

# US LNG vs Russian pipeline gas in the EU: to get rid of the rival?

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Presentation at the **Free webinar**

**“US LNG and European gas market”,**

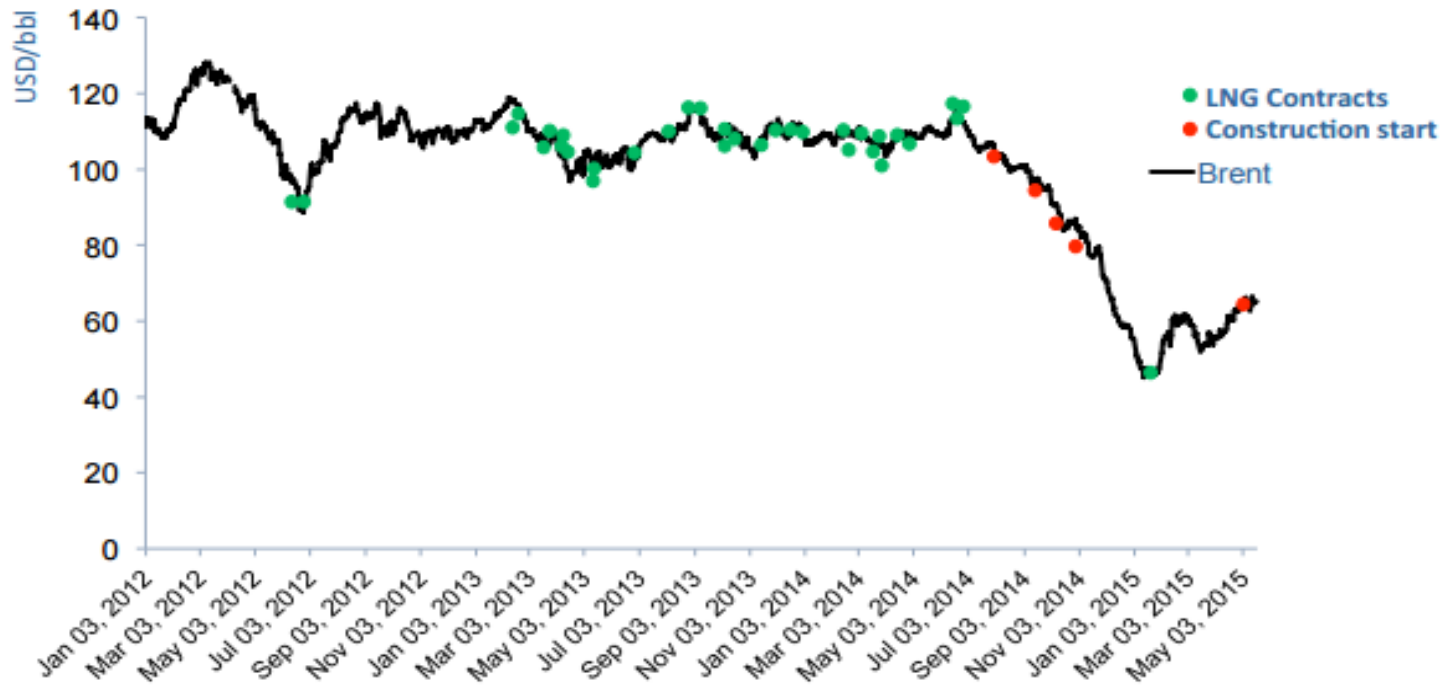
organized by Vostock Capital prior to “LNG 2017 Congress Russia”,  
Moscow-London, 26.10.2016

# US LNG export pre-history

- US shale gas revolution domino effects on US gas:
  - Rocket-style increase of domestic shale gas production post-2007 has led to oversupply within US gas market =>
  - US domestic gas market has almost closed for import LNG post-2007
  - Till Feb'2016 US - “energy island” => HH price went down/stayed low => price gap with Europe & Asia Pacific => both foreign non-US areas - premium markets for US gas
  - Debt financing of US shale gas development => growing indebtedness of US shale producers within US “energy island” domestic environment
- To pay-back CAPEX in US shale gas production within low domestic gas (HH) prices => reorientation/economic stimuli for export
  - Conversion of regas import LNG terminals to liquefaction export LNG terminals
  - Key target market – Asia Pacific with oil-indexed LNG price premium (esp. after Fukushima accident)
  - Third line of Panama channel expansion (Summer 2016) for US LNG to Pacific (unit size of LNG cargos increased 3 times)
- **BUT:** New export US LNG strategy was developed in end-2000-ies/first-half-2010-ies when oil price stood high (above 100 USD/bbl)

