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Towards an EU Gas Security Standard? Implications for the Baltic States and Bulgaria

S Findlater, P Noel & F Silve

EPRG, University of Cambridge

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E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Why this research?

- After January 09: rush to gas security policy
- The European Commission will propose a SoS standard as part the new directive of gas supply security
- There is very little research available on the security of supply situation in “Russia-dependent” Europe
- The Commission (and national governments!) need to know much more than they do
- We present preliminary analysis on Bulgaria and the Baltic States – *support from ECFR is acknowledged*

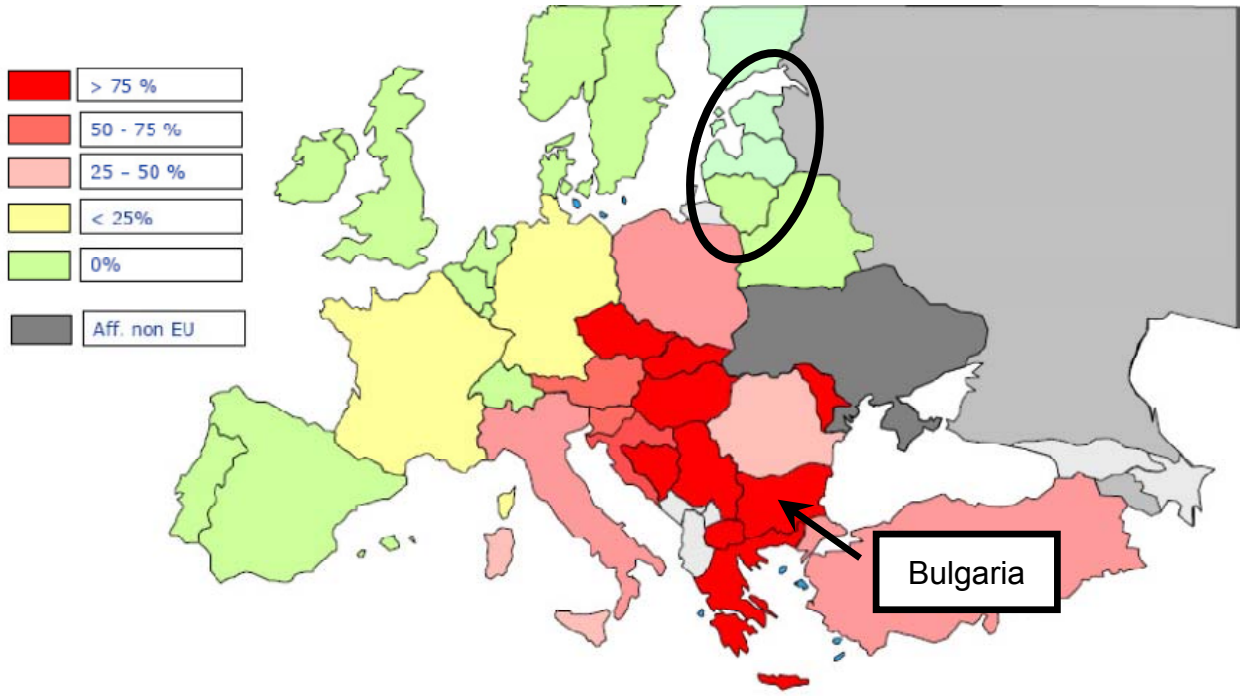
Bulgaria and the Baltics in Europe

- Different political attitudes towards Russia

ECFR Ranking	Izvestia Ranking
Trojan horses	*Russia's Lobbyists*
Cyprus	Belgium
Greece	Cyprus
Strategic partners	France
France	Germany
Germany	Greece
Italy	Italy
Spain	Luxemburg
Friendly pragmatists	*Pragmatics, Centrists, Neutrals*
Austria	Austria
Belgium	Bulgaria
Bulgaria	Finland
Finland	Ireland
Hungary	Malta
Luxembourg	Netherlands
Malta	Portugal
Portugal	Slovakia
Slovakia	Slovenia
Slovenia	Spain
Frosty pragmatists	*Moderate Critics*
Czech Republic	Czech Republic
Denmark	Denmark
Estonia	Hungary
Ireland	Romania
Latvia	*Russophobes*
Netherlands	Estonia
Romania	Latvia
Sweden	Lithuania
United Kingdom	Poland
New cold warriors	Sweden
Lithuania	UK
Poland	

