

European Gas Hubs and Security of Supply

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Aura Sabadus, Editor
Turkish Energy Hub Daily

ICIS



Questions for the Audience

- What is a natural gas hub?
- What is security of supply?



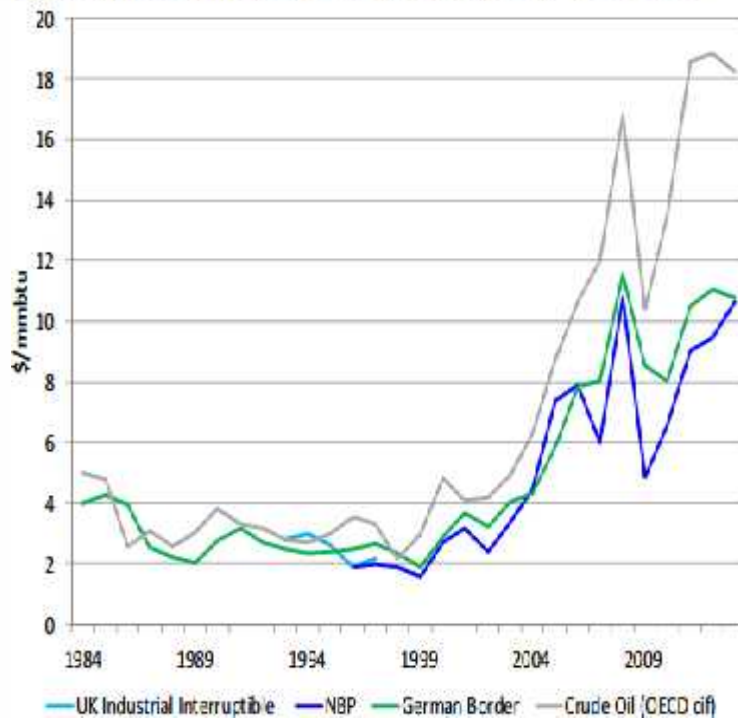
Attempted Answers

- A hub is the interface between traded markets and the transmission infrastructure of energy commodities (natural gas, electricity, oil)
- Security of supply – ‘the reliable and adequate supply of energy at reasonable prices (Bielecki, 2002:237)

