



The Gas Value Chain Company GmbH

UOKiK NS2 Decision: *'Alternative Facts' & 'Sanctimonious Hypocrisy'*

***UOKiK should clean up the foreclosed Polish market in front of its own doorsteps
instead of acting 'Headmaster' for the EU***

by

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Executive Summary

- The UOKiK decision imposing fines on Gazprom and five Western companies in conjunction with the Nord Stream 2 pipeline project ('NS2') is based on market facts, which are false without exception. Since we find it hard to believe that a competition authority is unaware of the true state of the markets, we choose to call them '*alternative facts*', deliberately put forward to justify its obviously politically motivated decision. To add insult to injury, the alternative facts are presented in sanctimonious hypocrisy fashion ("*... It is astounding that Western corporations fail to understand...*"). The description of the European gas markets, meanwhile embedded in a global gas market, is simply wrong. The depiction of the Polish gas market is misleadingly false. While the UOKiK assumes the role of 'headmaster' for the European Union, Poland continues to obstruct integration of its gas market into the Single European Gas Market by multiple '*non-physical entry barriers*' including anti-competitive practices such as e.g. '*predatory pricing*'. The UOKiK would thus be better advised to clean up the foreclosed Polish gas market in front of its own doorsteps.
- The UOKiK's assertion that Europe is dependent on Russia, and such would be exacerbated if NS2 were completed and became operational, is '*yesterday's news*'. Yesterday's news because it hinges on market circumstances prevailing in 2009, the year of the so-called '*Ukrainian gas crisis*', thereby ignoring the fundamental changes that have occurred since then.
 - Price formation in the European gas markets is predominantly performed by traded hubs, with no remaining price-setting power for importers. The Northwest-European market, where gas-on-gas pricing prevails with 95%, is meanwhile a '*transnational market behaving like a single price zone*'. While the Czech Republic, Poland's CEE neighbor, is part of it, Poland is not, although it could.
 - The Dutch TTF has established itself as the almost universal price benchmark also for other parts of Europe beyond the Northwest-European market. Some 75% of all European gas trades (a record 3,657 TWh in October 2020) are transacted on the TTF.
 - Moreover, the TTF has evolved as a global price benchmark e.g. for would-be LNG sellers. Global commercial operators monitor the spread between the American Henry Hub and the TTF as well as e.g. the Asian EAX respectively. They are continuously looking for where they can achieve the highest netback.
 - This means that the TTF, and thus Europe, can send out 'price signals' into the global gas market, e.g. price spikes if a major source of supply for Europe fails, be it for technical reasons or by an attempt to exercise political blackmail.
 - The so-called '*LNG revolution*' (IEA) has fostered a global gas market with an ever increasing quantity of destination-flexible and even destination-free LNG (IEA: ~500 bcm/a in 2025), ready to respond to attractive price signals on short notice. The pandemic causing cargo cancellations and terminal underutilization has not reduced, but amplified the response capabilities: significant quantities of LNG were – similar to

practices known in the oil market - put into 'floating storages' (LNG tankers), '*locked and loaded*' to respond to any attractive price signal.

- Europe avails of significant import infrastructure capacity far beyond its import needs. Besides an extensive, well interconnected pipeline grid, the LNG re-gas capacity comprises some 220 bcm/a, i.e. more than the entire Russian supplies to Europe. It can thus accommodate LNG in large quantities should the need arise.
- The availability of abundant destination-flexible global LNG affords Europe the best of two worlds: Pipeline gas and LNG compete, keeping prices low. At the same time, LNG sets the maximum achievable price for pipeline gas: LNG acts as the 'policeman'.
- Hence European security of supply has transformed from once '*bilateral physical dependency*' into a '*functionality of global price signals*', which renders the UOKiK assertions of dependency on Russia '*yesterday's news*'.
- Also infrastructure resilience tests, particularly the stringent ones performed by ENTSOG in its Union-wide SoS simulation report 2017, confirm, in a variety of scenarios, that dependency on Russia is, particularly also for Poland, a myth.
- The ENTSOG scenario simulating a complete disruption of Nordstream (1) at the Greifswald receiving station causes no supply curtailment anywhere. The ENTSOG scenario simulating the disruption of all Russian imports via Ukraine (i.e. emulating the 2009 gas crisis) reveals that Nordstream (1), carrying 55 bcm/a, *alleviated* a thus far existing European concentration risk: up to 120 bcm/a (>50%) of Russian imports via one single transit corridor, namely Ukraine.
- The UOKiK's assertion of Poland's dependence on Russia can hardly stem from ignorance, but rather appears to be made 'against better knowledge', rendering it '*fake news*' based on '*alternative facts*'.
 - Poland scores well under ACER's 'market health metrics' by boasting five different sources of supply and even more delivery-/interconnection points.
 - Also with regard to the so-called residual supply index ('RSI'), computed by dividing the sum of existing supply capacities minus the largest source (Russia) by domestic consumption, Poland scores well with RSIs >100%.
 - In the (unlikely) event that Yamal East-West transit flows would, as a consequence of both NS1 and NS2 being fully utilized, be diminished or subside completely, and thus also the possibility of Yamal virtual reverse flow, Polish independence from Russia would not be affected.
 - This conclusion is also confirmed by ENTSOG's scenario #2, '*Disruption of all Imports via Belarus*': no supply disruption whatsoever transpires for European Member States at large and also not for Poland.

