
Nord Stream 2 - Status of the Project and the Espoo Report

Riga, Latvia, 27 September 2016





Agenda >

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1	Presentation of the Project
2	Status of the Project
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4	Scope of the Espoo Report
5	Consultation Phase of the Espoo Report
6	AOB

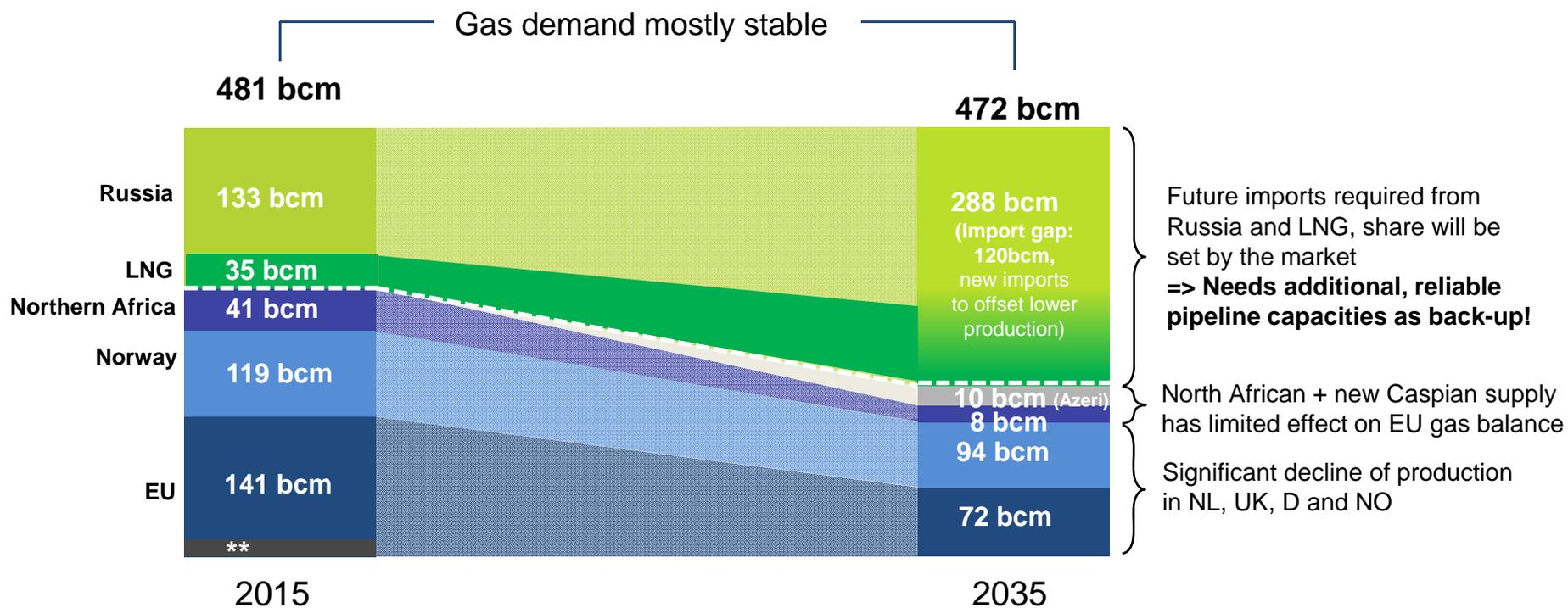
Our business at a glance >

- EU domestic gas production has fallen in recent years is expected to fall further within the next 20 years (-50%, about 70bcm less) while traditional suppliers from Norway (-25bcm) and Northern Africa (-30bcm) will not be able to supply Europe at today's level anymore
- At the same time, EU gas demand remains steady
- Additional infrastructure is necessary to fill the resulting import gap (~120bcm) and secure against supply-side and demand-side risks
- Nord Stream 2 will deliver up to 55bcm per year, which can supplement, not replace other supply options
- Nord Stream 2 aligns with EU energy policy goals
- Once gas lands in Germany, it can flow where gas is needed in the EU internal energy market
- Increased liquidity may stimulate new connections, bringing the benefits of the internal energy market to more consumers in more countries



To offset drop in production, more imports are needed – and additional capacities >