Bulgaria and the Baltics in Europe (2)

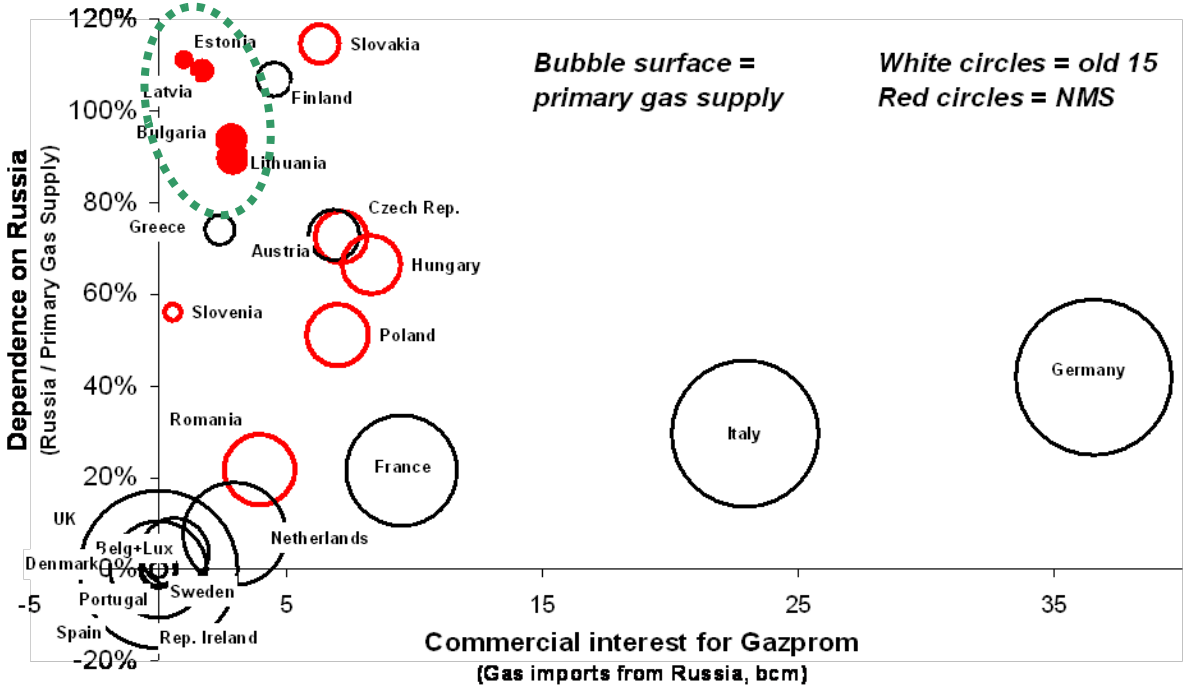
- January crisis: Bulgaria gets all its gas through Ukraine; the Baltics none of theirs



Source: DG TREN

Bulgaria and the Baltics in Europe (3)