- While the UOKiK asserts that NS2 is '*dividing Europe*', it is in fact Poland which is working hard to '*divide*' Europe. While having locked up its market to the West and pursuing its aspiration of becoming a '*pivotal hub*' to the East, it sits like a '*cork in the bottle*' between the transnational Northwest-European market and Poland's eastern neighbors.

What else can be more divisive than Poland preventing its eastern neighbors from becoming part of the – nearly completed - '*European Henry Hub*'?

- The UOKiK's assertion that Gazprom, if NS2 became operational, might be in a position to '*increase end-consumer prices*' (in Poland and elsewhere in Europe), is a populist statement lacking any understanding of how markets work. Gazprom is an importer at the wholesale market level. End-consumer prices can only be affected indirectly by means of procurement cost. Whether, however, Gazprom or any other importer has price-setting power on the wholesale market, depends on the price formation prevailing. Since hubs are the price setters, there is neither a direct nor an indirect possibility for Gazprom to increase wholesale prices, let alone end consumer prices.
 - Professional wholesale traded market price impact assessments (e.g. by ewi), conclude reduced wholesale traded market price levels for Europe at large if NS2 volumes became available in the market. Absent NS2 volumes, more LNG would need to be imported at elevated prices. The European welfare benefits according to ewi range between € 7.9 billion (in a low global LNG Demand scenario) and € 24.4 billion (in a high global LNG demand scenario) annually.
 - Ewi concludes, for Poland alone, welfare benefits from NS2 volumes coming to market of € 0.4 to 1.3 billion. This of course only, if Poland would drop its entry barriers towards the Northwest-European market.
 - The author, taking a less granular approach than ewi, but rather looking '*holistically*' at the European wholesale traded markets at large, arrives at a much larger number: If Russian NS2 gas were rebuked, Europe would have to compete for much larger quantities of global LNG with Asia on a *permanent* basis. The average Asian price premium (prevailing for a long time before October 2018) comprised some 3.3 \$/MMBtu (i.e. ~10 €/MWh). The respective welfare loss (or, conversely, welfare benefit if NS2 volumes would flow) for European citizens could amount, in a high global LNG demand situation, to some € 50 billion per year.
 - The debate around the '*Navalny incident*' is '*misguided*'. While unequivocally an inexcusable crime, an NS2 '*construction stop*' demanded by populist politicians would punish the wrong targets. Gazprom, however, could easily increase its booking of Ukrainian transit capacities and continue with undiminished gas supply levels. It would thus have to be an *embargo* of substantial quantities of Russian gas imports (and not an NS2 '*construction stop*') which would '*really punish*' Russia, if politically deemed expedient. The consequence would be elevated wholesale traded market prices in the range indicated above. Moreover, in order to avoid collateral damage to transit countries (e.g. Ukraine, Poland), such punishment should then aim

at delivery points exclusively hitting Russia, i.e. Greifswald (Nord Stream 1) and Lubmin (NS2).

The somewhat startling conclusion is thus that those most urgently demanding '*punishment*' should, if they are serious, be pushing hard to *expedite* NS2 completion in order to increase the '*punitive leverage*'.

