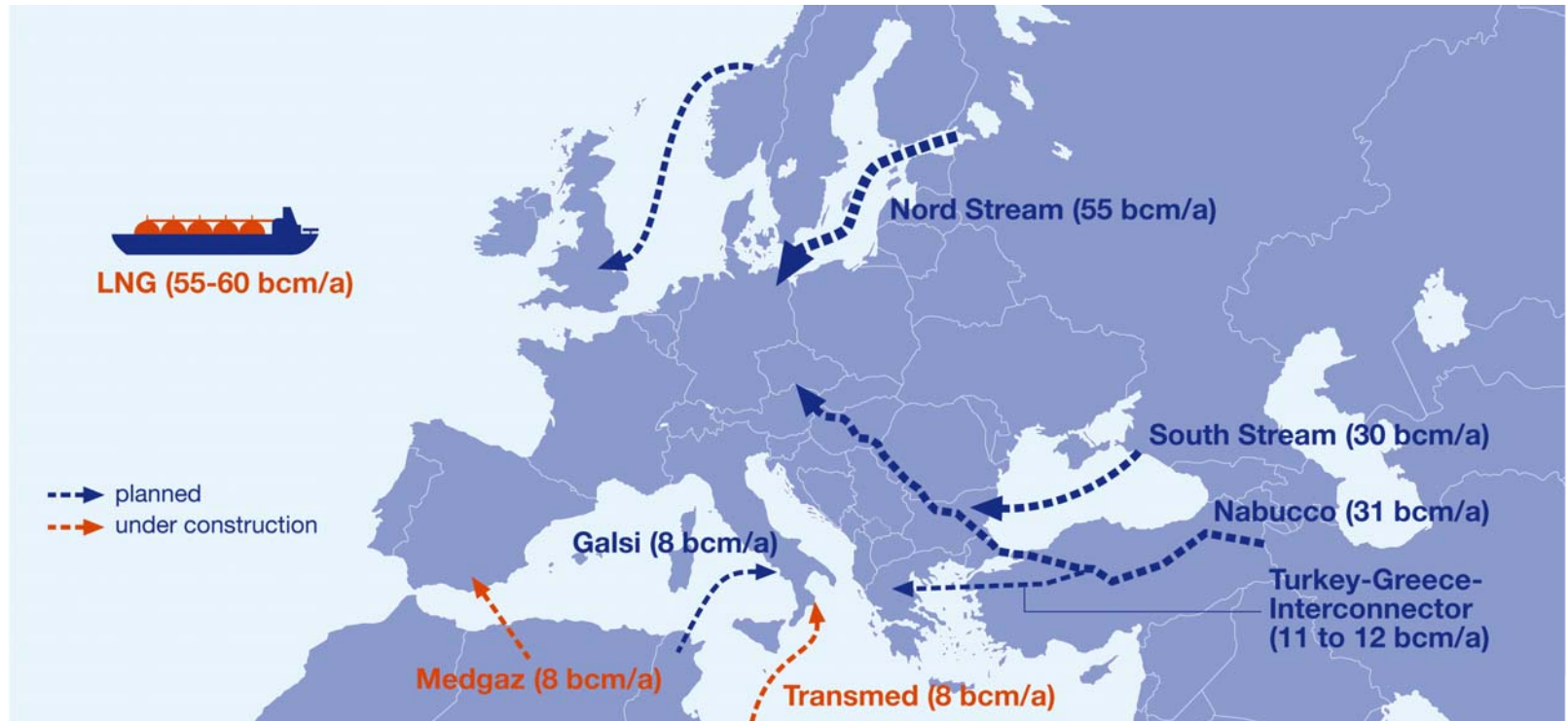
- **Solidarity**

- Secure supply to be guaranteed for each country – big and small, East and West
- Mutual interdependence between Russia and the EU



