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

Georg Zachmann, Ricardo Giucci

German Advisory Group Ukraine

Berlin/Kyiv, February 2014

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Structure

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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Structure

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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

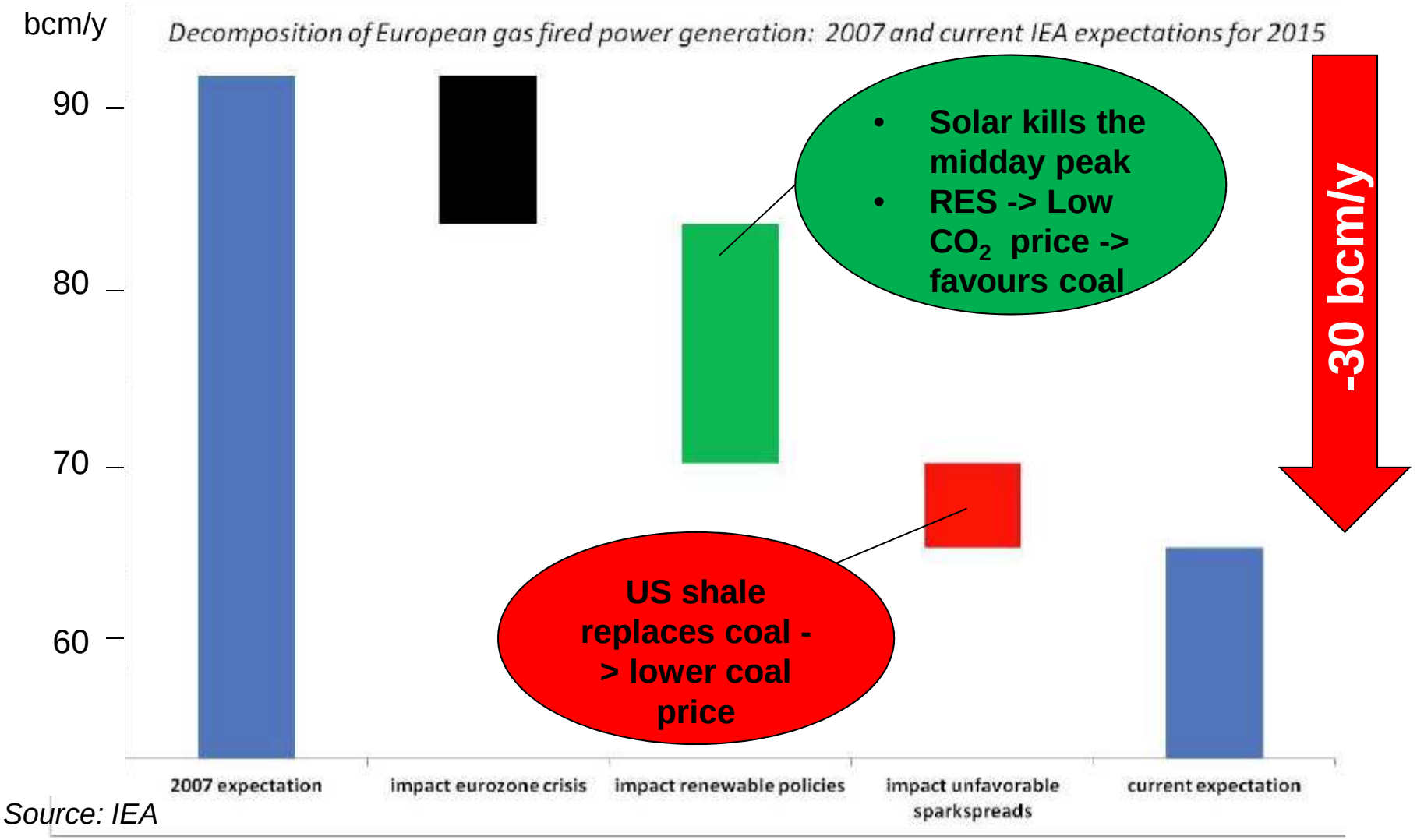
Structure of EU gas demand

- 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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