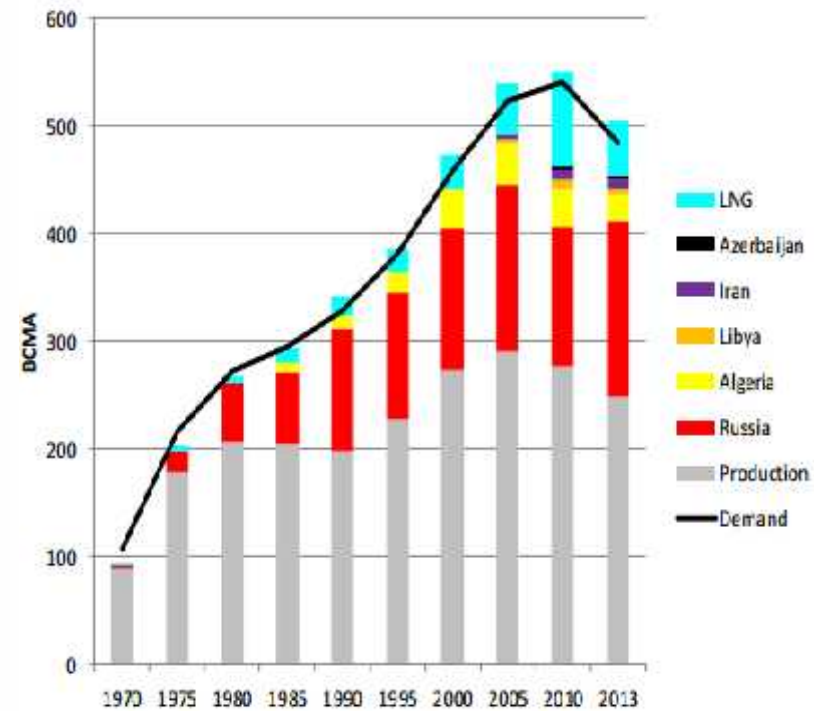


Long-term Natural Gas Supplies and Prices

British and German Wholesale Gas and Crude Oil Prices – 1984 to 2013



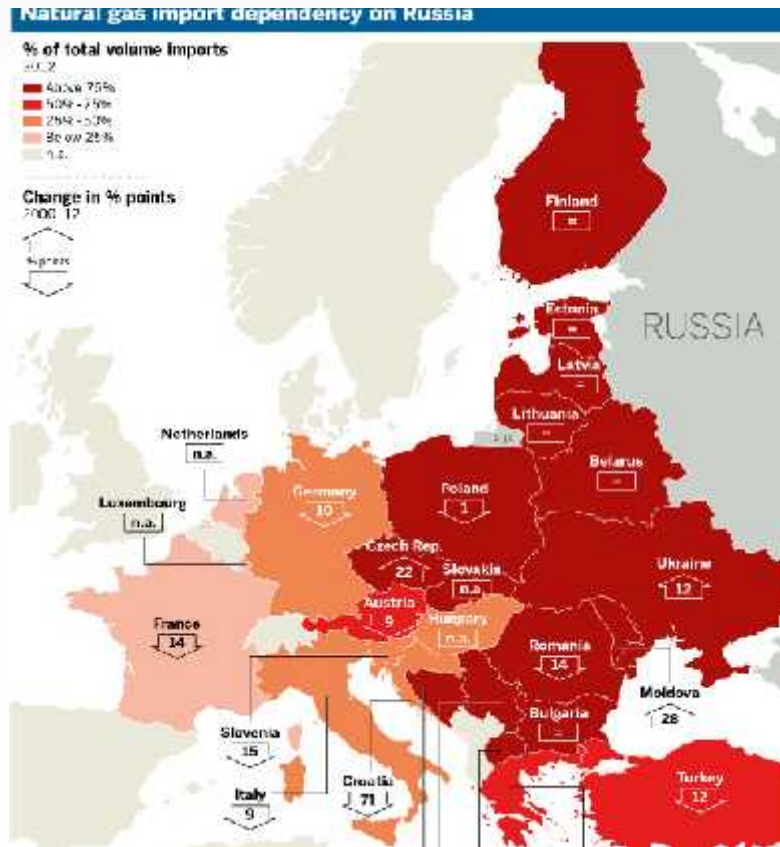
European Demand and Supply Sources: 1970 – 2013



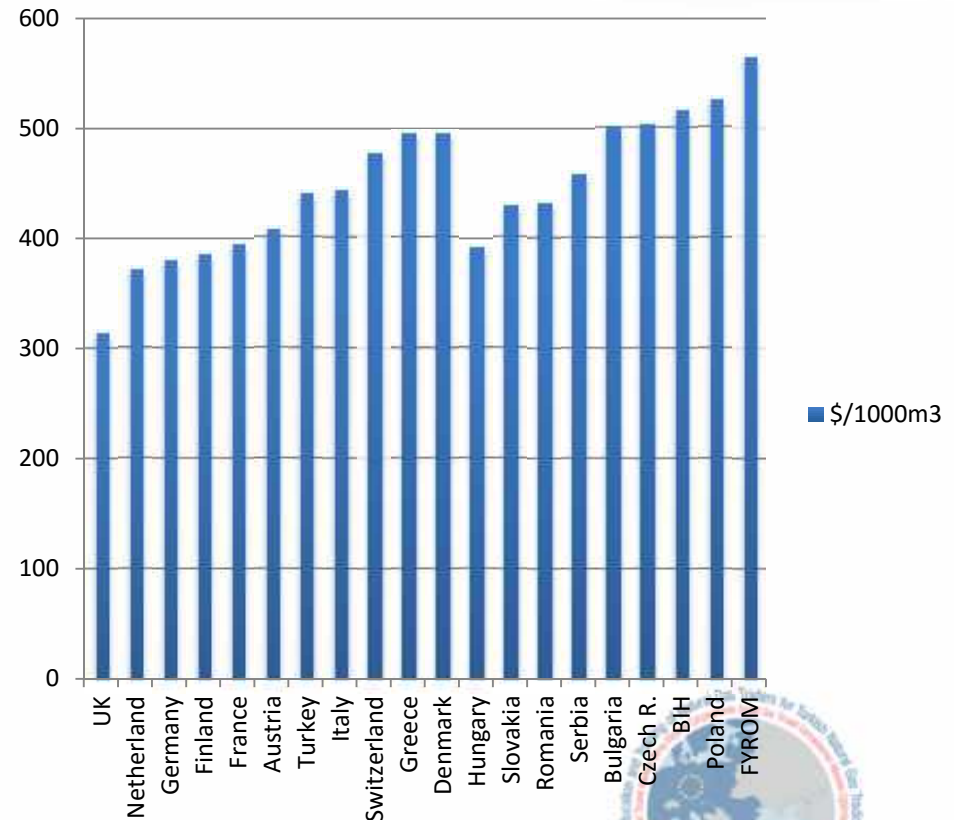
Source: Jonathan Stern, OIES, 2014 based on a compilation of BP, DECC, data



Natural Gas Supplies and Prices in EU Member States (2012)



Reported Gazprom gas prices to European consumers in first half of 2012



Source: FT, Izvestia, quoted by Vatansever, Koranyi, 2013



What Led to Change? Contract Pricing

- Increased mid and downstream competition resulting from EU enforcement of the 3rd Energy Directive;
- A sharp drop in gas demand and pressure on prices (particularly relative to oil) as coal pushed it out of the energy mix;
- The availability of reliable gas price indices as hub trade grew.



