Energy Security in Central & Southern Europe: TANAP vs. South Stream

Mikhail Korchemkin
East European Gas Analysis
Malvern, Pennsylvania, USA

TANAP Conference, Istanbul, September 28-29, 2012

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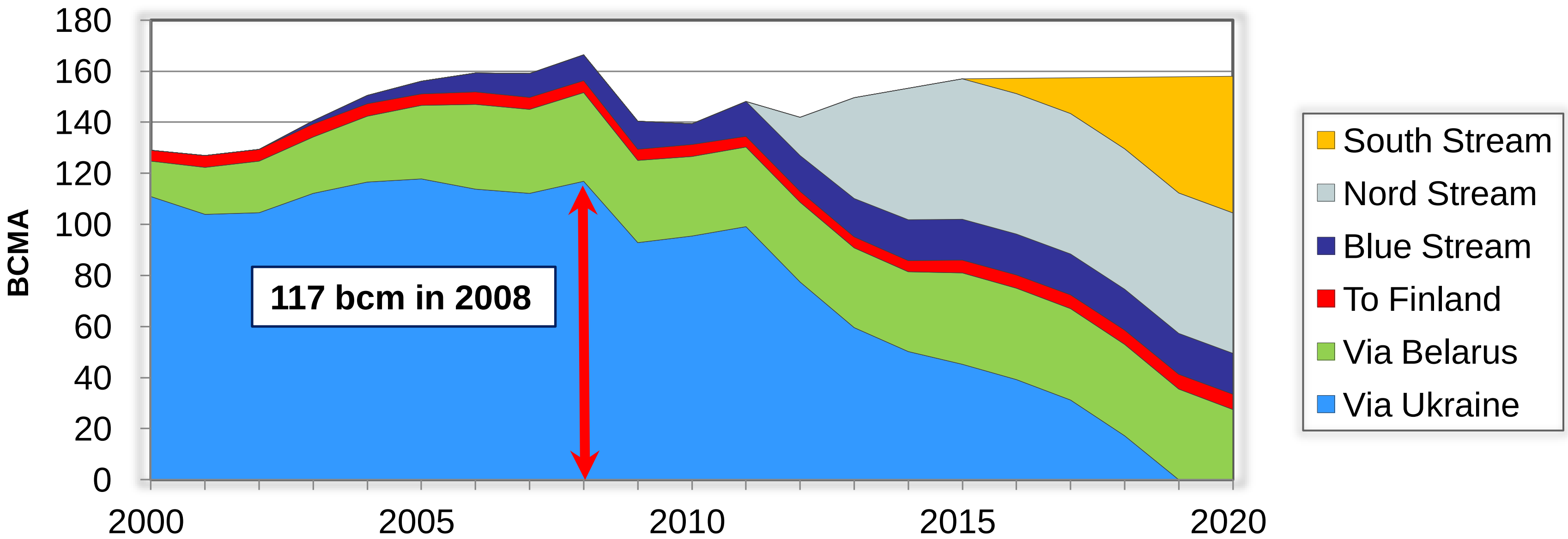
TANAP and South Stream Do Not Compete

December 28, 2011

- **Despite being targeted at the same markets, South Stream and TANAP are not competing projects.**
- **South Stream is designed to divert the "old" contracted flows of Russian gas from existing routes through Ukraine to the new route across the Black Sea.**
- **Unlike South Stream, TANAP is designed to deliver additional volumes of gas from new sources (higher level of security of supply).**

