

Thoughts on „security of gas supply“

Transatlantic Energy Policy, Latin America & Germany
Rio de Janeiro, 29. October 2015



Germany relatively secure, even in case of Russian gas embargo

EU-Commission stresstest 2015 – two scenarios

Russian 6-month disruption

Cooperative approach

February

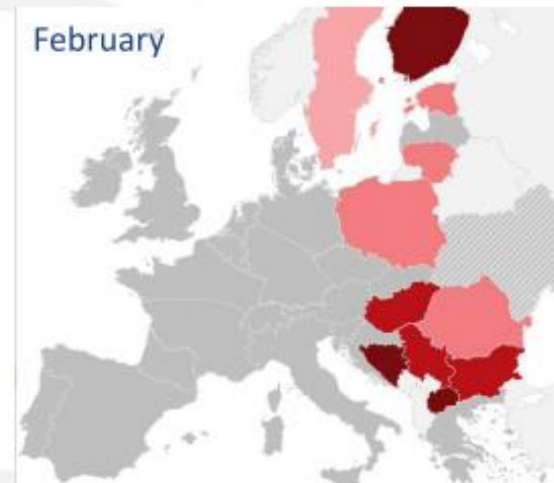


*Pending analysis
on a specific split
of Norwegian
gas at Emden to
maximize flow to
Gaspool*

| In percentage | SEP | OCT | NOV | DEC | JAN | FEB |
|---------------|-----|-----|-----|-----|-----|-----|
| AT | 0% | 0% | 0% | 0% | 0% | 12% |
| BA | 26% | 26% | 26% | 26% | 26% | 26% |
| BE | 0% | 0% | 0% | 0% | 0% | 0% |
| BGn | 0% | 0% | 6% | 26% | 31% | 38% |
| CH | 0% | 0% | 0% | 0% | 0% | 0% |
| CZ | 0% | 0% | 0% | 0% | 0% | 14% |
| DEg | 0% | 0% | 0% | 0% | 0% | 13% |
| DEn | 0% | 0% | 0% | 0% | 0% | 0% |