Contract Pricing: Moving Away From Oil Indexation (1)

- Original rationale behind oil indexation was based on the notion that end-users would have a choice of substituting oil products for gas if there was a price incentive to do so. This logic was robust in the 1960s, but changed dramatically in the 2000s.
- By 2004, the share of residual fuel oil in the total energy consumption of stationary sectors reached 0.1% in the Netherlands.
- Comparatively, the share of gas in the total energy consumption for the same sectors averaged 59.7% the same year (Stern, 2014)



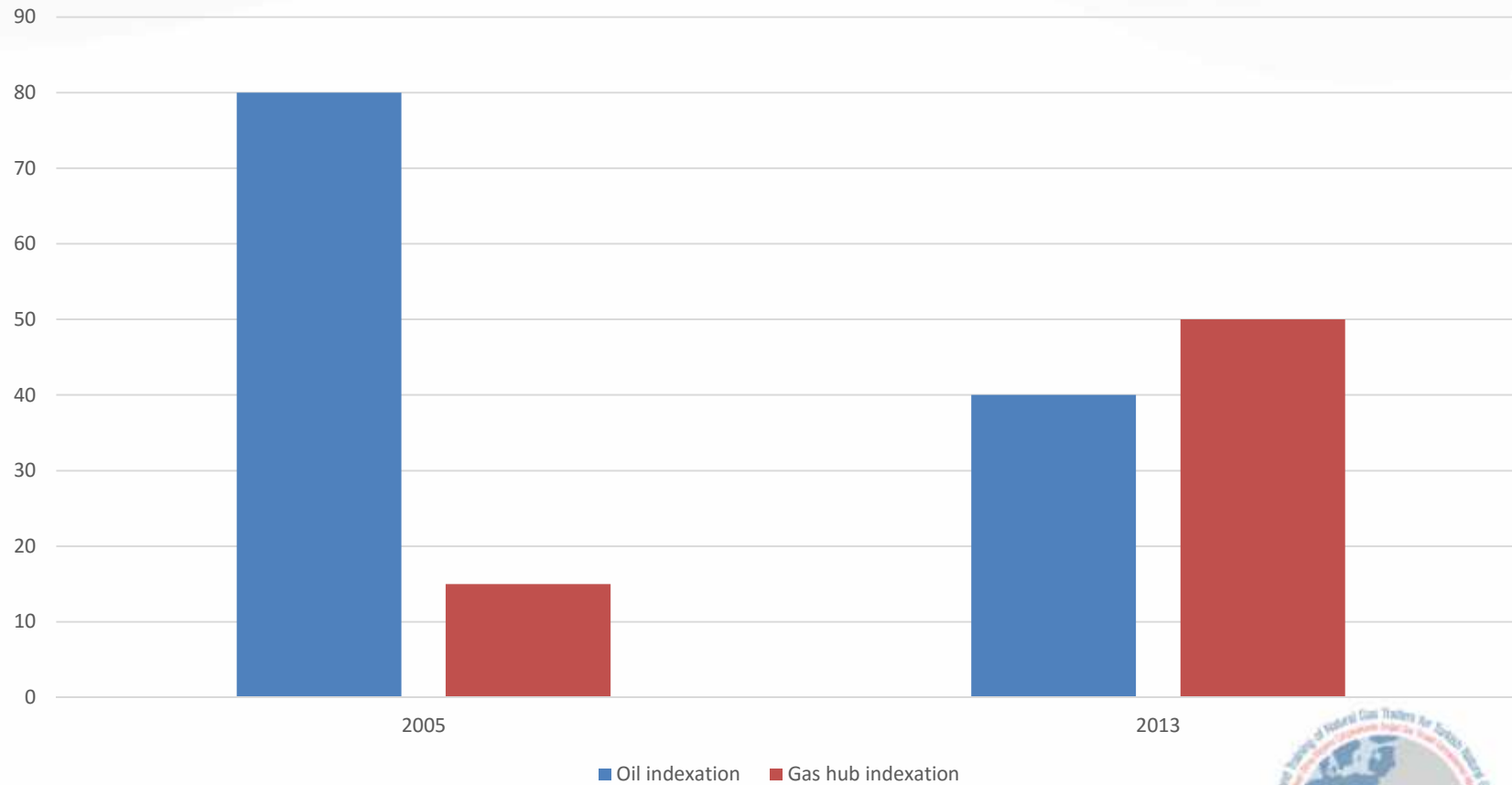
Contract Pricing: Moving Away From Oil Indexation (2)

