Development of European Gas Market – Russian Viewpoint

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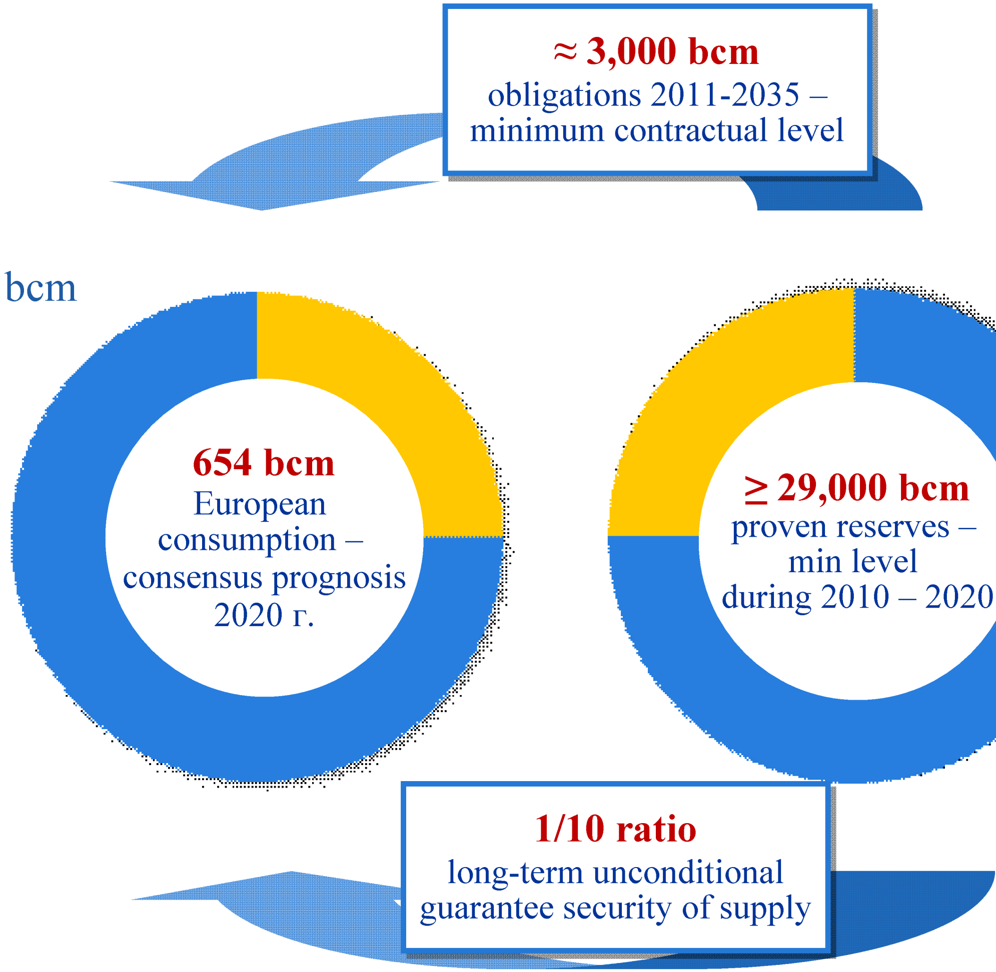
Gas Reserves vs. Contractual Obligations: long-term aspect