EU gas consumption in power generation declines



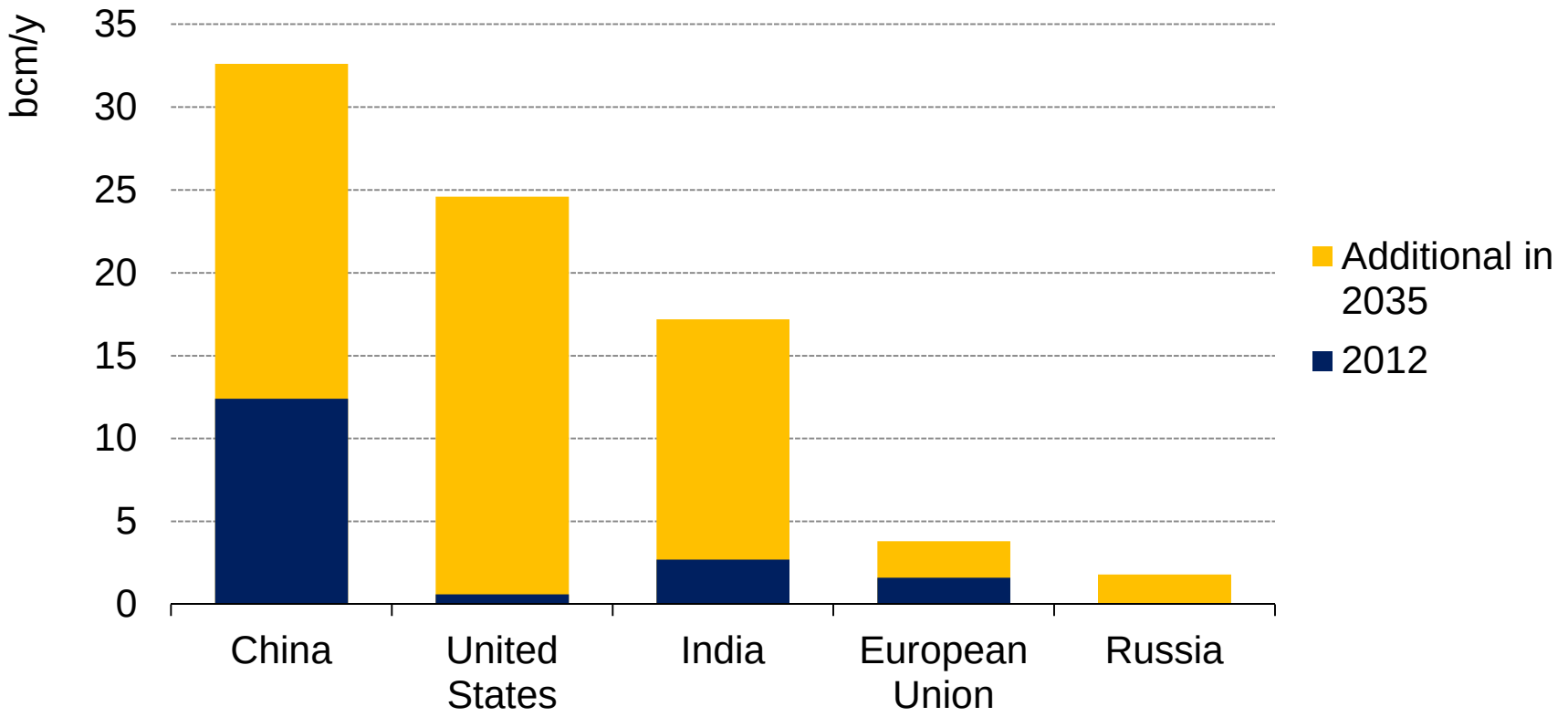
Source: IEA

© Institute for Economic Research and Policy Consulting

© German Advisory Group