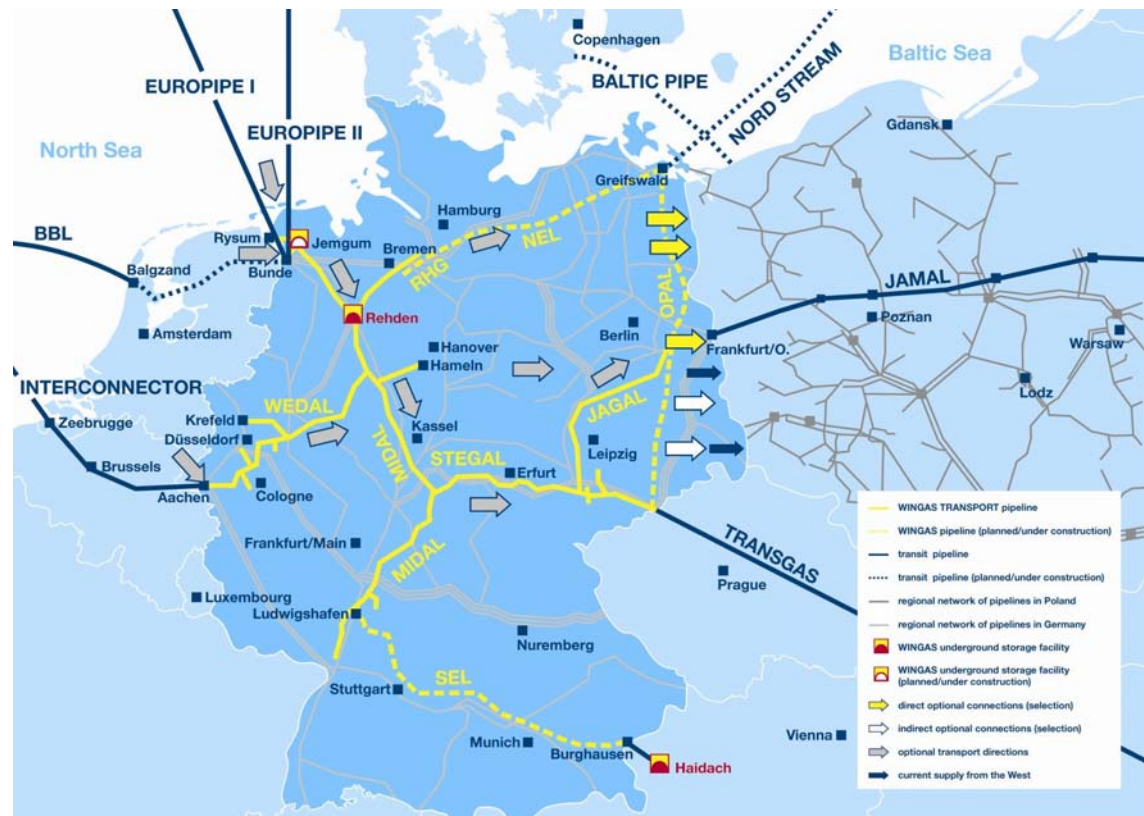
Additional transport capacities needed

To fill the growing import gap of more than 100 billion cubic meters per year (bcm/a), infrastructure projects featuring varying transport capacities are planned



Cross border infrastructure – A pre-requisite for the security of supply

- WINGAS offered to link the **Polish natural gas pipeline system to the West European system onshore**
- By connecting Poland to the OPAL pipeline or a reversed flow in the Yamal pipeline Poland could **contract gas from both Russia and the North Sea region**
- Offer provides options to integrate into a **robust West European grid as well as transit alternatives**



Nord Stream – A genuine EU project

- The "natural gas pipeline via the offshore route from Russia to the EU" nominated as a priority project under the **Trans-European Network Energy Guidelines ('TEN-E')**
- In 2000, the North European Gas Pipeline included into **'TEN-E' Guidelines** – as a **'Project of Common Interest'** (i.e. third level); status confirmed in 2003
- In 2006, Nord Stream designated a **'Project of European Interest,'** recognising its status as one of the most important projects to meet Europe's energy infrastructure needs
- Nord Stream is in line with the EU's overall energy policy objectives: **sustainability, competitiveness and security of supply**