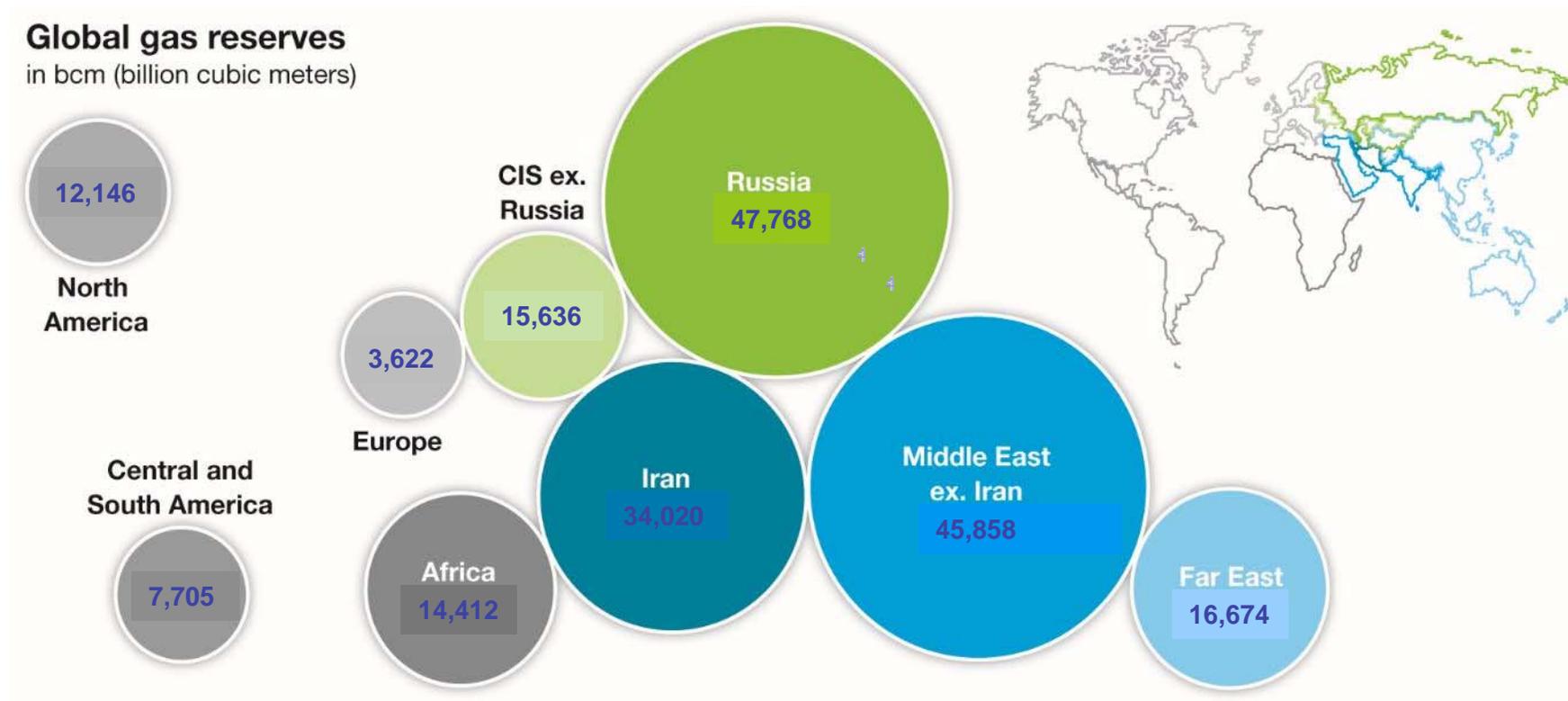
EU Reference Scenario 2016 (adjusted)



** Statistical difference of ~12 bcm in 2015

Sources: EU Reference Scenario 2016, adapted with NOP 2015, OGA (Oil and Gas Authority) production projections, February 2016, NEP Gas 2016, Norwegian Petroleum Directorate; The Oxford Institute for Energy Studies, Algerian Gas: Troubling Trends, Troubled Policies, May 2016; The Oxford Institute for Energy Studies, Azerbaijan's gas supply squeeze and the consequences for the Southern Corridor, July 2016, BP Statistical Review of World Energy, June 2016