Uncooperative approach

February

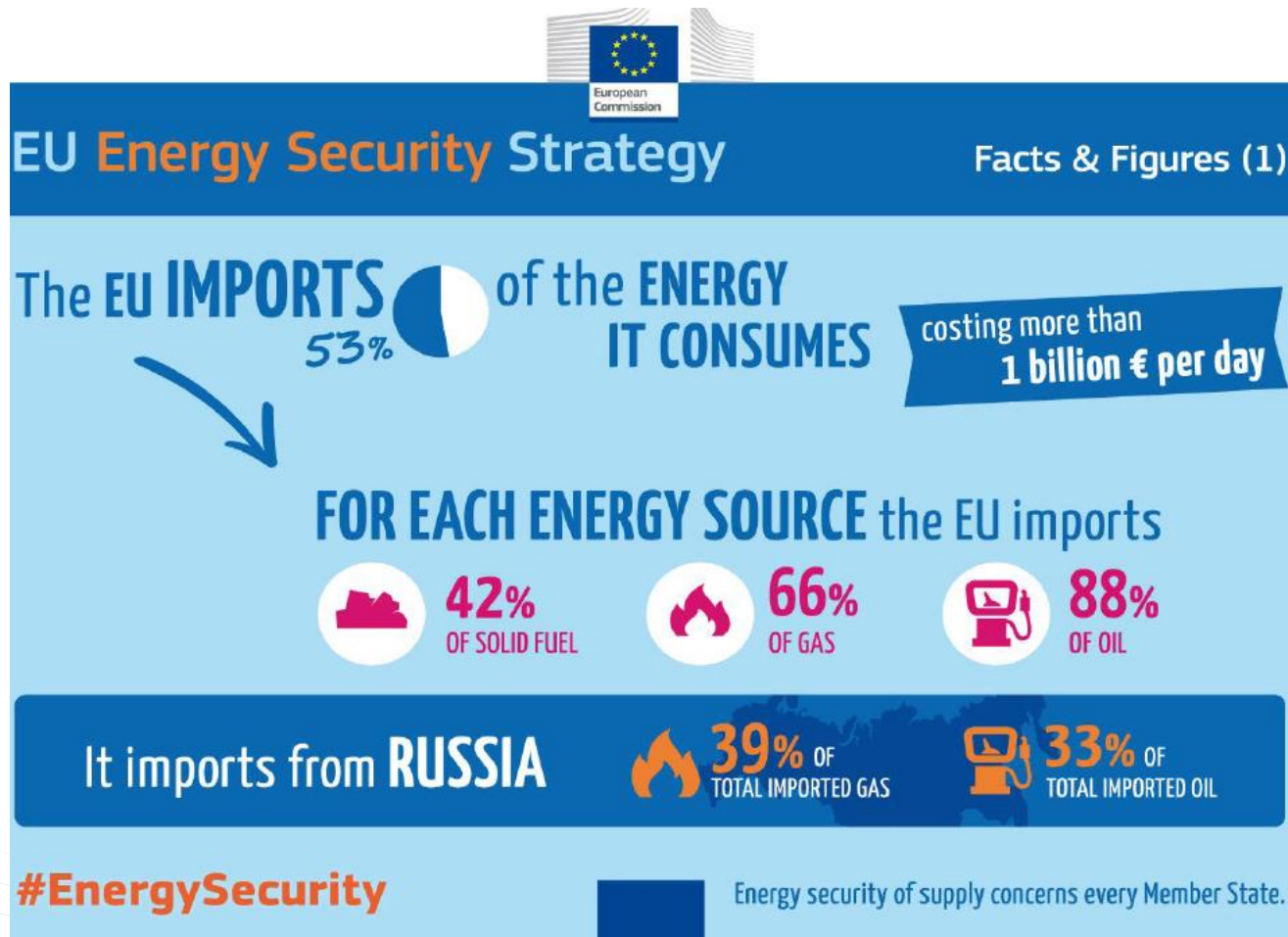


| In percentage | SEP | OCT | NOV | DEC | JAN | FEB |
|---------------|-----|-----|-----|-----|-----|-----|
| AT | 0% | 0% | 0% | 0% | 0% | 0% |
| BA | 26% | 26% | 26% | 26% | 26% | 26% |
| BE | 0% | 0% | 0% | 0% | 0% | 0% |
| BGn | 0% | 0% | 8% | 50% | 75% | 88% |
| CH | 0% | 0% | 0% | 0% | 0% | 0% |
| CZ | 0% | 0% | 0% | 0% | 0% | 0% |
| DEg | 0% | 0% | 0% | 0% | 0% | 0% |
| DEn | 0% | 0% | 0% | 0% | 0% | 0% |