Contracts	Negotiation	Take Or Pay level	Period	Indexation	Formulae
Pre-1990 contracts	Bilateral	High (80-90%)	25 years +	Oil, oil derivatives, electricity prices, inflation	<p>P1= 30% PPI + 20% electricity + 25% gas oil + 25% fuel oil or</p> <p>P2= 50% gas oil + 50% fuel oil</p>
Post-1990 contracts	Bilateral	High (95%)	15 years	Inflation, electricity, gas oil, coal	P1= 50% PPI + 20% gas oil + 15% electricity + 15% coal
Post-2000 contracts	Bilateral	n/a	8-10 years	ICIS Heren index	Delivered at the NBP on a 'flat' basis



Switch to hub pricing 2005-2013

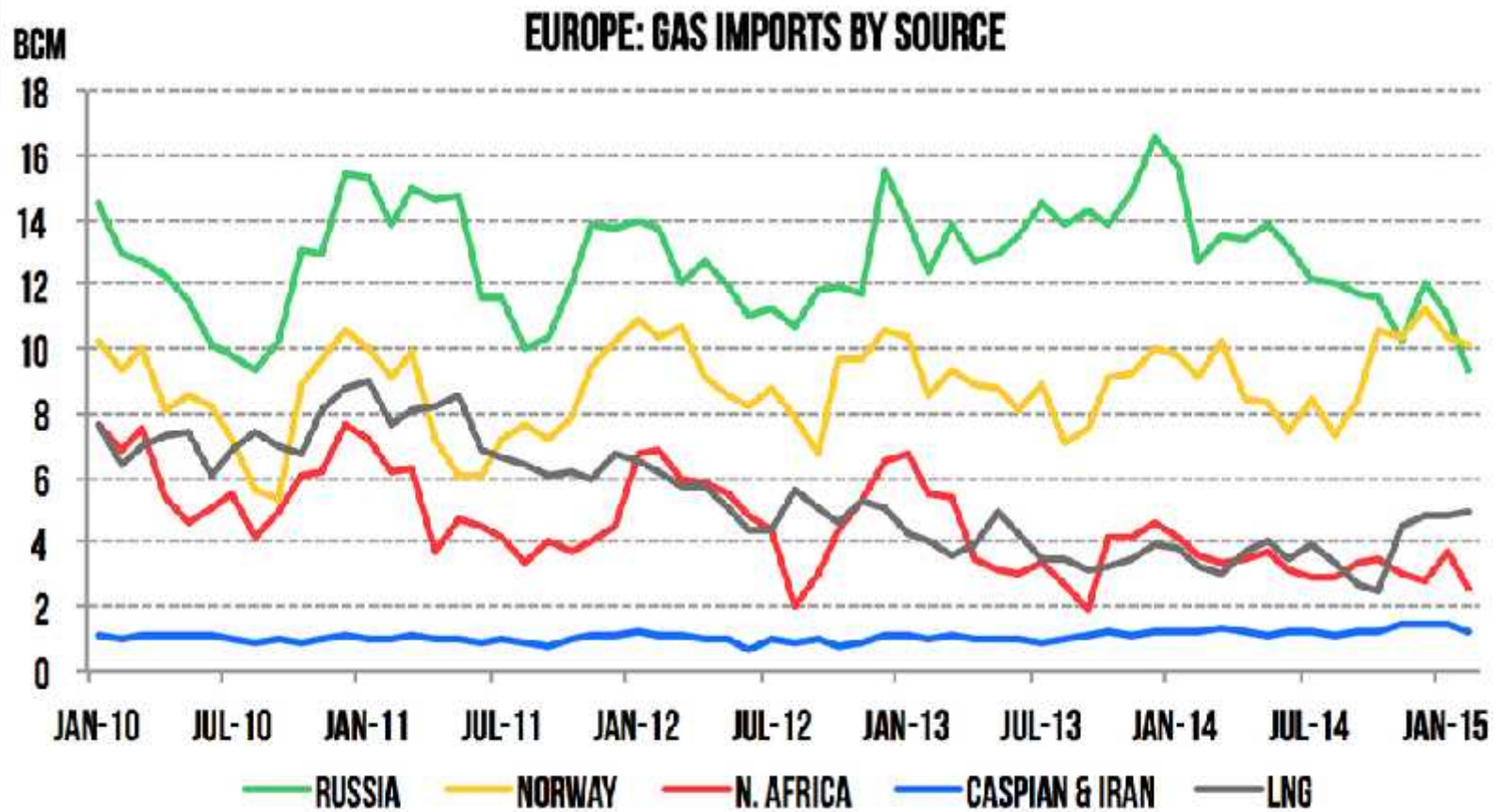
Percentage of gas sold in Europe under oil-indexed and hub-indexed contracts



