Nord Stream: Secure gas supply for Europe

Meeting of the Energy Charter Trade and Transit Group – Amsterdam, 14 May 2009
Agenda

1. A pipeline in a competitive landscape –
   Key facts and rationale of Nord Stream

2. One of Europe’s biggest private investments in infrastructure –
   Current project status and contractual arrangements

3. Cutting edge technology –
   Basic data about the pipeline and the pipe laying process

4. Selecting the optimal route –
   Extensive environmental research in the Baltic Sea

5. In dialogue with all Baltic Sea countries –
   National permitting processes and international consultations (Espoo process)
A pipeline in a competitive landscape

1. Key facts and rationale of Nord Stream
Nord Stream’s contribution to security of supply

- Can **meet 25% of future additional energy needs**

- Is the **most advanced of all infrastructure projects** aimed to fill the growing import gap

- Will **transport gas directly to the countries and customers where it is most needed**: Germany, the UK, the Netherlands, Belgium, France, the Czech Republic and other countries

- **Complements** existing routes from Russia to Western Europe (the “northern route”)
Growing need for gas in Europe

81% of gas to be imported in 2025, compared to 58% in 2005

Source: European Commission, DG-TREN, 2007
Additional transport capacities needed

To fill the future growing import gap of approximately 200 billion cubic meters per year (bcm/a), infrastructure projects featuring varying transport capacities are planned.

Source: Priority Interconnection Plan 2007; Nord Stream
One of Europe’s biggest private investments in infrastructure

2. Current project status and contractual arrangements
Nord Stream AG – An European-Russian consortium

Nord Stream AG – The new gas supply route for Europe

Nord Stream AG – Shareholders Committee

51,0% | 20,0% | 20,0% | 9,0%

SUPERVISORY LEVEL

Shareholders Committee

MANAGEMENT LEVEL

Managing Director

Technical Director

Commercial Director

Financial Director
European Union confirms high importance

- In 2000, the North European Gas Pipeline was included into the ‘TEN-E’ Guidelines – as a ‘Project of Common Interest’ (i.e. third level); 2003 status confirmed

- In 2006, Nord Stream was designated as a ‘Project of European Interest’, recognising its status as one of the most important projects to meet Europe’s energy infrastructure needs

- This means that Nord Stream…
  - Is in line with the EU’s overall energy policy objectives: sustainability, competitiveness and security of supply
  - Is supported by EU member states

Source: Decision 1364/2006/CE of the European Parliament and the Council of the European Communities, September 6, 2006
European dimension reflected in involved companies

**Nord Stream and Shareholder**
1. Nord Stream AG
2. OAO Gazprom
3. N.V. Nederlandse Gasunie
4. BASF/Wintershall Holding AG
5. E.ON Ruhrgas AG

**Returned to Shareholder**
1. Nord Stream AG
2. OAO Gazprom
3. N.V. Nederlandse Gasunie
4. BASF/Wintershall Holding AG
5. E.ON Ruhrgas AG

**Gas Purchasers**
1. Gazprom Marketing and Trading Ltd, UK
2. DONG Energy A/S
3. Gaz de France S. A.
4. WINGAS GmbH & Co. KG
5. E.ON Ruhrgas AG

**Logistical Hubs**
1. Port of Slite – Marshalling and stock yard
2. Port of Karlskrona – Marshalling and stock yard
3. Port of Hanko – Marshalling and stock yard
4. Port of Kotka – Coating yard
5. Port of Sassnitz-Mukran – Marshalling and coating yard

**Contractors**
1. Marin Mätteknik AB – Seabed survey
2. Ramboll – EIA and permit applications
3. Saipem S.p.A. – Pipe laying, engineering design
4. EUPEC GmbH – Concrete coating
5. PeterGaz – EIA documentation Russia and seabed survey
6. ZAO OMK – Pipe production
7. EUROPIPE GmbH – Pipe production
8. DoF ASA – Seabed survey
10. DNV – Quality control, certification
11. ERM – EIA (Espoo)
12. IfAÖ – EIA documentation Germany
14. IVL – Review of EIA documents
Important contracts signed

• Conclusion of major supply contracts important steps towards efficient and timely project implementation

• Supply agreements concluded for the first pipeline: over one million tons of pipes ordered
  - EUROPIPE (Germany) 75% – order value 1.2 bn EUR
  - OMK (Russia) 25% – order value 0.4 billion EUR
  - Further tender will be issued in 2009 for second pipeline