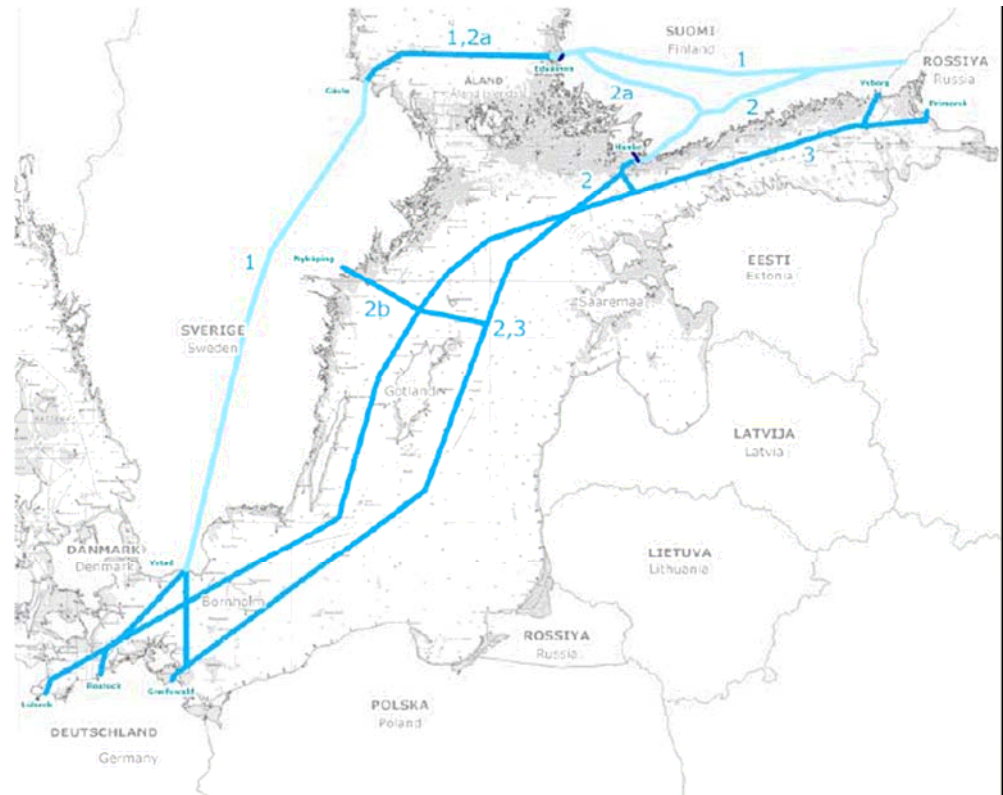


Answers to questions | 2

What is the economic dimension of a politically controversial discussed project?

Offshore route – A result of thorough assessments

- Route selected after **integrated evaluation of technical, environmental and economic aspects**
- Integrated feasibility study of alternative routes in **1997-99 by a Finnish-Russian consortium**
- The proposed route was assessed as the most feasible
- Nord Stream strives to avoid munitions dump sites and protected areas