World's largest gas reserves in strategic proximity >

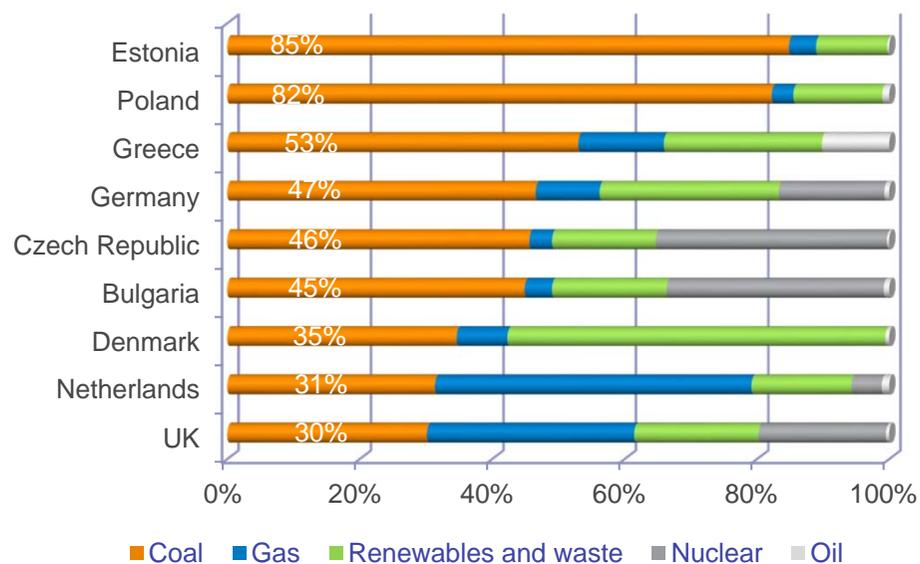


Sources: BGR Energiestudie 2015

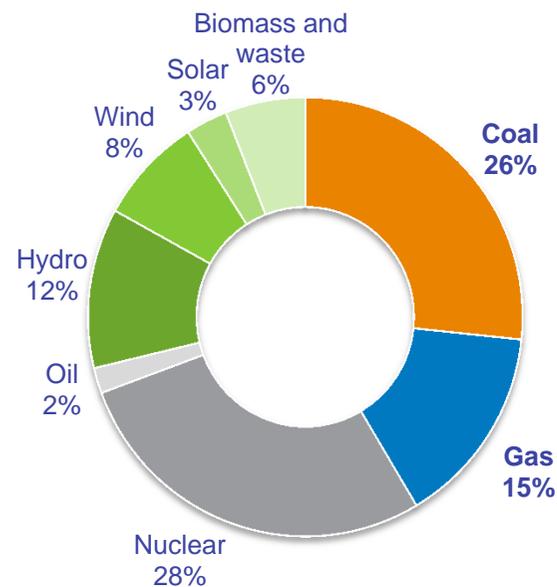
Total reserves: 197,841

Gas supports EU decarbonisation goals >

Electricity mix 2014 in the EU Member States by energy source*



Electricity mix 2014 in EU-28 by energy source*

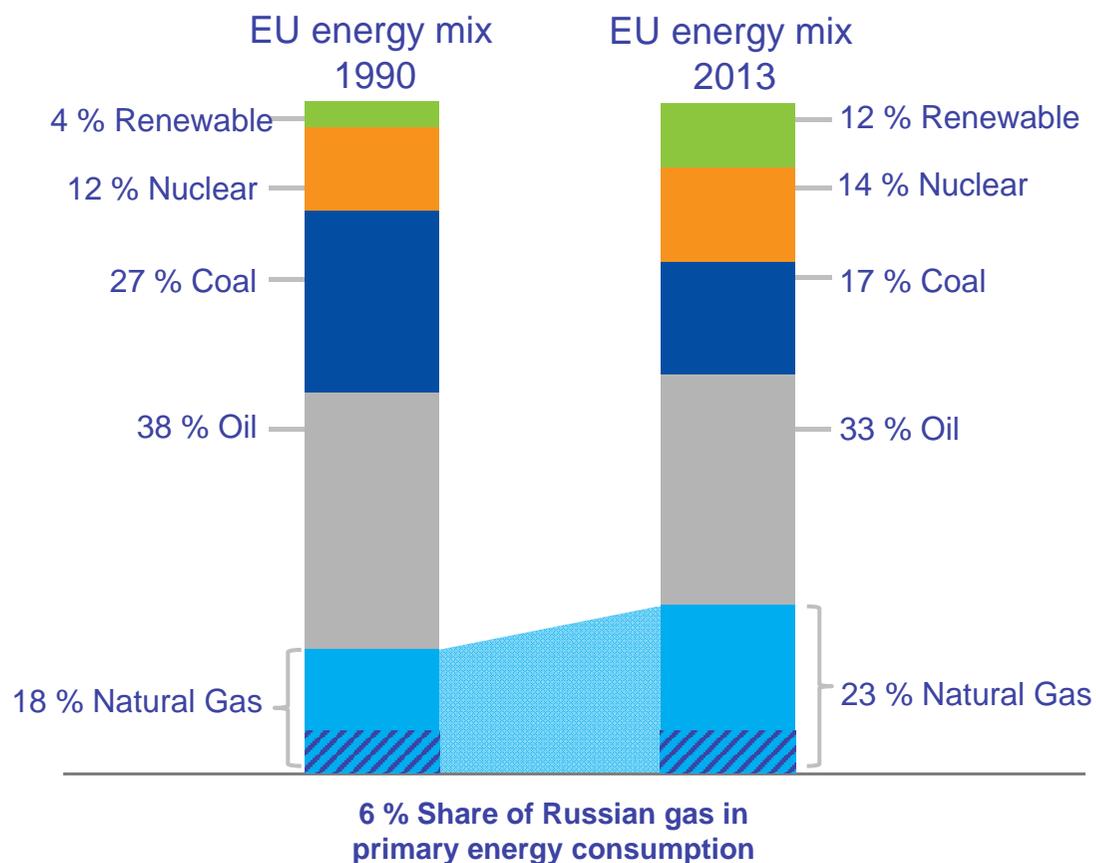


Natural gas produces less CO₂ as coal – Getting rid off coal with the help of gas delivers on the Energy Union objectives