Source: Stern, OIES, 2014



Current Supply Picture

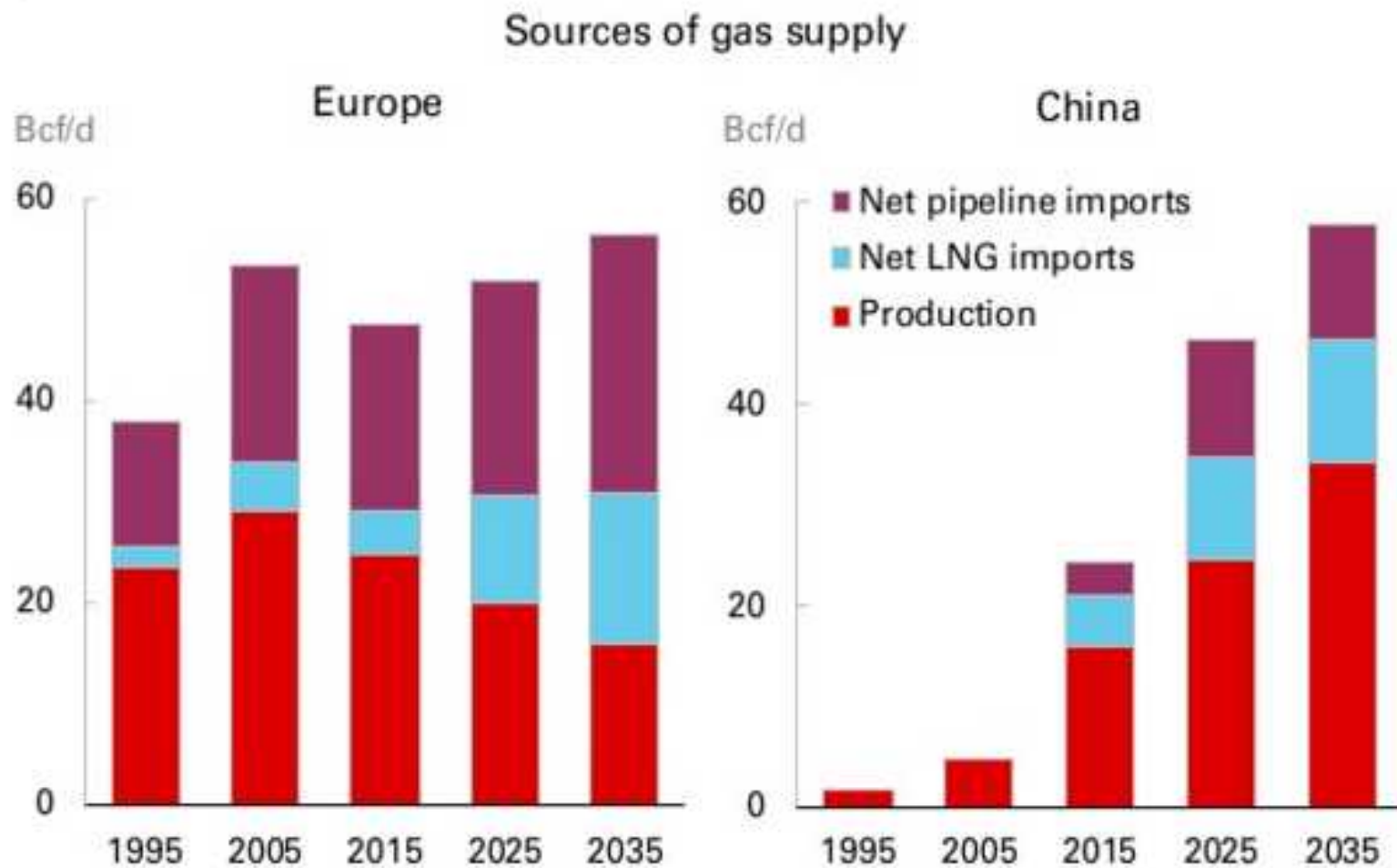


SOURCE: ENALYTICA BASED ON INTERNATIONAL ENERGY AGENCY, EUROPEAN GAS TRADE FLOWS

Source: Enalytica