- ACER observes stronger interdependence of hubs and further convergence of sourcing costs. Poland, however, stands out negatively with exceptionally high spreads versus the TTF benchmark on average hub price levels and even more so on day-ahead (i.e. spot price) divergence. Its hub still scores poorly in ACER's category of '*emerging hubs*'.
- Gazprom is meanwhile '*price-taker*' in the European wholesale traded markets. Its average LTC prices essentially trail, at somewhat higher levels than average traded prices, the TTF. Gazprom's auction platform 'ESP' has made up more than 14 bcm of sales '*lost*' through down-nominations by long-term contract customers in 2019. The ESP products on offer comprise all manner of traded products. The prices are essentially matching TTF prices, at times even lower.
- The UOKiK asserts that the high investment costs for NS2 would cause price increases for end consumers. Also this assertion is embarrassingly wrong: Since the achievable price for an importer is the wholesale traded market price, such price is a '*given*'. The costs of transport cannot affect such achievable price. Rather, they affect, just as other '*upstream costs to ship to market*', only the well-head netback of the producer.
- The UOKiK's assertion that Gazprom would, e.g. by means of NS2, impose '*territorial restrictions*' and (unilaterally) '*increase prices*', deliberately ignores the 2018 DG Comp/Gazprom settlement, in which Gazprom committed to the contrary. For Poland, being the only Member State challenging the settlement in court since it had wanted a hefty fine to be imposed on Gazprom, it is distasteful and probably '*ultra vires*' to anticipate breaches of such commitments and impose fines '*in advance*'.
- Poland has not removed its multiple '*non-physical entry barriers*': it continues to obstruct free cross-border trade, does not embrace the fair and competitive liberalized European market practices and even tolerates anti-competitive behaviour.
 - The economically prohibitive storage obligation continues to apply, keeping international traders out of the Polish market. Despite the EC eventually serving a '*Reasoned Opinion*' in November 2019, Poland has only proposed to '*gradually ease*' the storage obligations for LNG imports, conveniently ignoring that all LNG re-gas capacity had already been booked on a long-term basis by incumbent PGNiG.
 - The retail market, in 2018 qualified by the author as a '*commercial no-go area*' due to the prevailing predatory pricing practices of incumbent PGNiG, tolerated by the Polish regulator (and obviously also by the UOKiK), saw PGNiG's market share '*increase*' in 2018 and 2019. The Polish regulator explains that '*several*' new entrants

'ceased operations' and PGNiG stepped in as the *'supplier of last resort'*. The *'commercial no-go area'* has thus claimed its first victims.

- Poland has made significant progress in further diversifying its supply sources. The 10 bcm/a Baltic pipe project, supported by lavish EU subsidies, is well under way. Moreover, the LNG terminal Świnoujście is being expanded from 5 bcm/a to 7.5 bcm/a and yet another LNG terminal (8 bcm/a) is planned to be erected. Poland will thus shortly avail of non-Russian import capacities way beyond its own import needs, in pursuance of its dream to become a *'pivotal hub'*. There is no evidence that the asserted dependence on Russia is, e.g. by means of *'tacit coercion'* or otherwise, standing in the way, quite the contrary.
- Poland has been very successful in reversing its true role in the European Energy Union, namely *'culprit'* by obstructing market integration and tolerating anti-competitive practices, into *'victim of Russian dominance'*, thereby collecting substantial amounts of EU subsidies, i.e. European tax payers' money.
- The current transport arrangements regarding Russian gas imports, particularly the Ukrainian transit accord (with those capacities not booked liable to be mothballed or even completely decommissioned in the not too distant future), ride on the *'tacit optimism'* that NS2 will be completed with only *'minor delay'* despite all objections and troubles including American sanctions. Due to this *'tacit optimism'*, the respective capacity arrangements are *'tightly stitched on edge'*, without any remaining *'buffer-capacity'*, catering for seasonal cold spells, to speak of. With NS2 not completed, e.g. another *'beast-from-the-east'* could easily cause a supply crunch and in consequence price spikes up to levels required to attract sufficient quantities of global LNG.

Nonetheless, Poland is going out of its way to still derail the project entirely, or at least delay it as long as it can. It is annoying that Poland, falsely pretending to be *'victimized'* by Gazprom via NS2, might instead *'hurt'* European citizens at large if a supply crunch arises and prices go through the roof. It would then be the European citizens dearly paying for the Polish foolhardiness.

Last but not least, Poland is also, by any action aiming to protract or even derail NS2, damaging the efforts of the gas industry to reduce emissions along the entire gas value chain: NS2 would bring about significant quantities of CO₂_{equ} reductions (~11 million tons per annum) compared with continued Ukrainian transit.