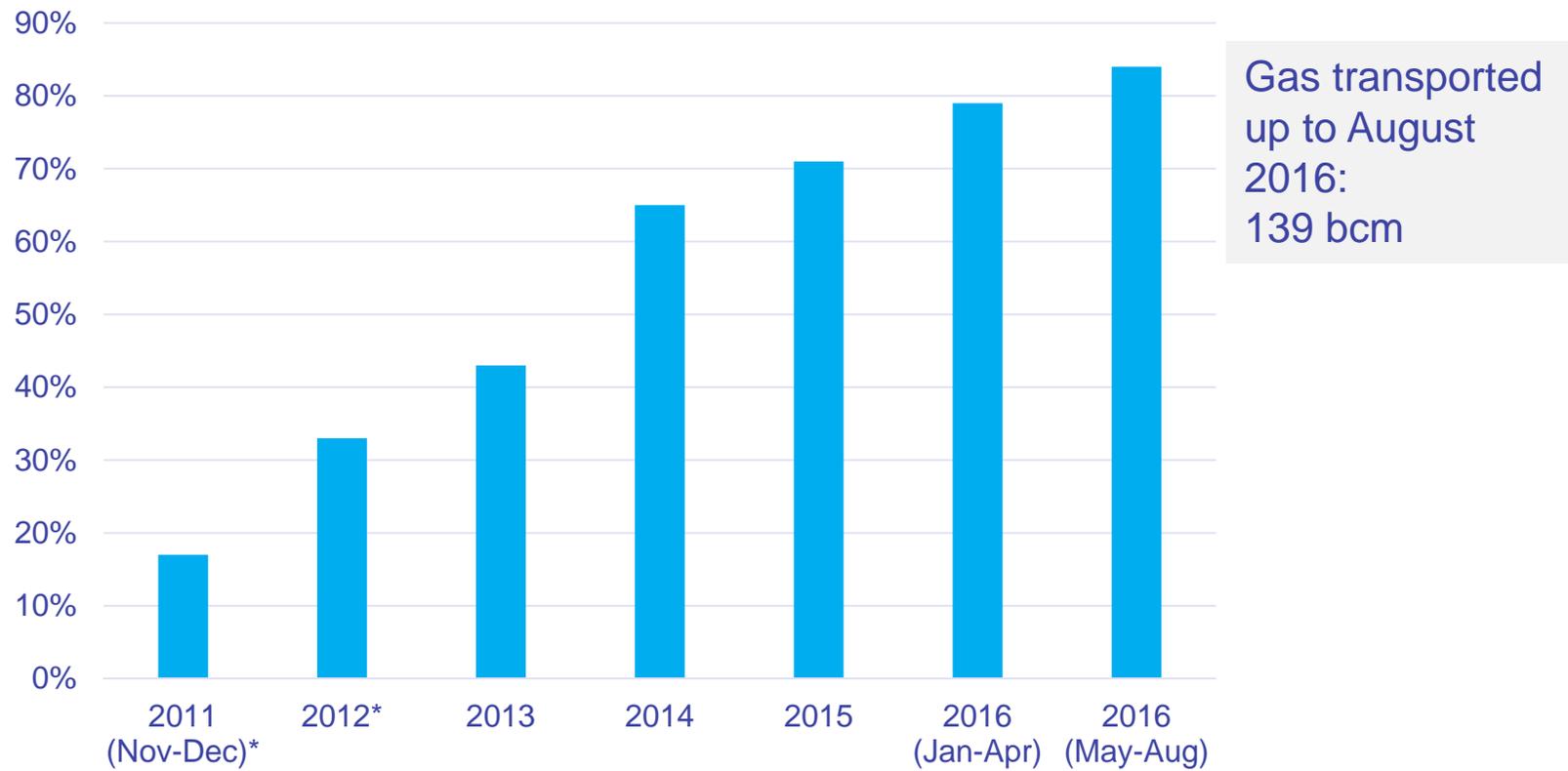
* Source: IHS Power Demand, Capacity, and Generation Outlook

Share of Russian gas: 6 percent of EU primary energy consumption >

- Russian natural gas holds a share of around 30 percent of the gas consumption of the EU
- For additional imports needed, Nord Stream 2 will be supplying only a part: the share of Russian gas in the imports will remain unchanged.
- Gazprom supplies around 60 percent of its exports to the EU: the company and the state are more dependent than the EU



Capacity utilisation of the Nord Stream pipeline >



* Based on 27.5 bcm per year; all other figures based on 55 bcm

Continuing Nord Stream's legacy >

- Nord Stream 2 will benefit from the extensive experience gained with the planning, construction and operation of the Nord Stream Pipeline
- Nord Stream was completed within the planned schedule and budget
- The award-winning logistics concept for the pipelines' construction helped save 60 million tonnes of CO₂
- Throughout the planning, permitting and construction process, Nord Stream led an open and transparent dialogue with responsible authorities and the public in all involved countries
- Nord Stream 2 will be able to build upon a strong culture of compliance and HSE following state-of-the-art standards