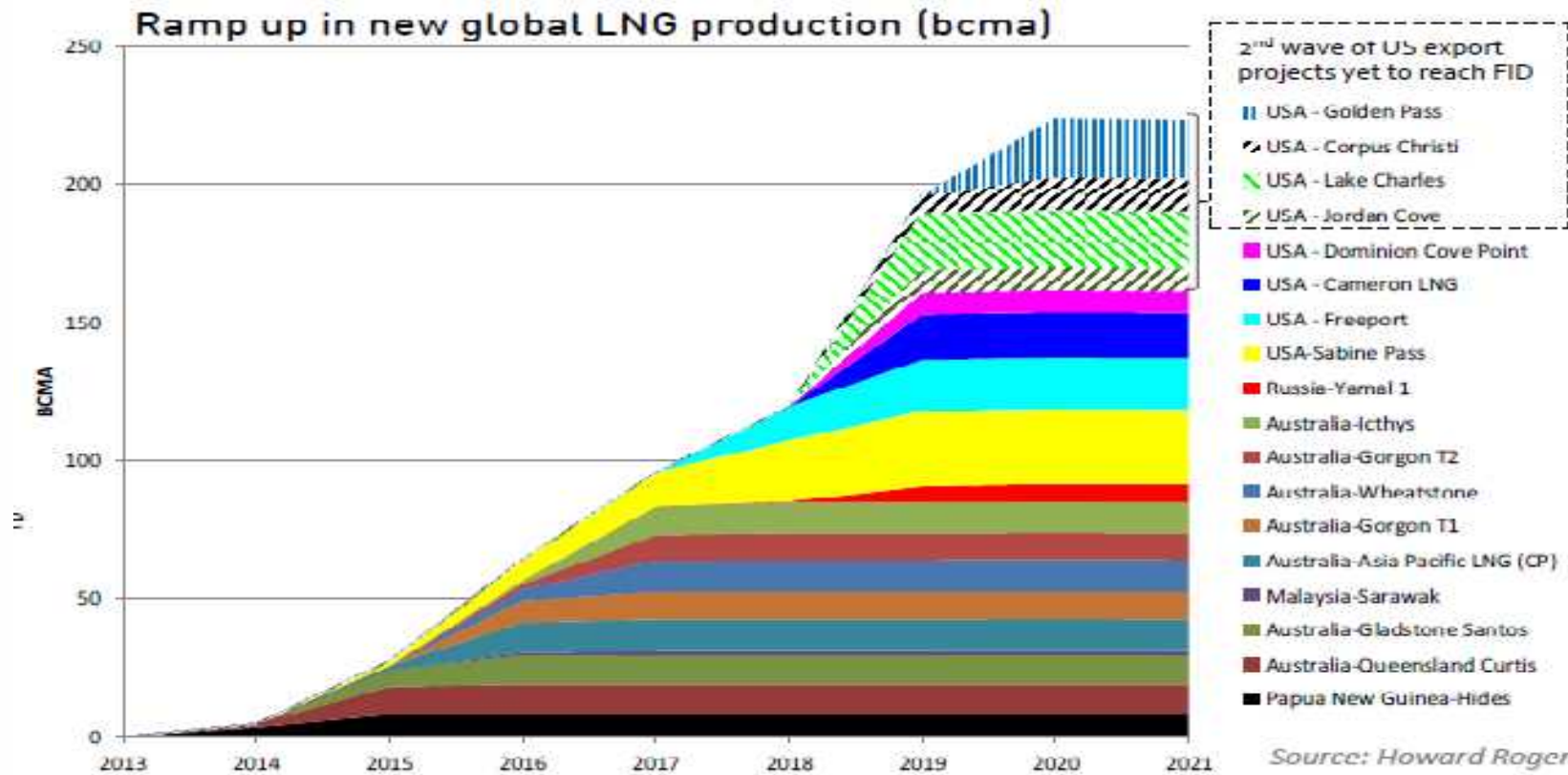


Sources of Gas Supply in Europe and China (bcf/day)



Supply Outlook

- More than 150bcm to be commissioned between 2014-2018 and Europe is market of last resort

