



# **EU gas demand scenarios and implications for Ukraine as a gas transit country**

**Georg Zachmann, Ricardo Giucci**

German Advisory Group Ukraine

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# Structure

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1. EU gas demand scenarios
2. Scenarios for EU gas production and import needs
3. Transit routes scenarios
4. Implications on Ukraine as a gas transit country

Contact



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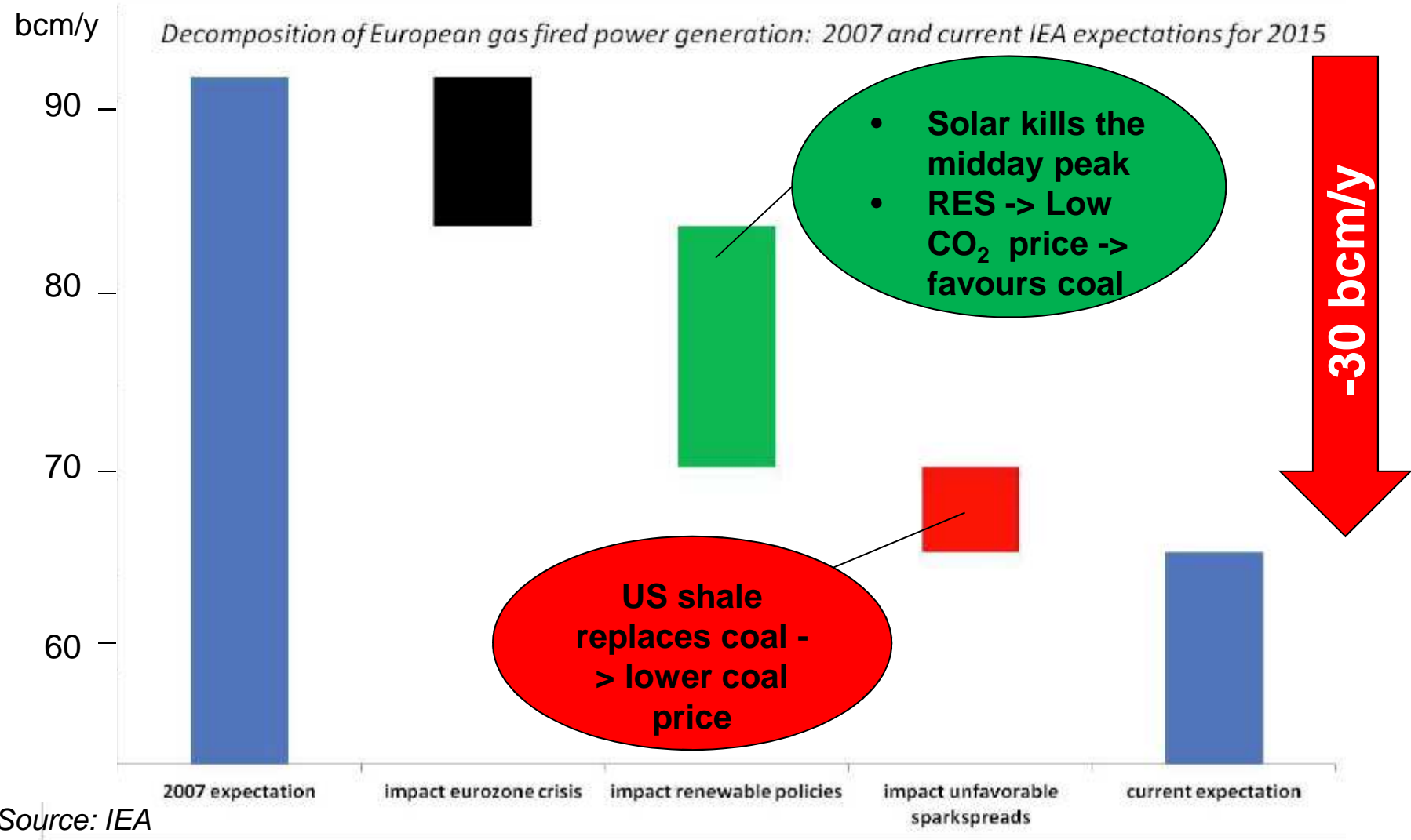
## Structure of EU gas demand