EU gas consumption in transport of limited dynamic

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

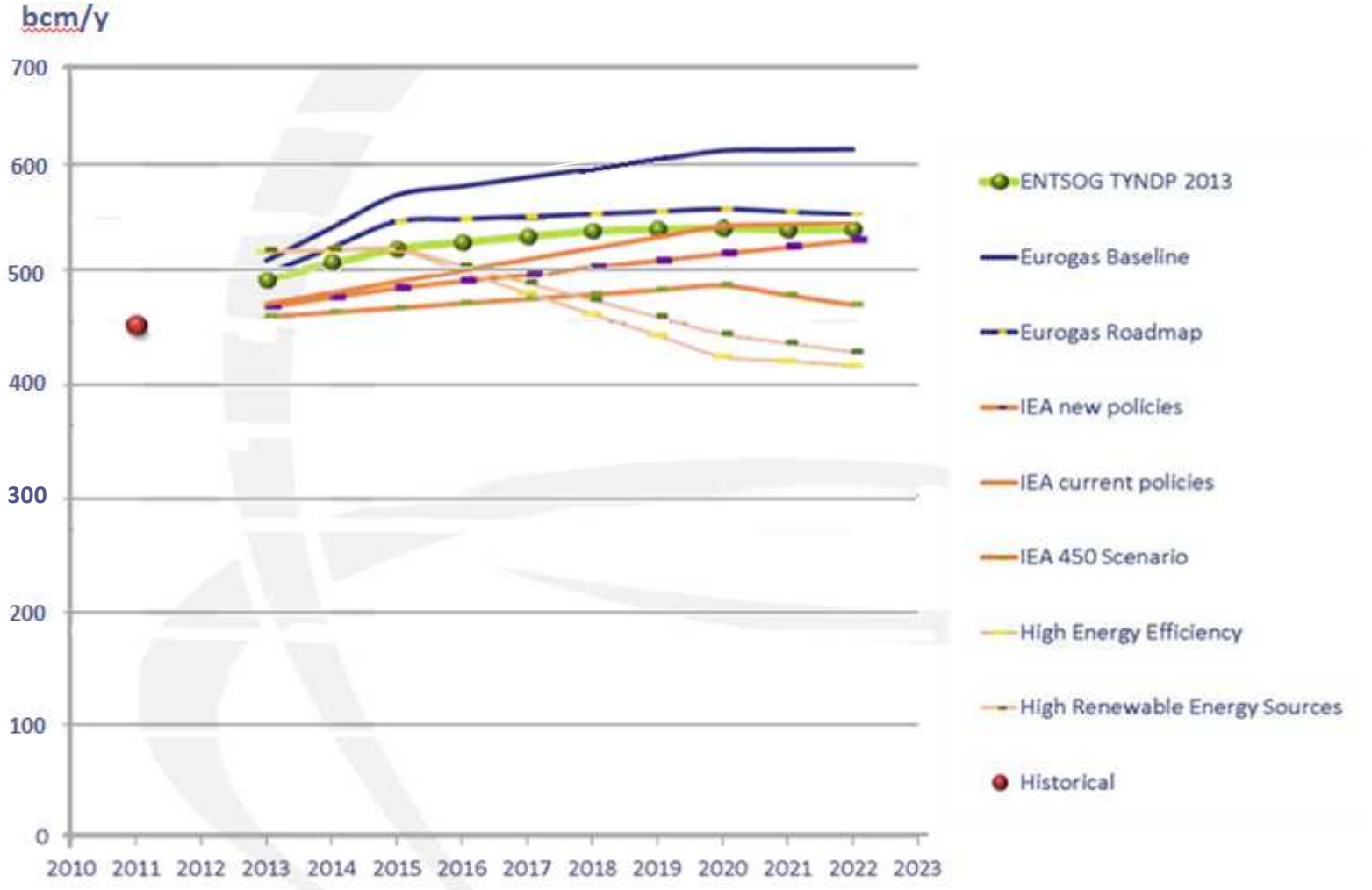


Source: WEO 2013 (p.519)

