



# Natural gas: the underrated climate saviour between ideology and geopolitics

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# Agenda

- ▶ **Natural gas: underrated climate saviour**
- ▶ **Ideology: gas put in the ‘dirty fossil corner’**
- ▶ **Geopolitics 1: exposure to political blackmail?**
- ▶ **Geopolitics 2: should we buy more US LNG?**

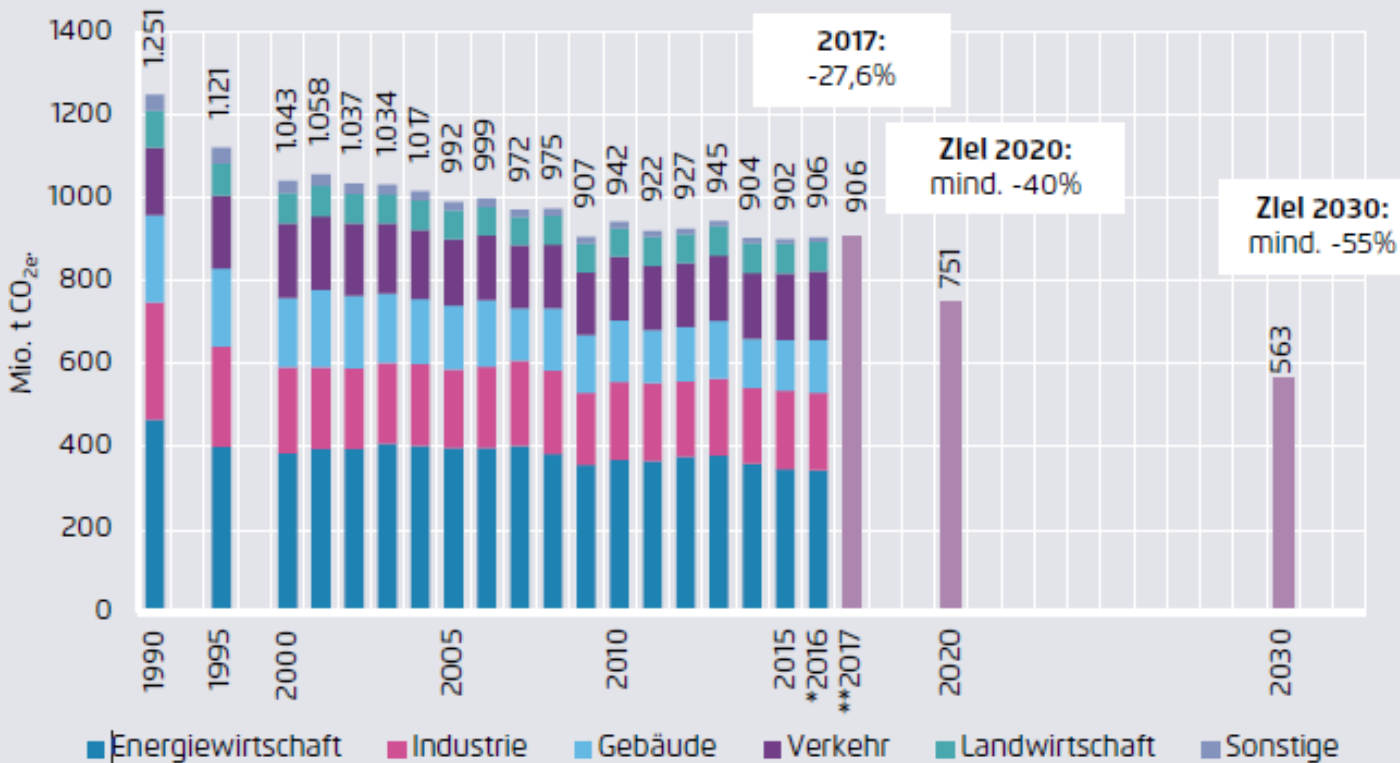
# Natural gas – underrated climate saviour

## German Energiewende: missing its CO2 reduction targets

Die Treibhausgasemissionen stagnieren auf hohem Niveau, das Ziel 2020 ist in weiter Ferne:

Treibhausgasemissionen nach Sektoren 1990–2017 sowie Klimaschutzziele 2020 und 2030

Abbildung 3-1

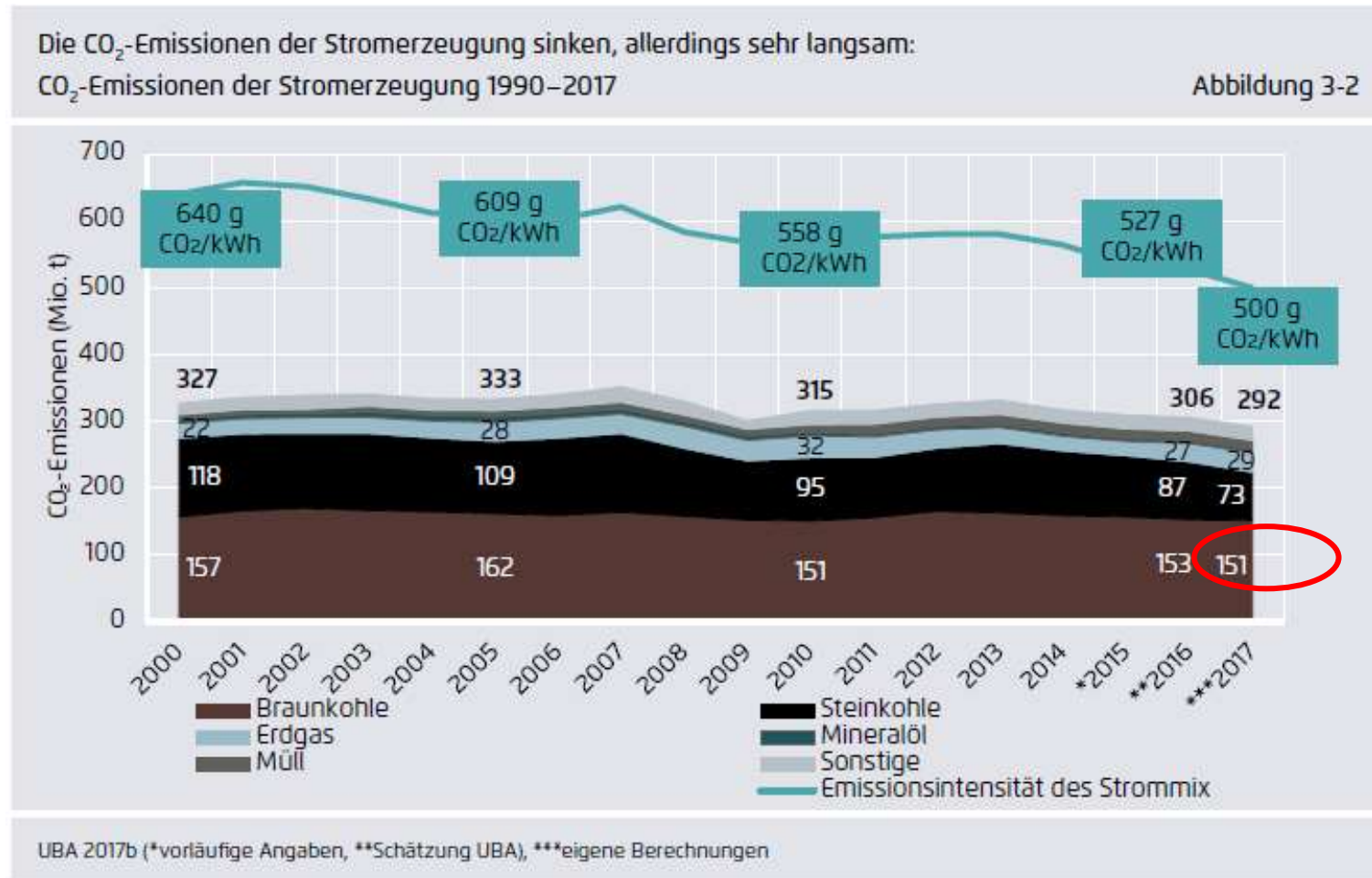


UBA 2017a, eigene Berechnungen, \*vorläufige Angaben, \*\*eigene Schätzung

Source: Agora Energiewende 2018

# Natural gas – underrated climate saviour

German power mix: gas vs. lignite saves ~97 mio to CO2 (64%)