Source: EU-Kommission, Stress Test von ENTSG für die EC

Russia clearly on the mind of EU energy security debate

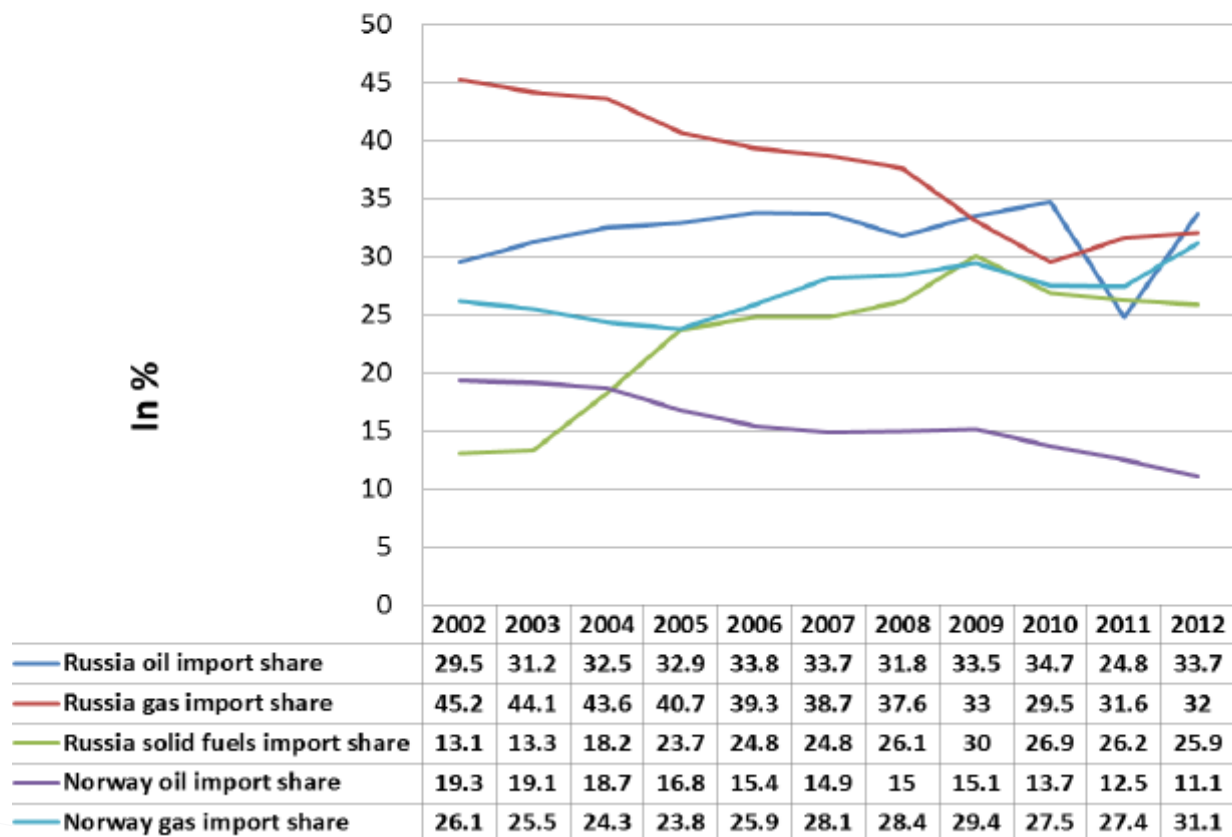
EU-Commission poster on the EU energy strategy