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- EU gas consumption by households(↑), commercial entities and industry(↓), currently representing 74% of total consumption, will remain about flat (according to ENTSO-G)
- EU gas consumption in power generation (26% of current total consumption) is a source of uncertainty
- EU gas consumption in transport (<1%) will not pick up in the next decade



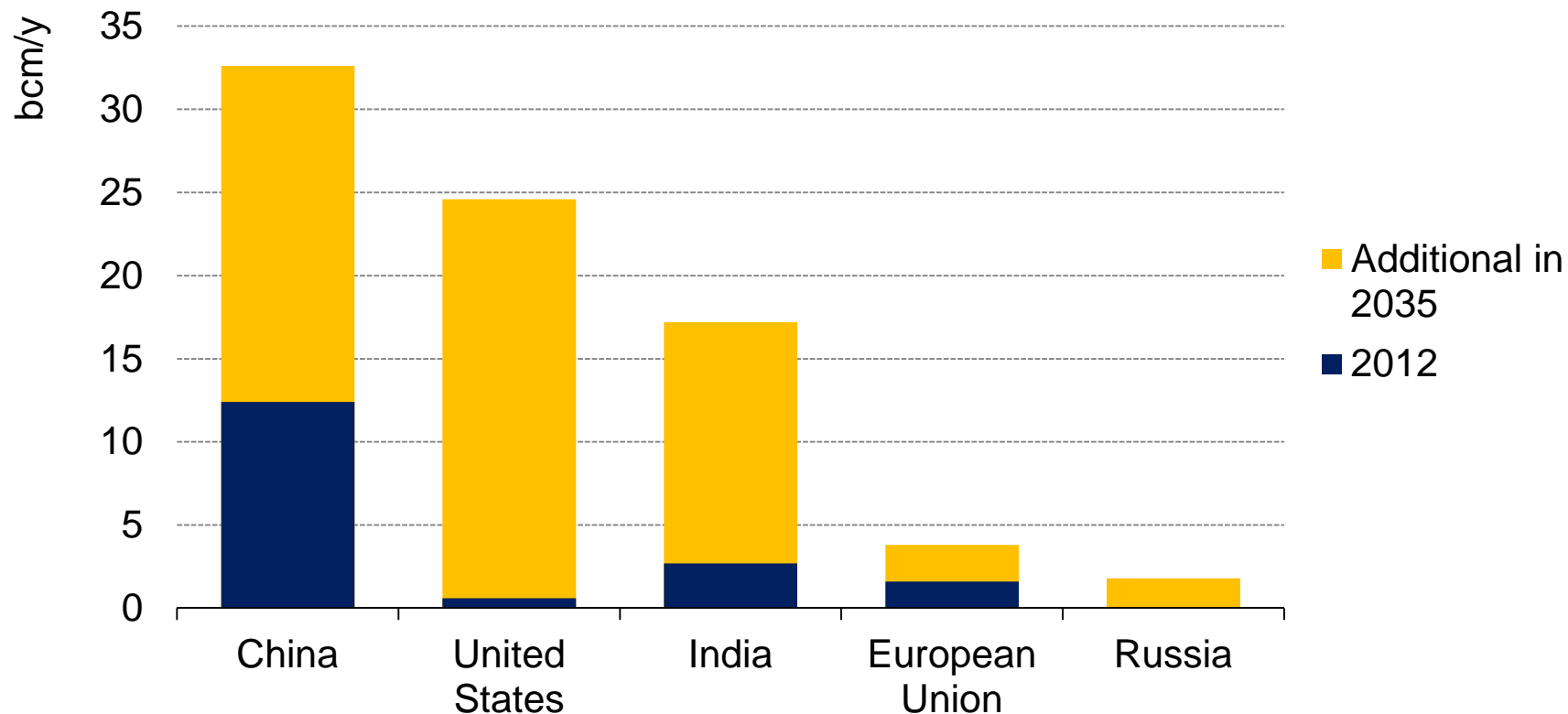
# EU gas consumption in power generation declines