From Europe, Gazprom's Plan May Look Like a Scary Pincer Movement

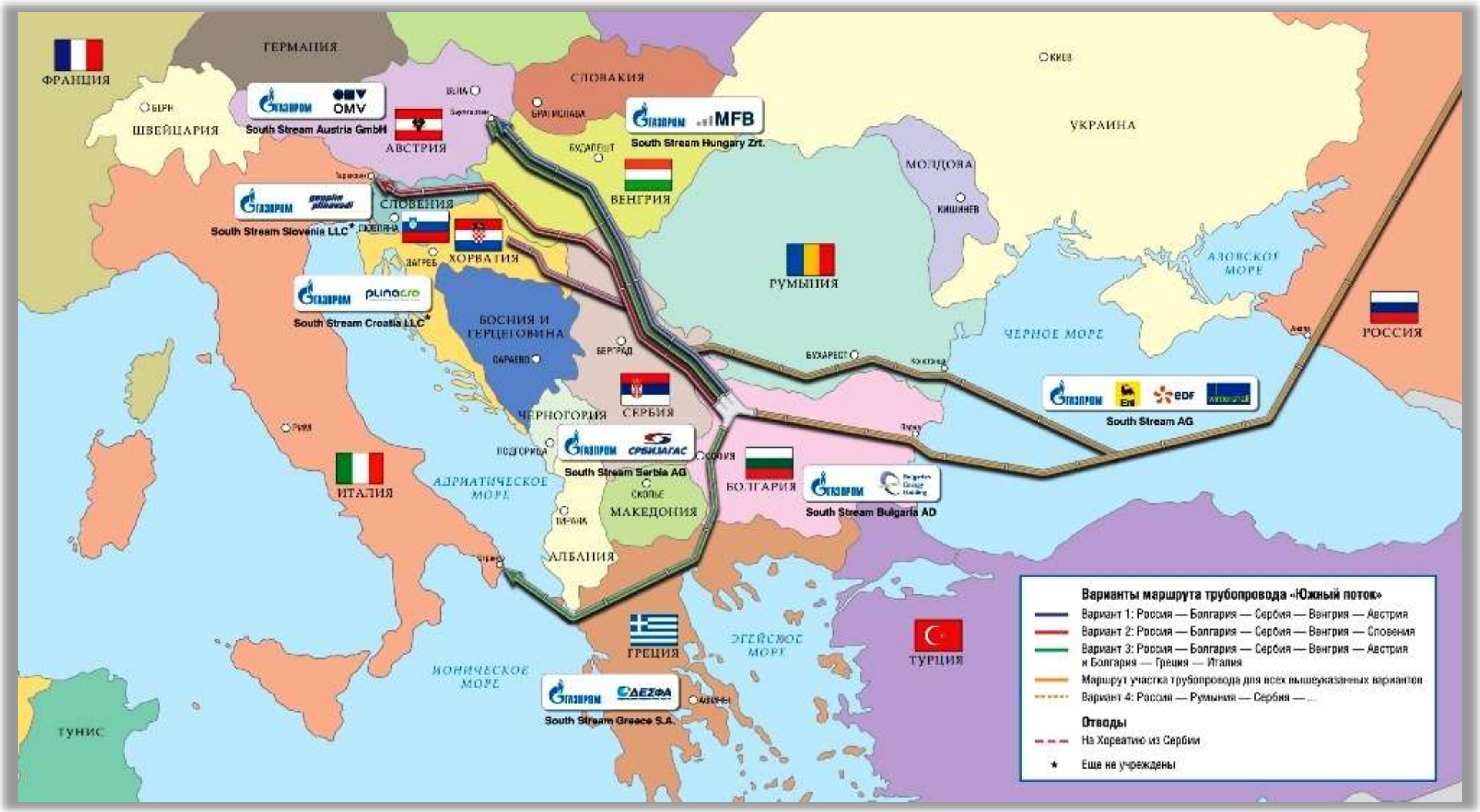
New Contracts for South Stream Unlikely



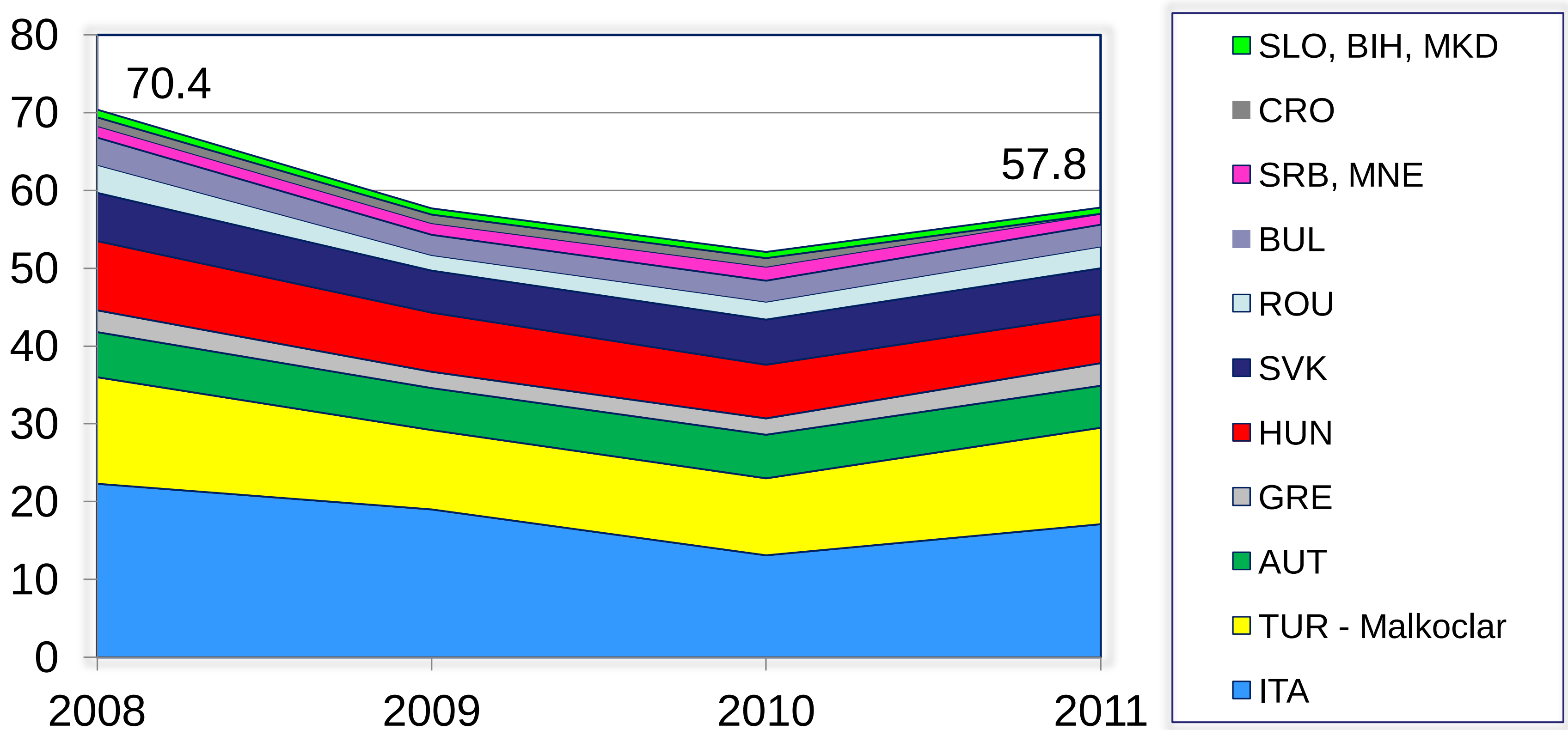
- **According to Gazprom, South Stream and Nord Stream "will reduce Ukraine's importance for transit to zero".**
  - **Combined capacity of the two lines is equal to the Ukrainian transit of 2008.**
- **Gazprom reports the minimum guaranteed contracted volume for the period from 2020 to 2025 at 158 bcma.**
- **After the completion of South Stream, the combined capacity of European export pipelines of Gazprom is to reach 318 bcma.**