© Institute for Economic Research and Policy Consulting

© German Advisory Group

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

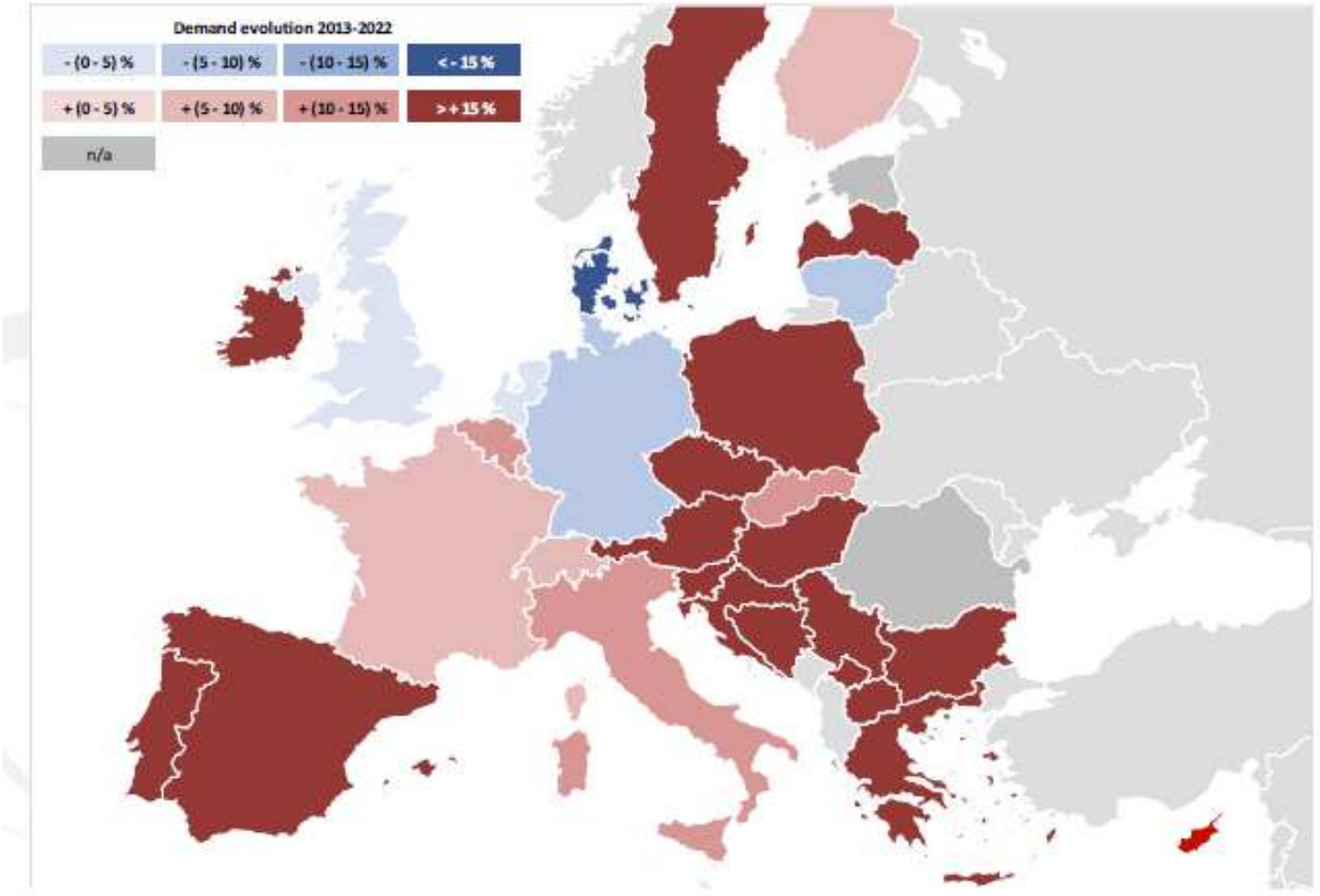
Source: IEA WEO 2013, total primary gas demand

- 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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