System of Strategic Target Indices

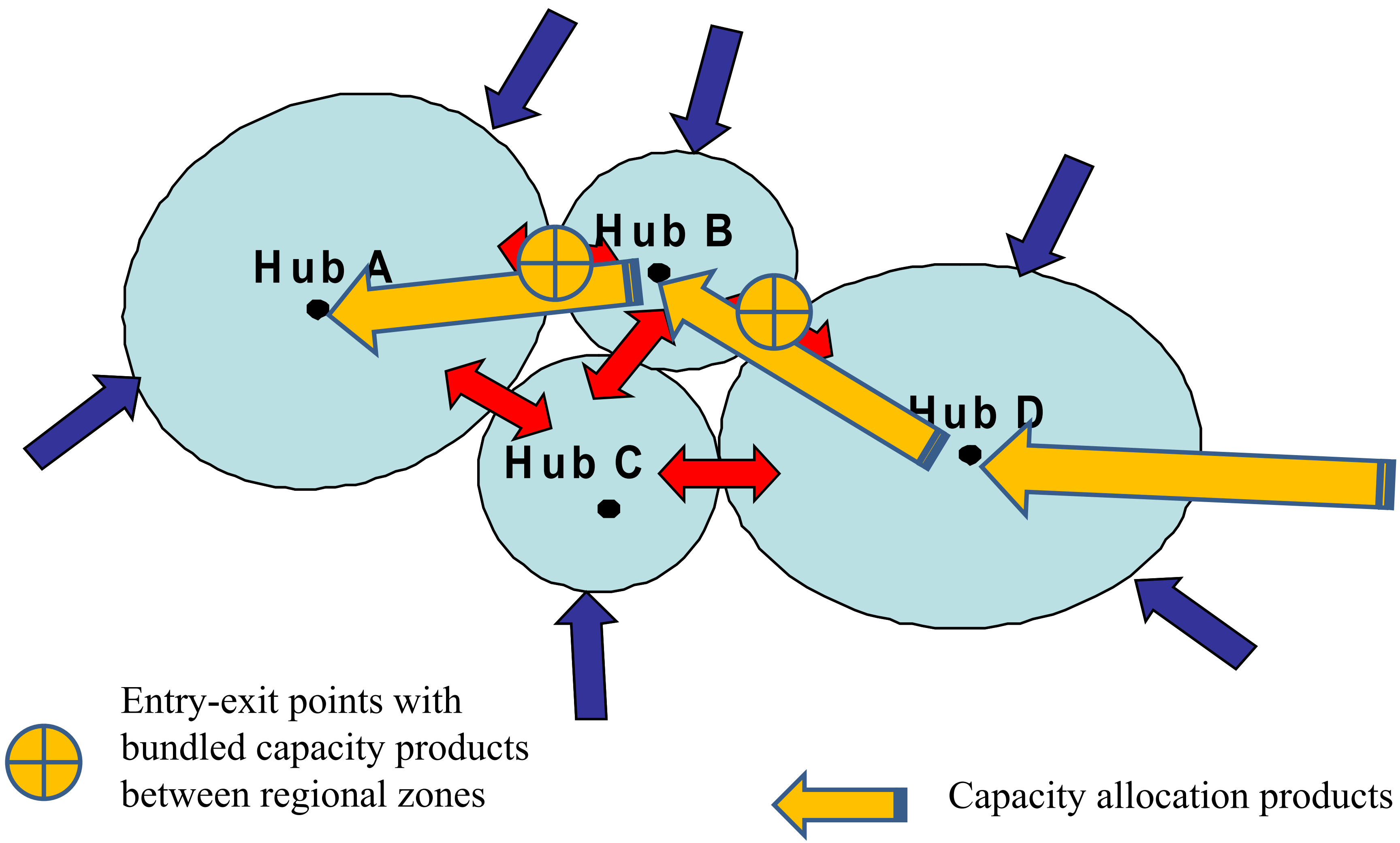
1. Integral & universal indices as core of Gazprom corporate planning
2. Long-term targets – 10-year time span
3. Approved by Board of Directors (last re-approval in December 2009)

…few figures from the document:

4. Proven reserves – not less than 29,000 bcm
5. Production within the UGS – not less then 550 bcm/a
6. Coefficient of gas reserves reproduction – above 100%



Future Organization of Common Internal EU Gas Market According to 3rd EU Energy Package



Source: 17th Madrid Forum (Jan'2010), Energy Regulators of EU member-states

Third Country Marginal Supply Costs Assumptions

Table 1: Supply Cost Assumptions

Supply Source	Supply Cost at EU border [EUR / MWh]
Pipeline supplies:	
Norway*	6.24
Russia	8.73
Azerbajian**	8.26
Iran**	8.06
Algeria	7.13
Lybia	7.51
LNG (cif to Europe):	
Global Marginal Supplier	19.78
LNG to Europe	6.21

*Supply Cost at field; **Supply Cost at Turkish border.

Source: Own calculations based on Lochner and Bothe (2009).

Does the EWI model for 2019 with Europe as a single market provide for correct signals to line up third country gas ranking?

Assumption I:

Norwegian gas – supply cost at field

Question I:

Will the cost in Poland and Italy be the same as at field in North Sea?

Assumption II:

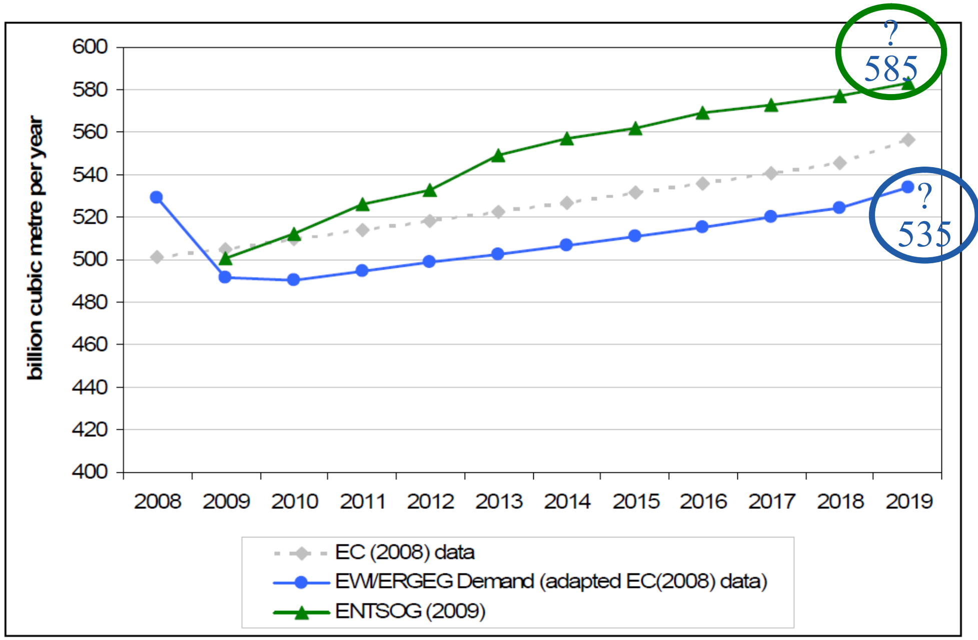
Azeri and Iran gas is relatively expensive at the East boarder of Turkey

Question II:

Will such gas be really competitive in the main consumption regions of Continental Europe?

Supply/ Demand Scenarios – Results Comparison: #1

Figure 4: Demand Scenarios



Source: Own calculation based on ENTSOG (2009), EC (2008) / IEA (2009) and EWI assumptions.

Appendices

Table 10: Demand Scenario Assumptions for 2019

Country	EWI/ERGEG Demand [bcm / year]	ENTSOG Demand* [bcm / year]	ENTSOG Peak Day Demand* [mcm / day]
Austria	9.6	13.0	86
Belgium	17.1	26.0	182
Bosnia and Herzegovina	0.5	0.6	2
Bulgaria	3.4	3.0	15
Croatia	4.3	6.0	37
Czech Republic	9.1	13.0	71
Denmark	2.8	3.0	26
Estonia	0.7	[illegible]	[illegible]
Slovenia	1.2	2.0	9
Spain	36.6	56.0	294
Sweden	1.6	2.0	9
Switzerland	3.3	3.3	23
United Kingdom	98.9	90.0	483
Turkey	50.2	50.2	199
Total	547	604	3790

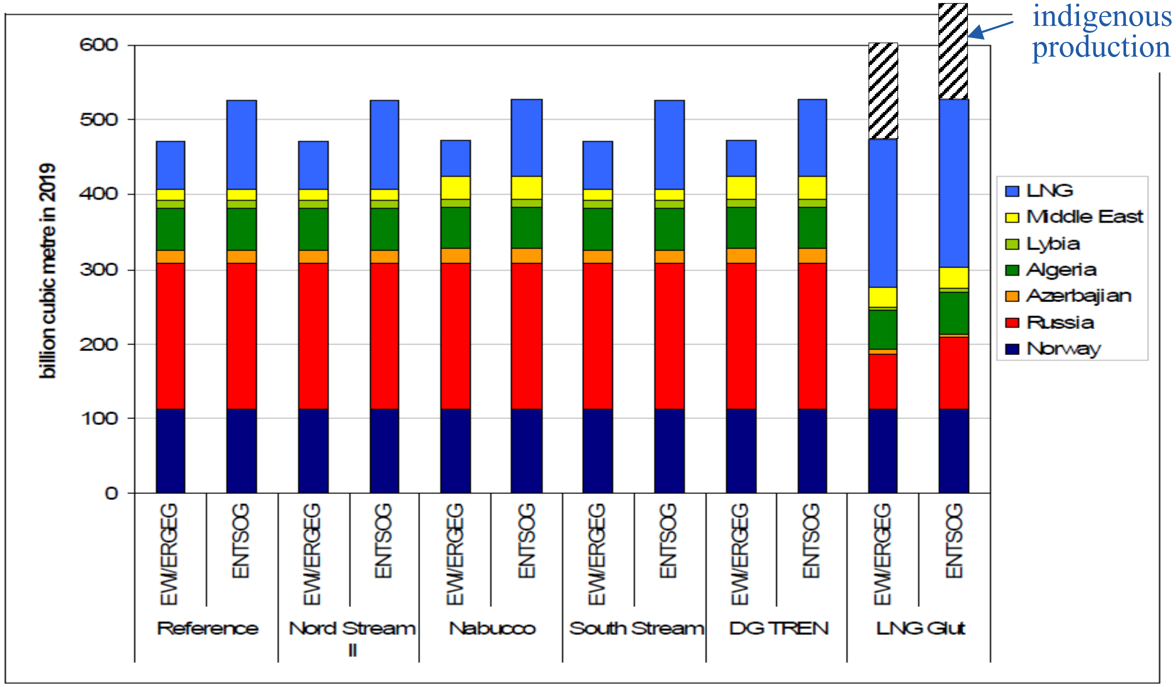
* EWI Assumptions for those countries where no ENTSOG data available:
Turkish Demand is based on WoodMackenzie (2008).
Data for the Balkan region is based on IEA (2009) with the trend being carried forward.