- The 4 countries have small gas markets, highly dependent on Russia



Source: BP Statistical Review; Eurostat

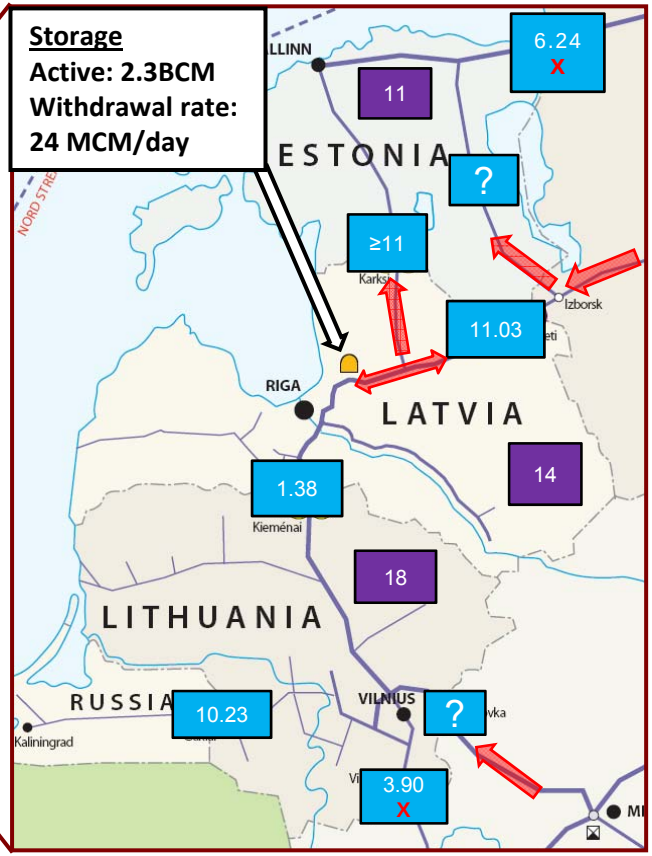
EU Gas Security Policy

- 2002: Commission proposed a SoS standard
  - 60 days of non-interruptible average winter consumption when the largest source is disrupted
  - 1-in-20 years period of 3 cold days + 1-in-50 winter
- Killed by member states (15 at the time)
- 2004 directive (2004/67)
  - Talks of a standard but enforces none
  - Compliance means informing the Commission about SoS situation and measures – *no security of supply policy required*

EU Gas Security Policy (2)

- Review of 2004/67 (November 2008)
  - Pose the right question: “What should be the minimum level of short-term security of supply that every MS has to be prepared for? How should it be defined?”
- After the crisis (Council of February 2009)
  - Commission must prepare a new directive on SoS in 2009
- Interviews in Brussels
  - Commission will propose a standard in the new directive
  - N-1 rule
  - 1-in-20 or 1-in-50 winter
- What does it mean for Bulgaria and the Baltics?

Baltic States



1.3 Pipeline capacity (MCM/day)

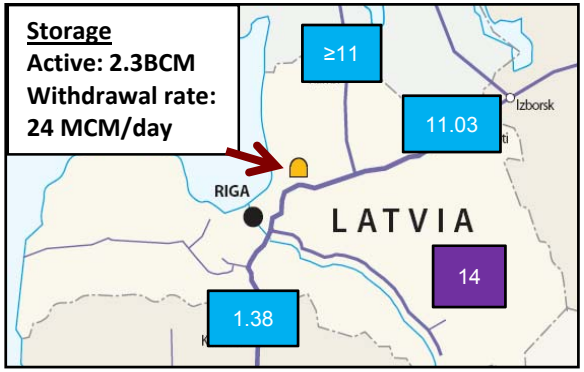
14 Peak consumption (MCM/day)

Source: Gas Transmission Europe

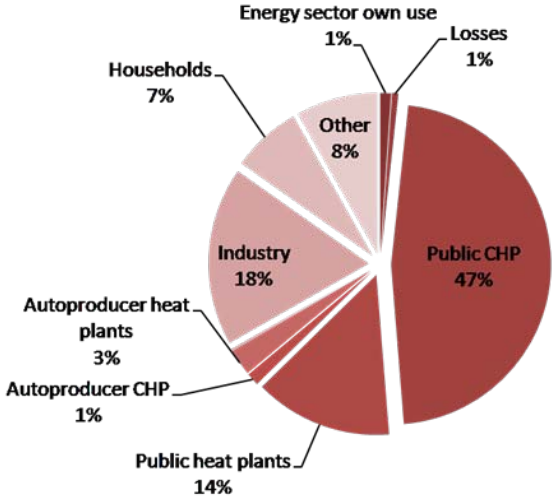
Latvia

Annual: 1.7 BCM/year
Peak: 14 MCM/day
Gas Source: Gazprom

Transmission Network:



Structure of consumption:



- Supply security risks
  - N-1
    - Summer pipeline failure
    - Latvian storage failure
  - Severe winter

- Potential for interruptibility and reallocation
  - Industry – 18%

- Electricity and Heat Generation under gas supply emergency
  - Heat generation 90% reliant on natural gas
  - Back up fuel and switching obligations for CHP: non-specific
  - High reliance on electricity imports and hydro: uncertain
  - Uncertain level of supply security

- Complying with an N-1 standard
  - N-1 situation: (partial) loss of the storage facility
    - Enforcing specific fuel switching obligations
    - Diversifying storage
    - Diversification of gas supply (LNG)?