# EU gas consumption in transport of limited dynamic

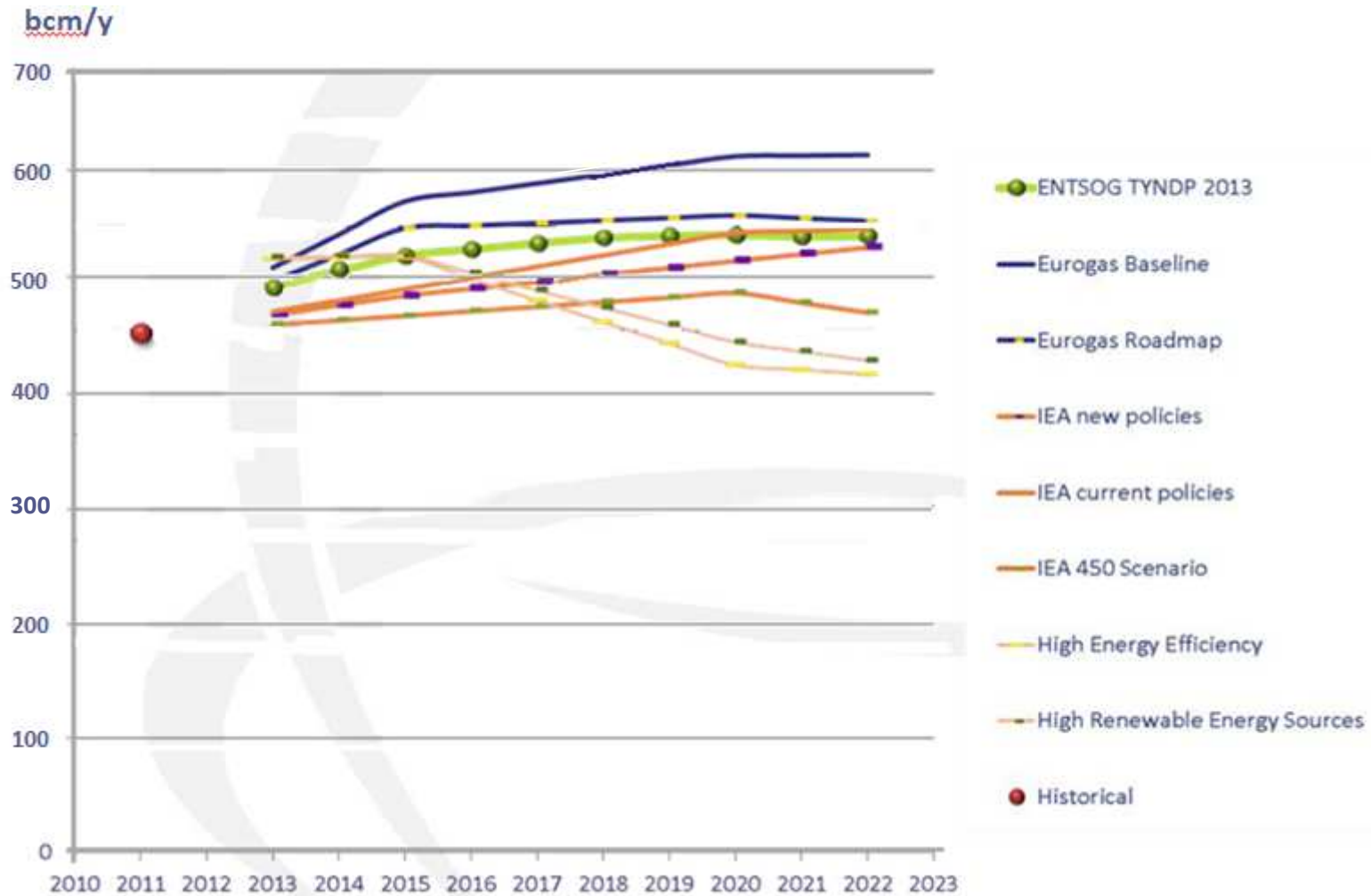
## Natural gas demand for road transport by selected regions in the New Policies Scenario