• Contract for logistics (concrete coating, pipe storage, transport) signed with EUPEC (France) – order value 650 million EUR

• Contract signed with SAIPEM (Italy) for pipe-laying – order value over 1 billion EUR
Attractive project for financiers

- **Project expenditure** 7.4 billion EUR
  - 30% from shareholders
  - 70% from banks

- Before bank financing is due, Nord Stream will be **financed by equity and shareholder loans**
  - Second half year 2009 bank financing expected

- **Nord Stream still seen as attractive project for banks** due to
  - Strong shareholder structure
  - Low market risk (energy)
  - Infrastructure (long term investment with stable returns)
  - Solid contract structure
Nord Stream transports gas directly to markets where it is most needed

- **Gas Transportation Agreement (GTA) between GazpromExport and Nord Stream**
  - Governs the Transportation Tariff which Nord Stream will be paid by GazpromExport
  - Defines Nord Stream’s future cash flow
  - Is a “ship-or-pay” agreement
  - Is a crucial document for the Limited Recourse Financing

- **Some 22 bcm of gas supplies are already contracted** between GazpromExport and
  - Dong Energy, Denmark
  - E.ON Ruhrgas, Germany
  - Wingas, Germany
  - Gaz de France, France
  - Gazprom Marketing & Trading, UK

Source: European Commission, DG-TREN 2007; Increase of demand for natural gas: 2005-2025 (bcm); *Besides the given amounts, Denmark and the Netherlands are facing a decrease in their production of 28 bcm.*
Nord Stream adheres to the “Equator Principles”

• “Equator Principles” are a finance industry benchmark for determining assessing and managing social and environmental risk in project financing

• “Equator Principles” include for instance set-up of a grievance mechanism as well as IFC Performance Standards
  - Social & Environmental Assessment and Management System
  - Labour and Working Condition
  - Pollution Prevention and Abatement
  - Community Health, Safety and Security
  - Land Acquisition and Involuntary Resettlement
  - Biodiversity Conservation and Sustainable Natural Resource Management
  - Indigenous People
  - Cultural Heritage
Cutting edge technology

3. Basic data about the pipeline and the pipe laying process
Pipeline design

- **1,220 km offshore pipeline across the Baltic Sea**
  - Two pipelines, almost in parallel, with an inner diameter of 1,153 mm
  - When fully operational, annual capacity of 55 billion cubic meters

- The pipelines have **a design pressure of up to 220 bar**

- Each pipeline consists of about 100,000 pipe segments of 12 metres each

- **Pressure and air tightness are continuously monitored**, saved in a data acquisition system (SCADA) and compared against benchmark data
Pipe design

- High-standard steel (DNV Offshore Standard OS-F101)

- **Wall thickness** in the range of 27 to 41 mm

- **Interior anti-friction coating of** 0.06 mm epoxy layer.

- **Exterior anti-corrosive coating of** 4.2 mm

- **Concrete coating between 60 and 110 mm thick** will give the pipelines added weight to keep them stable on the seabed
Logistics concept guarantees efficient pipe laying process

- 2 weight coating plants and marshalling yards
- 3 additional marshalling yards

**Logistics concept**
- Direct pipe supplies
- Reduced handlings
- Short shipping distances
- Reduced supply traffic in the Baltic Sea
Pipe laying of up to 3 kilometres per day

Delivery to laying vessel

Construction begins

Lowered to the seabed

Welding inside and out
Selecting the optimal route

4. Extensive environmental research in the Baltic Sea
Route planning after feasibility study in 1997-1999

- **Integrated feasibility study** done by a Finnish-Russian consortium for alternative routes in 1997-99

- The result of the feasibility study was an **offshore pipeline from Vyborg in Russia to Greifswald in Germany**

- Route selected after integrated evaluation of technical, environmental and economic aspects
Comprehensive survey undertaken in the Baltic Sea

• **Provide new data** and expertise on the Baltic Sea to improve current understanding of the natural processes

• **Collect experience and knowledge** of project activities critical to the environment

• **Scope of environmental studies** (investment of more than 100 Million EUR into studies, planning and route design)
  - Full route investigated from landfall to landfall
  - Whole route subject to munitions surveys since 2005
  - More than 40,000 km of geophysical survey over 4 campaigns
  - Over 6,000 km of gradiometer survey
  - State-of-the-art equipment with project specific developments
Criteria to ensure optimal route