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1. Introduction

On 6 October 2020, the 'President of the Polish Office of Competition and Consumer Protection' ('UOKiK') slapped the maximum competition fine (10% of its annual turnover) on Gazprom¹ – an eye-watering € 6.5 billion, some two thirds of the total Nord Stream 2 ('NS2') pipeline project investment costs. A global record – even Bill Gates got off easier with DG Comp².

Moreover, substantial fines were imposed on French Engie, German Uniper, Austrian OMV, British/Dutch Shell and German Wintershall (the '*Western Companies*'). The latter had previously aspired to cooperate with Gazprom as joint venture partners in the construction and ownership of NS2, but stepped back in 2016 towards a mere financing role, some € 950 million each, on account of the Polish UOKiK indicating objections against their '*intention to concentrate*'.

The UOKiK decision is hinging on somewhat of a '*conspiracy theory*': the Western companies, initially aspiring to become joint venture partners (in a string of steel pipes carrying gas, such gas mostly nominated by long-term contract customers aspiring to meet market demand, in the eyes of the UOKiK nonetheless constituting an '*anti-competitive cartel*'), clandestinely continued to pursue their purpose, 'pretending' to only be financiers. The UOKiK considers this confirmed by the fact that the Western partners stipulated NS2 shares as loan collateral, which, so the UOKiK, makes the Western Companies '*quasi-stakeholders*'.

It is neither my place nor my aspiration to dwell on legal aspects of the case³. It is surprising though that the Polish UOKiK is, besides claiming Polish national security of supply concerns (all of which we shall assess as false further down below), concerned about the *European* security of supply at large, for which I thought thus far the EC's DG Comp is in charge. The relevant body of the EC, however, appears to neither have been involved at all nor even informed. European Commissioner Margrethe Vestager is quoted by Politico as saying "*The case is new to me, it's not something where we had a close cooperation with the Polish national competition authority*"⁴. Apparently, the UOKiK did not consider it necessary to align with the EC, and assumed the role of 'headmaster' for the European Union on its own.

Disturbing if not embarrassing is the fact that the UOKiK used an entirely false factual basis regarding European, global and, importantly, Polish gas market circumstances to justify its decision. Since we find it hard to believe that a competition authority is really 'unaware' of the true state of the markets, we take liberty to qualify the '*false facts*' as '*alternative facts*', deliberately put forward to justify its obviously politically motivated decision. To add insult to injury, the UOKiK chose to '*lecture*' the EU in '*sanctimonious hypocrisy*' fashion. The respective part of the UOKiK press statement reads: "...*the undertaking splits Europe in two parts, with the*

¹ The full decision is only available in the Polish language (https://decyzje.uokik.gov.pl/bp/dec_prez.nsf). This paper will thus allude to the UOKiK's press statement (https://www.uokik.gov.pl/news.php?news_id=16818; [UOKiK - About us - About us - News - Nord Stream 2 - maximum penalties imposed by UOKiK President](#)). A Polish legal expert, who does not want to be named, confirmed that the quotes from the press statement used in this paper are "*fully reflective of the reasoning presented in the decision.*"

² https://ec.europa.eu/commission/presscorner/detail/en/IP_13_196

³ Noteworthy Politico's consultations in that respect: "*Four competition experts acknowledged the watchdog's reasoning is novel. One qualified it as 'a stretch.'*" (<https://www.politico.eu/article/poland-hits-gazprom-with-world-largest-competition-fine/>).

⁴ <https://www.politico.eu/article/poland-hits-gazprom-with-world-largest-competition-fine/>

border located on the Odra river. **It is astounding that Western corporations fail to understand that⁵** and participate in an undertaking that not only disturbs competition on the market, but also poses a threat to Europe's energy security."⁶ In my book, it is the lecturous arrogance of these words that is 'astounding', i.e. qualifying such as 'sanctimonious hypocrisy' is putting it mildly.

While, from time to time, the gas industry might not be happy with the assessments and conclusions of competition authorities, be it national or European, their decisions are usually based on a thorough analysis and understanding of the relevant economic facts, in the case at hand of the gas markets.

Not so the UOKiK decision. It completely misrepresents the European gas market and its embeddedness in the meanwhile evolved global gas market and is, in consequence, basing its decision simply on false facts. Even worse is the UOKiK's depiction of the prevailing circumstances of the Polish gas market: they are blatantly false and I dare say put forward against better knowledge. Hence, the entire UOKiK decision appears to be rather a political maneuver by spreading 'fake news' based on 'alternative facts'. It is certainly not a well-reasoned decision based on the rule of law, a widely recognized 'Polish problem' also beyond the energy space⁷.