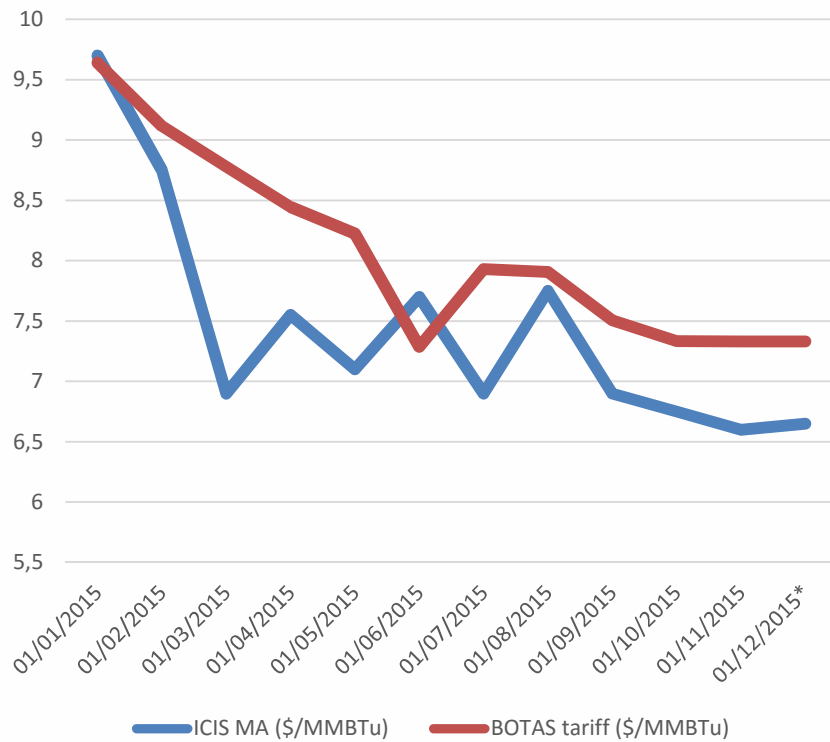


Source: Howard Rogers, quoted by Timera Energy

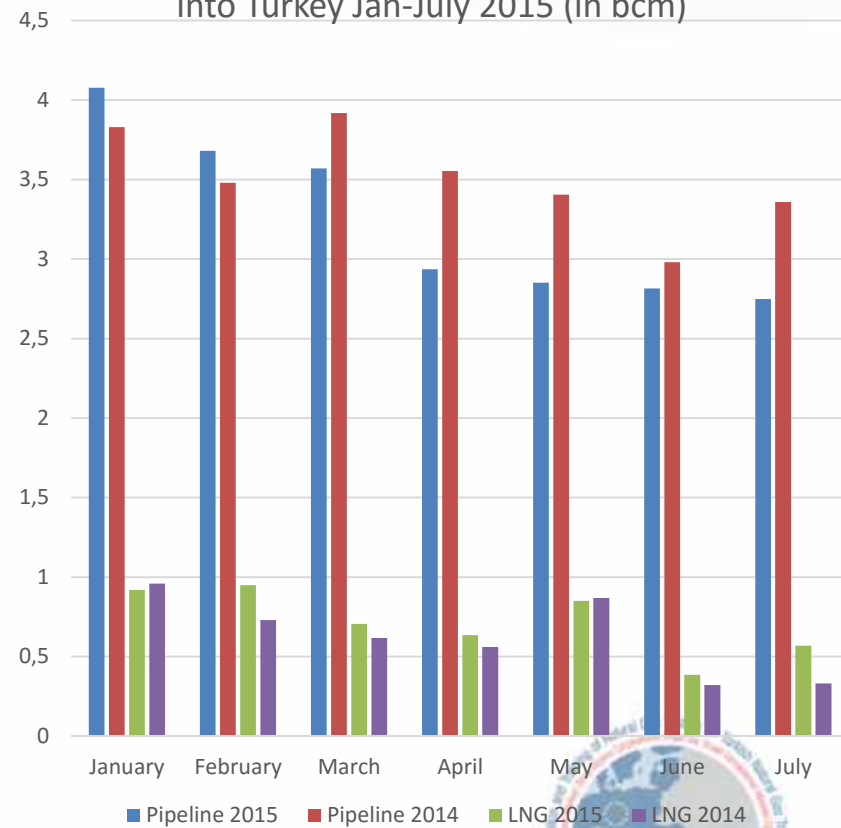


Pipeline and LNG Imports in Turkey: A Changing Picture

ICIS Turkish LNG month-ahead prices v. BOTAS tariff



Pipeline and contract+spot LNG imports into Turkey Jan-July 2015 (in bcm)