Source: EU-Kommission

Russia's share historically used to be much higher

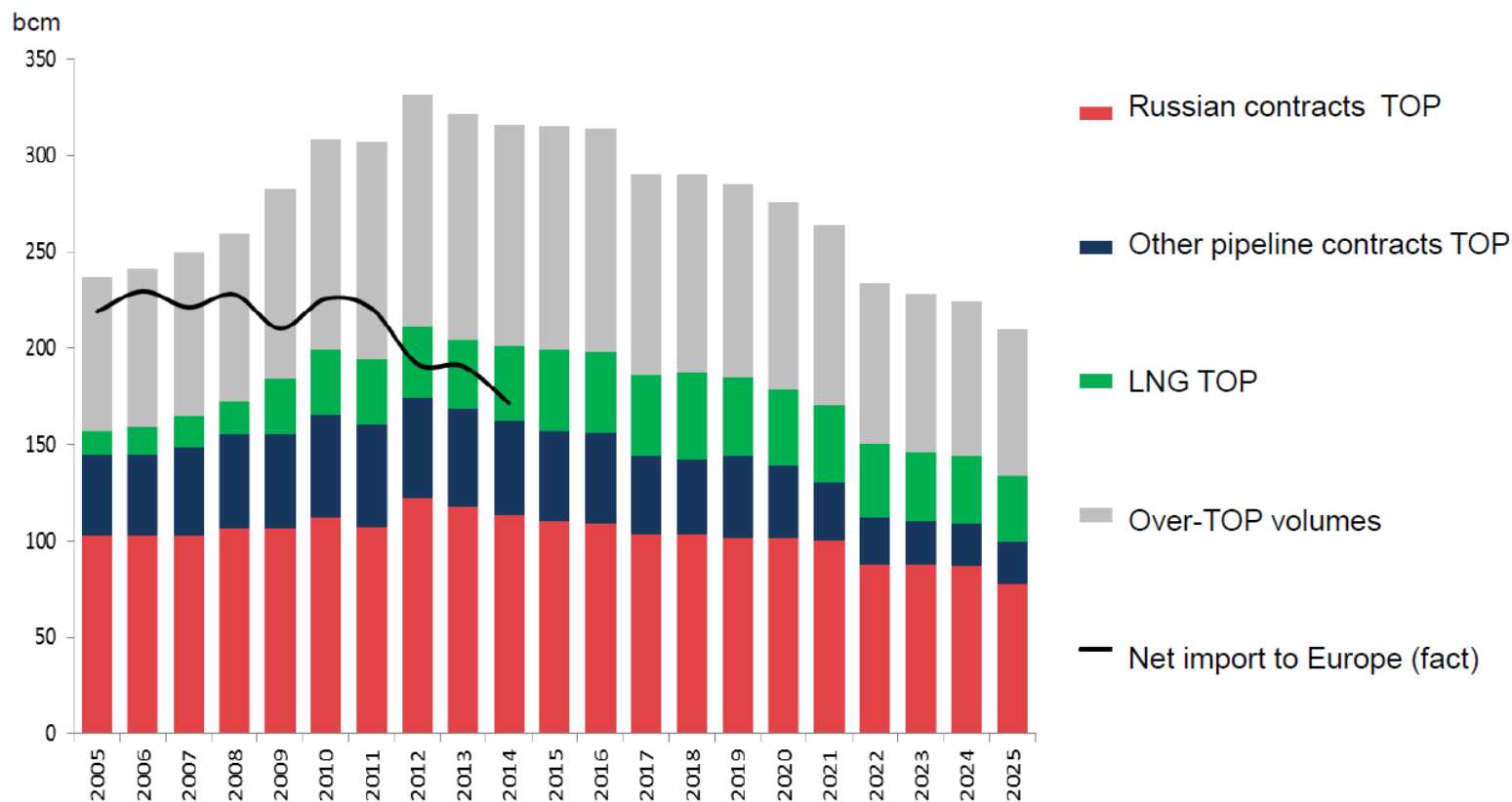
Percentage of import share of key oil and gas suppliers to the EU (until 2012)