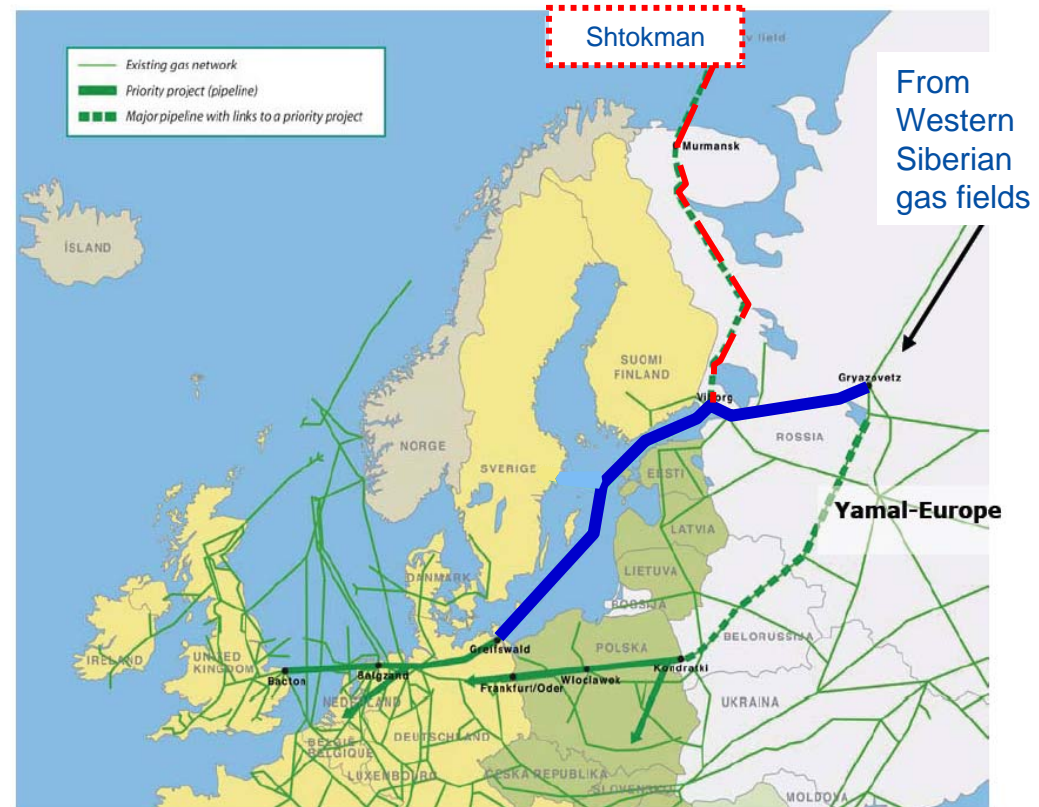


Necessity for a comprehensive comparison

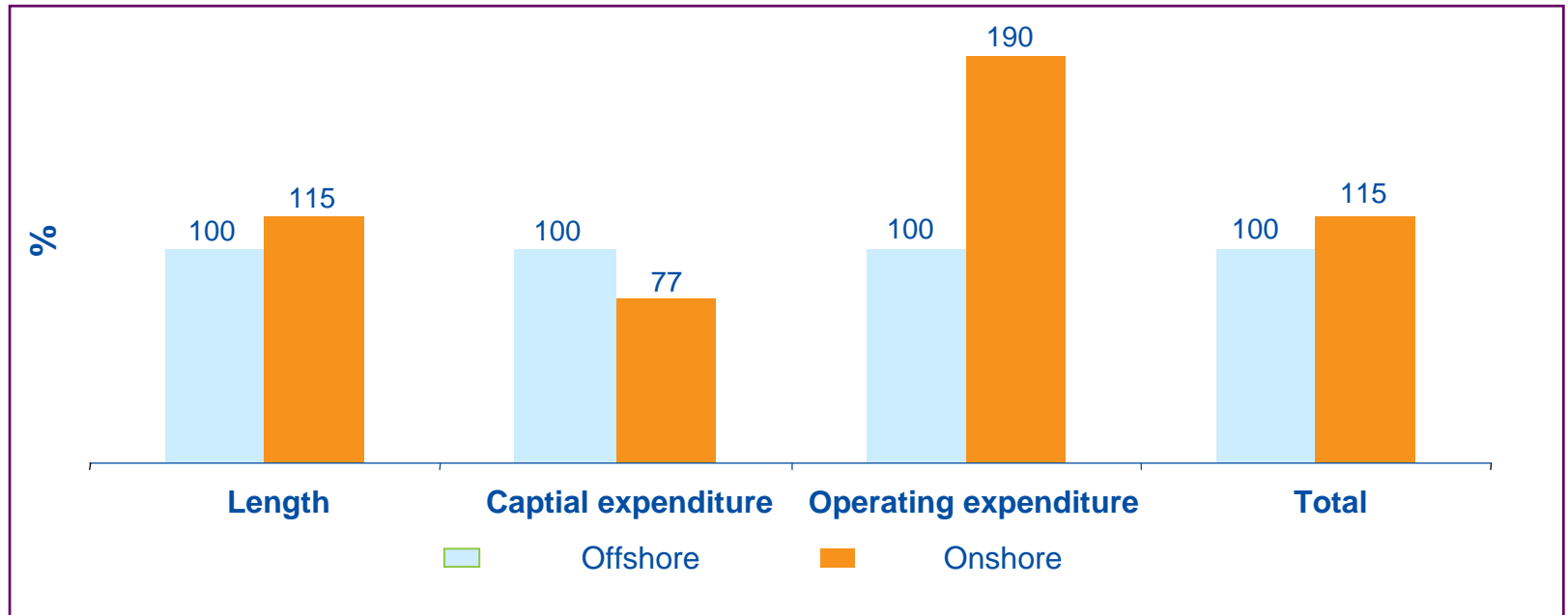
	Offshore	Onshore
Environmental	<ul style="list-style-type: none"> + Pipeline lies on the seabed at depths + Fast laying process with little disturbance 	<ul style="list-style-type: none"> - Crossing of sensitive areas (such as forests, rivers, villages etc.)
Technological	<ul style="list-style-type: none"> + Higher pressure + Greater output 	<ul style="list-style-type: none"> - Compressor station needed every 200 km + Easy connections to customers
Security	<ul style="list-style-type: none"> + Less risk due to difficult accessibility + Lower presence of human beings in the proximity 	<ul style="list-style-type: none"> + Easy maintenance + Easy repair
Economical	<ul style="list-style-type: none"> - Higher investment costs + Lower operational costs 	<ul style="list-style-type: none"> + Lower investment costs - Higher operational costs - Fuel gas needed