# Buyers seem to become cautious on the competitiveness of Henry Hub based LNG

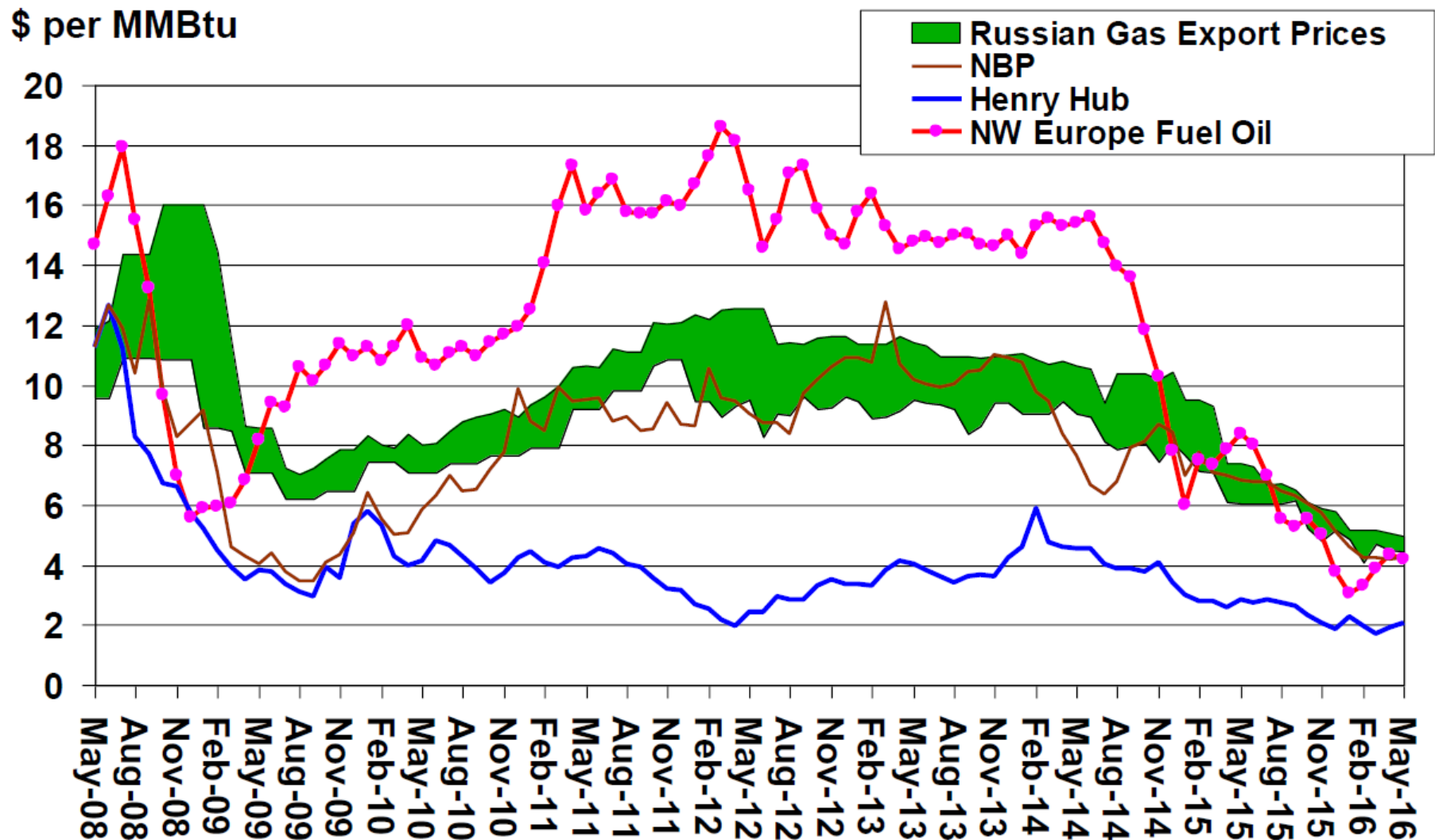
Medium-Term  
Market Report  
2015



- *Financing of projects with previously signed contracts is unproblematic*
- *Only one small contract (0.75 Mt/Y) was signed since oil peaked*

Source: Costanza Jacazio, Senior gas analyst, International Energy Agency. Gas: medium-Term Market Report 2015. Market Analysis and Forecast to 2020. – Presentation at The Center on Global Energy Policy, Columbia University, New York, NY, USA, 20.06.2016, <https://energywatch-inc.com/wp-content/uploads/2015/07/IEA-Medium-Term-Gas-Market-Report-Presentation.pdf>