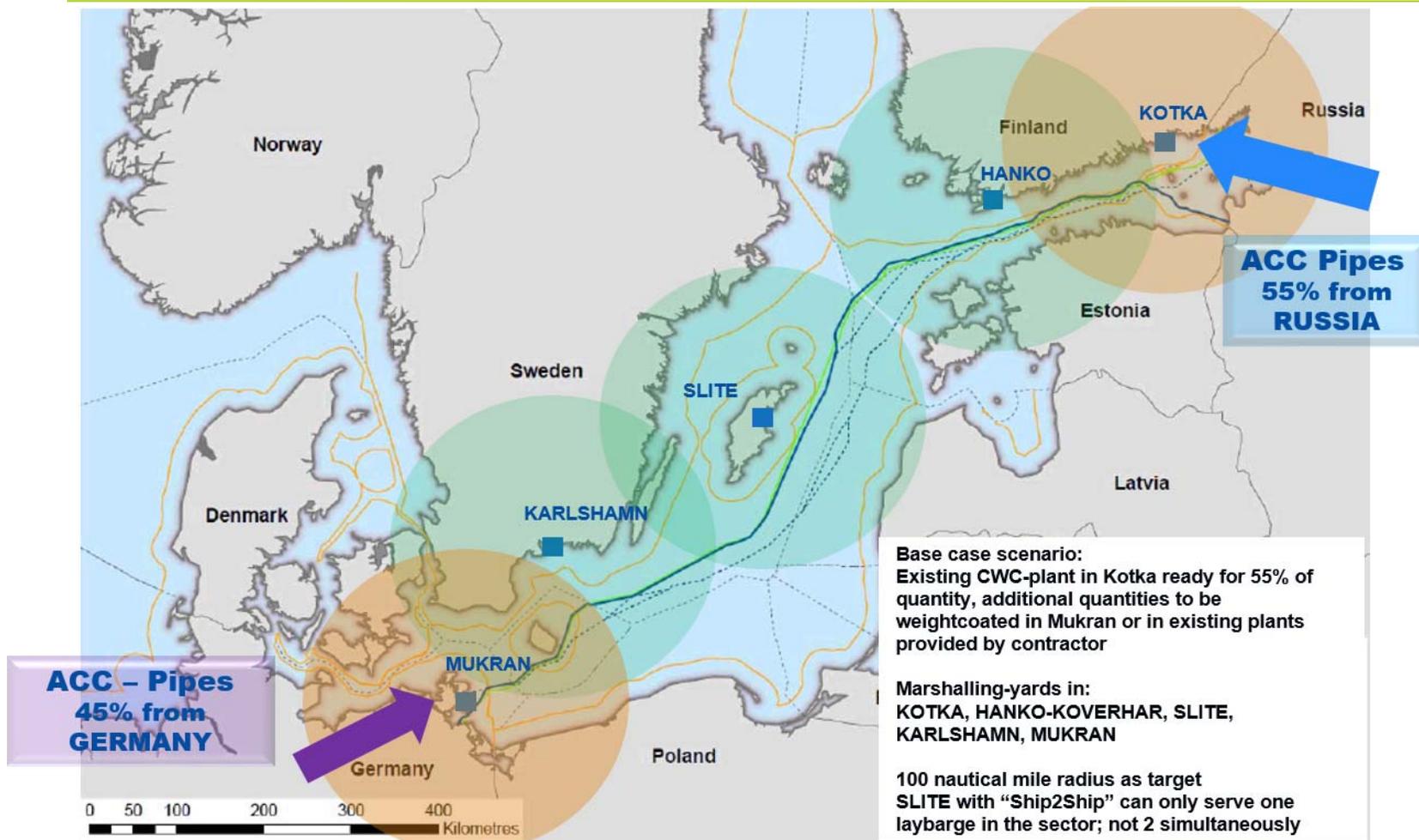


Optimised route >

- The Nord Stream 2 twin pipeline will run roughly parallel to the existing Nord Stream Pipeline
- The route is selected to minimize length and environmental impact
- Pipelines will be approximately 1,200 km long, starting at the Southern Coast of the Gulf of Finland in Russia and ending near Greifswald, Germany
- After examination of possible route corridors, shortlisted options cross Russian, Finnish, Swedish, Danish and German waters