Market Area of South Stream

Targeted Markets Are Getting Highly Competitive



Exports to Target Markets of South Stream, bcm



- **Current Russian exports to the market area of South Stream are slightly below the project's design capacity of 63 bcma.**
  - **Note that Austria and Slovakia can receive Russian gas via Nord Stream.**
- **Russian gas is less competitive than gas from Azerbaijan and LNG.**

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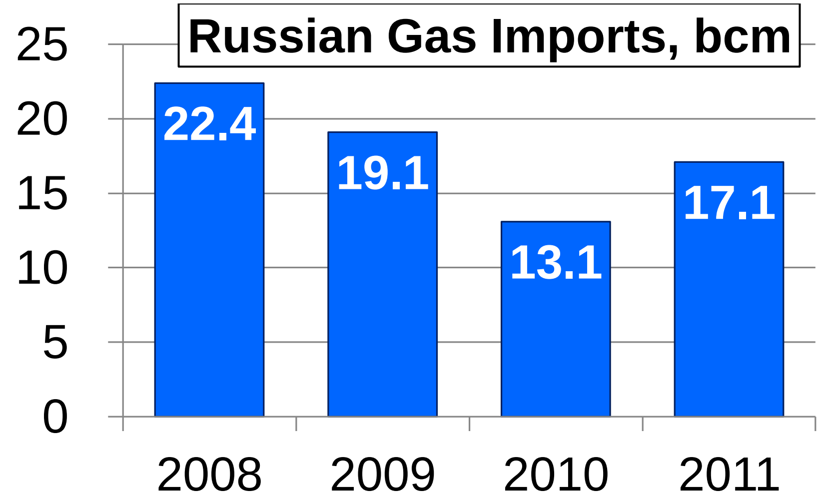
Italy: Capacity to Grow Faster Than Imports

	bcma
Existing pipelines – Transmed, Green Stream, TAG, Transitgas	101.8
Existing LNG terminals – La Spezia, Porto Levante	11.5
Existing import capacity:	113.3
2011 imports:	69.6
New pipelines – TAP, TGI, GALSI, South Stream	73.5
New LNG terminals under construction – Livorno / Toscana, Brindisi, La Spezia	16.2
New LNG terminal projected	73.0
Total 2030 capacity:	>175
Italian 2030 import projections (1):	70-94

