EU Energy Security and the Crisis in Crimea

Dr Andrew Judge
School of Government and Public Policy, University of Strathclyde

Dr Jack Sharples
International Programs, European University at St. Petersburg

European Policies Research Centre, University of Strathclyde, 4th April 2014


Myth? Reality?

Overview

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

1. Instability in Ukraine-Russian gas relations
2. Potential for a gas supply disruption
3. Impact of a potential suspension in gas transit via Ukraine on EU gas supplies
4. The EU's options for improving energy security

1. Russian-Ukrainian gas relations: Key themes

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- **Prices** – Gas prices in FSU states (including Ukraine) and Russia's domestic market substantially lower than in Western Europe
- **Debts** – Ukraine accumulated large debts; Supply cuts throughout 1990s to enforce payment discipline

- **Commercial** – Regular renegotiation of supply and transit prices; Gazprom's desire to increase FSU price to West European levels
- **Politics** – Discounts in return for political concessions

1st January 2006: The 'first' disruption

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- Upsurge in oil price in 2003 → Widened price gap
- Orange revolution (2004/05) and election of pro-Western Ukrainian government

- Gazprom attempted to impose higher prices, Naftogaz refused and supplies were cut off for three days → Supply shortfalls in EU Member States
- Dispute temporarily resolved by Gazprom supplying Ukraine with a mixture of full price Russian gas and cheaper gas from Turkmenistan

January 2009: The 'second' disruption

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- Naftogaz accumulated massive debts to Gazprom (between $1.6 and $2.2 billion)
- Gazprom agreed to pay netback prices for imports from Central Asia in 2008
- Plans announced in 2009 by Russian Government to increase domestic prices to European netback by 2011
- Supplies to Ukraine halted → Accusations of Naftogaz siphoning off supplies → Full disruption for 13 days
- Timoshenko Resolution: European netback with a one year 20% discount

2009-2013: Unhealthy mixture of politics and economics

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- Deal perceived to be unfair for Ukraine
  - Jump in oil prices 2009-2010 ($43→$76)
  - Kharkiv Accords – 30% discount in return for Sevastopol lease extension
- Price gap between Europe and Ukraine reversed
  - Jump in oil prices 2010-2011 (annual average $110)
  - Gazprom gave temporary discounts to Western Europe to retain market share
  - Ukraine reduced consumption but continued to accumulate debts; Refused the 'Belarusian option'

2013-2014: Protests, Revolution and Crimea

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- December 2013: Russia offered Ukraine 33% discount and $15bn loan ($3bn immediate bond purchase)
- February 2014: Naftogaz debt to Gazprom – $3.25bn
  - Naftogaz paid $1.47bn, requested deferral to April
  - Overthrow of Yanukovich → End of bond purchases
- March 2014: Russia cancelled discount and Sevastopol agreement

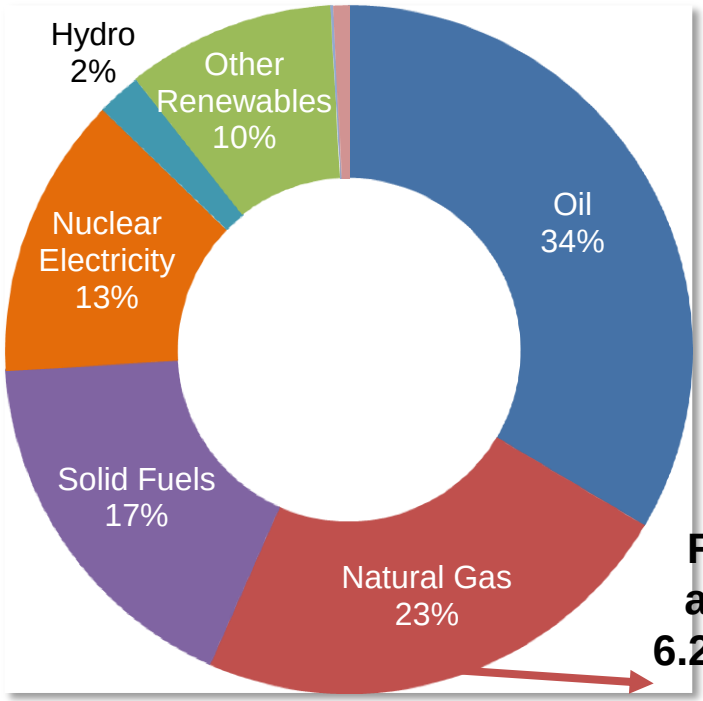
"Either Ukraine settles its debt and pays for current deliveries or the risk arises of a return to the situation we saw at the start of 2009" (Alexei Miller, Gazprom CEO)