In the following, I shall in turn address the main 'arguments' brought forward by the UOKiK. On various aspects, I shall re-visit some of my earlier findings and observations on the Polish gas market in GVC's Polish Gas Market Study of June 2018: "*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'*"⁸. Of the various aspects addressed, the focus shall inter alia be on Poland's residual supply index ('RSI'), which compares the sum of all available supply sources minus the largest supply source (Russia) with domestic consumption. Based on 2017 numbers, computed at maximum capacities⁹, Poland featured RSI values >100%, already then belying dependency on Russia.

Further, we shall take a look at the status of Poland's multiple 'non-physical entry barriers', i.a. blocking free cross-border trade and tolerating predatory pricing in the retail space. Free cross-border trade was, and continues to be, stifled by means of an economically prohibitive storage obligation, at the time resulting in a 'Letter of Formal Notice' by the EC and meanwhile escalated towards serving a 'Reasoned Opinion', which could lead to legal action of the EC against Poland at the ECJ. The prevailing predatory pricing caused several bankruptcies of new entrants. We shall thus see, that the Polish market continues to be foreclosed by a raft of 'non-physical entry barriers'. Thus, instead of acting 'headmaster' of the EU in sanctimonious hypocrisy fashion, the UOKiK should rather clean up in front of its own doorsteps.

Moreover, we shall explore whether Poland's efforts to further diversify and expand non-Russian gas supplies – at times in economically questionable fashion – may have been stifled

⁵ Emphasis added.

⁶ UOKiK press statement, page 3.

⁷ <https://reneweuropegroup.eu/en/news/1602-poland-s-rule-of-law-crisis-must-be-urgently-addressed/>

⁸ GVC Polish Gas Market Study.

⁹ As opposed to ACER applying hefty discounts (see GVC Polish Gas Market Study, page 11 ff.).

(e.g. by ‘*tacit coercion*’ or otherwise due to the alleged dependency on Russia) or have been progressing as aspired.

2. Alleged European dependency on Russia is ‘*yesterday’s news*’

The UOKiK claims that NS2 would ‘*increase*’ Europe’s dependency on Russia: “... *Completion of this investment increases the economic dependence on the Russian gas – not only in the case of Poland, but also of other European states*”^{10,11}

Unfortunately, it can be observed all too often that politicians (both European and American), acting as self-appointed energy experts, oppose NS2 by alluding to conditions of the European gas markets as they prevailed in 2009, the year of the so-called ‘Ukrainian gas crisis’¹². Thereby, they are completely ignoring the fundamental changes that occurred in Europe and globally since then. The fact that now also officers of a competition authority, namely the Polish UOKiK, reveal the same ignorance, necessitates to re-explain why the alleged dependence on Russia is, and has been for a while, ‘*yesterday’s news*’.

We shall explain that the predominant price formation occurs by hub-trading in the wholesale traded markets, that therefore there is no remaining price-setting power for importers, that the European traded markets have the ability to send out price signals to attract alternative global LNG supplies in case of need, that the ever growing quantity of destination-flexible LNG in the meanwhile global gas market would respond to such price European signals and that Europe avails of ample redundant import capacities capable of receiving such alternative supplies.

2.1 Price formation by traded markets – importers’ price-setting power gone

Price formation in the European gas market is meanwhile predominantly performed by traded markets, i.e. supply and demand determine price levels. There is no remaining price-setting power of importers¹³, including Russia. The IGU Wholesale Gas Price Survey 2020 describes the developments in the European markets since 2005 as “...*one of the regions where the most significant changes in price formation mechanisms have taken place.*”¹⁴ What the IGU alludes to is the demise of ‘OPE’ (‘oil price escalation’) and the rise of ‘GOG’ (‘gas-on-gas competition’).

While this development varies for different regions across Europe, already the European average is impressive: OPE declined from 78% in 2005 to 22% (some 118 bcm) in 2019. GOG rose from 15%¹⁵ in 2005 to 78% (some 425 bcm) in 2019. No doubt the European average is tarnished by those (few) Member States where it still lacks the political will to fully embrace the liberalized European market regime, characterized by free cross-border trade on hubs.