Ecological advantages of the offshore route

- **Obvious savings of an integrated offshore-onshore transportation route** against a 4,000 km pure onshore transportation system, due to **reduced length and higher pressure**
 - **2-3 bcm/year fuel gas**
(= actual total demand of Estonia and Latvia)
 - **4-6 Mio. t/year CO₂**
(Burned and emitted in 7-10 additional compressor stations)



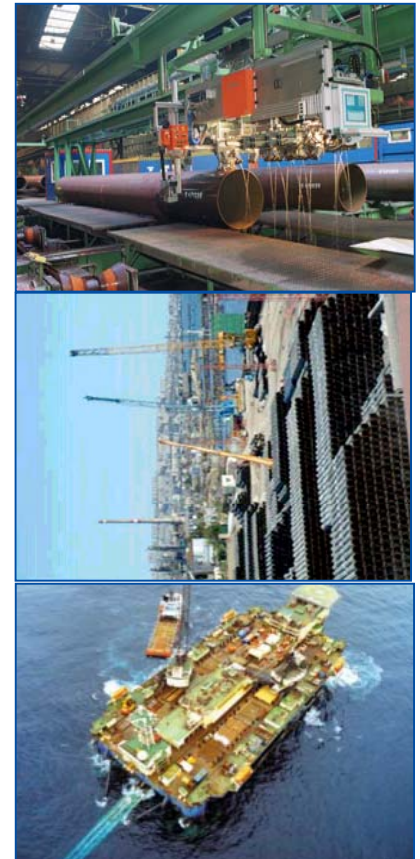
Cost advantages of the offshore route



Total costs of an offshore pipeline are **some 15% lower** than an onshore pipeline, calculated over an period of 25 years

Major contribution to economic development of Trans-European Energy Networks

- Nord Stream overall **project budget of 7.4 billion Euros**
- Budget based on **assessment of the key cost drivers** (especially those related to steel prices and additional expenditures on technical and environmental safety)
- Conclusion of supply contracts important steps towards **efficient and timely project implementation**
- One of the **largest private investments in infrastructure** in Europe
 - Realisation of the TEN-E strategy calls for total investments of roughly 19 billion Euros in gas projects alone to diversify the energy mix and to increase import capacity with additional supply routes
- **Reinforces economic growth** and the creation of employment