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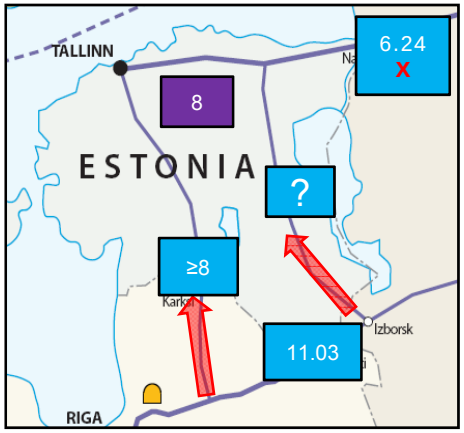
Sources: 2007 data, national statistics websites; company information

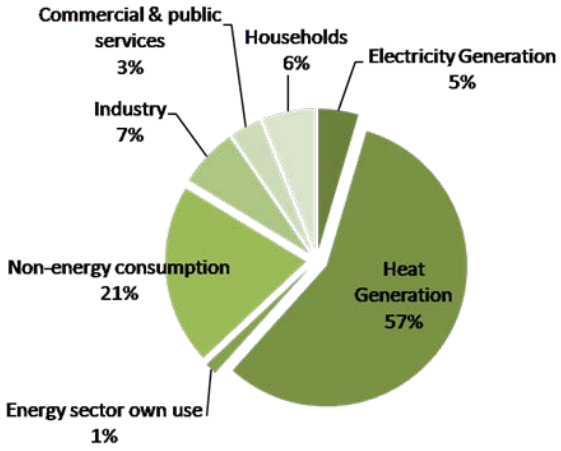
Estonia

Annual: 1.003 BCM/year
Peak: 11 MCM/day
Gas source: Gazprom

Transmission Network:



Structure of consumption:



- Supply security risks – as for Latvia

- Potential for interruptibility and reallocation
  - Industry – 7%
  - Fertiliser plant – pipeline capacity only?

- Electricity Generation under gas supply emergency
  - Gas is marginal - 95% oil shale
  - Huge spare capacity in oil shale plants: approx 900MW
  - Estlink connection to Finland: 350MW
  - Electricity supply secure

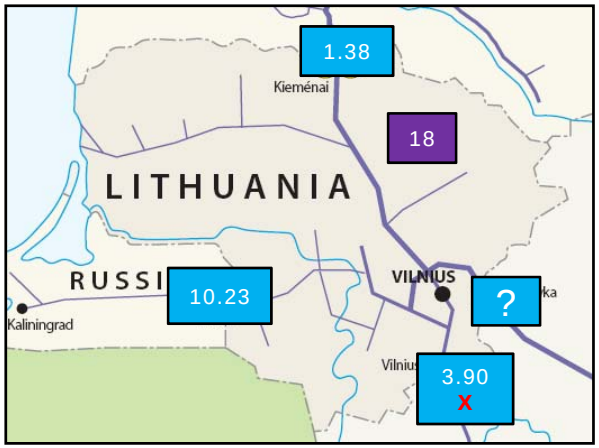
- Heat Generation under gas supply emergency
  - Back up fuel and switching obligations – 3 days at peak load
  - Localised networks prevent physical redistribution
  - Limited levels of security

- Complying with an N-1 standard
  - Protecting heat generation beyond 3 days
  - Investment in Latvian supply security could benefit Estonia

Lithuania

Annual: 3.77 BCM/year
Peak: 18 MCM/day
Gas source: Gazprom

Transmission Network:



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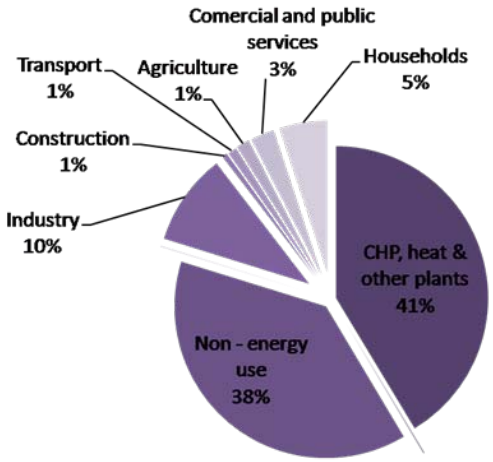