Source: Agora Energiewende 2018

# Natural gas – underrated climate saviour

Dena Leitstudie: almost all scenarios show substantial use of gas

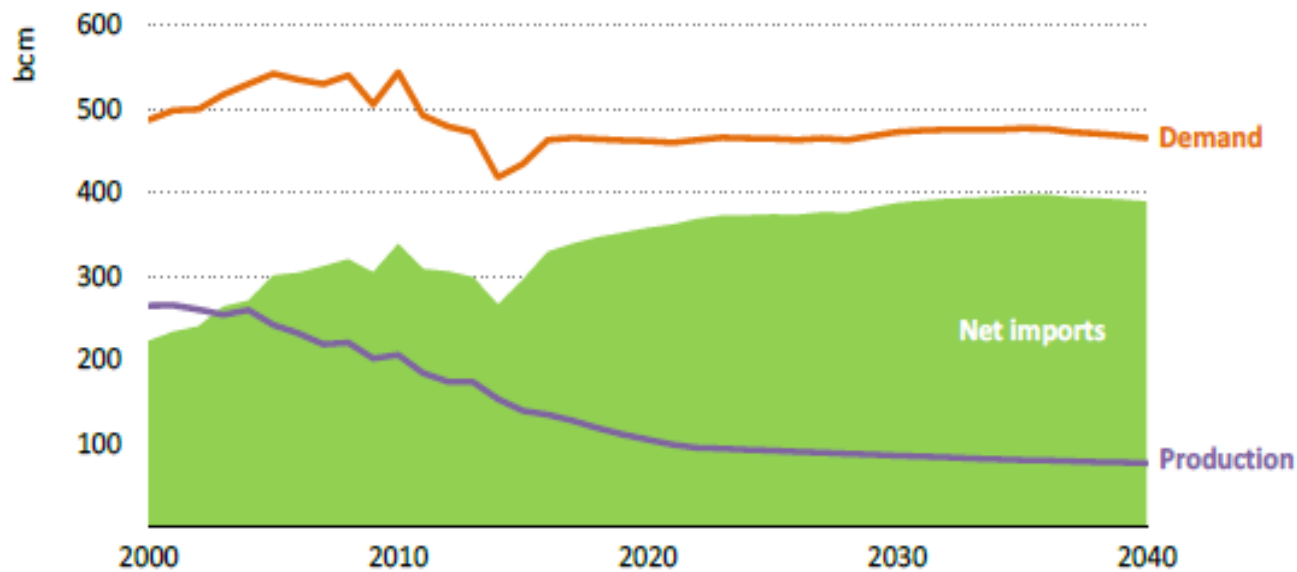


Source: dena Leitstudie 2018

# Natural gas – underrated climate saviour

## Rising European import demand: 390 bcm/a in 2040

**Figure 8.9** ▶ Natural gas balance of the European Union in the New Policies Scenario



*Even with a flat demand outlook, the European Union's gas imports increase to 2040 as domestic output continues to decline*

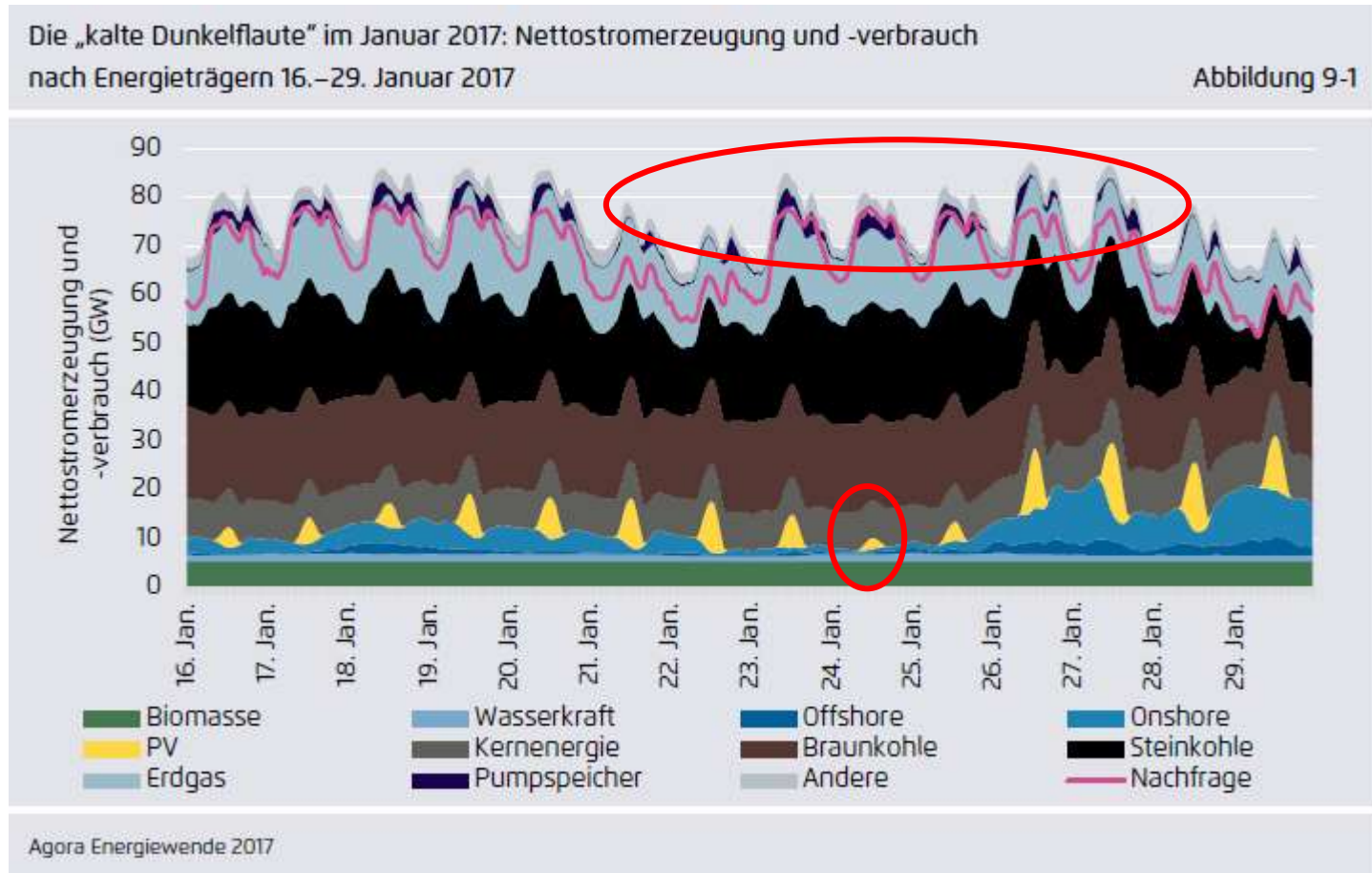
Source: IEA WEO 2017

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# Ideology: gas put in the 'dirty fossil corner'