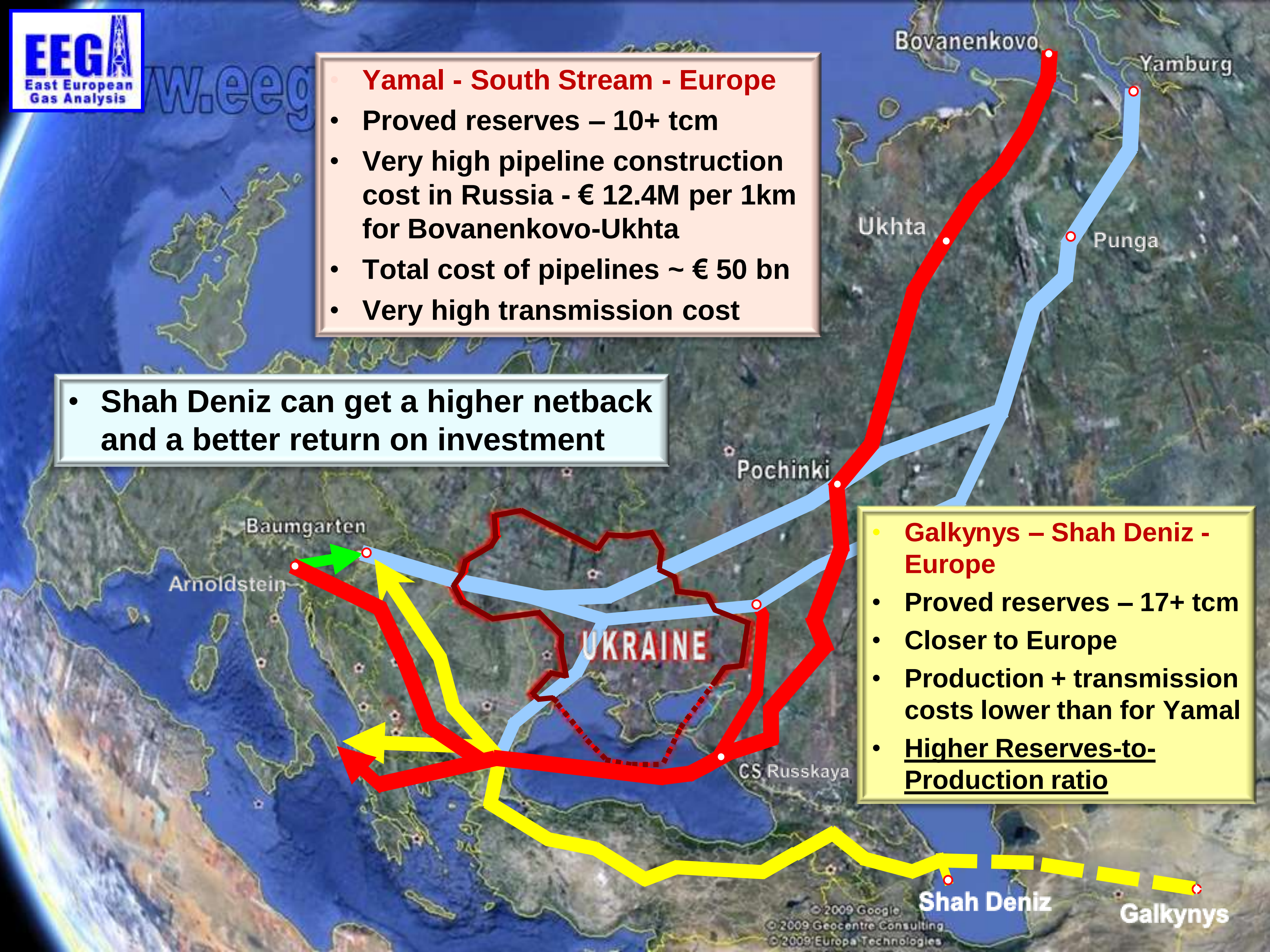
(1) EU Energy Trends to 2030.

Can Italy Buy More Russian Gas?