Source: EWI, ENTSOG (2009).

What figures should be used as
the true result of modeling
of demand scenarios for 2019?

Supply/ Demand Scenarios – Results Comparison: #2

Figure 11: European Imports* 2019 – All Scenarios



* Pipeline and LNG imports. LNG imports in bright blue colour. Potential countries exporting LNG to Europe in 2019 could be Qatar, Algeria, Libya, Egypt, Nigeria, Norway, Russia, Trinidad and Tobago and Yemen. Europe here stands for EU-27 plus Norway, Switzerland and Turkey.

Source: EWI.

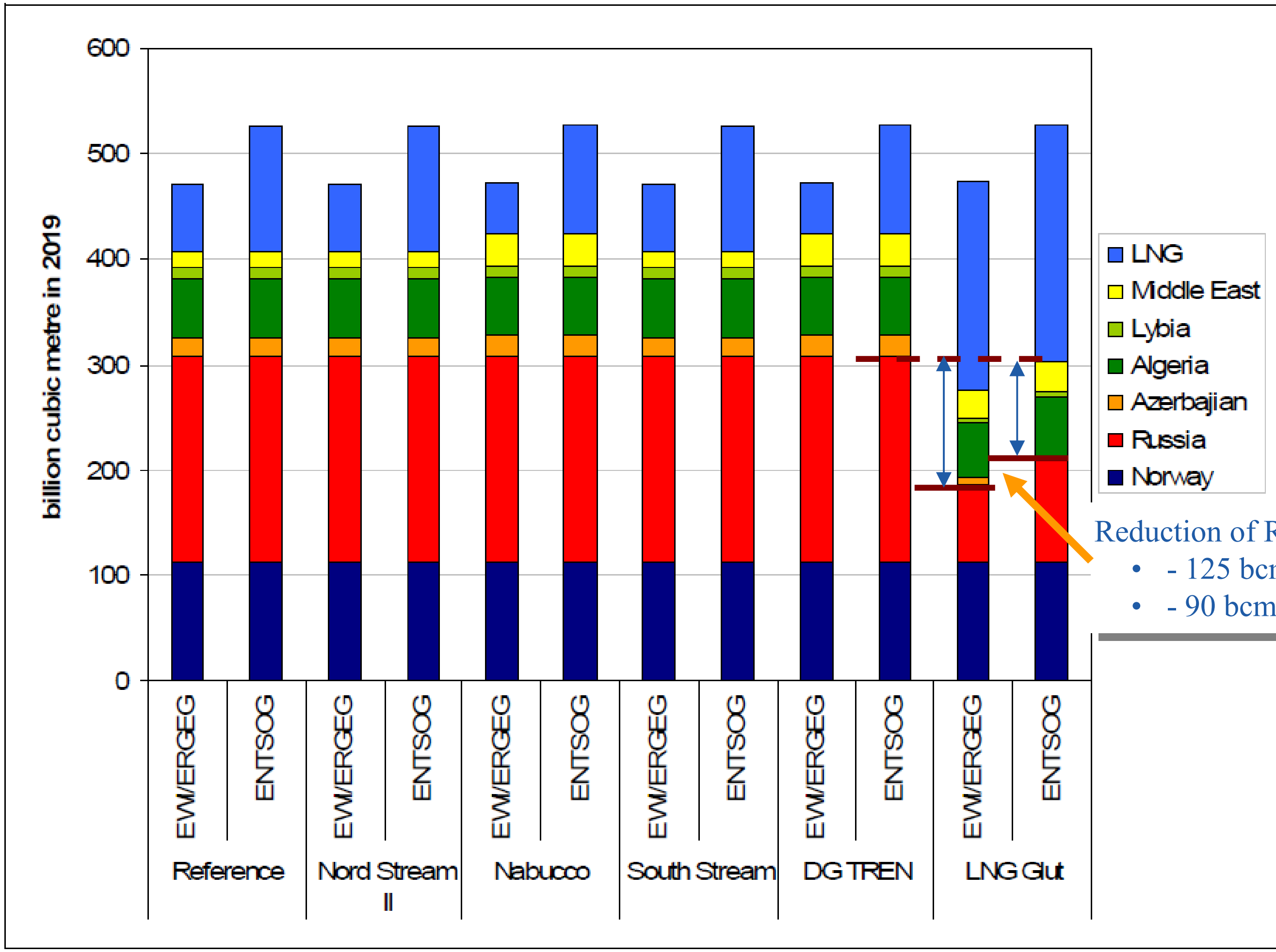
There is no apparent explanation of the disparity between aggregated supply/ demand data country by country and the overall balance for Europe