# Convergence of Gas Prices

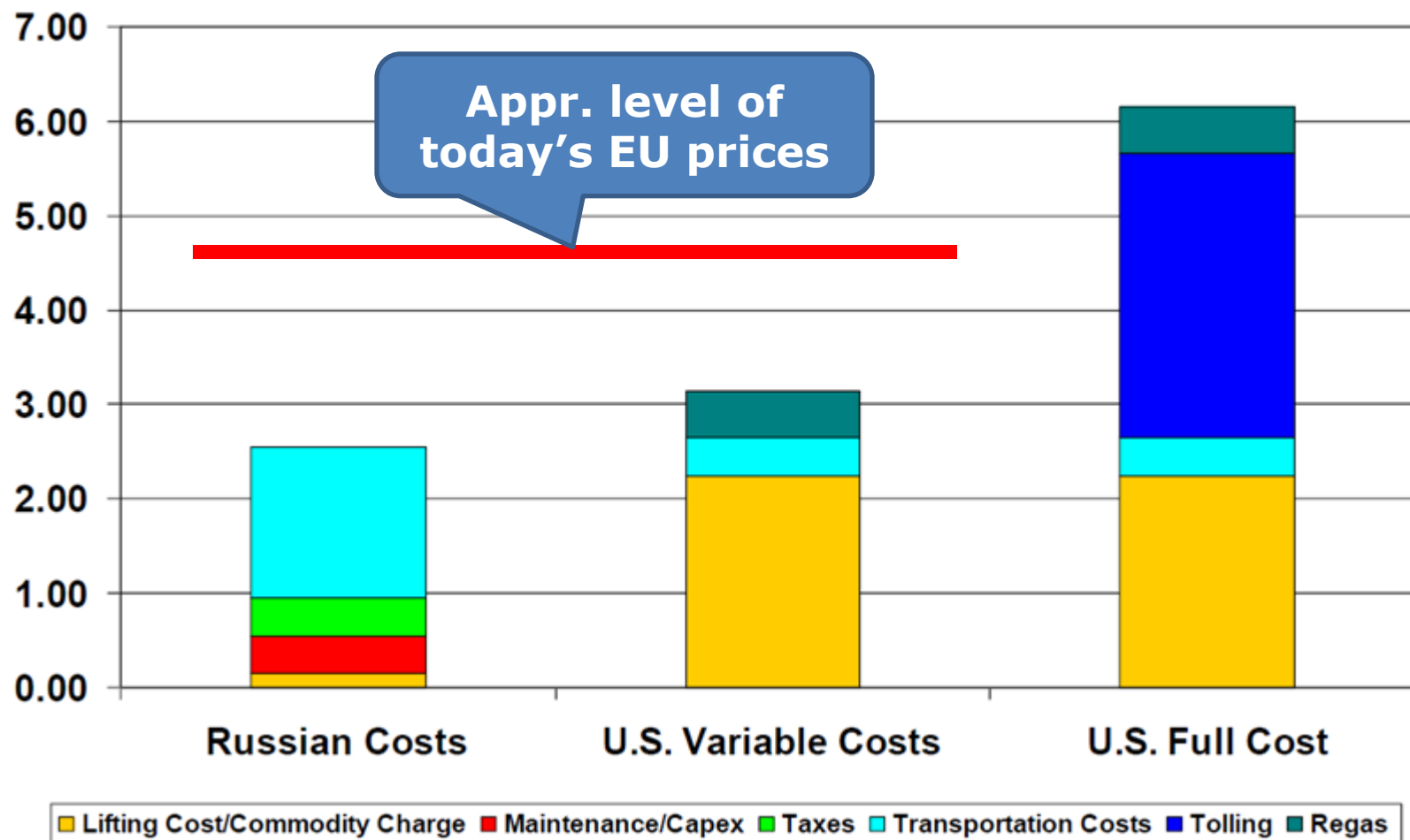


Source: PIRA

Source: S.Komlev. Gazprom on the European Market Problems and Solutions . ETCSEE2016, 15-16 June, 2016, Bucharest, Romania