'Kalte Dunkelflaute': no wind, no sun – gas saves the day



Source: Agora Energiewende 2018

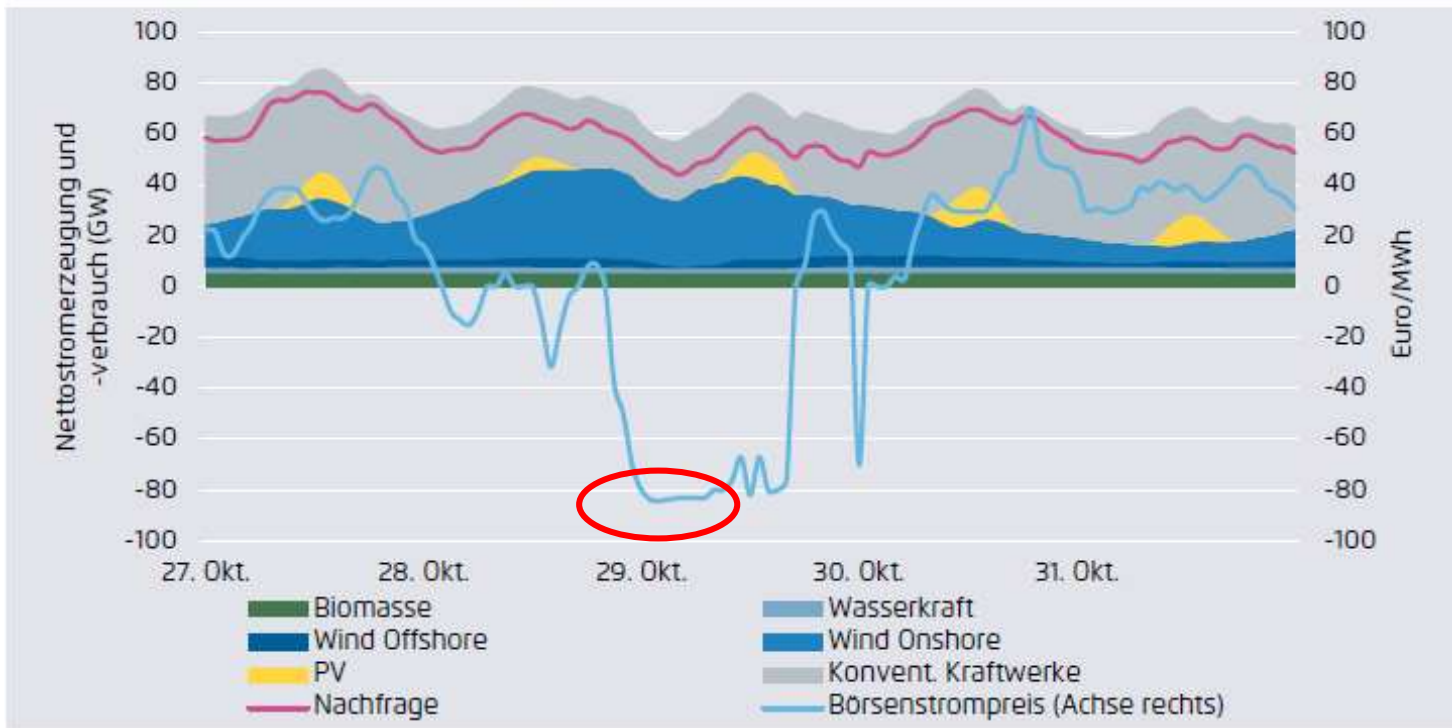


# Ideology: gas put in the 'dirty fossil corner'

Surplus production RES: negative prices (-83.06 €/MWh)  
If the neighbours can't take it: re-dispatch & curtailment

Das Sturmtief Herwart im Oktober 2017: Nettostromerzeugung und -verbrauch nach Energieträgern und Börsenstrompreis (Day-Ahead) 27.–31. Oktober 2017

Abbildung 9-3



Agora Energiewende 2017

Source: Agora Energiewende 2018

# Ideology: gas put in the 'dirty fossil corner'

Costs of re-dispatch and curtailment alone >€ 1.4 billion in 2017

## Netz- und Systemsicherheitsmaßnahmen nach §13 EnWG im Jahr 2017

Redispatch	Einspeisemanagement	Anpassungsmaßnahmen
Gesamt: 20.439 GWh	Gesamt: 5.518 GWh	Gesamt: 34,5 GWh
Gesamt: 838,2 Mio. EUR	Gesamt: 609,9 Mio. EUR	