Ankara, August 6, 2009



- **Current import capacity is 40% above the 2011 import volume.**
  - **Higher capacity-to-import ratio means higher competition.**
- **Vladimir Putin ordered Gazprom to keep the price up despite losing market share.**
- **Italy is unlikely to buy more Russian gas on the old terms.**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Yamal - South Stream - Europe
• Proved reserves – 10+ tcm
• Very high pipeline construction cost in Russia - € 12.4M per 1km for Bovanenkovo-Ukhta
• Total cost of pipelines ~ € 50 bn
• Very high transmission cost
• Shah Deniz can get a higher netback and a better return on investment
Galkynys – Shah Deniz - Europe
• Proved reserves – 17+ tcm
• Closer to Europe
• Production + transmission costs lower than for Yamal
• Higher Reserves-to-Production ratio
Bovanenkovo
Yamburg
Ukhta
Punga
Pochinki
Baumgarten
Arnoldstein
UKRAINE
CS Russkaya
Shah Deniz
Galkynys
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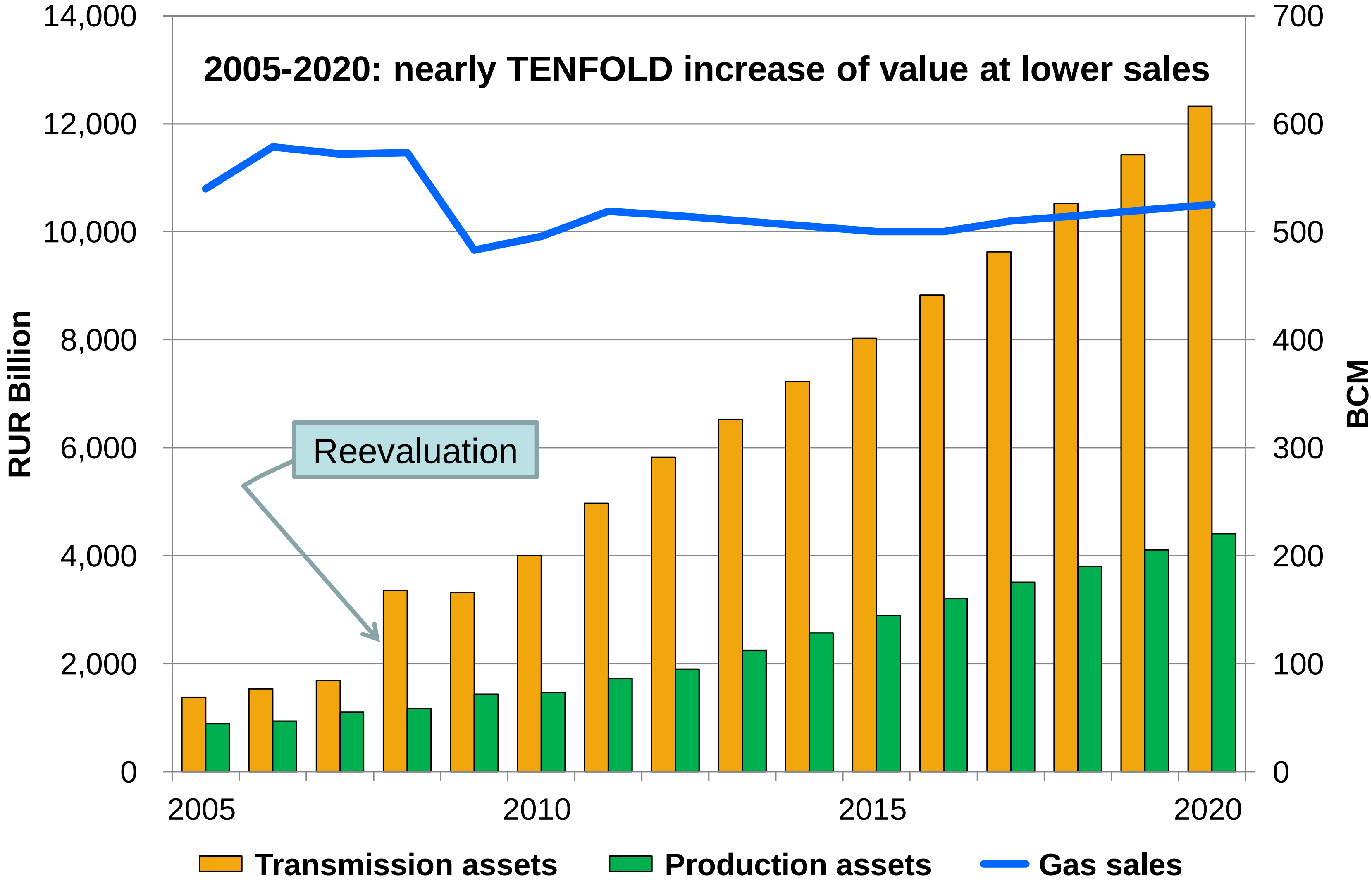
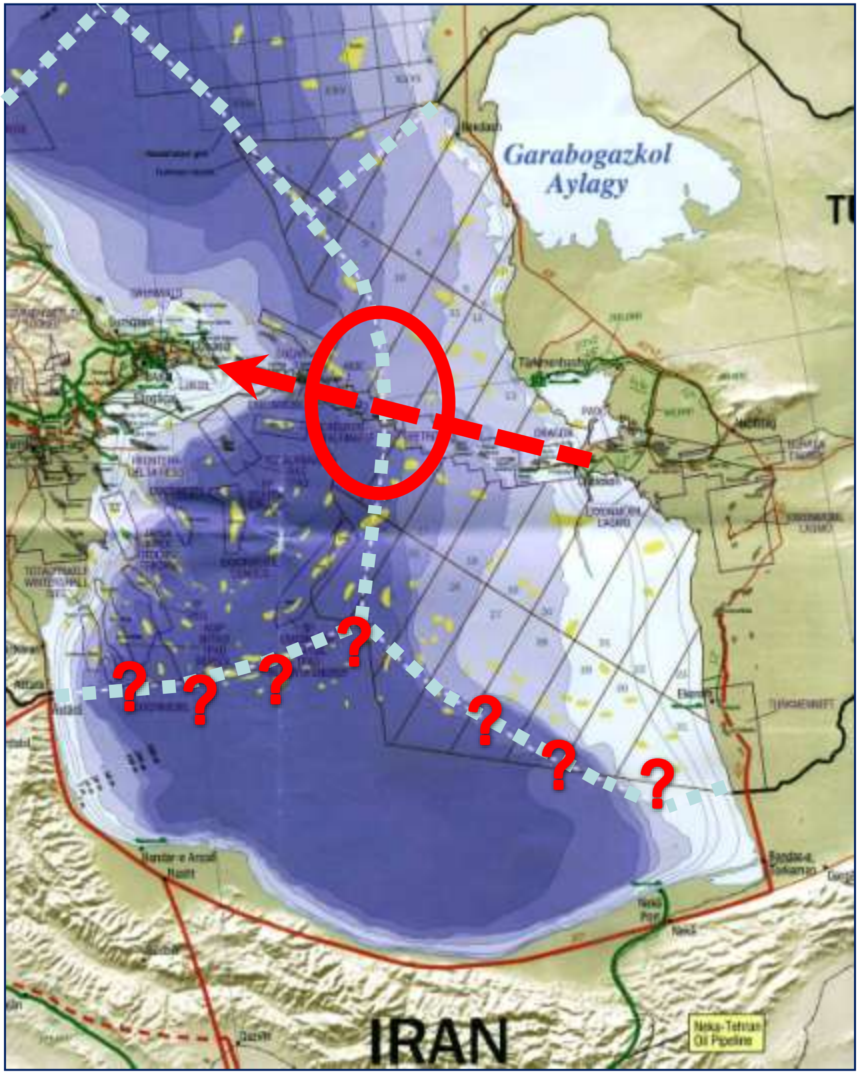
Growth of Pipeline Assets of Gazprom