# Gazprom Sees No Threat from US LNG to European Pipeline Gas

\$/MMBtu, assumes 115% of Henry Hub at current prices

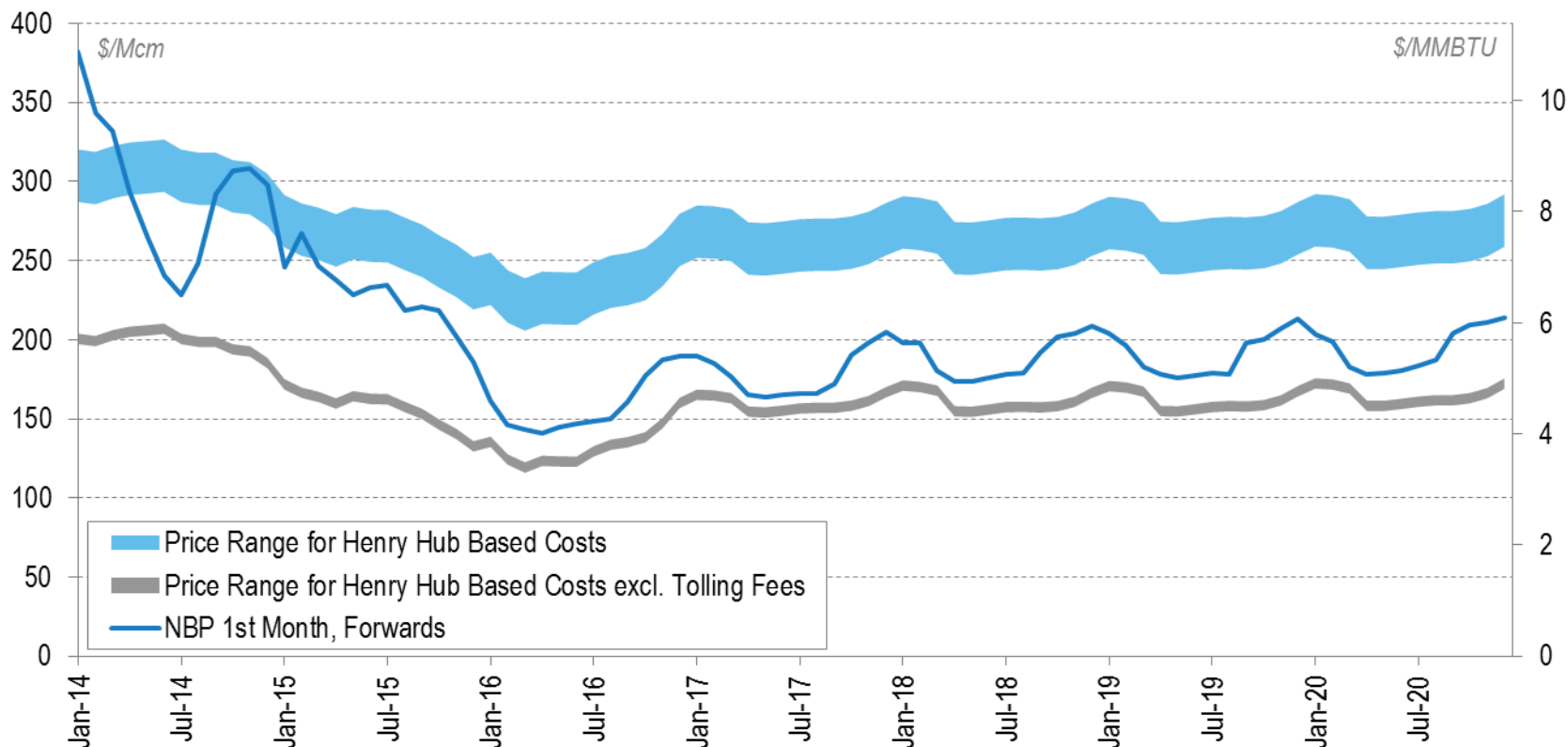


Source: PIRA

Source: S.Komlev. Gazprom on the European Market Problems and Solutions . ETCSEE2016, 15-16 June, 2016, Bucharest, Romania

# US Benchmark Prices are Poised to Rise Within a Year, Meaning Export Costs to Europe Will Also Gain

Estimated Costs\* of US LNG Deliveries to Europe in comparison with European Traded Forwards\*\*



\* Based on Henry Hub Forward Curve,  $P = HH * 115\% + X$ , where X – costs of liquefaction, shipping, regasification

\*\* NBP Forward Curve

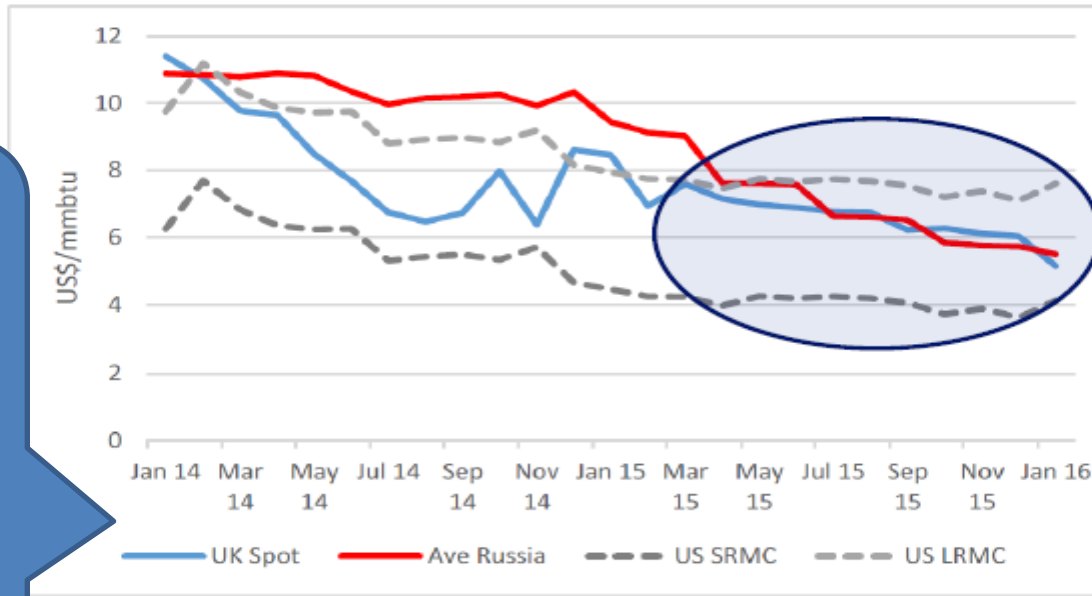
Source: Bloomberg, Wood McKenzie

Source: S.Komlev. Gazprom on the European Market Problems and Solutions . ETCSEE2016, 15-16 June, 2016, Bucharest, Romania



# European Gas Prices vs. Marginal Cost of US LNG

Source: The Oxford Institute for Energy Studies



European gas prices below long run marginal cost of US LNG,  
limiting appetite for new investments into LNG projects.

Taken from:

Andreas Rau, CEO NET4GAS, s.r.o. The Current Environment for Gas Infrastructure Investment. // Central European Gas Congress, Bratislava, April 27, 2016

Original source:

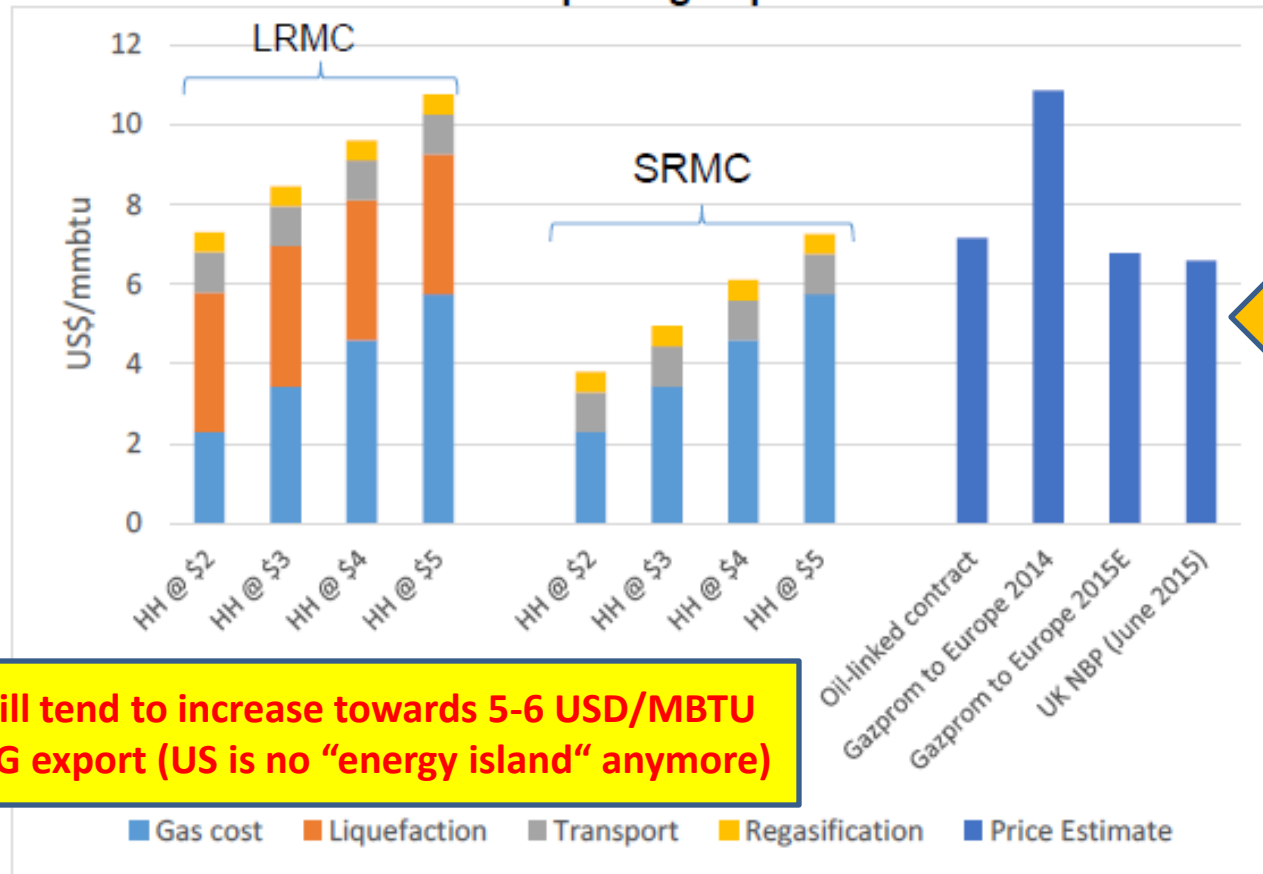
James Henderson. Gazprom – Is 2016 the Year for a Change of Pricing Strategy in Europe? – OIES, OXFORD ENERGY COMMENT, January 2016, p. 7 (fig. 3).

J.Henderson's conclusions on US LNG competitiveness in EU are trusted in other parts of Europe...

**US LNG is less competitive to Russian pipeline gas in the EU by LRMC (CAPEX + OPEX) & is competitive there only by SRMC (OPEX) (Henderson) =>**

this does not diminish the increasing “debt bubble” of US shale gas producers – the resource base for US LNG export => *short-term “window of opportunities” for US LNG in the EU?*

# The cost of US LNG versus European Gas prices (acc. to J.Henderson & T.Mitrova)



EU 2016 spot gas prices level

**US HH prices will tend to increase towards 5-6 USD/MBTU with growing LNG export (US is no "energy island" anymore)**

Sources: Cheniere Energy, Energy Intelligence, Gazprom (n.b. oil-linked contract calculated at an oil price of \$65/barrel)