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



Source: ENTSO-G

Structure

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

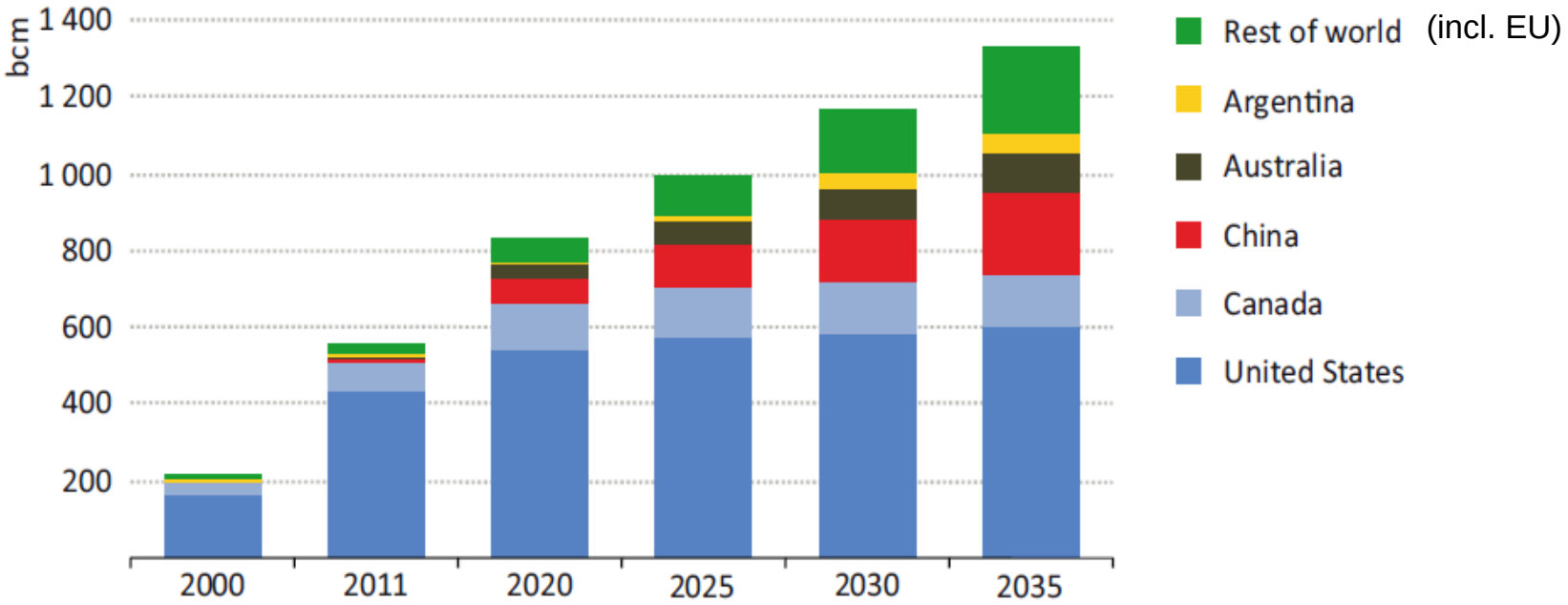
Contact

© Institute for Economic Research and Policy Consulting

© German Advisory Group

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

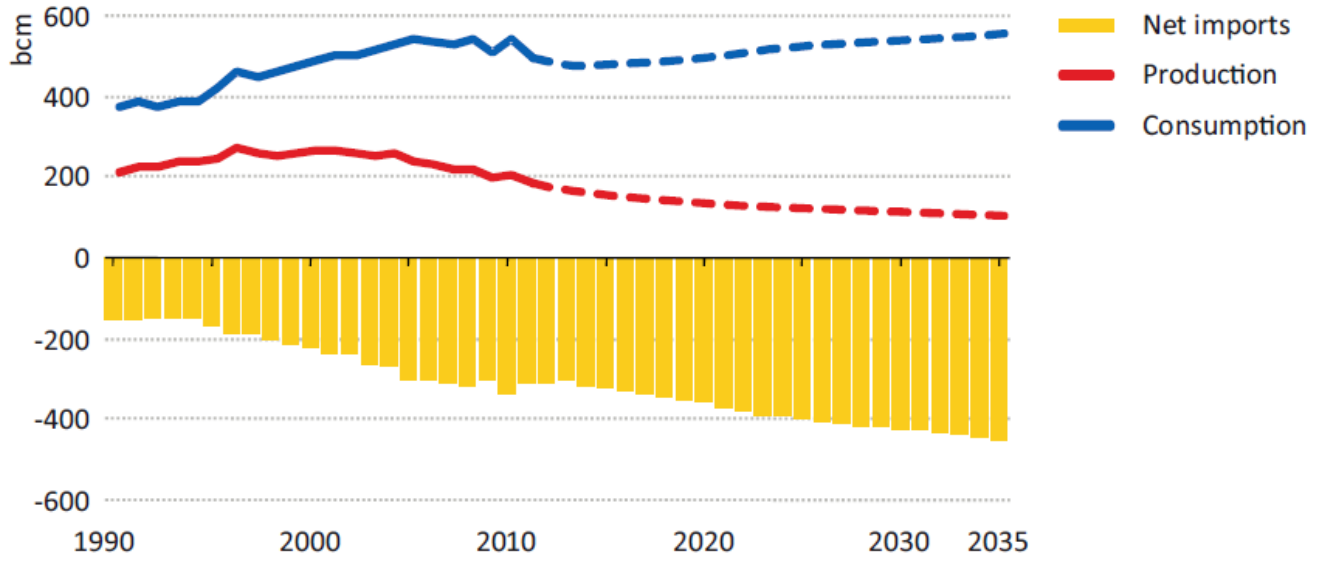
EU natural gas production forecast by IEA