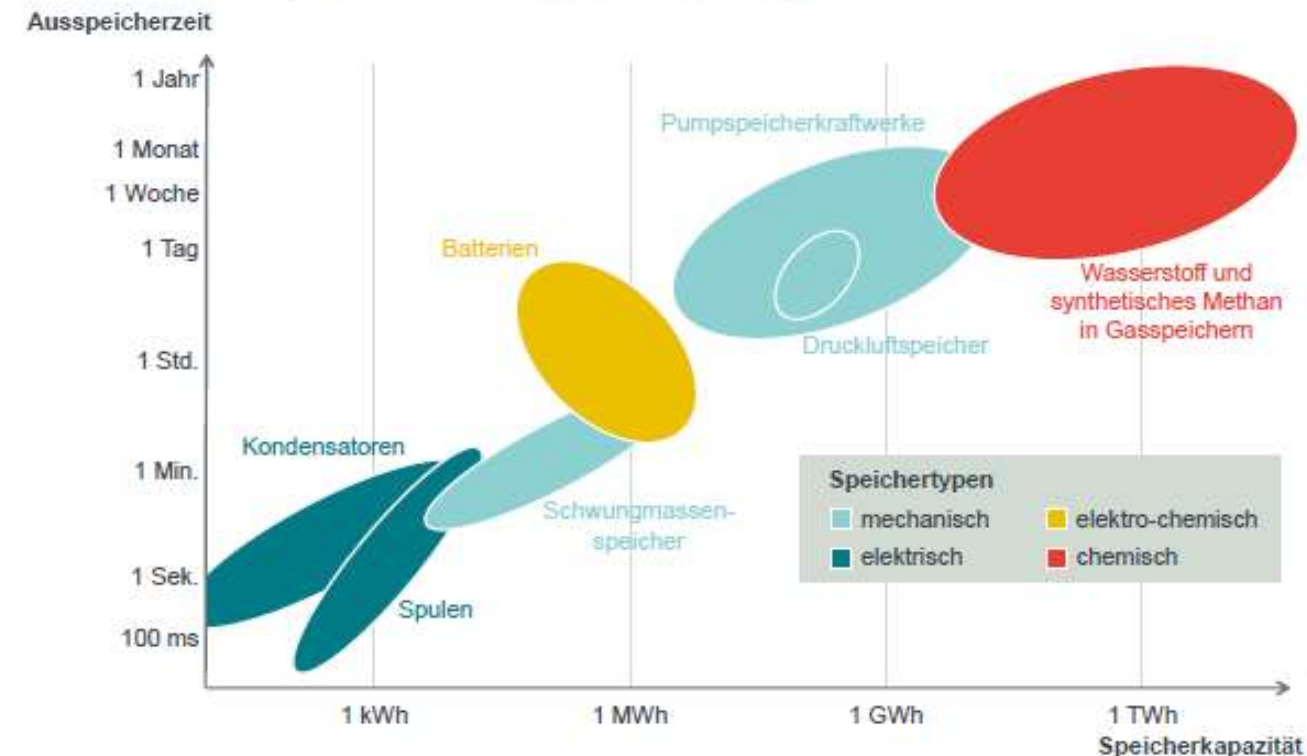
Source: Bundesnetzagentur 2018

Could this money be put to better use?

# Ideology: gas put in the 'dirty fossil corner'

'Power to gas': store RES in large quantities and over long periods of time in the gas infrastructure

Abbildung 15 Speichertechnologien im Vergleich



Quelle: Frontier Economics basierend auf Sterner et. al (2014) S. 19 und eigenen Analysen

Source: Frontier Economics 2017

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## Geopolitics 1: exposure to political blackmail?

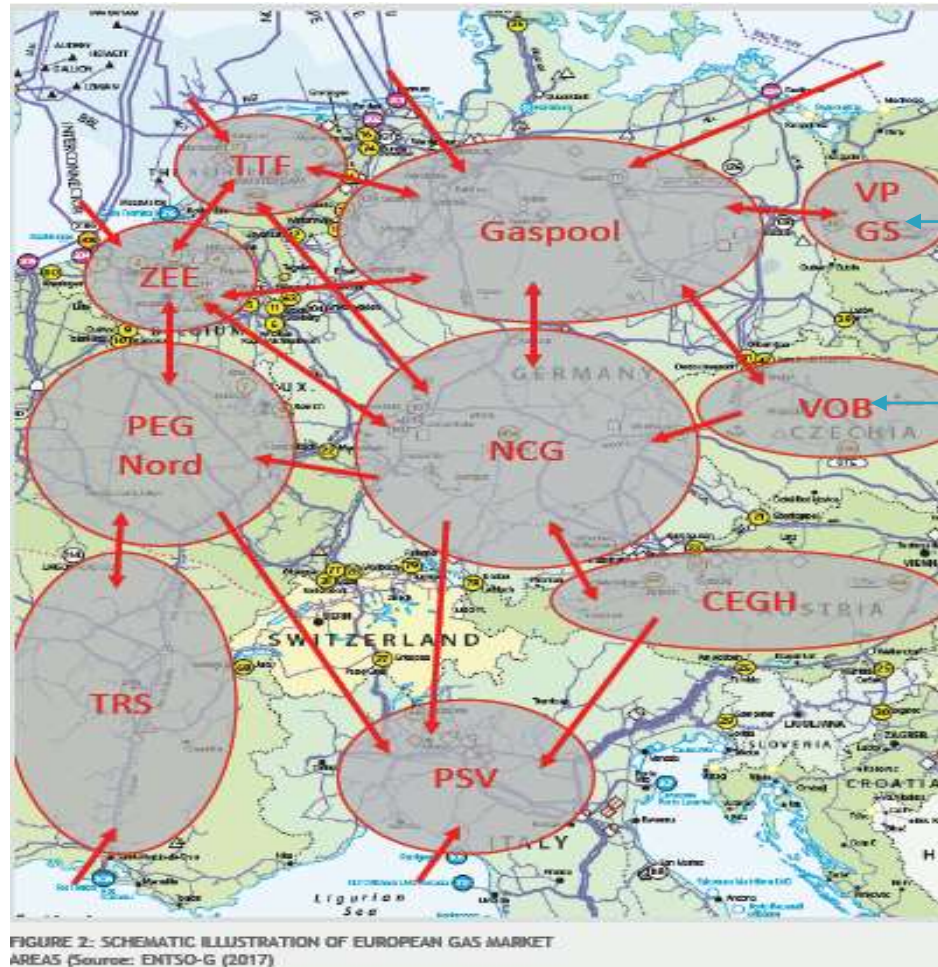
SoS has transformed from physical dependency to functionality of price signals – ‘Putin phobia’ no longer relevant



Ukrainian Crisis 2009: Andrej Budajew, “Putin’s recalcitrant bride”

# Geopolitics 1: exposure to political blackmail?

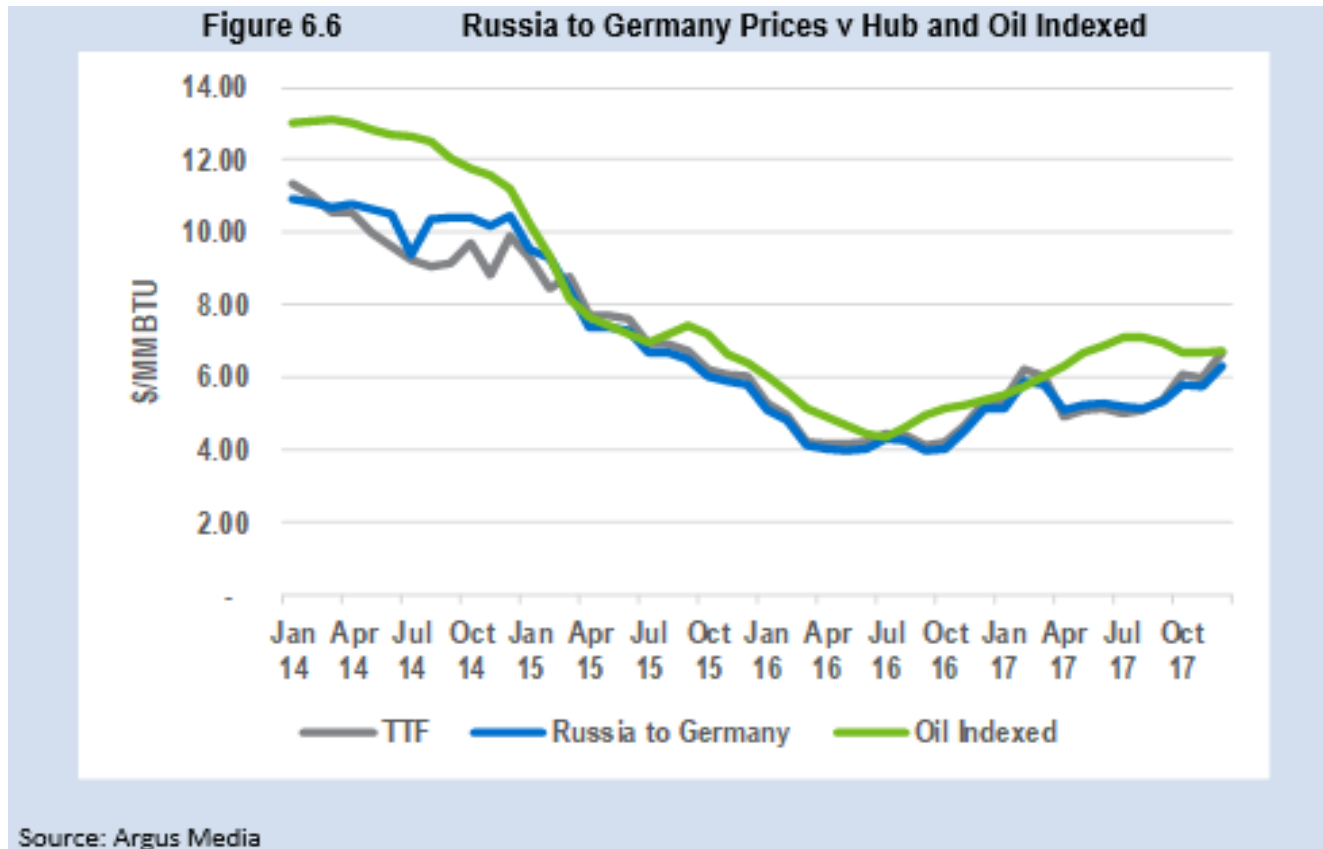
Northwest-Europe: integrated transnational market behaving like a 'single price area' (only Polish VPGS NOT)