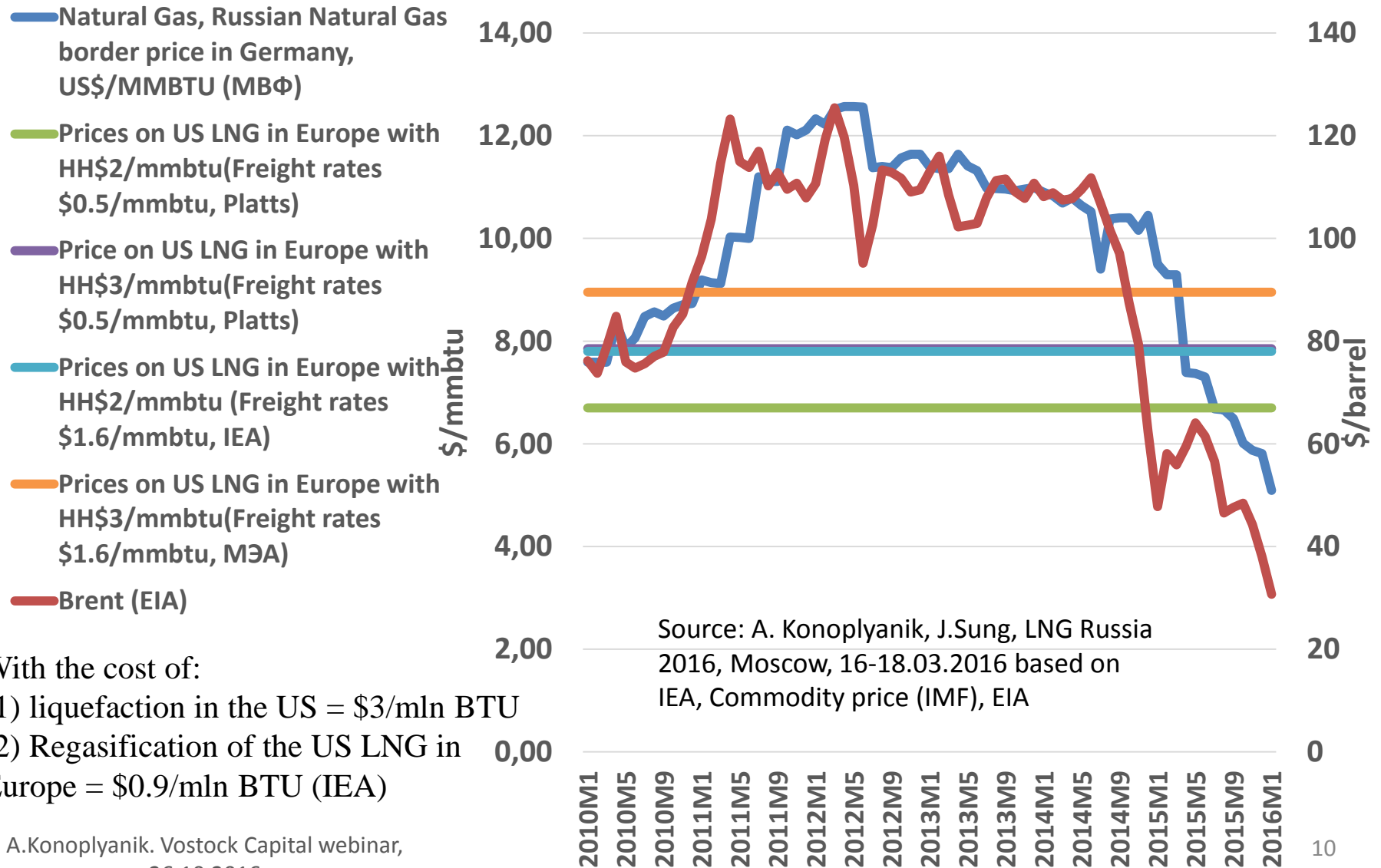
Source of original chart: James Henderson & Tatiana Mitrova. The Political and Commercial Dynamics of Russia's Gas Export Strategy. - OIES PAPER: NG 102, September 2015, p. 44



## Thierry Bros on US LNG competitiveness vs Russian gas in the EU

- Thierry Bros: “HH price will guarantee Gazprom European rent in 2020e! ... Even if Europe market moves to near full spot indexation, if it is inked to the US via the costs of LNG exports, Europe price could remain 6 USD/MBTU (cost of liquefaction, shipping & regasification) above HH. ... In short, the liquid US market will guarantee minimum profit for Gazprom and revenues for the Russian state”
  - (T.Bros. After the US Shale Gas Revolution. // Editions TECHNIP, Paris, 2012, p.149)

# US LNG prices compared against Russian pipeline gas in Europe



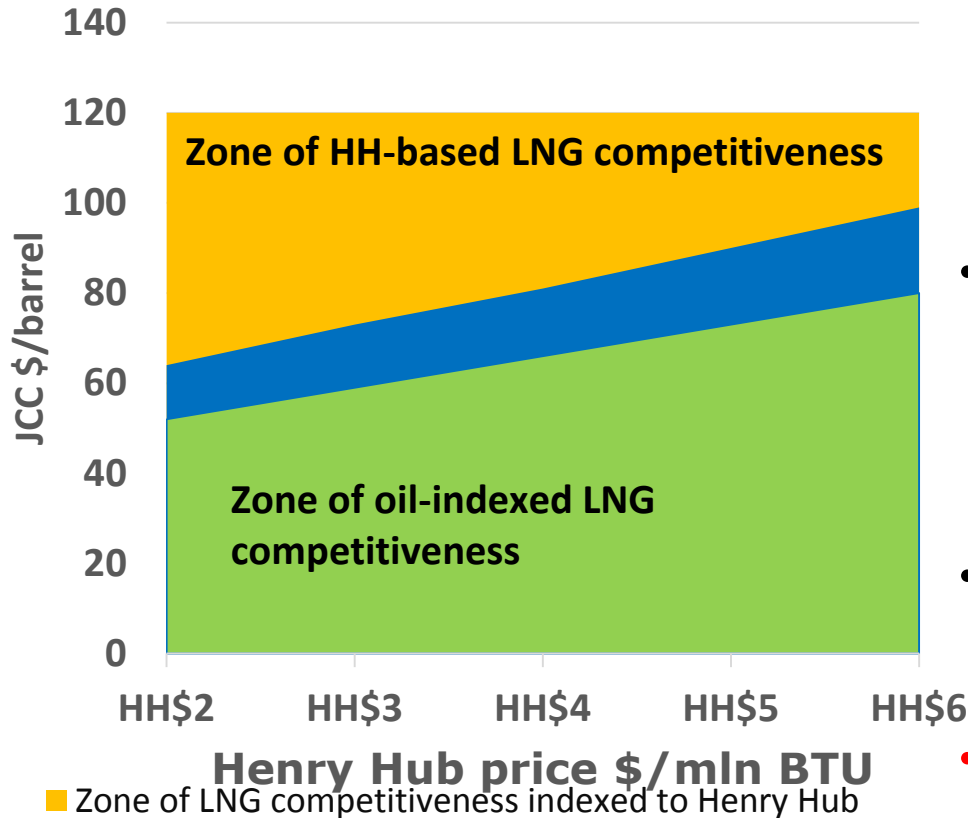
Source: A. Konoplyanik, J.Sung, LNG Russia 2016, Moscow, 16-18.03.2016 based on IEA, Commodity price (IMF), EIA