Source: WEO 2013 (p.519)



## Demand evolution is uncertain



Source: ENTSO-G



## EU gas demand scenarios

### EU natural gas demand forecast by IEA

	2030
Reference (New policies scenario)	532 bcm
Ambitious climate policy (450 ppm)	435 bcm
Current policies	578 bcm

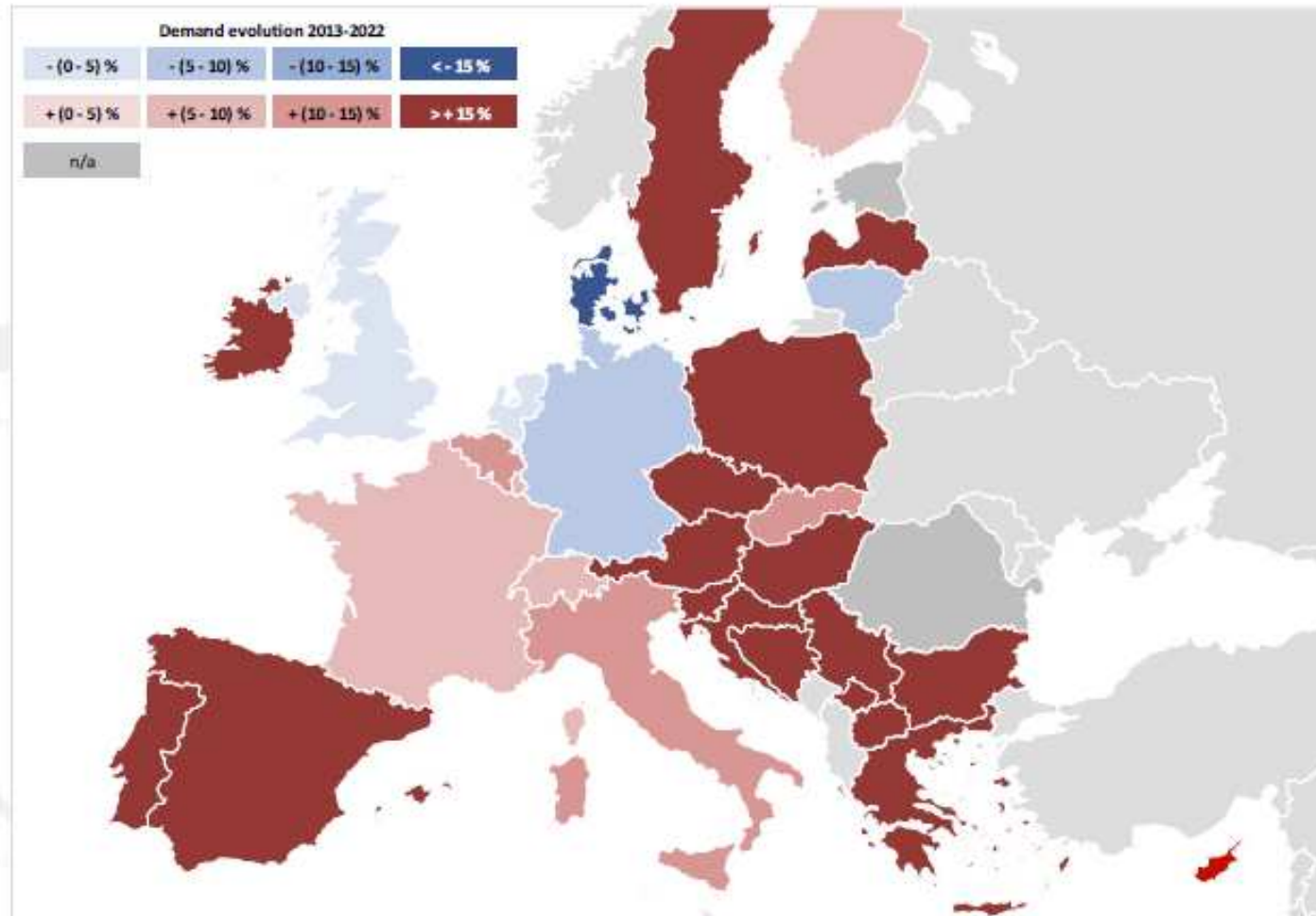
*Source: IEA WEO 2013, total primary gas demand*