Results, bcm	**EWI/ ERGEG Demand (adapted EC(2008) data)**	**ENTSOG (2009)**
Demand Scenario (fig. 4, p. 31)*	535	585
Demand Scenario (table 10, p. 121)	547	604
European import + indigenous production (fig. 11 p. 45 + fig. 3 p. 25)*	601	652

** calculations based on graphs data*

Scenario Simulation and Infrastructure Needs – Example

Figure 11: European Imports* 2019 – All Scenarios



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Source: EWI.

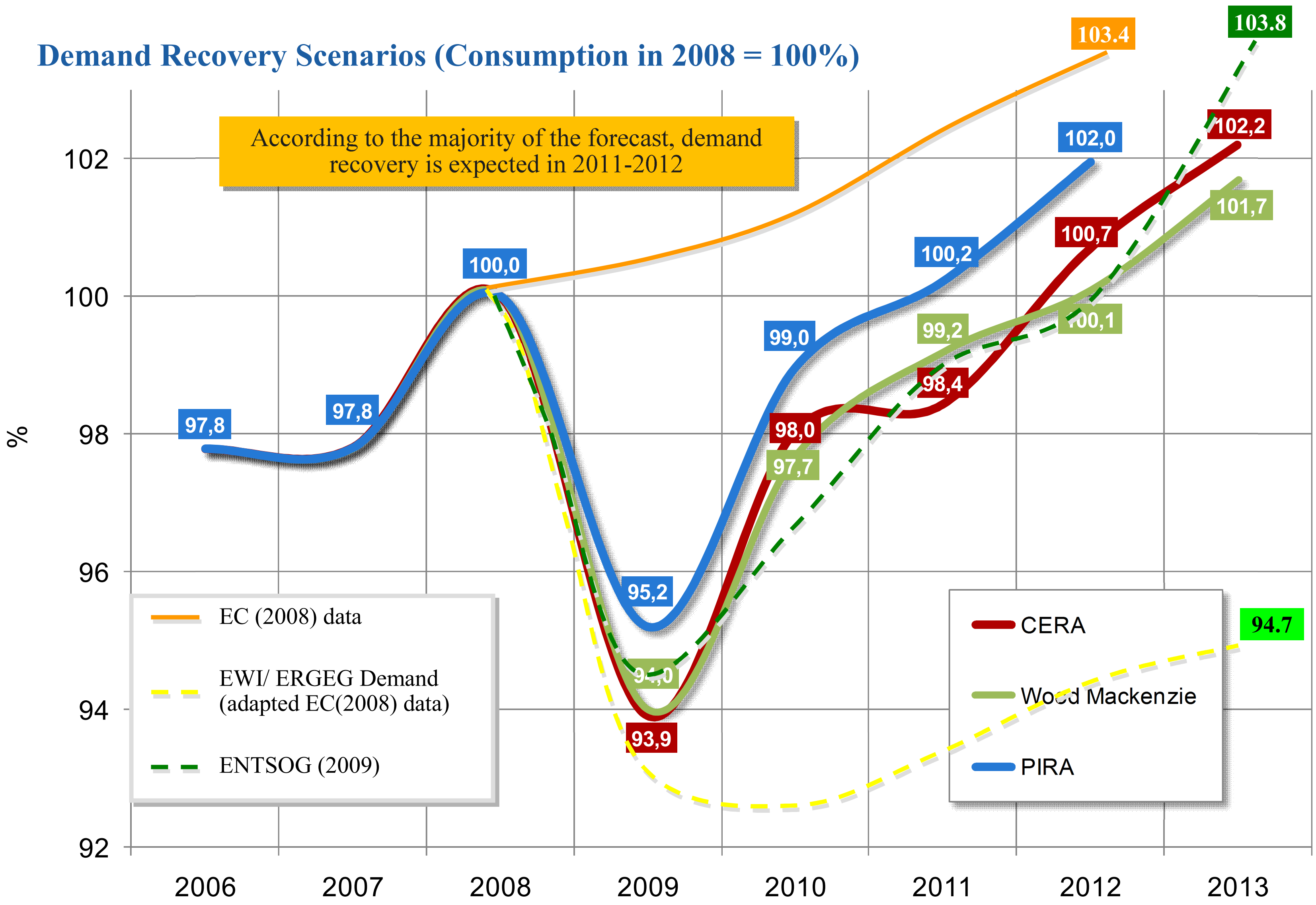
Reduction of Russian supplies:

- \- 125 bcm for EWI/ ERGEG scenario
- \- 90 bcm for ENTSOG scenario

The Russian gas reduction, according to scenario, is due to the main increment of LNG volumes to be delivered to UK, Spain, France and Netherlands. But in these markets Russian gas is either absent (Spain) or its share is relatively small and in no way equals half of total supply portfolio…

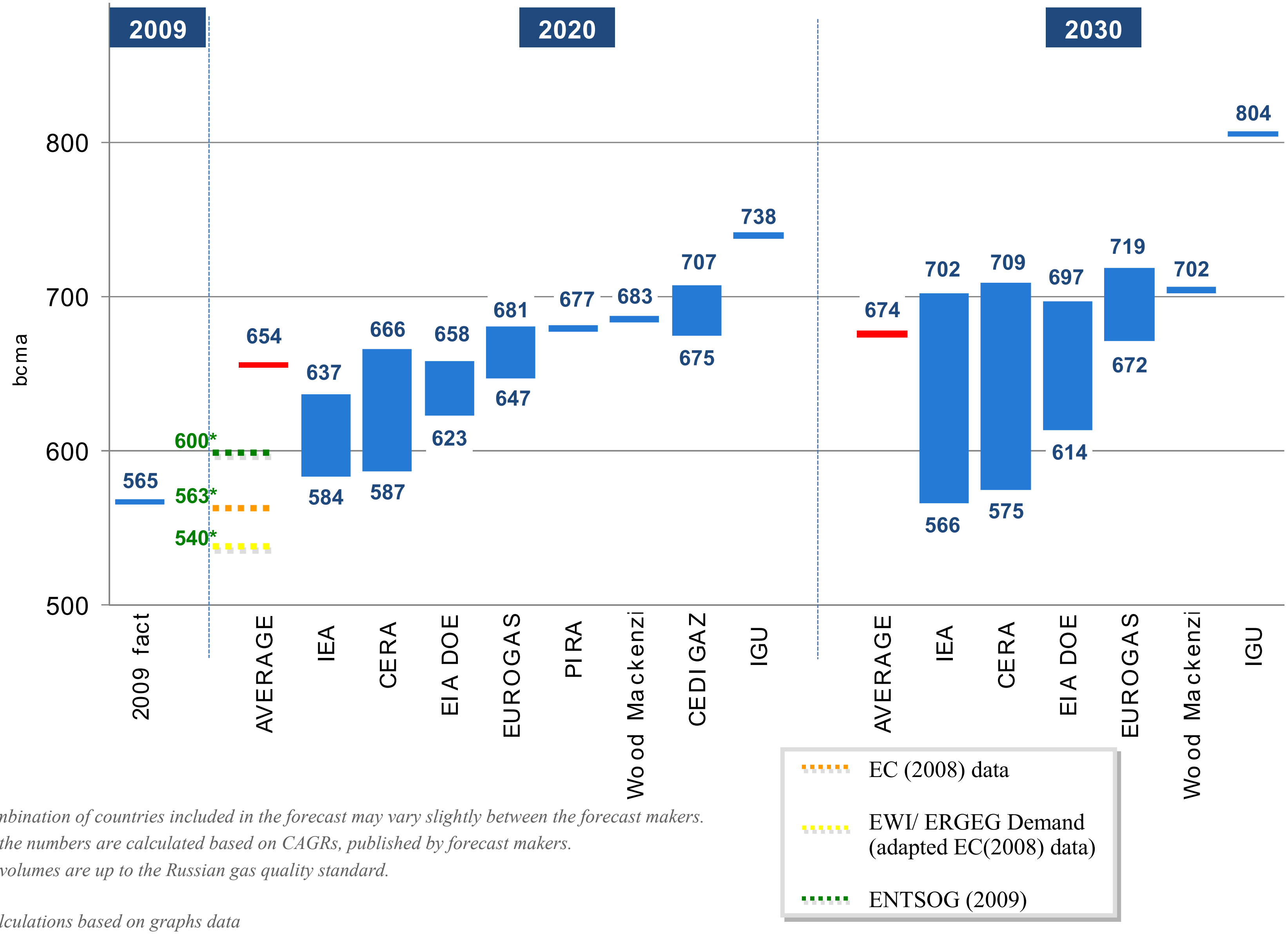
…and why Norwegian supplies were not subject to reduction?