With the cost of:

(1) liquefaction in the US = \$3/mln BTU

(2) Regasification of the US LNG in Europe = \$0.9/mln BTU (IEA)

# Zones of LNG competitiveness in Asia indexed to JCC (NBRV pricing) and Henry Hub (cost-plus pricing)



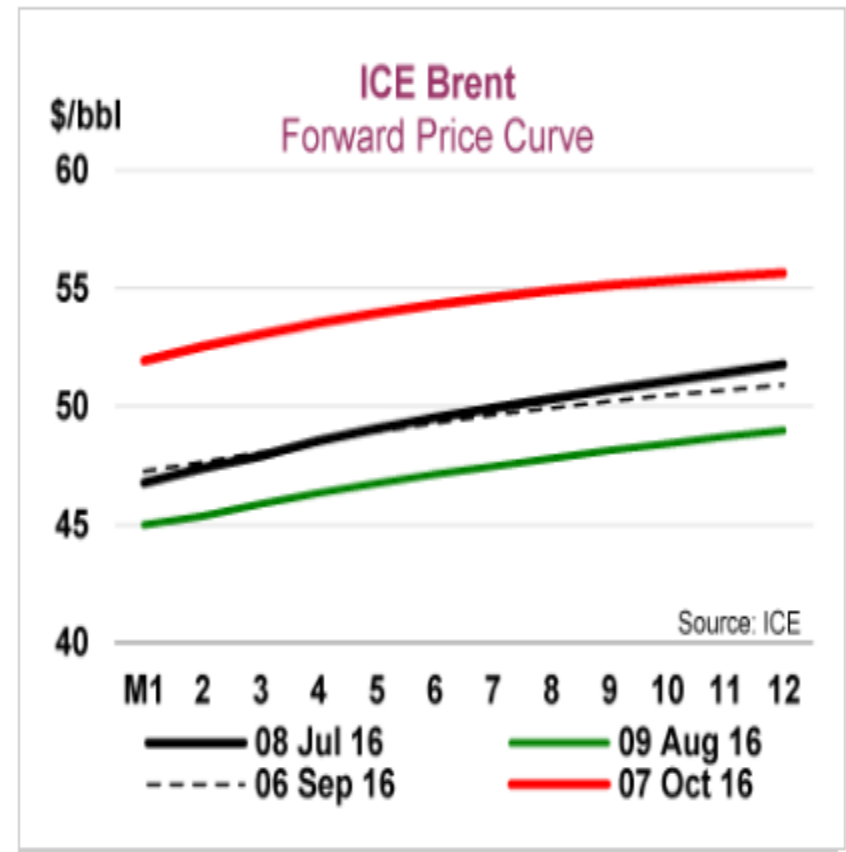
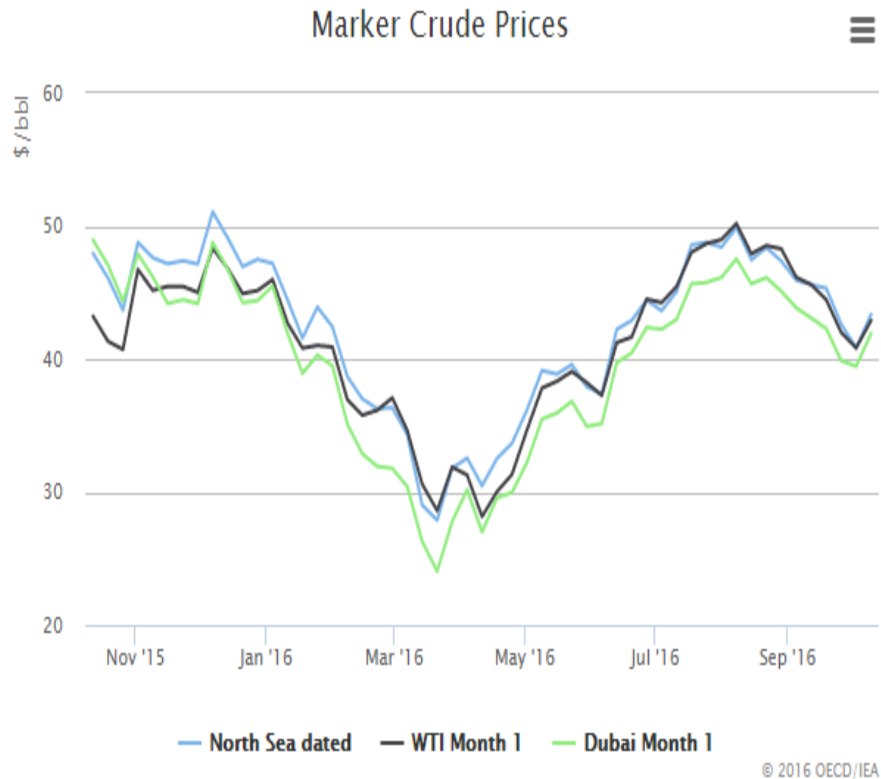
- With the oil price of **\$2/MMBTU** at Henry Hub (*minimum value: April 2012, beginning of 2016*), oil-indexed LNG will be competitive in Asia if JCC price **< \$50/barrel** (*at present*)
- With the oil price of **\$6/MMBTU** (*maximum value: beginning of 2014*), oil-indexed LNG will be competitive in Asia if JCC price **< \$80/barrel** (*mid 2010 – end of 2014*)
- With JCC price **above \$100/barrel**, US LNG becomes competitive if Henry Hub price **exceeds \$6/MMBTU**,
- **BUT WHETHER OIL PRICES LIKELY TO RETURN TO \$100/BBL AND ABOVE? => My answer is “NO”, at least in the foreseeable future, due to “domino effects” of US shale revolution**

# Views from NY Times “Oil & Money” Conference (London, October 2016) – not supportive for US LNG to be competitive against oil-indexed gas

According to the overarching view presented by several speakers oil is preparing to settle into a \$50-\$60 a barrel range. BP chief executive Bob Dudley picked that band when asked where he saw oil trading in 2017, while the heads of independent oil traders such as Vitol, Mercuria and Gunvor all predicted prices would trade between \$55 to \$58 a barrel this time next year.