- On aggregate: EU gas demand is expected to moderately increase
- Highest uncertainty comes from gas for power production [28-93 bcm]
- Some uncertainty on economic development and climate policy





## Regional demand pattern: some increase in the East, and recovery in crisis countries



Source: ENTSO-G



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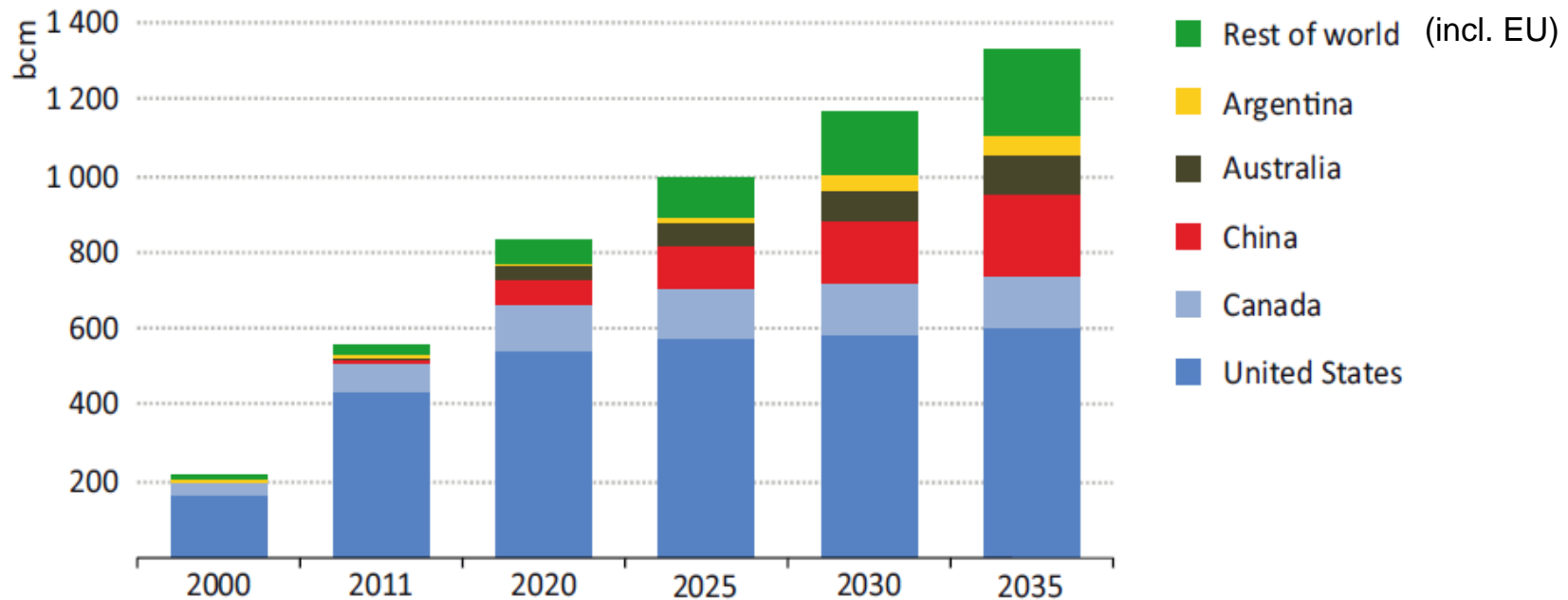
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# No shale gas revolution in the EU