IEA WEO 2013	2011	2030
EU gas production[1]	185 bcm	114 bcm

[1]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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Structure

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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Import sources

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

Sources:

[1] MottMcDonald 2010 Supplying the EU Natural Gas Market

[2] Own assessment [possible production consumed in the region]

[3] Sberbank Investment Research, exports to non-FSU

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Import corridors

European import capacities	Low 2020	Medium 2020	High 2020
Through Turkey[1]	0	10	20
LNG[2]	384	410	438
Norway[3]	130	153	165
North Africa[4]	61	71	80
From/through Russia[5]	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.

[1] TAP
[2] EU import capacity according to naturalgaseurope
[3] Proedrou (2012, p.): current 130 bcm, Europipe III 23 bcm, plus another 12 bcm
[4] current capacity 61 bcm, Galsi 10 bcm
[5] 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.

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Structure

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

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Implications on Ukraine gas transit until 2030

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

[1] *190 bcm could be rerouted outside Ukraine when South Stream and Nord Stream 3&4 are built*

[2] *135 bcm could be rerouted outside Ukraine when South Stream is built*

© Institute for Economic Research and Policy Consulting

© German Advisory Group

Conclusions

- 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)

© Institute for Economic Research and Policy Consulting

© German Advisory Group

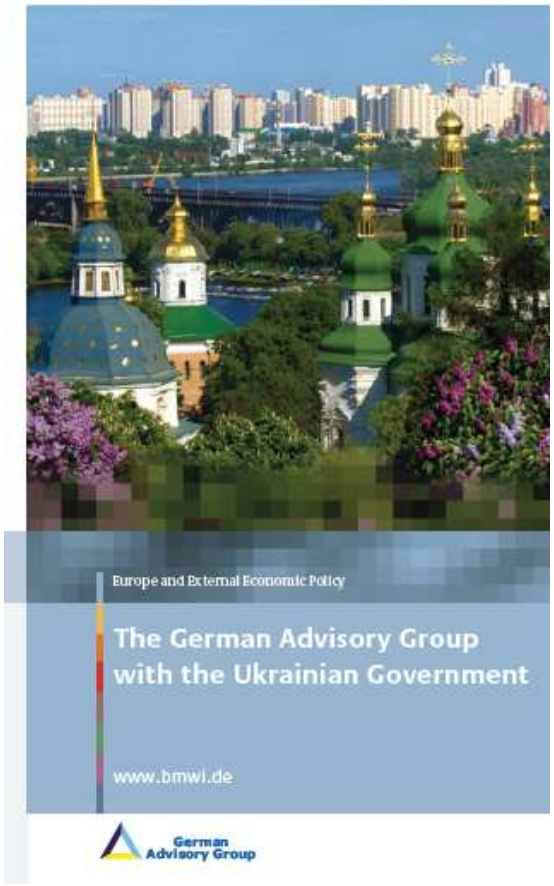
Contacts

Dr. Georg Zachmann
zachmann@berlin-economics.com

Dr. Ricardo Giucci
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
www.beratergruppe-ukraine.de

Federal Ministry of Economics and Technology



© Institute for Economic Research and Policy Consulting

© German Advisory Group