Cited from: “South-East Europe Energy Brief, Market Fundamentals and Prices”, October 22, 2016, Issue No 216, July-August-September 2016, Published by the Institute of Energy for South-East Europe, p. 5.

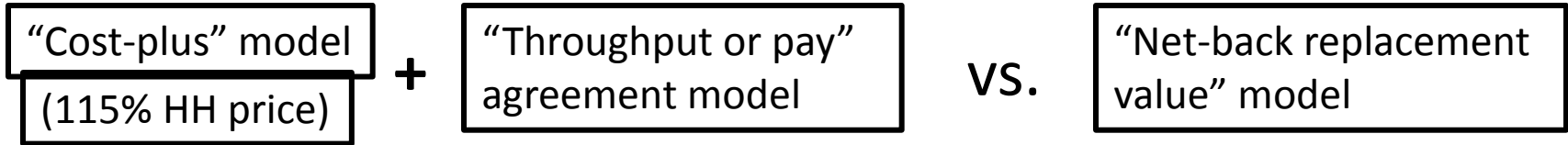
# Oil market in contango, but not high enough to prove competitiveness of US LNG against oil-indexed gas?



Source: IEA Oil Market Report, 11 October 2016, <https://www.iea.org/oilmarketreport/omrpublic/>

**At current oil price range of 40-50 USD/bbl US LNG seems not to be competitive in Asia with oil-indexed LNG; at oil price within 50-60 USD/bbl range (as expected for 2017) US LNG is questionably competitive in Asia even at 2 USD/MBTU**

# US LNG export model



Debt financing problems => Repayment of growing accumulated debt for shale producers => Another financial bubble at US market (like in 2008)?

Capacity fee (2.25-3.0 USD/MMBTU) => Cheniere' Sabine-Pass model = :

- (a) risk-free business model for LNG terminal operator;
- (b) all risks are on shale gas producer & LNG exporter

(1) Pricing problems = pricing scissors:

- (a) purchasing FOB price (Henry Hub) to go upward (US is not “energy island” anymore),
- (b) selling CIF price going downward (oil-indexation as NBRV &/or spot)

(2) Price/cost problem = capacity fee fixed obligatory payment (on top of growing HH price)

# US LNG & campaign against Russian gas: to get rid of the rival?

- Different recent Western “studies” present **RUSSIAN GAS AS IF MORE DIRTY** than other gases (both pipeline & LNG) &/or other fossil fuels &/or RES, like (\*):
  - US Dep’t of Energy on long-term GHG perspective on exporting LNG from the US as of May, 29 2014 (long-term GHG perspectives for NG)
  - Karlsruhe Institute of Technology (KIT) Study as of March 2016 (argues the results of the above & official estimates of the US Environment Protection Agency)
  - PÖYRY Study as of June 2016 (coal vs NG)
  - EXERGIA/COWI for DG ENER, “Study on Actual GHG Data for Diesel, Petrol, Kerosene, and Natural Gas”, July 2015 (to provide information about the lifecycle GHG emissions of fossil fuels used in transport)
- **NB1:** *Current thesis of as if “more dirty” Russian gas is additive to post-2009 thesis of Russia as if “non-reliable” source of gas (supplier)*
  - *substitution of notions: “non-reliable **source**” (Russia) vs “non-reliable **transit route from the source**” to the market (Ukraine)*
- **NB2:** *The Trans-Atlantic fight against NordStream-2 - of the same origin?*
  - *To “softly” force Russia to continue gas supplies to EU post-2019 through more risky & costly transit route (to diminish its competitiveness?)*
- **NB3:** *Parallel with different other (non-energy) spheres, like f.i. WADA treatment of US vs Russian Olympic & Paralympic athletes in Rio?*
  - *substitution of notions: fact of allowed doping vs source of information (hackers)*

(\*) Source: D. Leonov, N. Sudarev. COP-21 – role of NG in Decarbonization and Sustainability of EU economy.; K. Romanov. The Role of Natural Gas In Decarbonization and Sustainability.// Russia-EU Gas Advisory Council, Work Stream 2 “Internal Markets” meeting, Vienna, E-Control, 01 July 2016

# Conclusion

- J.Henderson: “The potential of North American LNG is huge...”, but (*different authors*) economics is poor when it is to be delivered to the EU
- A.Konoplyanik: ...so whether US LNG can be competitive in Europe based on free market forces without administrative support to US LNG from the opponents of Russian gas in the EU? Maybe (one of) the real reason(s) of current campaign against Russian gas in the EU is to create administratively competitive advantages for US LNG aimed at getting rid of Russian gas as its rival in the EU?



# Thank you for your attention!

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