Nord Stream 2
and its impact on Europe

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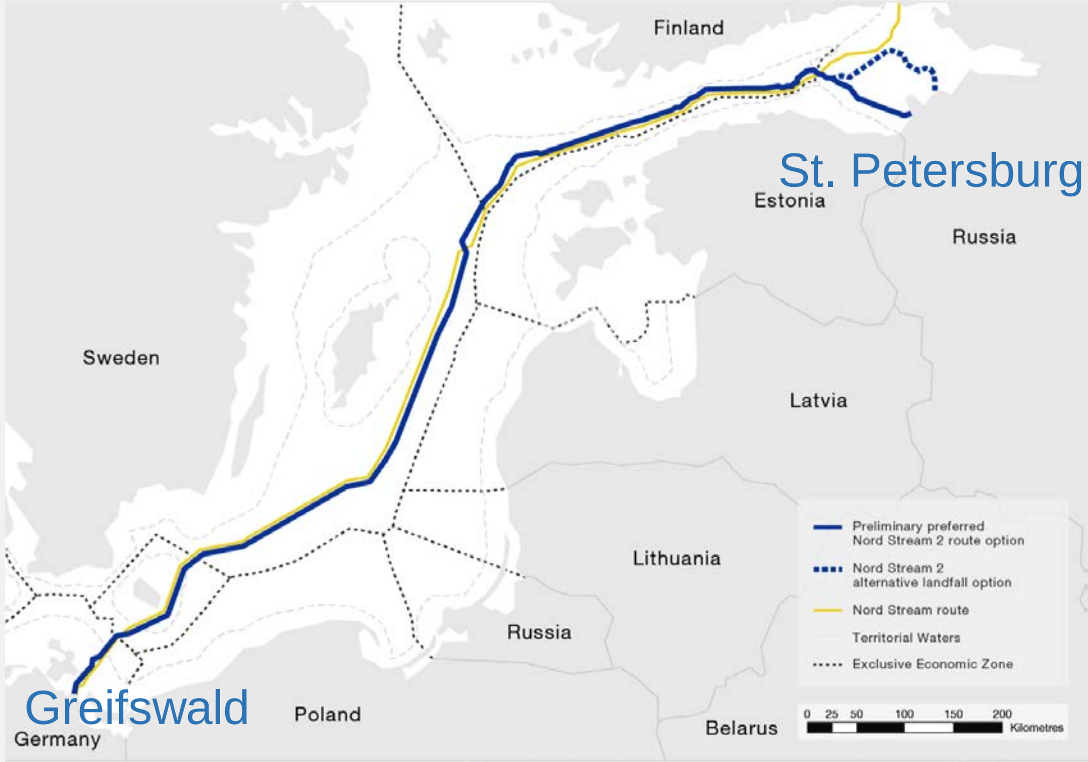
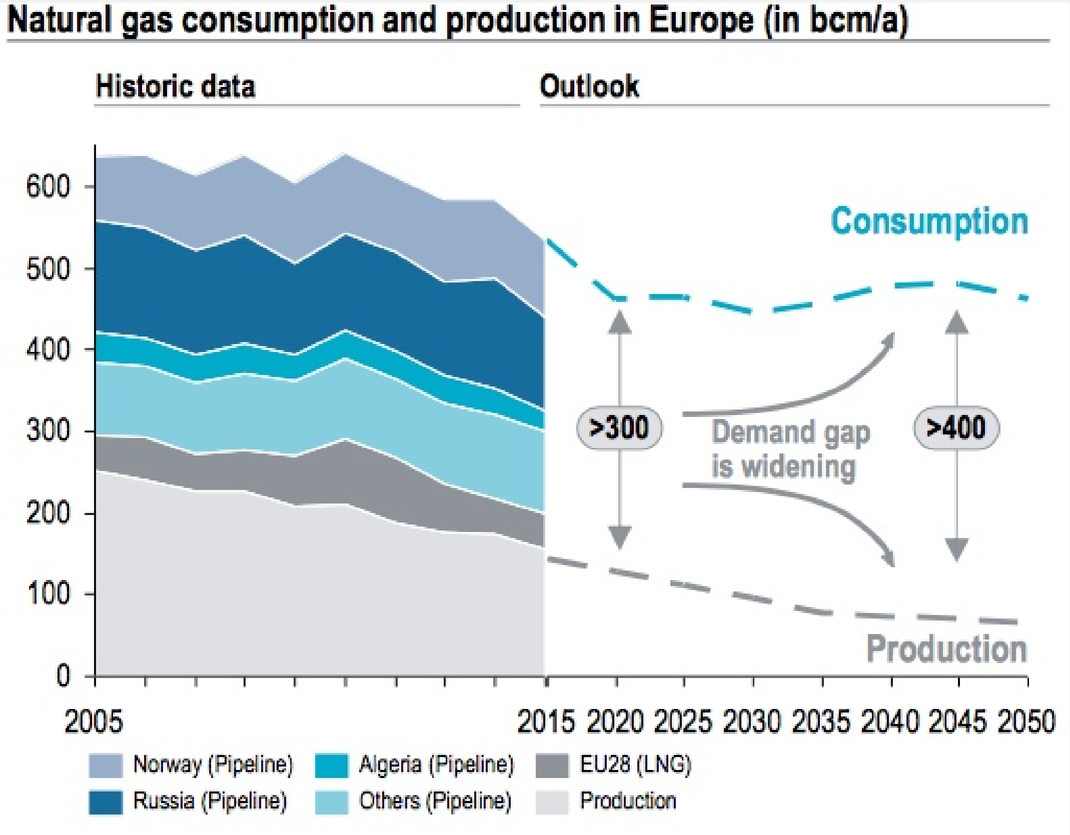
The Nord Stream 2 facts