Source: ewi Central European Gas Market Congestion Analysis

# Geopolitics 1: exposure to political blackmail?

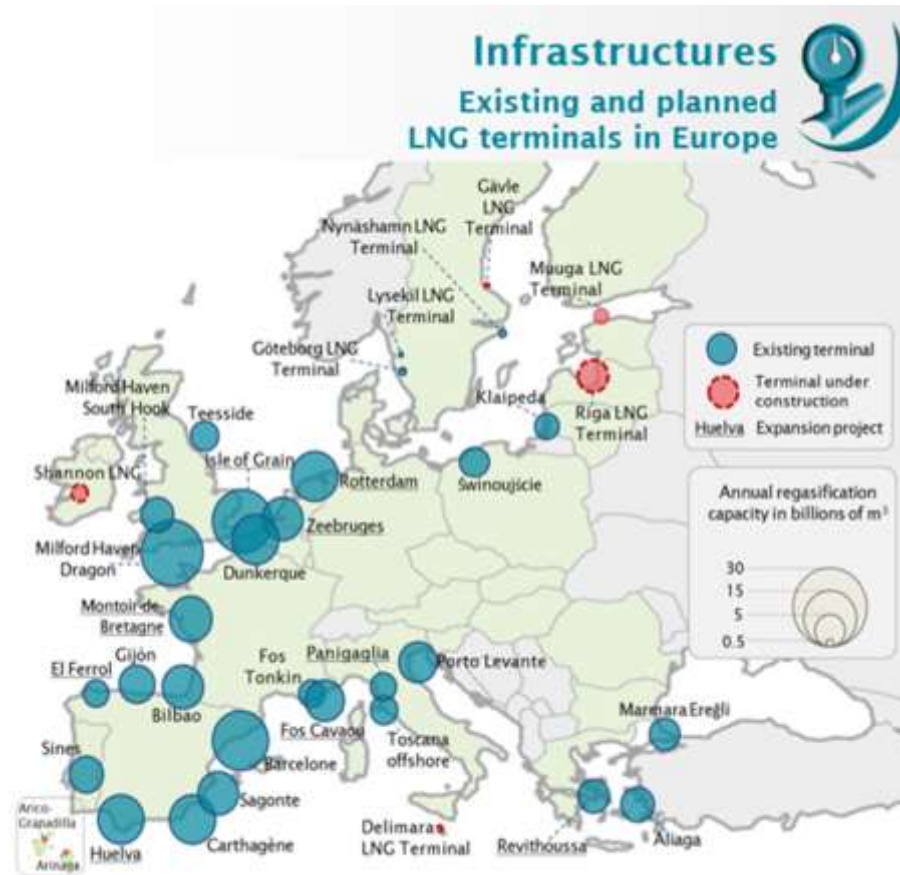
Russian supplies to Germany 2017: 100% TTF correlation  
Crucial is how a country deals with price formation



Source: IGU Wholesale Gas Price Survey 2018 Edition

# Geopolitics 1: exposure to political blackmail?

210 bcm/a of LNG regas terminals (~75% idle)



Source : GIIGNL (2016), GLE (2015)