**Figure 3.7** ▶ Unconventional gas production by selected country in the New Policies Scenario



Source: WEO 2013 (p. 120)

Shale production	2035
Poland	8 bcm
UK	3 bcm



## EU domestic gas production

### EU natural gas production forecast by IEA

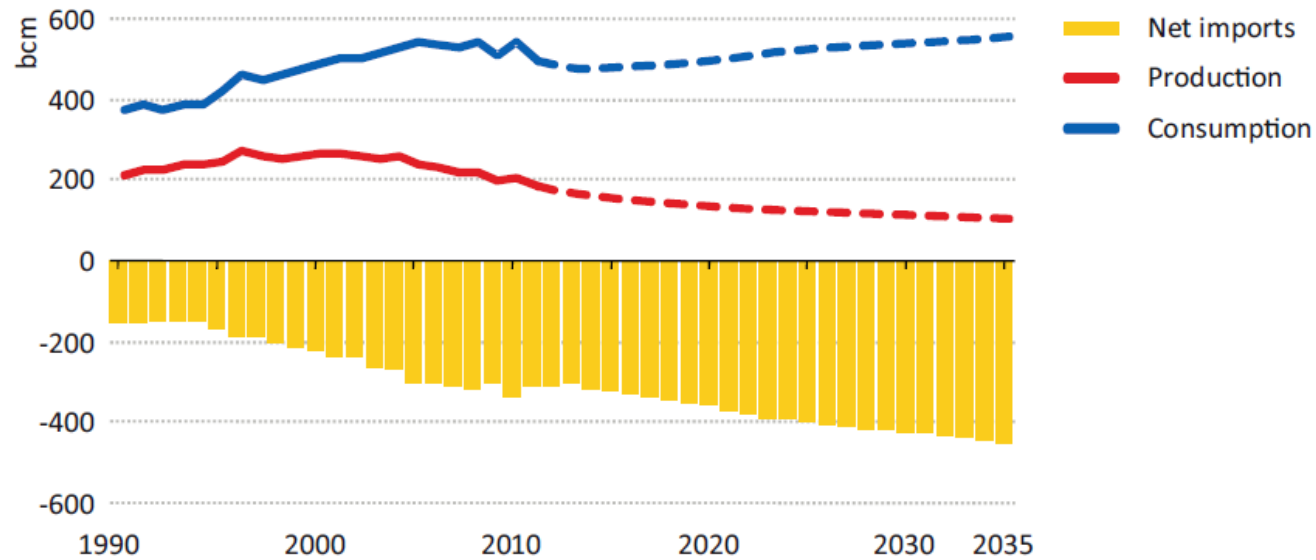
IEA WEO 2013	2011	2030
EU gas production <sup>1</sup>	185 bcm	114 bcm

<sup>1</sup>no differences in the scenarios

- Strong decline in natural gas production in the EU



# Annual import need



Source: WEO 2013 (p.125)

	2030
Reference (New policies scenario)	$532 - 114 = 418$ bcm
Ambitious climate policy (450 ppm)	$435 - 114 = 321$ bcm
Current policies	$578 - 114 = 464$ bcm