European Gas Demand Recovery Scenarios:
study results vs. major forecasting agencies data



Gas Consumption in Europe in the Long Term:

study results vs. major forecasting agencies data



Combination of countries included in the forecast may vary slightly between the forecast makers.
All the numbers are calculated based on CAGRs, published by forecast makers.
All volumes are up to the Russian gas quality standard.

** calculations based on graphs data*

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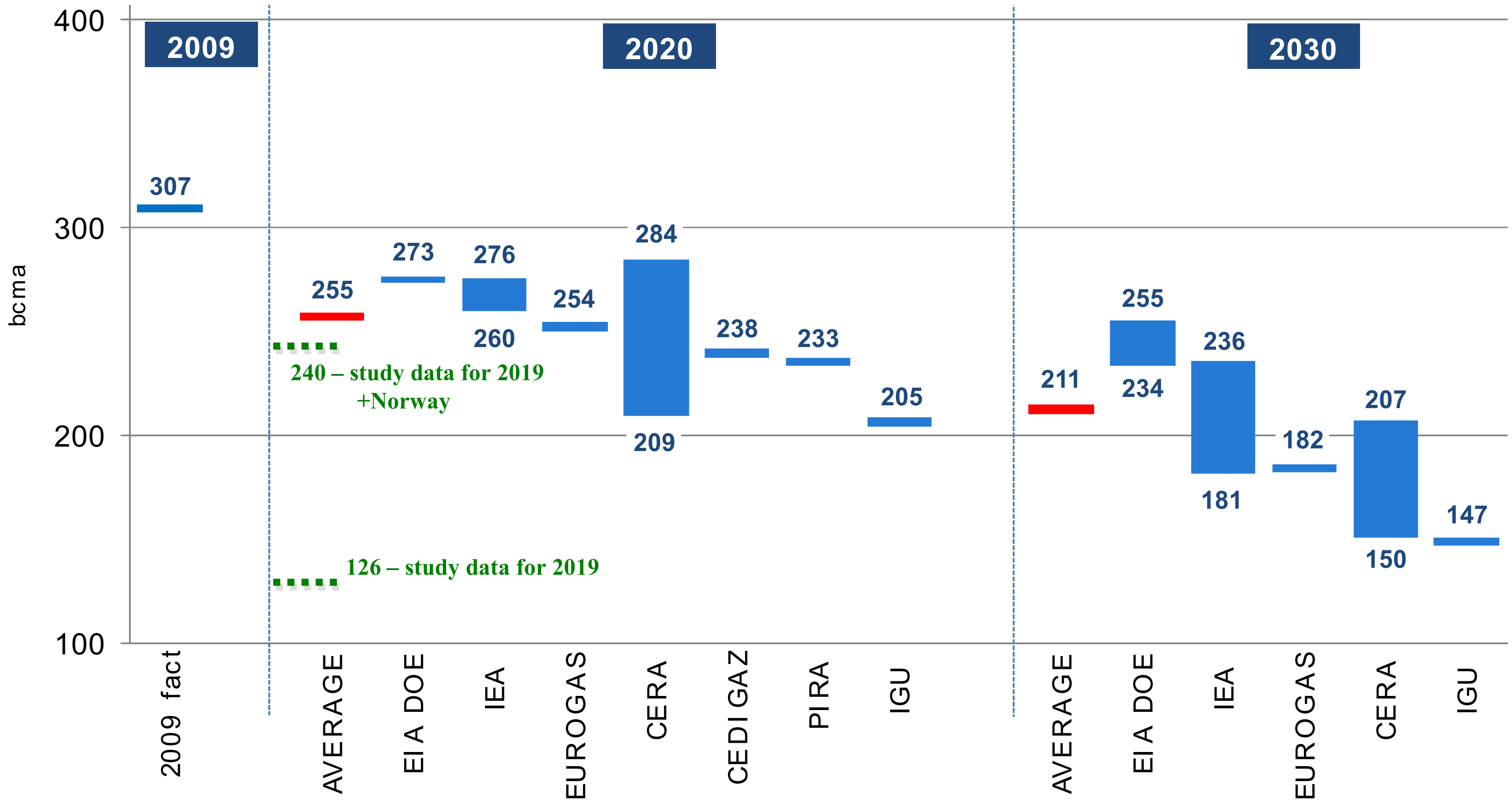