- Minimise the pipeline length

- Consider the conditions of the seabed and the depth of the sea

- Avoid environmental protected areas (Natura 2000)

- Avoid munitions dump sites and shipping lanes

- Bypass planned or existing infrastructure projects

- Respect cultural heritage sites

- Avoid restrictions to fishery
Dealing with dumped munitions

• Nord Stream’s strategy in dealing with munitions finds
  - Notification of the relevant authorities
  - Re-routing of the pipeline to avoid interaction, whenever possible
  - Detailed examination of the potential findings, if an evasion of the pipeline is not possible; await authority instructions and clearance

• Development of a detailed evacuation plan for munitions in cooperation with the responsible national authorities
In dialogue with all Baltic Sea countries

5. National permitting processes and international consultations (Espoo process)
### Overview of the legal framework

<table>
<thead>
<tr>
<th>National level</th>
<th>National law of 5 states</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✌ Russia ✌ Finland ✌ Sweden ✌ Denmark ✌ Germany</td>
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<thead>
<tr>
<th>Supra-national level</th>
<th>EU Directives, Regulations, TEN-E Guidelines</th>
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<td>![EU Flag]</td>
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<table>
<thead>
<tr>
<th>International level</th>
<th>Between states</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UNCLOS, Espoo Convention, Helsinki Convention, (other) bilateral / multilateral treaties</td>
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<td>![UN Flag] ![OSHA Flag]</td>
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Complex permitting processes in 5 countries –
Permits to construct and operate the pipeline required

Nord Stream route crosses 5 Exclusive Economic Zones (EEZ) and 3 Territorial Waters (TW)

<table>
<thead>
<tr>
<th>Country</th>
<th>EEZ [km]</th>
<th>TW [km]</th>
<th>Total [km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>1</td>
<td>122</td>
<td>123</td>
</tr>
<tr>
<td>Finland</td>
<td>375</td>
<td>0</td>
<td>375</td>
</tr>
<tr>
<td>Sweden</td>
<td>506</td>
<td>0</td>
<td>506</td>
</tr>
<tr>
<td>Denmark</td>
<td>49</td>
<td>88</td>
<td>137</td>
</tr>
<tr>
<td>Germany</td>
<td>31</td>
<td>50</td>
<td>81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,222</strong></td>
<td></td>
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## All national applications submitted

<table>
<thead>
<tr>
<th>Country</th>
<th>Legislation in EEZ and Territorial Water</th>
<th>Submission of national application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>• Federal laws about Internal Sea Water, Territorial Sea, Continental Shelf; Decree of the government</td>
<td>End of 2008</td>
</tr>
<tr>
<td>Finland</td>
<td>• The Water Act</td>
<td>March 2009</td>
</tr>
<tr>
<td>Sweden</td>
<td>• Act on the Continental Shelf</td>
<td>December 2007; additional documents in October 2008</td>
</tr>
<tr>
<td>Denmark</td>
<td>• Act on the Continental Shelf</td>
<td>March 2009</td>
</tr>
<tr>
<td>Germany</td>
<td>• Energy Industry Act</td>
<td>December 2008</td>
</tr>
</tbody>
</table>
International consultations – Nine Baltic Sea countries participating in largest Espoo process ever
Espoo process in final stage

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 February 2009</td>
<td>Meeting of Espoo group in Copenhagen confirmed Espoo Report and agreed timeline for public participation</td>
</tr>
<tr>
<td>4 March 2009</td>
<td>Submission of Espoo Report in ten languages</td>
</tr>
<tr>
<td>9 March 2009</td>
<td>Start of public participation phase synchronised with national procedures</td>
</tr>
<tr>
<td>March-May 2009</td>
<td>Public hearings in Finland, Denmark, Sweden, Lithuania, Estonia, Russia, Germany and Latvia (Poland tbc)</td>
</tr>
<tr>
<td>8 June 2009</td>
<td>End of public consultation phase</td>
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Project on track – Present situation

Completed
- Feasibility study
- Operational company
- Technical design
- EIA programme and environmental reports
- Logistical concept
- Pipes production, pipeline laying and logistics contracted
- Route optimisation, additional surveys

Ongoing
- International consultations
- National permitting processes
- Financial concept
- Dialogue with authorities and public in the Baltic Sea region