- Approx. 1,200 km length
- 2 parallel lines
- 55 bcm/a total capacity
- CAPEX about EUR 8 billion
- 30 % shareholder funding
- Project launched in 2011
- Planned construction in 2018-19
- Planned commissioning date Q4/2019
- First pipes arrived in German logistic hub end of October
- Coating has started



(Source: NS2)

Massive capacity increase in Greifswald area



Total EU pipe import capacity in 2016	450 bcm/a
From Russia (total)	245 bcm/a
From Ukraine	120 bcm/a
Total EU gas import in 2015	**400 bcm**
From Russia (total)	40%
From Ukraine	39%
From NS 1	30%

(Source: DG ENER; ENTSOG 2016)

Is this all about business?

- EU is Gazprom Exports (GE) largest gas customer (~ 70%).
  - 146.6 bcm sold to EU (33% of overall output) in 2014, even more in 2015.
- Loss of industrial customers in home market.
- Declining domestic consumption & exports to Ukraine.
- Federal Antimonopoly Service plans to liberalize domestic prices from 2018.
  - Unbundling under discussion.
  - Export monopoly under pressure.
- DG COMP has objections against GE business model.
  - Oil-indexed LTC model is fading out.
  - Market share maximization vs. price maximization system.

Is this all about business?

- Global LNG capacity increase will put pressure on gas prices.
- GE reportedly lost $1.5 billion during January 2009.
- Liquid NW EU gas markets coincide with lower prices.
- Southern Corridor – would be a better choice for business - But
  - LTC delivery points need to be moved.
  - Additional infrastructure investment in EU needed (as well as for NS2).
  - Political risks do exist for gas transport to EU border – for many countries.

However,….

GE will end transit through Ukraine upon the expiry of existing supply contracts in 2019, ‘even if hell freezes’. - GE CEO Medvedev

Regulatory treatment of pipelines

Nord Stream 1

- Permitting process prior Third Energy Package.

Trans Adriatic Pipeline (TAP)

- 25 years, 10 bcm, TPA & tariffs; unbundling.

NABUCCO

- 25 years, 7.5 bcm, TPA & tariffs; unbundling.

Ostsee-Pipeline-Anbindungsleitung (OPAL)

- 22 years, 17.5 bcm entry capacity, TPA & tariffs.
- Recent changes to exemption.

Is a different regulatory treatment possible?