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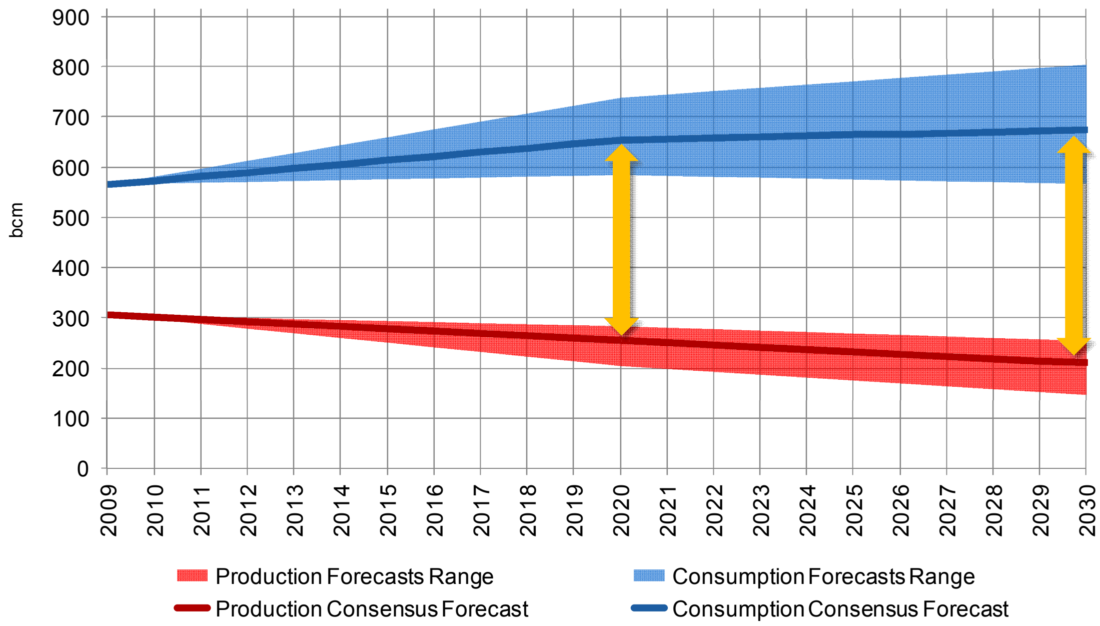
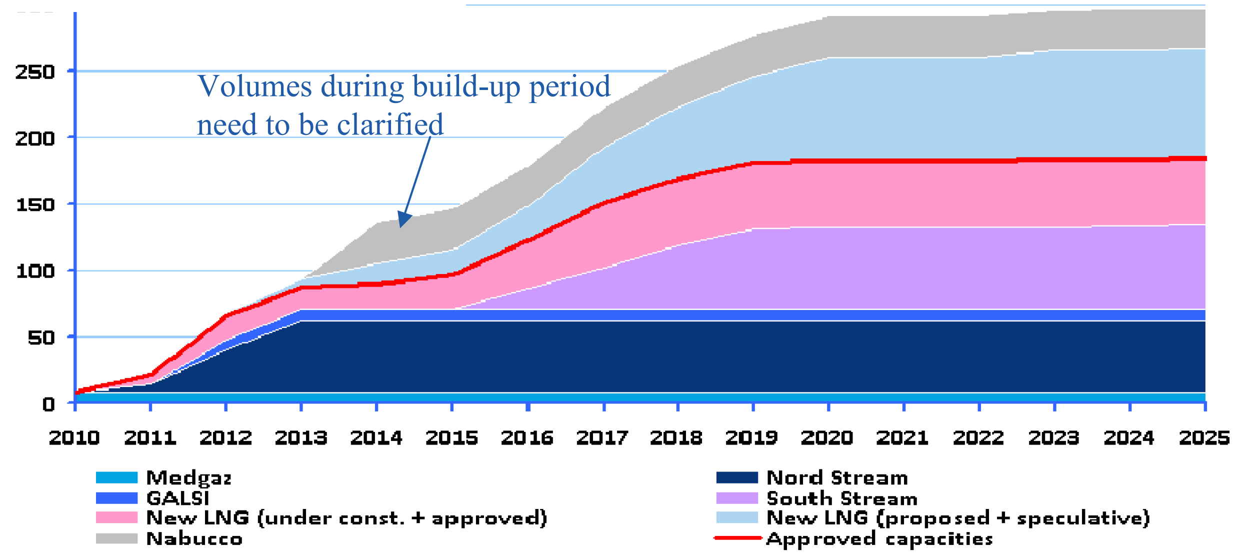
Gas Consumption and Production Gap in Europe vs. New Import Infrastructure Progects



Consumption – indigenous production gap:

400 bcm/a by 2020
465 bcm/a by 2030

In Europe there is room for gas which could be delivered via approved and proposed capacities



Thank you for your attention!