¹⁰ Emphasis added.

¹¹ UOKiK press statement, page 4.

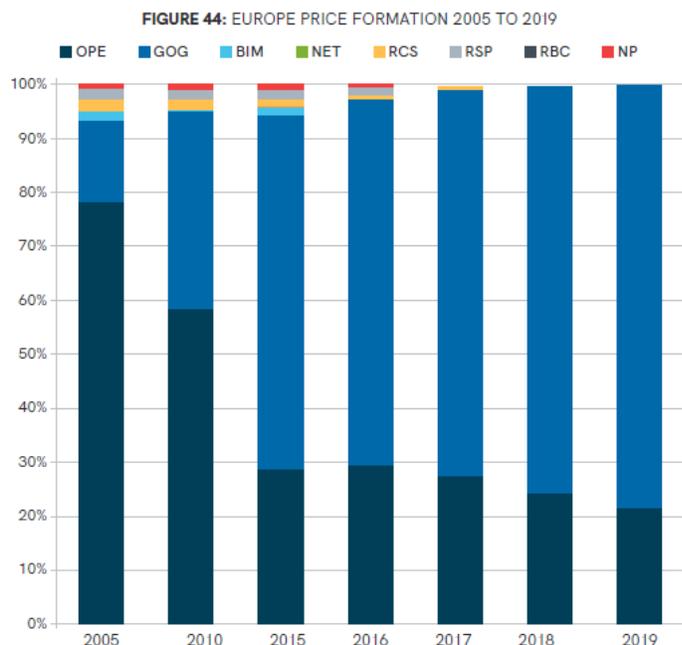
¹² E.g. German MP Norbert Röttgen speaks of a “*one-sided dependencies*”, which never were “*in the interest of Germany*” (<https://www.handelsblatt.com/politik/deutschland/kampf-um-cdu-vorsitz-norbert-roettgen-nord-stream-2-war-nie-im-deutschen-interesse/26247212.html?ticket=ST-4207663-OxysIH6RsPMdfBTcVKsR-ap5>)

¹³ ‘Enron-style’ price manipulations by misusing volume power are of course theoretically possible, but I would not qualify them as ‘price setting power’, but rather as breaking the law, a universal potential issue in all traded markets.

¹⁴ IGU Wholesale Gas Price Survey 2020, page 46.

¹⁵ In 2005, also other price formation mechanisms prevailed, see IGU Wholesale Gas Price Survey 2020, page 46.

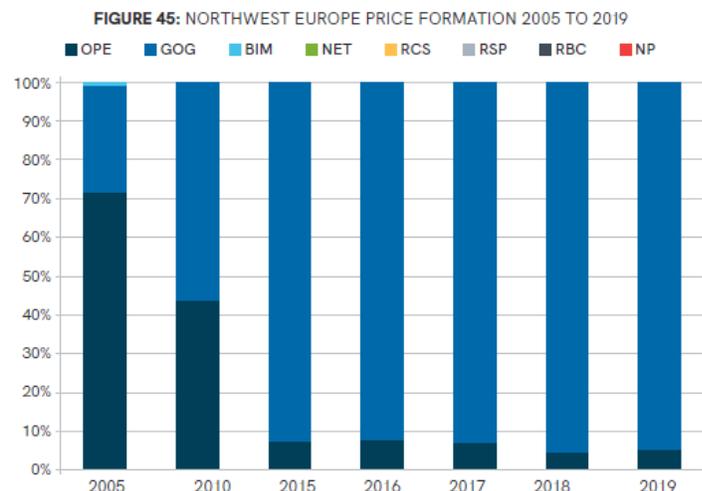
Figure 1: European gas price formation



Source: IGU Wholesale Gas Price Survey 2020 edition, page 46.

Even more striking is the development of the Northwest-European markets. The IGU Wholesale Gas Price Survey 2020 considers Northwest-Europe as the place with “...the most dramatic changes in price formation mechanisms, with a complete reversal in the ratio of OPE ... and GOG...”¹⁶. While OPE was at 72% in 2005, it declined to 5% in 2019. GOG featured 28% in 2005 and rose to 95% in 2019.¹⁷

Figure 2: Northwest-European gas price formation



Source: IGU Wholesale Gas Price Survey 2020 Edition, page 48.

¹⁶ IGU Wholesale Gas Price Survey 2020, page 47.

¹⁷ IGU Wholesale Gas Price Survey 2020, page 47.