Logistics concept >

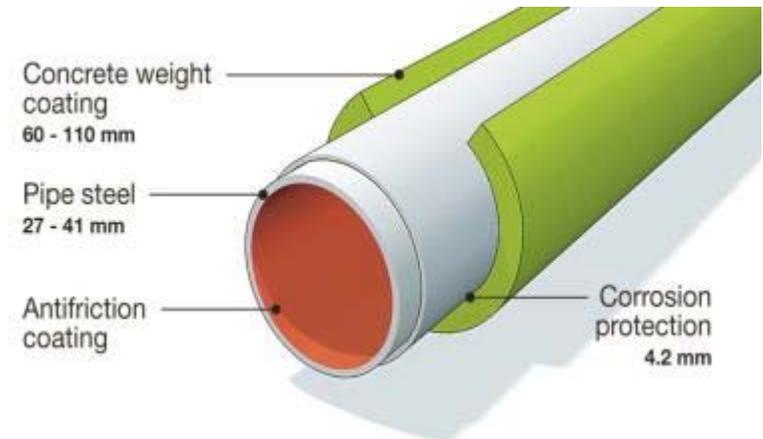


Technical design >

- Design, construction and operation of the pipelines will draw on extensive experience acquired through Nord Stream
- Independent certification bodies will witness, audit, participate in and certify technical design and implementation
- Key parameters and pipeline components have been confirmed as viable:
 - > 48 inch steel pipes with internal flow coating, external corrosion protection coating and concrete weight coating
 - > inner pipe diameter of 1,153 mm
 - > segmented pipe wall thicknesses along the pipeline route corresponding to decreasing design pressures in the range of 220, 200, and 177.5 bar



Rosteknadzor



Construction activities >

- Construction methods and construction procedure will be similar to the Nord Stream Pipelines
- Prior to pipe laying, the entire route will be surveyed, gravel berms will be strategically placed to support the pipeline in areas of high seabed relief and to serve as basement structures at tie-in areas
- In certain shallow water areas, pre-lay and/or post-lay trenching activities may be required to embed sections of the pipelines into the seabed and increase stability
- Post-lay gravel placement may be required at certain locations to improve stability
- Each of the pipelines will be built in three sections with different wall thicknesses
- The pipeline sections may be connected under water, using hyperbaric tie-ins



Pipe laying activities >

- Two pipe lay vessel types are being considered for the project:
 - > Anchored vessels for pipe laying in shallow and deep waters
 - > A dynamically positioned vessel for use in areas with highest concentration of munitions
- An average lay rate of 2 to 3 kilometres per day is expected (depending on weather conditions, water depth, and pipe wall thickness)
- The pipe laying process on-board includes pipe welding, non-destructive testing of welds, field joint protection against corrosion, and lowering onto sea floor