2. Potential supply disruptions EU28 key statistics

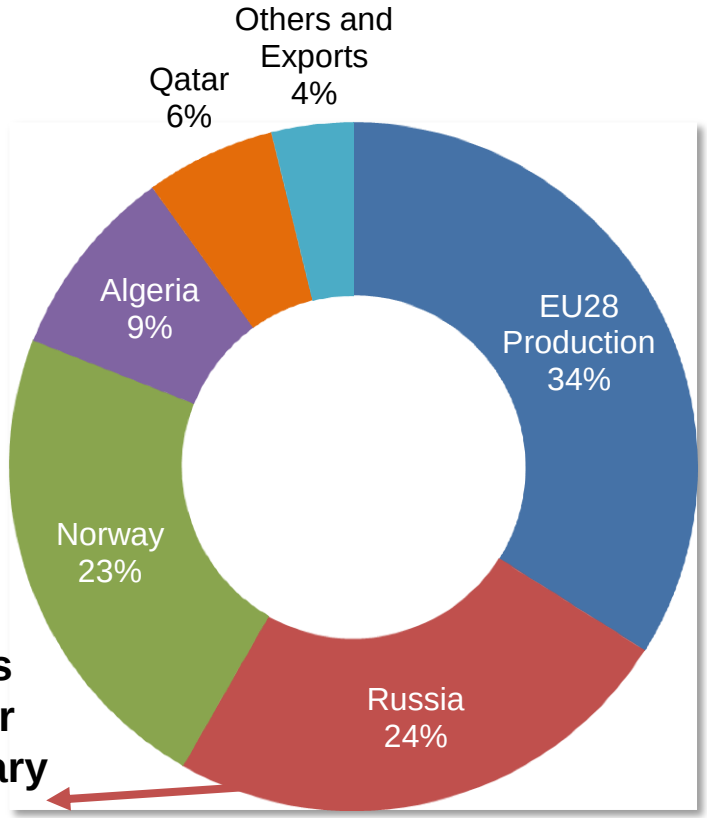
EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Primary Energy Consumption, 2012



Gas Supply, 2012



Russian gas accounts for 6.2% of Primary Energy Consumption

Sources: Eurogas Statistical Report 2013

Differentiated Dependence on Russian Gas

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

	Dependence on imported gas	Share of Russian gas in	
		Gas imports	Gas consumption
Austria	78.9%	76.1%	60.0%
Bulgaria	97.7%	100%	83.3%
Croatia	34.5%	-	-
Czech Rep	98.0%	58.6%	57.5%
Germany	86.8%	43.0%	37.3%
Greece	100.0%	55.6%	55.6%
Hungary	78.2%	100.0%	78.2%
Italy	88.5%	32.6%	28.9%
Poland	72.0%	81.3%	58.6%
Romania	24.3%	100.0%	24.3%
Slovakia	98.4%	83.5%	82.2%
Slovenia	100.0%	60.2%	60.2%
CEE Average	**79.8%**	**65.9%**	**52.1%**
EU28 Total	**66.2%**	**36.6%**	**24.2%**

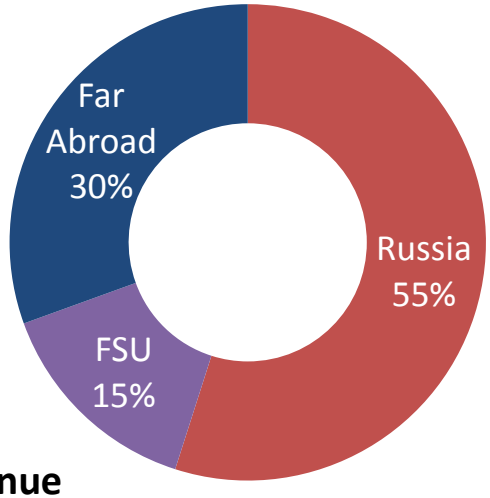
Sources: Eurogas Statistical Report 2013