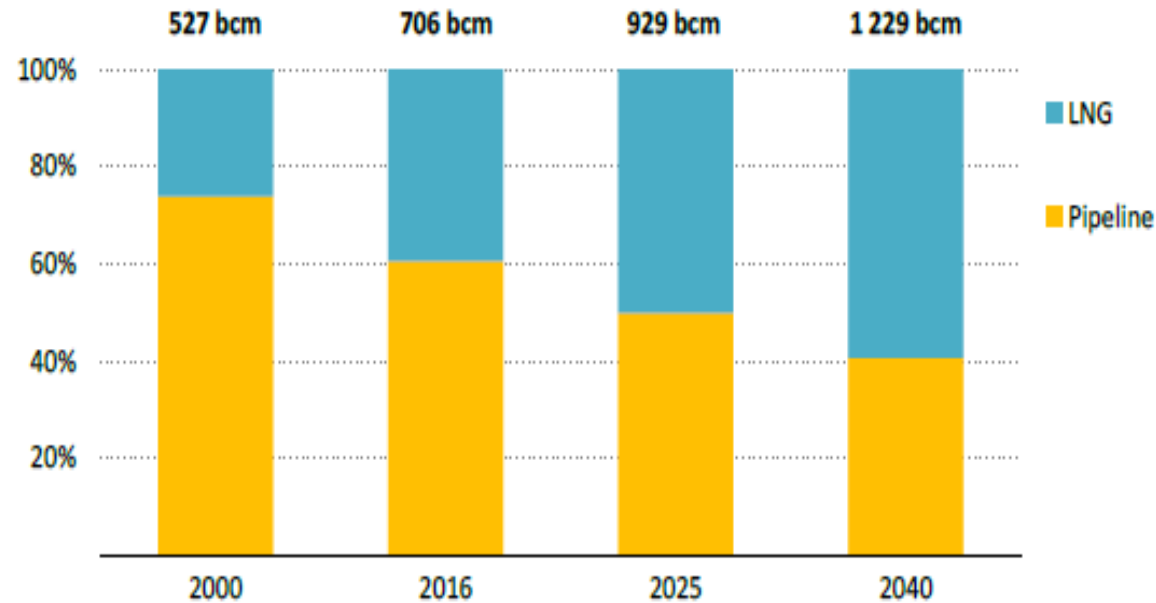
Source: GIE LNG Map 2018



# Geopolitics 1: exposure to political blackmail?

IEA WEO 2017: global LNG => second gas revolution

**Figure 2.16** ▶ Global gas trade by mode in the New Policies Scenario



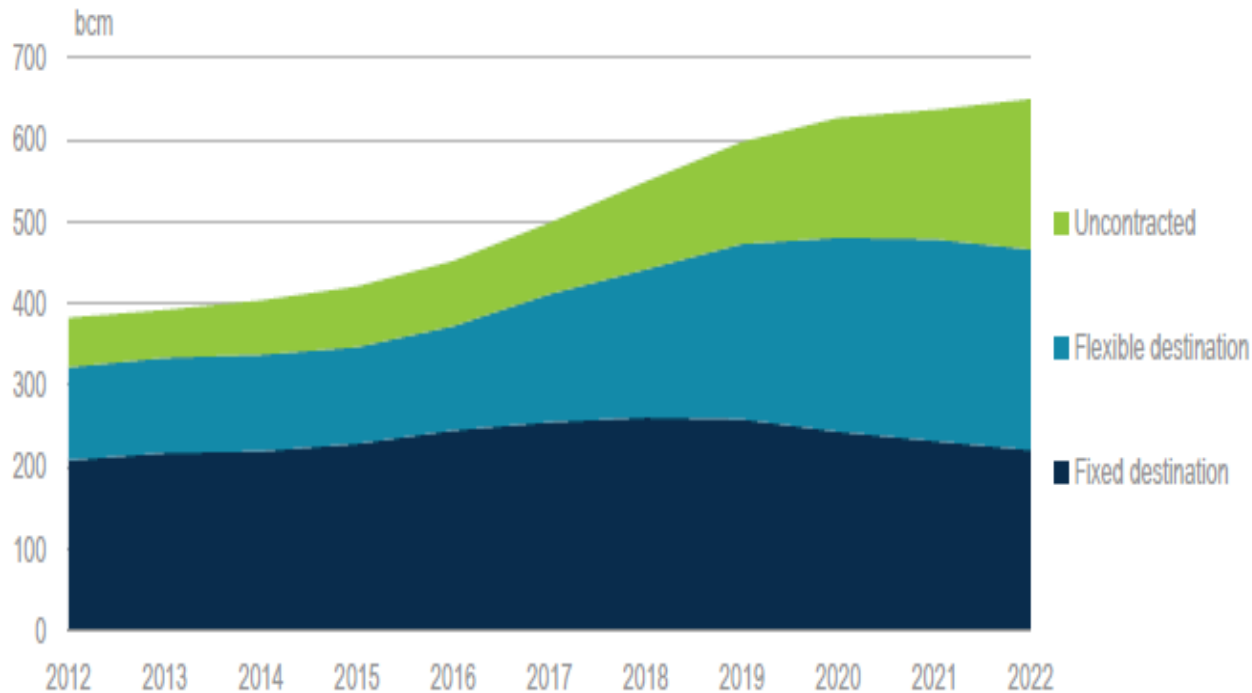
*Almost 90% of additional gas trade in the period to 2040 is in the form of LNG*

Source: IEA WEO 2017

# Geopolitics 1: exposure to political blackmail?

## LNG increasingly 'destination-flexible', responding to price signals

Figure 2.10 • LNG export contract volumes by destination flexibility, 2012-22

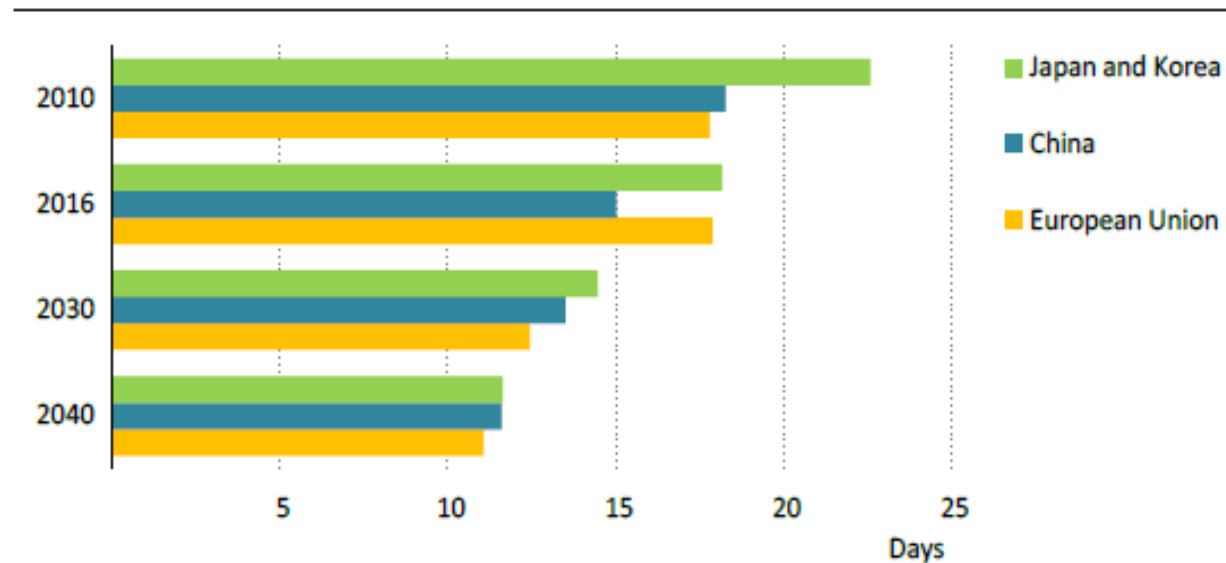


Source: IEA Global Gas Security Review 2017

# Geopolitics 1: exposure to political blackmail?

## LNG response time significantly reduced

**Figure 9.14** ▶ Estimated average time to procure an extra 10% of LNG import volumes by selected importer in the New Policies Scenario



*As LNG trade expands and becomes more diversified, major LNG importers are able to meet an unforeseen 10%-spike in their LNG import demand in much less time than today*

Source: IEA WEO 2017

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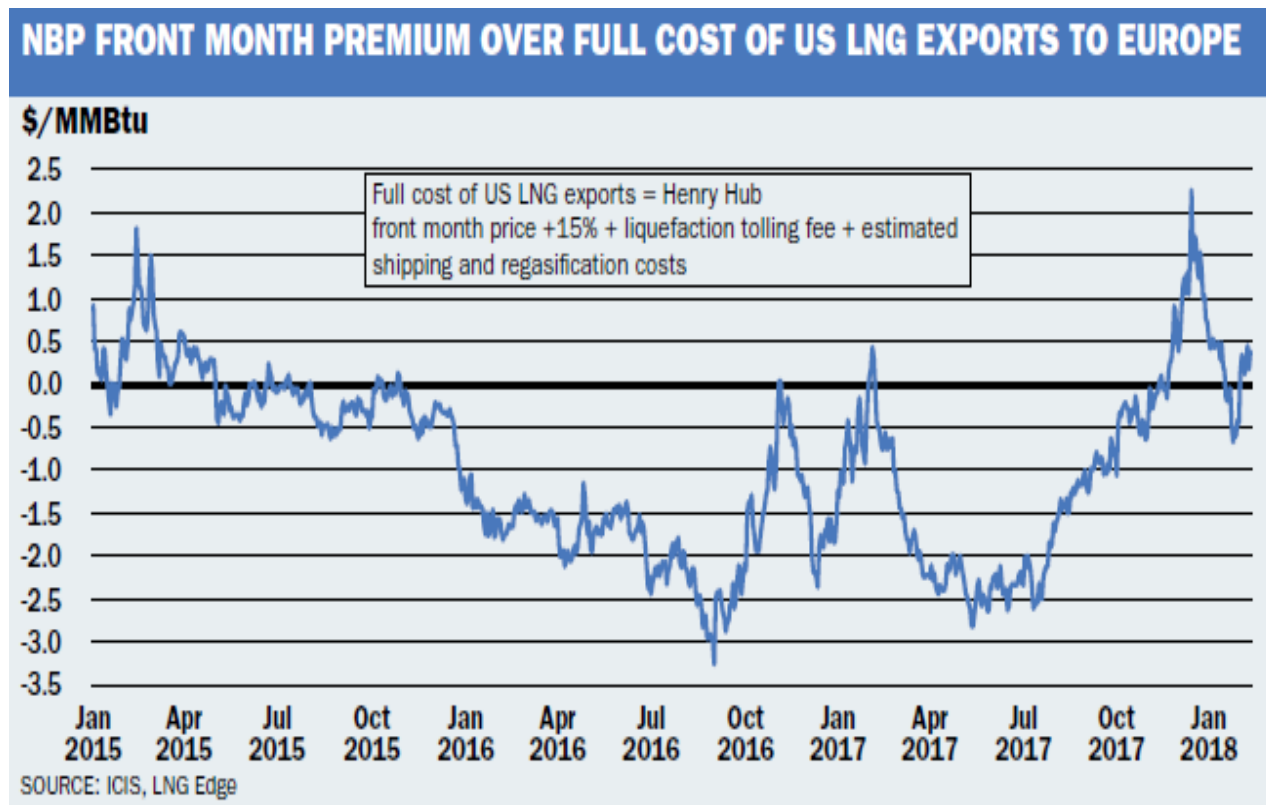
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# Geopolitics 2: should we buy more US LNG?