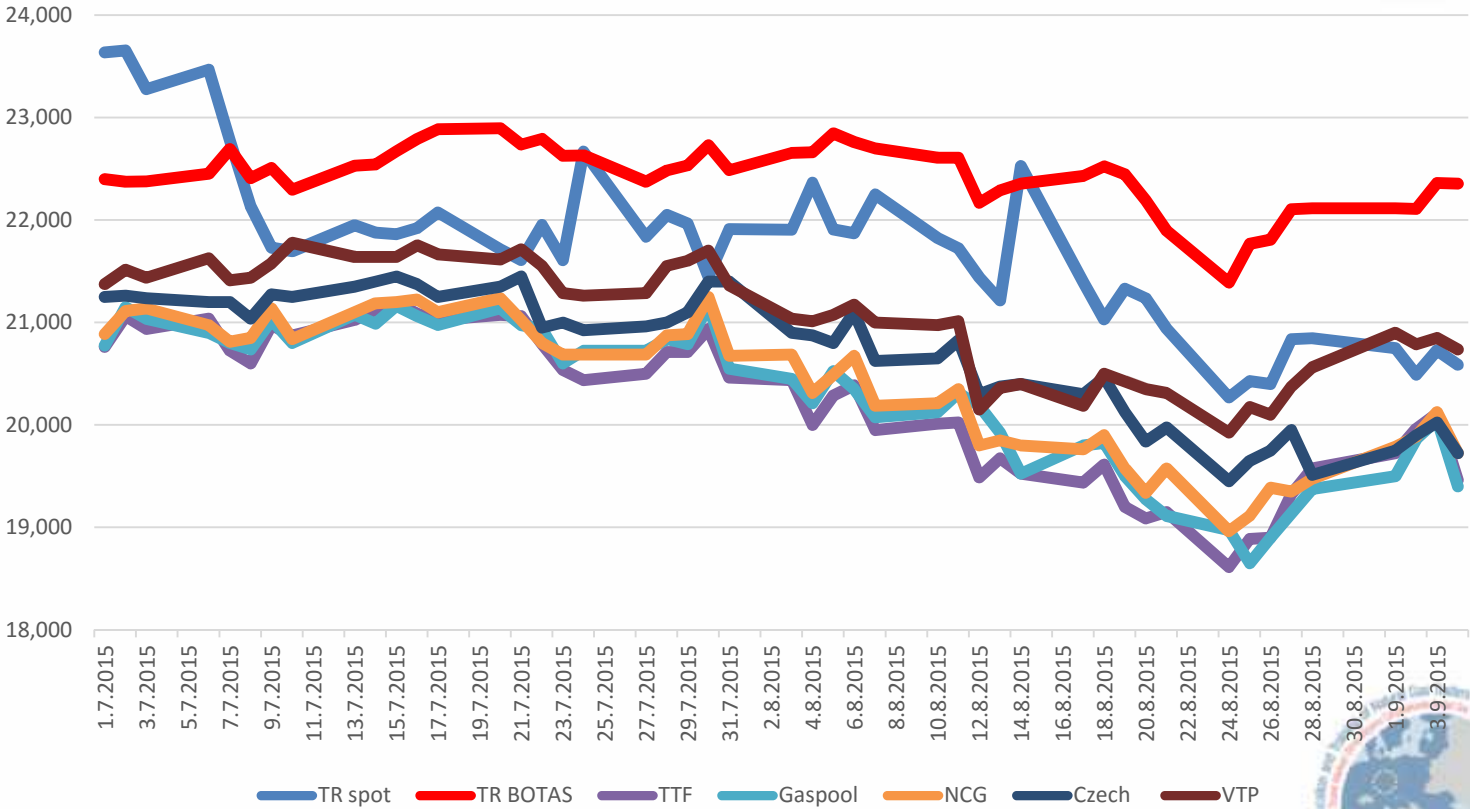


Source: ICIS and EPDK



But Constraints to Diversification Remain

Comparison of Turkish BOTAS, Turkish spot and European gas hub prices for Q3 2015



Source: ICIS



Turkey: An Afterthought

- Turkish gas demand slowing down
- Gas supplies to Turkey to increase (Azerbaijan, N.Iraq, Russia)
- More LNG supplies reaching the market
- How will the Turkish economy absorb the new gas supplies?
- Can Turkey absorb new gas supplies if no pricing and import/export reform enacted?
- **Under a gas glut scenario is the fuel still likely to be a political commodity?**



Thank you!

Aura Sabadus, aura.sabadus@icis.com

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