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## Import sources

Total available exports	Low 2020	Medium 2020	High 2020	IEA 2030 (production)
Algeria <sup>1</sup>	40	66	75	123
Egypt <sup>1</sup>	5	32	50	
Lybia <sup>1</sup>	-3	10	26	24
Iraq <sup>1</sup> (2030)	0	15	30	79
Levant (CY, ISR, LIB) <sup>2</sup>	0	0	20	20
Norway <sup>2</sup>	85	100	115	115
Russia, Caspian, Central Asia <sup>3</sup>		188 <sup>3</sup>		917

Sources:

<sup>1</sup> MottMcDonald 2010 *Supplying the EU Natural Gas Market*

<sup>2</sup> Own assessment [possible production consumed in the region]

<sup>3</sup> Sberbank Investment Research, exports to non-FSU



## Import corridors

European import capacities	Low 2020	Medium 2020	High 2020
Through Turkey <sup>1</sup>	0	10	20
LNG <sup>2</sup>	384	410	438
Norway <sup>3</sup>	130	153	165
North Africa <sup>4</sup>	61	71	80
From/through Russia <sup>5</sup>	230	293	348

In the high demand scenario (464 bcm/y), EU imports from Russia might represent between 0% and 75% of EU total imports.

<sup>1</sup>TAP

<sup>2</sup> EU import capacity according to naturalgaseurope

<sup>3</sup> Proedrou (2012, p.): current 130 bcm, Europipe III 23 bcm, plus another 12 bcm

<sup>4</sup> current capacity 61 bcm, Galsi 10 bcm

<sup>5</sup> current 230 bcm + Southstream 63 bcm + Nord Stream 3&4 55 bcm

*Filippos Proedrou (2012) EU Energy Security in the Gas Sector: Evolving Dynamics, Policy Dilemmas and Prospects, Ashgate.*





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## Implications on Ukraine gas transit until 2030

	EU net imports, IEA scenarios (bcm)	Min with current system	Max transit	Min with NSt3&4 & SSt <sup>1</sup>	Min with SSt <sup>2</sup>
<b>Less from Eurasia (25%)</b>	Ambitious climate (321)	8	80	0	0
	Reference (418)	33	105	0	0
	Current policies (464)	44	116	0	0
<b>Current shares (33%)</b>	Ambitious climate (321)	34	106	0	0
	Reference (418)	66	138	0	3
	Current policies (464)	81	140	0	18
<b>More from Eurasia (40%)</b>	Ambitious climate (321)	56	128	0	0
	Reference (418)	95	140	0	32
	Current policies (464)	114	140	0	51

<sup>1</sup> 190 bcm could be rerouted outside Ukraine when South Stream and Nord Stream 3&4 are built

<sup>2</sup> 135 bcm could be rerouted outside Ukraine when South Stream is built



## Conclusions

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- Depending on the EU gas consumption, import sources and transit corridor, gas transit through Ukraine might be between 0 and 140 bcm.
- For strategic considerations a number of scenarios is of particular importance.
- How low could volumes get at worst, if Gazprom minimises transit through Ukraine?
  - If EU embarks on aggressive climate policy (transit = 34 bcm)
  - If Gazprom builds South Stream (3 bcm)
  - If EU reduces share of Russian imports (33 bcm)
  - If Gazprom does not built alternative pipelines (66 bcm)



# Contacts

**Dr. Georg Zachmann**

[zachmann@berlin-economics.com](mailto:zachmann@berlin-economics.com)

**Dr. Ricardo Giucci**

[giucci@berlin-economics.com](mailto:giucci@berlin-economics.com)

German Advisory Group

c/o BE Berlin Economics GmbH

Schillerstr. 59, D-10627 Berlin

Tel: +49 30 / 20 61 34 64 0

Fax: +49 30 / 20 61 34 64 9

E-mail: [info@beratergruppe-ukraine.de](mailto:info@beratergruppe-ukraine.de)

[www.beratergruppe-ukraine.de](http://www.beratergruppe-ukraine.de)



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