Gazprom and Russia's Dependence on Europe

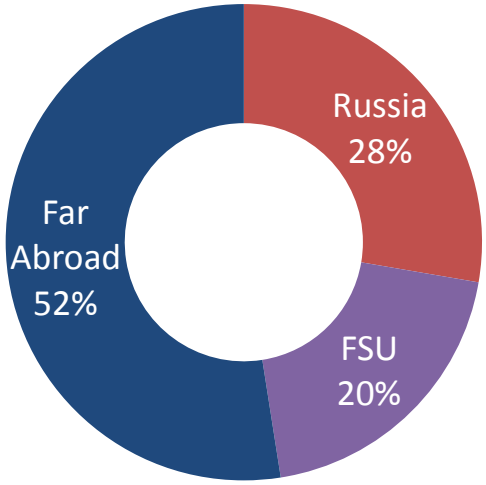
EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Gazprom Sales 2012



Revenue 2012



Some approximate figures:

- Half of Gazprom revenues come from European Gas Sales, 6% from Ukraine
- Gas accounts for 14% of Russian export sales (50% for oil)
- 50% of Federal Revenues come from oil (40%) and gas sales (10%)

Source: Gazprom Annual Report 2012; Pirani, et al. (2014)
Revenue calculations are approximations based on average prices in RR

Mutual dependence on transit (non-Baltic Europe)

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Gas Flow (billion cubic metres)			
Capacity	Total 2012	Total 2013	March 2013
55.0	11.3	23.5	2.1
19.7%	9.2%	16.5%	17.4%
41.3	37.7	37.0	3.3
14.8%	26.0%	25.9%	28.1%
182.9	78.8	82.3	6.5
65.5%	64.7%	57.6%	54.5%

Sources: IEA Gas Trade Flows in Europe, Nord Stream website

Nord Stream and Belarus pipelines were constructed to diversify transit away from Ukraine

Potential for supply disruptions

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- Economic suicide for Russia to disrupt all energy supplies on all routes (very unlikely)
- Difficult Ukraine-Russia gas relations
  - Russia and Gazprom – how to recover debts without Ukraine default/siphoning off supplies
  - Ukraine and Naftogaz – little prospect for servicing debt
- Political tensions + Commercial issues = Potential for gas disruption on Ukraine route only
- Further military action in Ukraine could lead to non-commercial shut-offs (unlikely at this point)