HH/TTF spread of >3.95 \$/MMBtu required

Not if higher net-backs elsewhere ('money talks')

Hence, 'occasional', not 'permanent' reliance on U.S. LNG

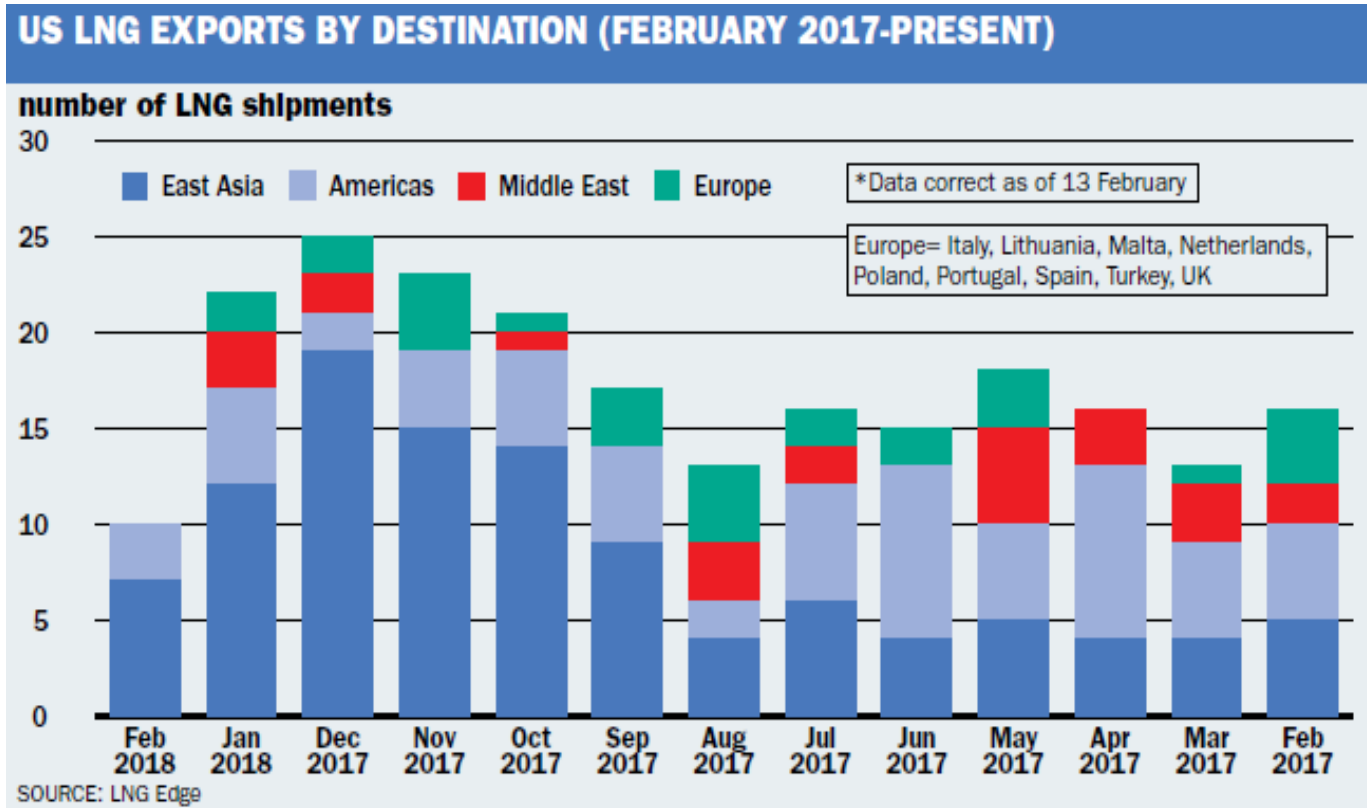


Source: ICIS Heren, EGM 25.03

# Geopolitics 2: should we buy more US LNG?

U.S. LNG 'followed the money'

Since October 2017, 67 out of 101 Sabine Pass cargoes to East-Asia  
9 cargoes to Europe, but only Turkey, Spain, Portugal