Expression of the European dimension

Nord Stream and Shareholders

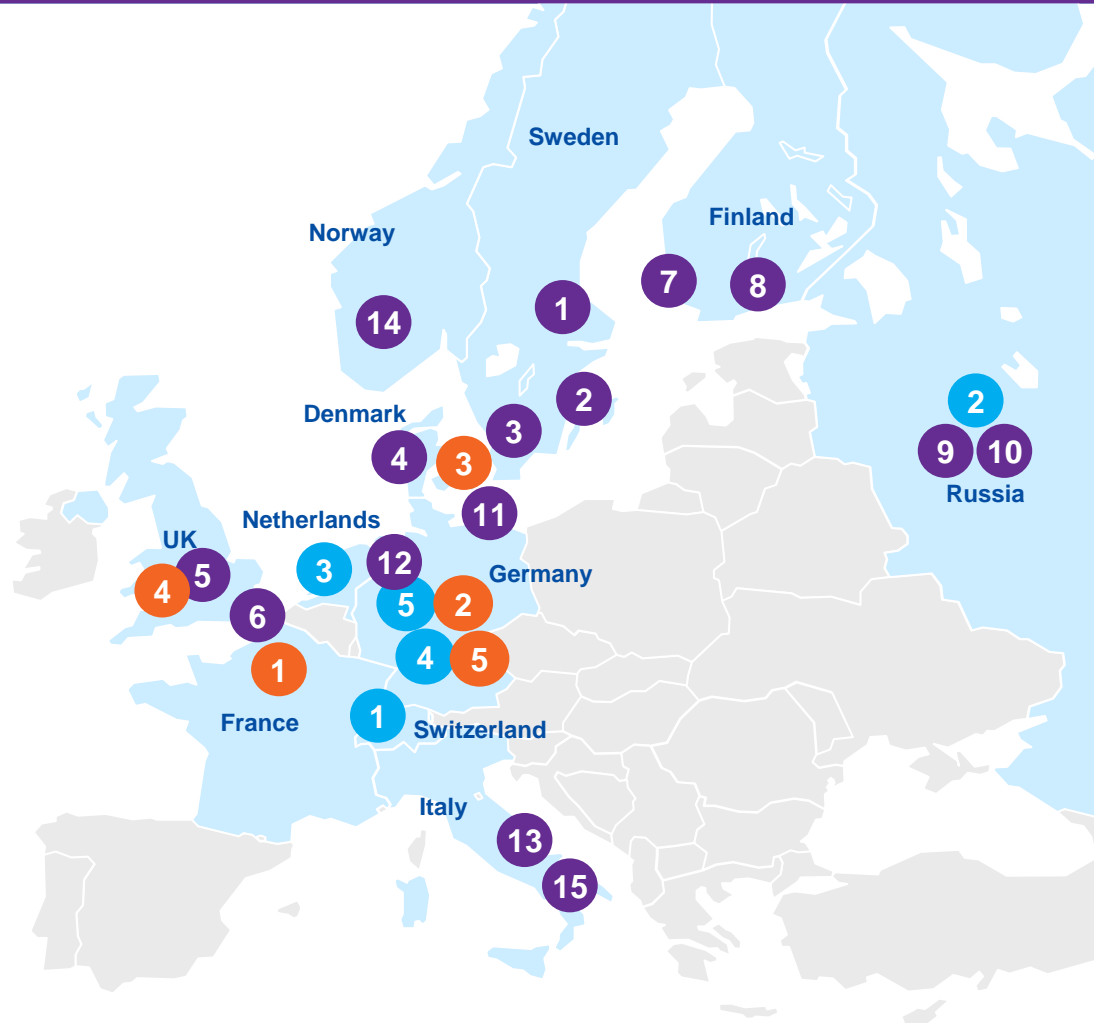
- ① Nord Stream AG
- ② OAO GAZPROM
- ③ N.V. Nederlandse Gasunie
- ④ BASF/Wintershall AG
- ⑤ E.ON Ruhrgas AG

Contractors

- ① Marin Mätteknik – Seabed survey
- ② Port of Slite – Marshalling and stock yard
- ③ Port of Karlshamn – Marshalling and stock yard
- ④ Rambøll – EIA and permit applications
- ⑤ Saipem – Pipeline-laying, Investment over €1bn
- ⑥ EUPEC – Transshipment, Investment of €650Mill.
- ⑦ Port of Hanko – Marshalling and stock yard
- ⑧ Port of Kotka – Coating yard
- ⑨ PeterGaz – Seabed survey
- ⑩ OMK – Pipe production
- ⑪ Mukran – Marshalling and coating yard
- ⑫ EUROPIPE – Pipe production, Investment €1bn
- ⑬ Snamprogetti – Engineering/design
- ⑭ DoF – Seabed survey
- ⑮ PetrolValves – Supply of valves