- Legal and regulatory framework for any new pipeline is enshrined in the Third Energy Package.
- 3^{rd} Package entered into force 2009.
- Not all EU member states have it completely transposed yet.
- Heterogeneity in national regulatory models exists.
- NS2 faces a much tougher regulatory environment than NS1 did.
  - Territorial waters of 2 and exclusive economic zones of 8 member states concerned.
  - ECJ ruling can be seen as pointing to application of 3^{rd} Package. Or not.
- NS2 could also go ahead with a full application of 3^{rd} Package rules.

The European Commission says….

- *"[...] eastern European countries will clearly have their energy security decreased' because of Nord Stream 2."* - Commissioner Šefčovic
- *"All natural gas flows entering the EU need to be fully compliant with energy market regulation".* - Director Borchardt, DG ENER
- EU energy regulation applies to both the on- and offshore (if in territorial jurisdiction of EU member states) parts of NS2.
- Unbundling is an issue (Article 11 Gas Directive).
- Treatment of South Stream is precedent for new pipelines entering the EU and possible downstream extensions.

Long list of (as yet open) legal issues

Unbundling	Exemption	TPA	Tariffs	CAM
CAM	CMP	Incremental	PCI	CEF
	Balancing	IGA	Environ. IA	

… However, the list of political issues might be even longer.

"Mr Miller […] will continue to pursue NS2 project.
This is in our interests; […]

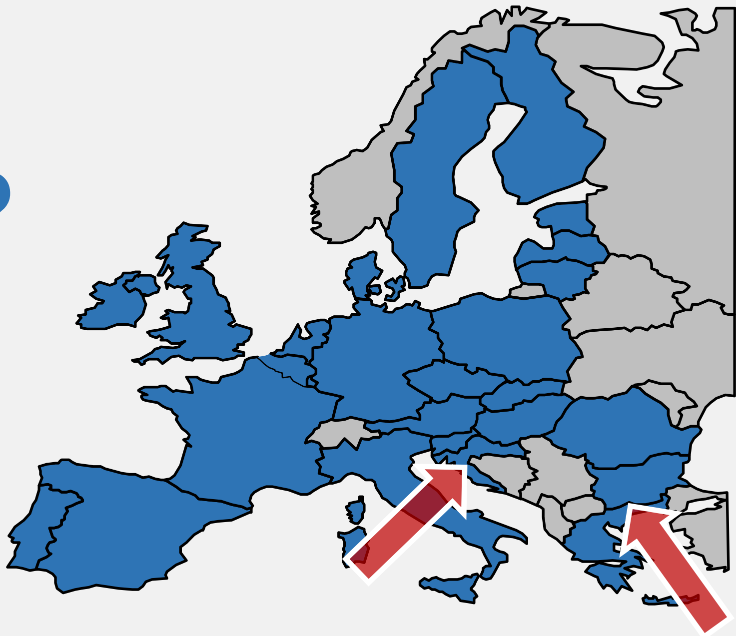
What's most important as far as legal issues are concerned is that we strive to ensure that all this remains under the competence of the German authorities, if possible. […]

And in order to limit political meddling in these issues […] we need to settle the issue of Ukraine's role as a transit nation after 2019. […]"

\- Vice-Chancellor Gabriel

(Source: Meeting Putin – Gabriel, 28.10.2015, Kremlin's official website)

Southern Corridor – an alternative?



- EU priority to secure alternative, non-Russian, gas & supply routes, without/with less geopolitical issues.
- Support for infrastructure investment via PCI & CEF.
- CESEC to accelerate integration of gas markets and diversify supplies.
- Southern Gas Corridor Advisory Council & other diplomacy initiatives reaching out for Caspian gas.
- Remaining questions:
  - Will Caspian upstream capacity increase significantly?
  - If so, how much Caspian gas will flow to Europe?
  - Are there less geopolitical issues along the route?
  - Will a common/co-ordinated regulatory framework exist within reasonable time?

Europe has to do some homework

- NS2 might enhance liquidity of NW hubs & partially also CEGH.
- 2014 stress test showed potential issues in SEE & partially in CEE if no gas enters from EU eastern borders.
- NS2 will partially re-route already contracted supplies.
- NS2 itself does not fundamentally alter European import dependency on Russian gas.
- NS2 will provide for additional import and (indirectly) interconnection capacity.
- Legal, regulatory & political questions need to be answered.
- Election cycles in EU member states might alter political positions.

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