Gazprom to Lose Its Competitive Capacity

- **Export of gas produced in Russia is the most profitable operation of Gazprom now.**
- **Current profit margin allows a substantial price reduction.**
- **A sharp growth of transportation costs is expected.**
  - **Gazprom builds an extremely expensive new pipeline system to evacuate the Yamal gas.**
  - **The new expensive lines will be fully loaded while the existing ones will have growing spare capacity.**
- **In 2020, Gazprom needs a high price of above $14/MMBtu.**
- **Shah Deniz and Galkynys can beat Russian gas in Europe.**

Gazprom: Unsettled Border Is Not a Problem



- "Legal uncertainties with regard to the unsettled sea border south of Bornholm" were not a problem for the Nord Stream pipeline.
- There is no third party disputing the border along the route of the Trans-Caspian Gas Pipeline (TCGP).
- Assuming a standard EIA procedure, TCGP is a bilateral matter of Azerbaijan and Turkmenistan.
- There are offshore oil pipelines operating in the Caspian Sea for over 60 years.

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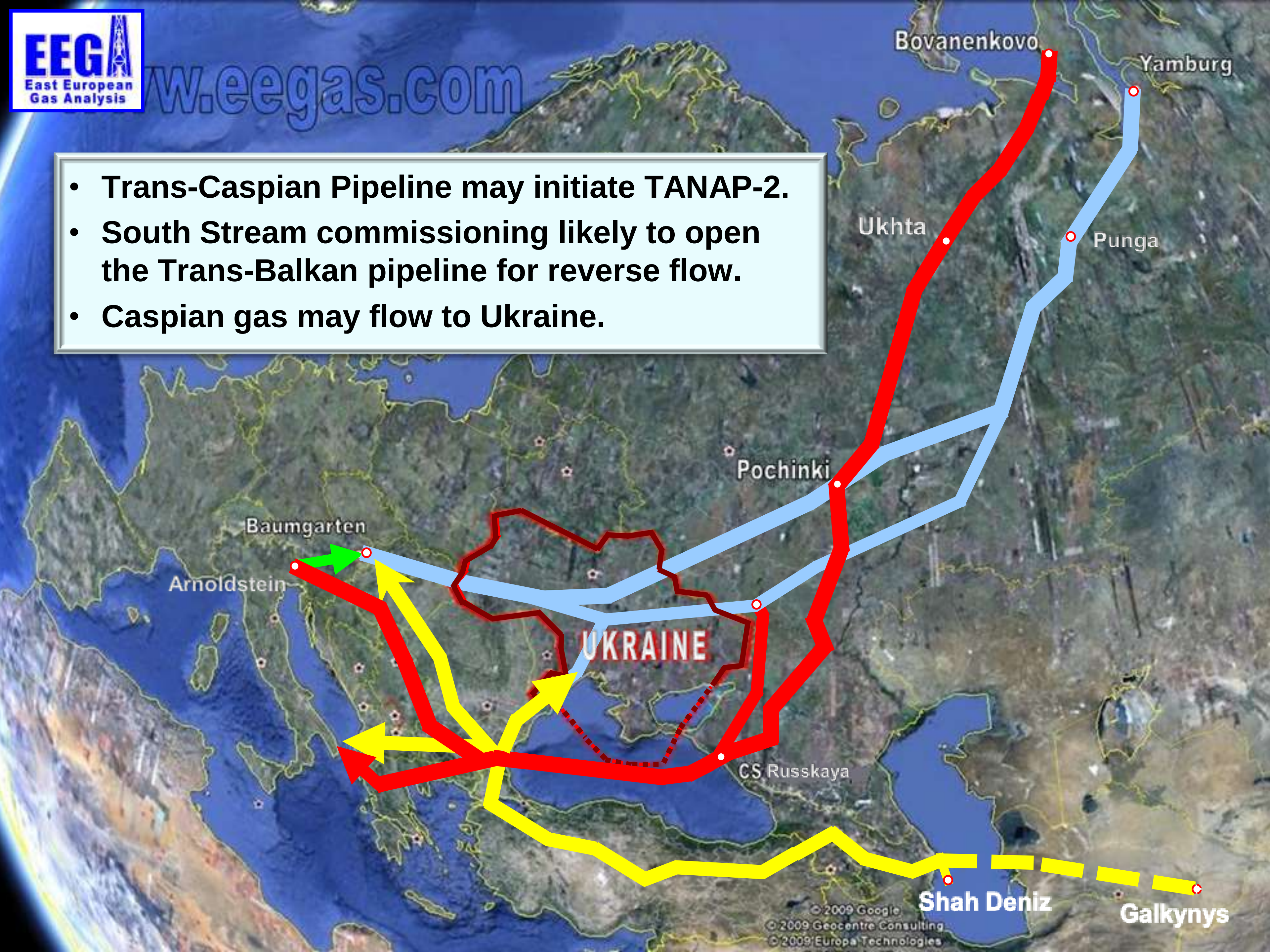
- **Trans-Caspian Pipeline may initiate TANAP-2.**
- **South Stream commissioning likely to open the Trans-Balkan pipeline for reverse flow.**
- **Caspian gas may flow to Ukraine.**



Facilitating the Trans-Caspian Pipeline Talks

Vladivostok, September 11, 2012

- **A "gas-light" chandelier may create a more friendly atmosphere**

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THANK YOU

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