- Supply security risks
  - N-1: Pipeline failure from Russia
  - Severe winter
- Interruptible supply and potential for reallocation
  - Industry – 10%
  - Petrochemicals & fertiliser – pipeline capacity only?
- Electricity Generation under gas supply emergency
  - Ignalina NPP – 75% of electricity supply
  - Sufficient generation capacity from fossil fuels
  - Obligation for 30 days back-up fuels
  - Secure for 30 days (in theory)
- Heat Generation under gas supply emergency
  - Approx 80% supplied by natural gas
  - Obligation for 30 days back-up fuels
  - Secure for 30 days (in theory)
- Complying with an N-1 standard
  - Enforcing the 30 day back-up fuel obligation
  - Gas supply diversity (Polish or Baltic LNG)
  - Increased connection capacity to Latvian storage

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Sources: 2007 data, national statistics websites; company information

Natural gas in Bulgaria

Gas network

Domestic gas supply network

Transit gas supply network

Annual gas consumption : 3.34 bcm
Reliance on Russian gas: 93 %[1]

Peak daily consumption: 15.6 mcm[2]
Storage peak withdrawal rate: 4.3 mcm/day[3]

1. Refers to 2008; SEWRC.
2. Estimate
3. Ministry of Economy and Energy of Bulgaria

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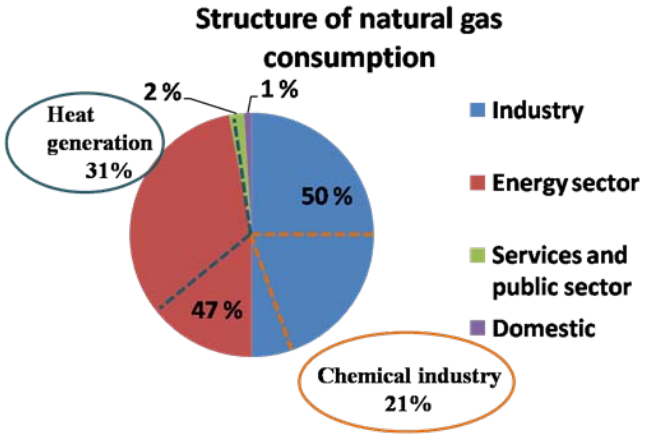
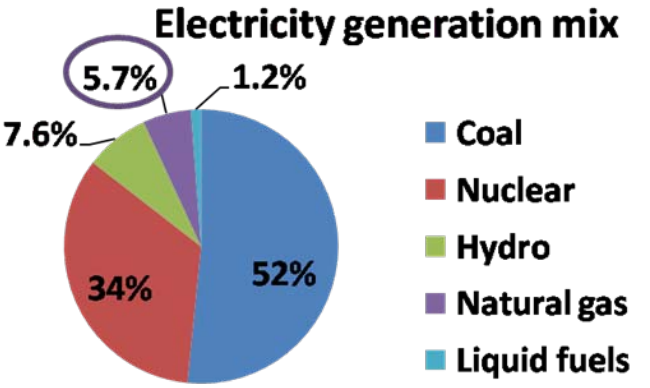
Natural gas in Bulgaria





- Supply security risks
  - N-1
    - Russian gas supply interruption
- Potential for interruptibility and reallocation
  - Industry – 50%
- Electricity and Heat Generation under gas supply emergency
  - Only 5.6% of electricity generated by gas-fired power plants
  - Heat generation: more than 50% generated from gas
- Complying with an N-1 standard
  - Increasing storage capacities
  - Enforcing specific fuel switching obligations
  - Diversification of gas supply sources

Refers to 2008; SEWRC.

Improving gas security in Bulgaria

Scenario: 12 days of Russian gas supply interruption every year

Option		Capacity (mcm/day)	Cost (m€/mcm/day)
Electricity generation	Switch to diesel	0.66	1.6
	Cut exports	0.66	5.3
Chemical industry	Stop production	1.94	6.9
Interconnections	Romania - Bulgaria	1.5[a]	10.0
	Greece - Bulgaria	7[b]	17.1
Heat production	Switch to electricity	5	20.0
UGS	Chiren (expansion)	6	41.7

a. Based on expected pipelines capacity
b. Based on expected gas availability

Open questions

- Will the SoS directive pass the Council test?
  - Impact of 2006 and 2009 crises
  - An ambitious SoS standard would mean serious investment by most new member states
  - Insecurity in Bulgaria does not mean insecurity in Germany or France – Who will push for a standard?
- Will there be “solidarity” in financing?
  - NMS would ask for EU money to comply with a standard
- A European gas market would make it easier to meet a standard (for most countries)
  - Will there be a market?