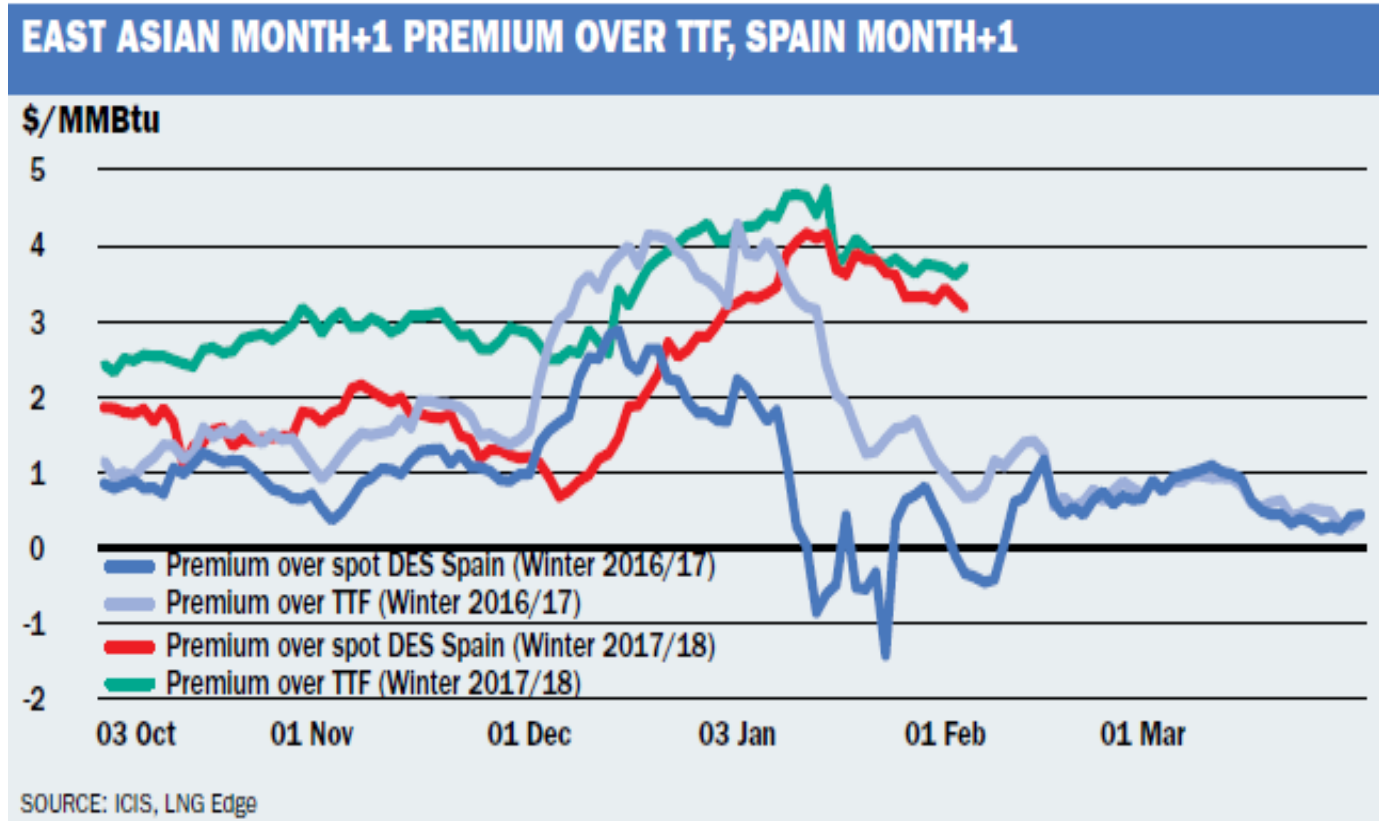
Source: ICIS Heren, EGM 25.03

## Geopolitics 2: should we buy more US LNG?

Exclusive, permanent reliance on US LNG means competing with Asia

Required premium over TTF January 2018 **4.12 \$/MMBtu**

**I.e. TTF price level would have had to be >50% higher**



Source: ICIS Heren, EGM 25.03



For further 'bed-time reading':

- on global gas markets

**'Implications of a global gas market for traditional gas  
economical paradigms',**

by Wolfgang Peters, in February 2018

[http://gasvaluechain.com/cms/wp-content/uploads/2018/03/2018-02-20-Implications-Global-Gas-Market...-W.Peters\\_Gas-Value-Chain.pdf](http://gasvaluechain.com/cms/wp-content/uploads/2018/03/2018-02-20-Implications-Global-Gas-Market...-W.Peters_Gas-Value-Chain.pdf)

- on further European market integration

**Poland, a 'failed state' in gas trading**

Poland's deliberate obstruction of European traded gas market integration and its misguided quest for diversity hinging on 'ideological physicality'

by Wolfgang Peters, in June 2018

<http://gasvaluechain.com/cms/wp-content/uploads/2018/07/GVC-Market-Study-Poland-06-18.pdf>

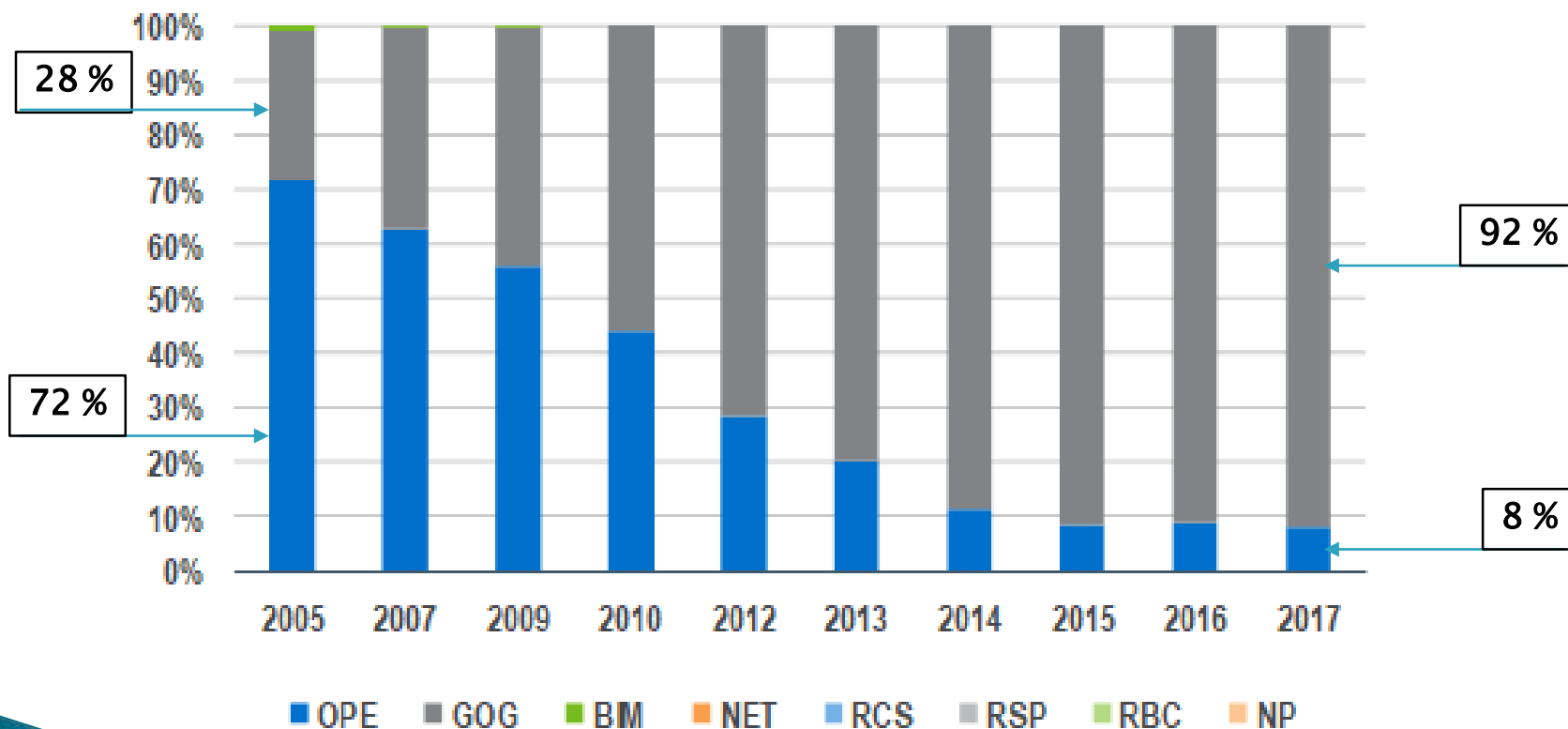


# Geopolitics 1: exposure to political blackmail?

Myth of Russia 'bullying' EU with oil-indexation

IGU: 92% GOG, only 8% OPE (Russian supply share >30%)

Figure 6.5 Northwest Europe Price Formation 2005 to 2017



Source: IGU Wholesale Gas Price Survey 2018 Edition