Source: Jakub M. Godzimirski, Norwegian Institute of International Affairs

Gas glut – Europe clearly a buyers' market at the moment

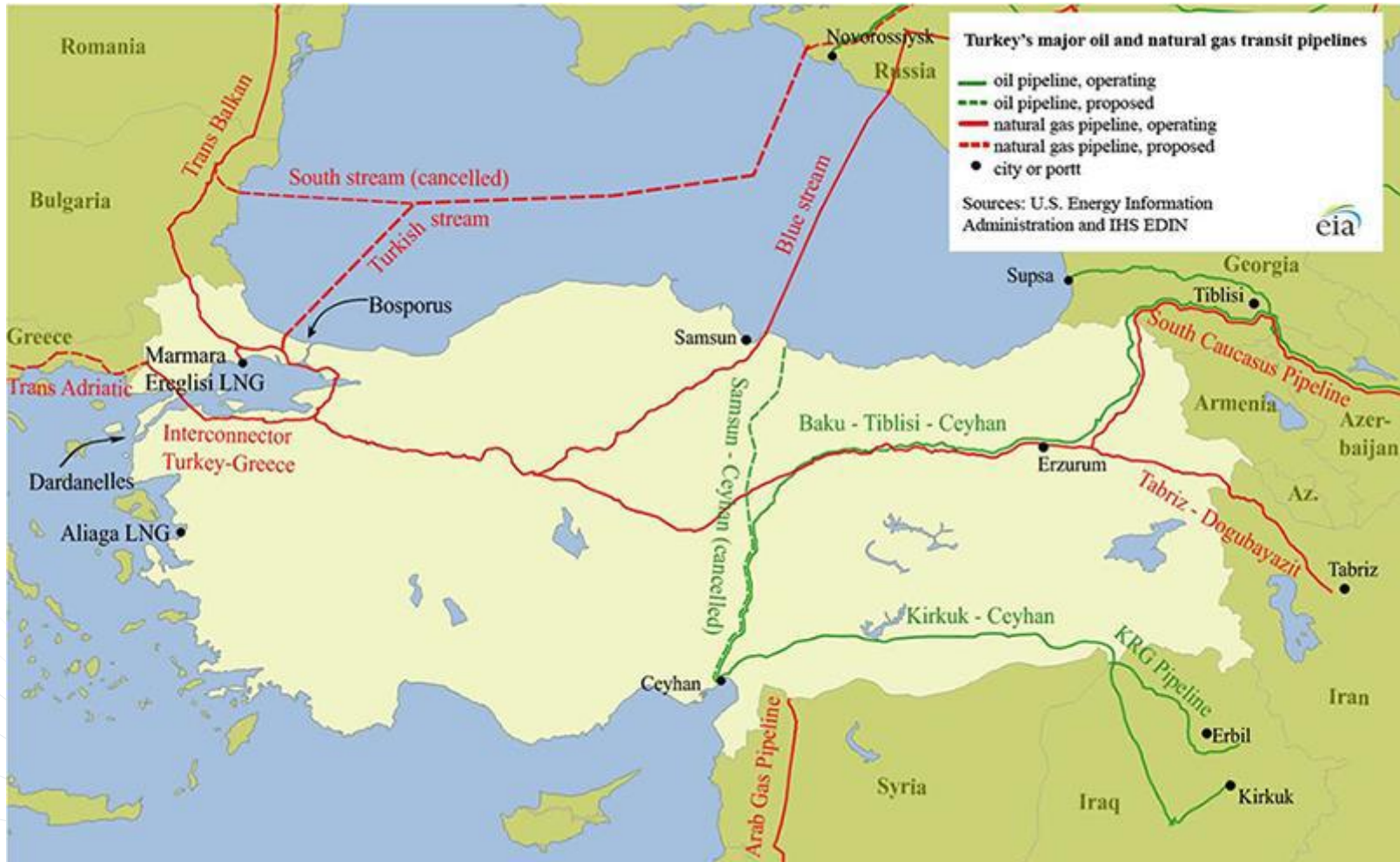
Gas sources, types of contract, origins



Source: Dr. Tatiana Mitrova, Energy Research Institute of the Russian Academy of Sciences

„Pipeline-Games“ – is there really a Southern Corridor?

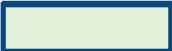
Pipeline-options for the EU – security as a question of transit




„Pipeline-Games“ – Russian aim to bypass Ukraine by 2019

Overview of key pipeline projects and their implications for Ukraine

| | No Nord Stream expansion | Nord Stream-3 | Nord Stream-3 and 4 |
|------------------------|--------------------------------------|---|--|
| No Turkish Stream | Transit through Ukraine ~ 60 bcma | Transit through Ukraine ~ 30 bcma | Transit through Ukraine 5-10 bcm |
| Turkish Stream 1 | Transit through Ukraine ~ 45 bcma | Transit through Ukraine ~ 20 bcma | No transit through Ukraine if NS is completely utilized, otherwise limited Ukraine transit |
| Turkish Stream 1 and 2 | Transit through Ukraine ~ 30 bcma | No transit through Ukraine if NS is fully used, otherwise limited Ukraine transit | No transit through Ukraine |
| Turkish Stream 1,2,3 | Transit through Ukraine ~ 10-15 bcma | No transit through Ukraine | No transit through Ukraine |
| Turkish Stream 1,2,3,4 | No transit through Ukraine | No transit through Ukraine | No transit through Ukraine |

 Higher probability

 Lower probability

Source: Dr. Tatiana Mitrova, Energy Research Institute of the Russian Academy of Sciences