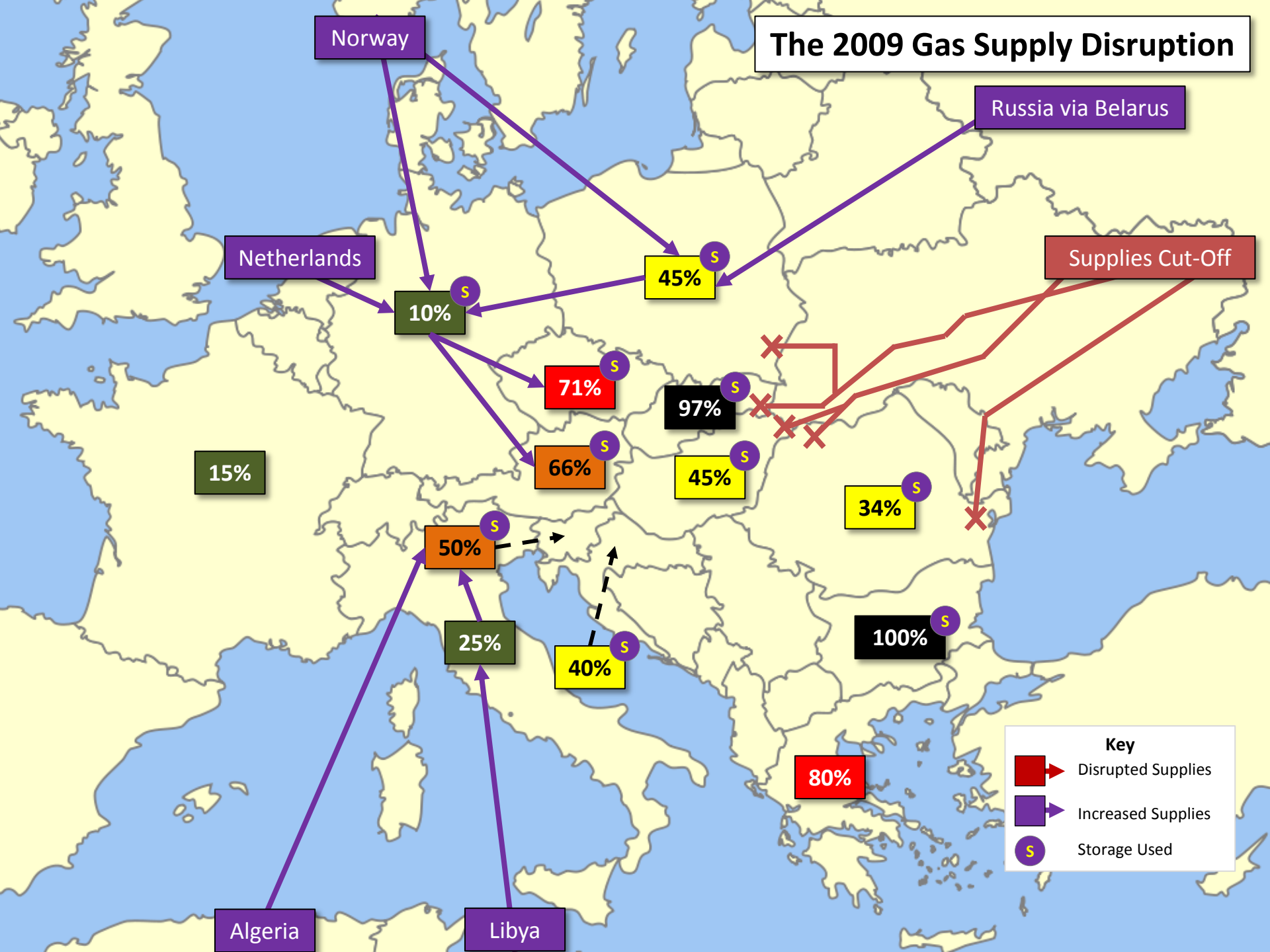
3. Impact of supply disruptions: Key factors

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- Alternative transit routes?
- Alternative supplies?
- Will storage be able to compensate for shortfalls?
- Can the gas reach affected areas via interconnectors?

Modelling possible based on past experience and most recent data (2013)


The 2009 Gas Supply Disruption
Norway
Russia via Belarus
Netherlands
Supplies Cut-Off
45%
S
10%
S
71%
S
97%
S
66%
S
45%
S
15%
34%
S
50%
S
25%
40%
S
100%
S
80%
Algeria
Libya
Key
Disrupted Supplies
Increased Supplies
S
Storage Used

Potential impact of a disruption: Preparation since 2009

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Key factors

- Alternative transit routes?
- Alternative supplies?
- Will storage be able to compensate for shortfalls?
- Can the gas reach affected areas via interconnectors?

Preparation in EU

- Nord Stream – alternative transit route
- Potential supplies from Algeria, Norway and LNG
- More storage
- More reverse-flow interconnections
- National and regional emergency plans under EU regulation 994/2010

Potential impact of a disruption: Transit to Europe

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

March 2013 Levels (mcm/day)			
Route	**Capacity**	**Flow in March 2013**	**Spare Capacity**
Nord Stream	150.7	66.6	84.1
Yamal Europe (Kondratki)	97.4	97.1	0.3
Beltransgaz (Wysokoje)	15.8	10.7	5.1
Ukraine-Poland (Drozdwicze)	16.6	13.8	2.8
Ukraine-Slovakia (Velke Kapusany)	323.0	122.0	201.0
Ukraine-Hunary (Beregdaroc)	56.4	14.4	42.0
Ukraine-Romania (Mediesu Aurit)	9.1	0.2	8.9
Ukraine-Romania (Orlovka-Isaccea)	96.0	58.3	37.7
Flows via Ukraine	**501.1**	**208.7**	**292.4**
Flows via other routes	**263.9**	**174.4**	**89.5**