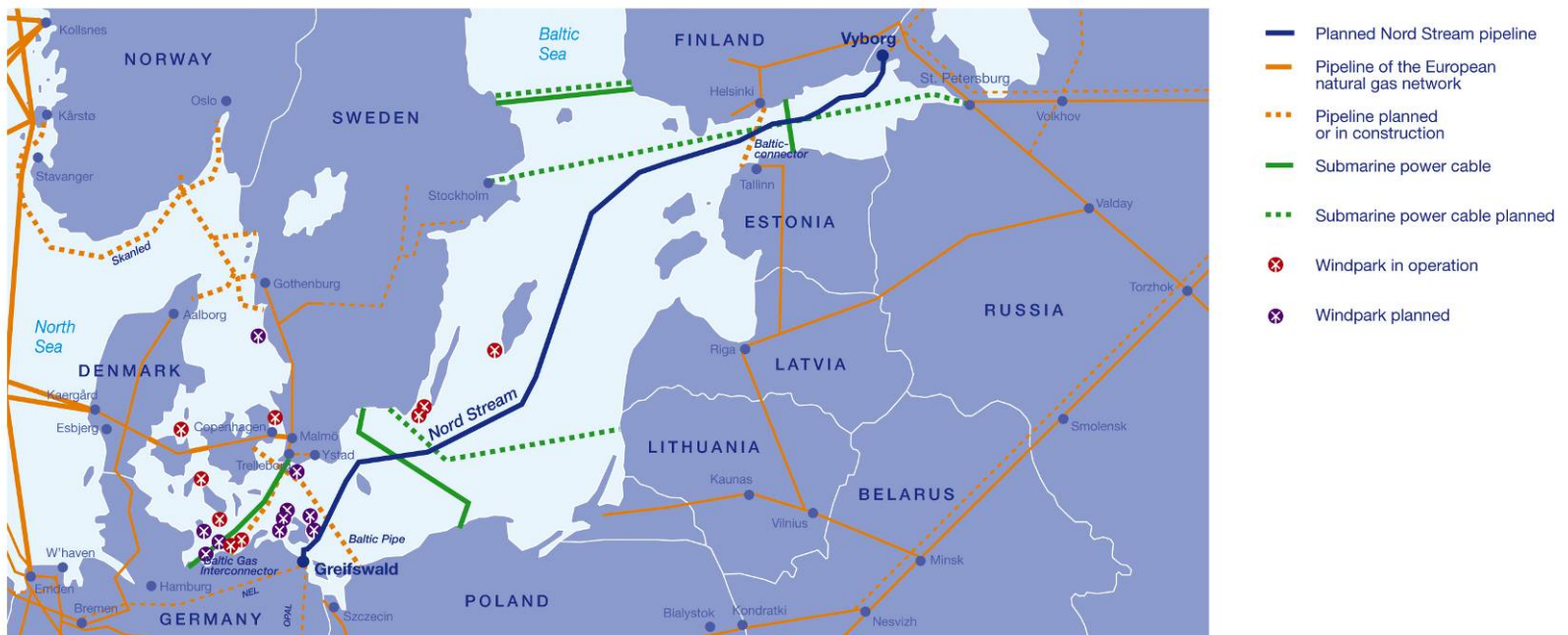
Contracted Gas Purchasers

- ① Gaz de France S. A.
- ② E.ON Ruhrgas AG
- ③ DONG Energy A/S
- ④ GAZPROM MARKETING AND TRADING, UK
- ⑤ WINGAS GmbH



Environmental impact – A common challenge for all Baltic Sea infrastructure projects

- Offshore pipelines are a **well established, proven and environmentally sound technology** since 30 years, especially in the North Sea
- Nord Stream is **only one of several planned or existing energy infrastructure projects** in the Baltic Sea
- All projects strive to **minimise their impact on the environment** and preserve the ecosystem



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