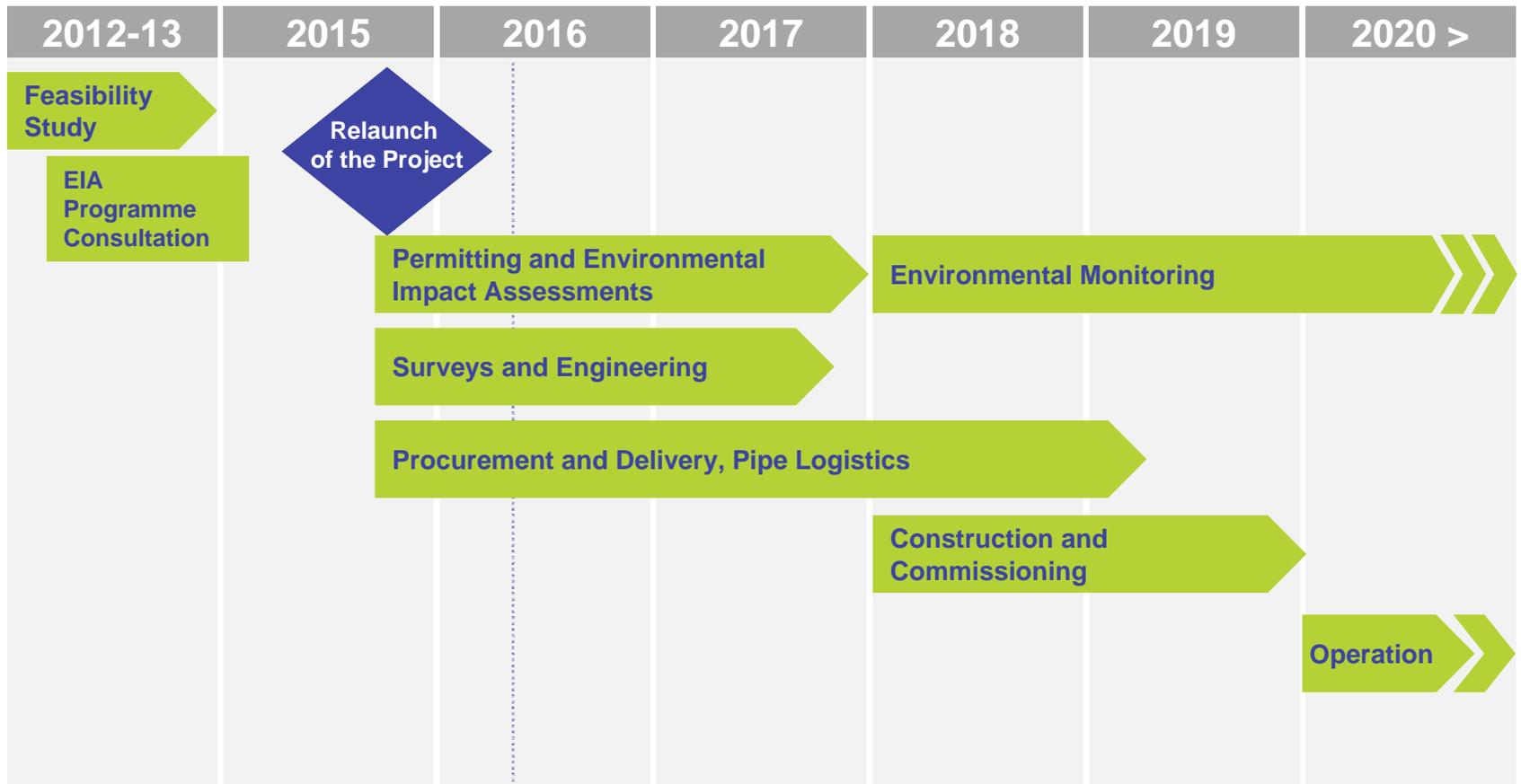


Pipeline has no lasting environmental impact >

- Nord Stream 2 benefits from six years of environmental monitoring, assessing the impact of construction and operation of the existing Nord Stream pipeline
- The monitoring results confirm that:
 - > there is no significant or lasting environmental impact
 - > temporary impacts were in line with the Environmental Impact Assessment (EIA), with evidence of recovery after construction
 - > transboundary effects were insignificant
- Nord Stream 2 is committed to meet the same stringent environmental standards



Project timeline >



Status of the Project >

- Environmental and Engineering surveys mostly complete. Munitions screening surveys ongoing
- Preparation of EIAs and application documentation is ongoing in all countries.
- Discussion with Fishermen and Cable Owners around the Baltic have been initiated
- Production of long lead items, such as line pipe have started with first pipes will be delivered to the coating yard in Finland at the end of September
- Nord Stream 2 has signed a contract with Wasco Coatings Europe BV for concrete weight coating, pipe storage and logistics
- Pipelay contract to be awarded in Q4 2016



General Comments to the PID >

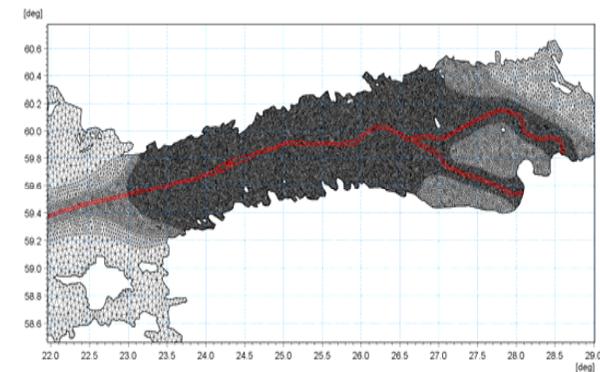
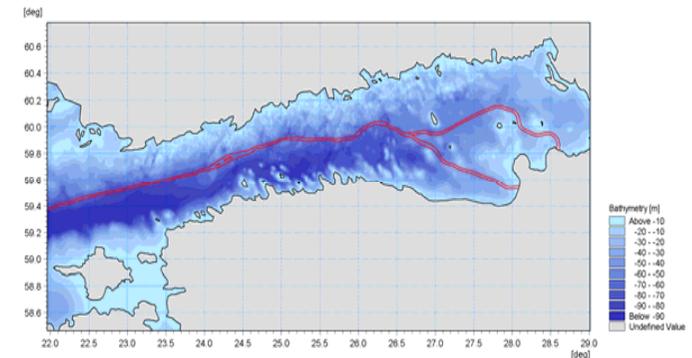
Key issues	Project response
Project justification, alternatives and zero alternative	Presentation of the justification and investigation of alternative routes and the zero alternative
Marine mammals, birds and fish spawning areas	Assessment and minimisation of impacts on marine mammals, birds and fish spawning areas
Existing and planned infrastructure, fishery, maritime traffic and cultural heritage	Investigation of existing and planned infrastructure projects, assessment and minimisation of impacts on fishery, maritime traffic and cultural heritage
Conventional and chemical munitions	Surveys and assessments performed, avoidance of chemical munitions
Cumulative impacts	Assessment of cumulative impacts with existing and planned infrastructure
Emergency preparedness	Risk assessments performed and emergency preparedness and response plans developed

Specific Comments to the PID from Latvia

Issues	Project Response
<p>Potential impact on fishery (including fish, spawning areas, food resources, pollution transfer, restrictions concerning construction and operation)</p>	<ul style="list-style-type: none"> • Assessment and minimisation of impacts on fishery and consultations with affected fishermen • Assessment of impact on fish and spawning areas taking into account the assessed impact on water quality
<p>Planning, design and impact assessment of possible future pipelines (e.g. side connections and connection lines)</p>	<ul style="list-style-type: none"> • Impacts on existing and planned infrastructure projects assessed • No side connections planned