Potential impact of a disruption: Transit within Europe

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Imports in March 2013 (million cubic metres/day)		
Country	**Via Ukraine**	**Total**
Austria*	14.30	14.30
Bulgaria*	7.90	7.90
Croatia*	3.96	3.96
Czech Rep	11.19	27.59
Greece	6.56	9.44
Hungary*	21.48	21.48
Italy	83.87	172.74
Poland	13.83	31.53
Romania*	4.96	4.96
Slovakia*	14.84	14.84
Slovenia*	3.16	3.16
Average	16.91	28.35
	82.1%	

Percentages are for share of Ukrainian transit in total gas imports

Asterisks indicate countries where Ukrainian transit accounts for 100% of imports

Source: IEA Gas Trade Flows in Europe

Potential impact of a disruption: Storage

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Best available figures for March (2013 for imports, 2014 for storage)					
Country	Imports via Ukraine (mcm/day)	Maximum withdrawal (mcm/day)	Difference	Gas in storage on 10/03/14 (mcm)	Number of Days Supply
Austria	14.30	44.16	+29.86	1237.80	87
Bulgaria	**7.90**	**3.50**	**-4.40**	**200.00**	**57**
Czech Republic	11.19	33.09	+21.90	960.00	86
Greece	6.56	-	-	-	-
Hungary	24.48	79.58	58.10	1273.92	59
Italy	83.87	230.40	146.53	8111.71	97
Poland	13.83	33.85	20.02	1300.90	64
Romania	4.96	30.30	25.34	~1000.00	202
Slovakia	14.84	41.15	26.31	1171.00	79
Regional	**167.41**	**496.03**	**+323.66**	**15255.33**	**95**

4. Future Options: Diversification of Suppliers

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

US Shale Gas

- Requires granting of export licences
- Not available until around 2016
- Competition with Asian market

EU Shale Gas

- Environmental opposition in several Member States
- Major uncertainties over reserves
- Unlikely before 2020

Azeri Gas via TAP pipeline (Turkey-Greece-Albania-Italy)

- 10bcm initially (2018), later 30bcm (by 2026)
- Security concerns due to bordering Russia and Georgia
- Potential for other supplies (Central Asia, Middle East)

Future Options: Diversification of Transit

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

Source: http://www.south-stream.info/fileadmin/f/maps/eng/eng_blank.png
Additional potential pipeline routes based on authors' own research

Future Options: Adaptation within Europe

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- Diversification of energy mix
  - Limited options, due to cost and climate commitments
- Interconnectors
  - Romania-Bulgaria → Would help Bulgaria, but not Macedonia
- Gas Storage
  - Gas has to come from somewhere!
- Complete the Internal Energy Market
  - More attractive market / Stronger bargaining position
  - Future security of demand problems in Russia

Conclusions

EUROPEAN UNIVERSITY AT SAINT-PETERSBURG

University of Strathclyde Humanities & Social Sciences

- EU and Russia are characterised by mutual dependency → Total energy shut-off very unlikely
- Long-standing instability in Ukraine-Russian gas relations is the main factor in any potential supply disruption
- Ukraine transit disruption could be mitigated for around three months, except in Bulgaria
- No silver bullet to improve EU energy security

Read the research

Long version

Sharples, J. and Judge, A. (2014) 'Russian Gas Supplies to Europe: the Likelihood, and Potential Impact, of an Interruption in Gas Transit via Ukraine', *The European Geopolitical Forum: Energy Special Contribution, 20th March,* http://gpf-europe.com/forum/?blog=energy&id=157

Short version

Sharples, J. and Judge, A. (2014) 'Bulgaria and Macedonia would be hardest hit by a suspension of Russian gas exports through Ukraine', *LSE EUROPP Blog, 13th March,* http://bit.ly/1gnh8IG

Contact Details

Dr Andrew Judge
University of Strathclyde, Glasgow
a.judge@strath.ac.uk

http://independent.academia.edu/AndrewJudge

Twitter: @andyjudgeuk

Dr Jack Sharples
European University at St. Petersburg
jsharples@eu.spb.ru

http://eu-spb.academia.edu/JackSharples

Jack also writes the monthly 'Gazprom Monitor' report for the European Geopolitical Forum: http://gpf-europe.com/egf-files/russia/