Enhancement of Modelling >

- Hydrodynamic model applied for modelling of sediment and contaminant dispersion improved:
 - > Finer modelling mesh developed for the entire project area and particularly for the Gulf of Finland
 - > Model calibrated against Nord Stream current monitoring and HELCOM water quality data and validated with Nord Stream 2 baseline survey data
 - > In consultation with Finnish Environment Institute, Finnish Meteorological Institute and Marine Systems Institute, Estonia
 - > Same model applied in RUS, FIN, SWE and DEN
- Additional sediment sampling carried out in RUS in Aug 2016 with same approach as in FIN to ensure the use of comparable data for modelling





Content of the Espoo Report >

- 1) Non-technical summary
- 2) General information about the project
 - Project background
 - Project justification
 - Regulatory context
 - Espoo consultation procedure
 - Project technical description
 - Alternatives
- 3) Existing conditions in the project area (environmental baseline)
- 4) Methods applied in the impact assessments



Content of the Espoo Report >

- 5) Overall assessment of environmental impacts covering the whole project area
 - Impacts on the physical and chemical environment
 - Impacts on the biological environment
 - Impacts on the socio-economic environment
 - Cumulative impacts
- 6) Assessment of transboundary impacts
 - Transboundary impacts on the physical and chemical environment
 - Transboundary impacts on the biological environment
 - Transboundary impacts on the socio-economic environment
 - Transboundary cumulative impacts
- 7) Risk assessment
- 8) Mitigation measures
- 9) Environmental management and monitoring
- 10) Map Atlas

Scope of the Espoo Report >

Category	Activities/facilities
Project activities (directly under contractual control of the project)	<ul style="list-style-type: none"> • Construction activities (i.e. seabed intervention works, munitions clearance and pipelay at sea and on land) • Transportation of material and equipment (e.g. rock, pipes, backfill material) to construction sites • Pre-commissioning and commissioning • Pipeline operation
Ancillary activities (in third party facilities exclusively performed for the project)	<ul style="list-style-type: none"> • Operation of coating plants, marshalling yards, storage areas • Transportation between these facilities
Associated facilities (not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable)	<ul style="list-style-type: none"> • Compressor station in Russia including feeder lines to Pig Trap Area and to existing gas network • Gas receiving terminal in Germany including feeder lines to existing gas network



Scope of the Espoo Report >

Category	Assessment
Project activities	<ul style="list-style-type: none">• All project activities will be fully assessed in the national EIAs and in the Espoo Report
Ancillary activities	<ul style="list-style-type: none">• Operation of coating plants, marshalling yards and storage areas will be assessed in terms of emissions (e.g. noise, dust, CO2) and (if applicable) socio-economic impacts
Associated facilities	<ul style="list-style-type: none">• Associated facilities will be assessed in terms of cumulative impacts

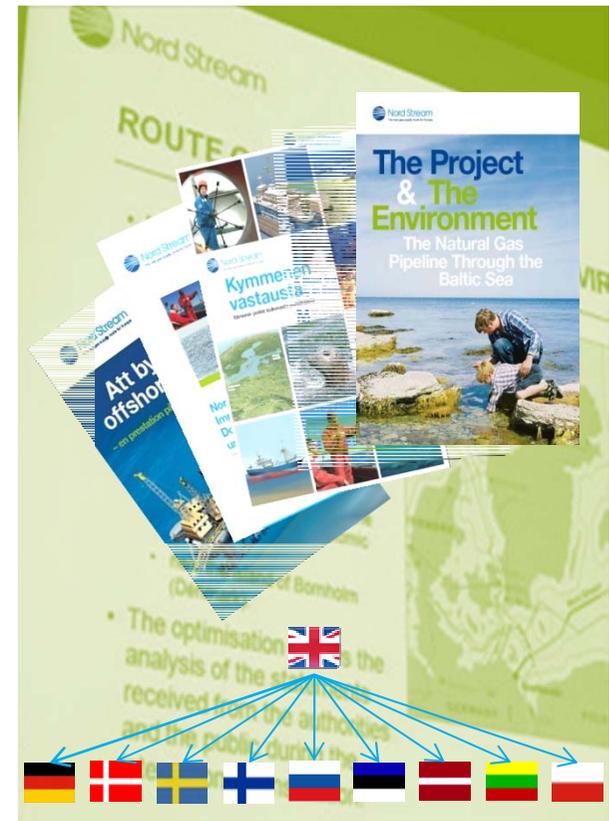
Consultation Phase of the Espoo Report >



Espoo report issued for consultation around Baltic

Consultation Phase of the Espoo Report >

- The **submission of the Espoo Report** is planned together with the national EIAs in **Q1 2017**.
- Nord Stream 2 will **translate the full Espoo Report** into the languages of all Affected Parties. In addition, an English version will be available.
- Following the submission, the national EIAs and the Espoo Report will be on **public display** in Parties of Origin and Affected Parties.
- During the public consultation phase, Nord Stream 2 is available to **participate in public hearings** in all Parties of Origin and Affected Parties, if requested.



Thank you! >

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