The transnational Northwest-European traded market is important in the context of this paper. Namely, the Czech Republic, Poland's Central-European neighbor, is price-wise fully correlated to and hence effectively part of such Northwest-European market. This also belies the frequently encountered assertion that 'all' CEE countries universally still 'suffer' from Russian dependency. Poland - although it could - is not part of the Northwest-European transnational market by its own doing.

Heather and Petrovic describe the Northwest-European market '... as if it is a single price area, i.e. a fully integrated trans-national market for gas'¹⁸. The price correlation between the various national hubs and the (leading) Dutch TTF is so strong, that at times the spread is smaller than what it would cost to book entry/exit to physically get gas from one hub to another.¹⁹

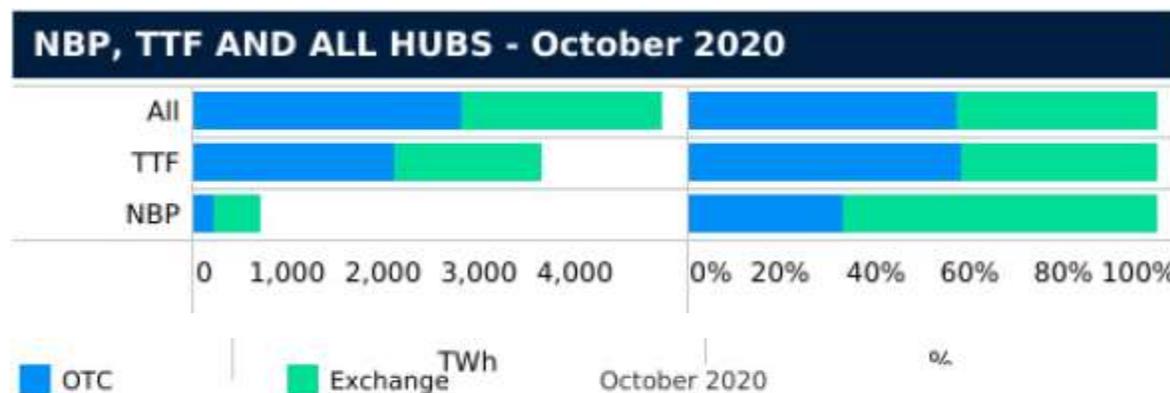
We shall come back in somewhat more detail to the regulatory regime which, besides the markets themselves, facilitated the massive changes since 2009. The important point regarding Poland is that, besides market development and regulatory changes, it requires the political will of the respective Member State government to embrace such changes. This entails political acceptance of (erroneously perceived) loss of control and instead trusting the markets to take care. Poland is one of the few Member States which has not been able to bring this about as yet.

2.2 TTF meanwhile *the* European- and also a global price benchmark

TTF meanwhile European price benchmark also beyond the Northwest-European markets

The TTF has firmly established itself as the leading European trading hub. In October 2020 it transacted 3,657 TWh (OTC and Exchange), some 75% of all gas traded in Europe. This volume represents also >70 % of the entire European annual consumption in one month, a new record despite October being a 'flank month' with relative mild temperatures and demand depressed by the pandemic.

Figure 3: TTF trade turn-over in October 2020



Source: ICIS Heren GIF 27.20 of 16 November

¹⁸ Heather/Petrovic OIES Energy Insight 13, page 18.

¹⁹ It should be noted that spread convergence/divergence in 2019 saw outliers, due i.a. to uncertainty about the Ukrainian transit extension, exceptionally high influx of LNG and high storage fill-levels, see ACER, GMMR 2019, page 7.

The TTF has become the European price benchmark also *beyond* the Northwest-European market. In other words, also in European regions not belonging to the Northwest-European transnational market, and not as developed in GOG over OPE, the TTF serves as the almost universal benchmark. ACER, in its Gas Market Monitoring Report 2019, describes this as follows: “*The spot price correlations between TTF and other EU hubs increased in 2019, indicating both the growing role of the Dutch hub as a pricing benchmark as well as stronger interdependence of EU hubs.*”²⁰

Such is not the case in Poland. This is particularly regrettable, since Poland has all it takes to become a fully integrated part of the Northwest-European traded market. Unlike its CEE neighbor, the Czech Republic, Poland has locked-up its market and refuses to embrace the liberalized Single European Market with free cross-border trade from hub to hub.

The TTF has also evolved as a global price benchmark

The TTF has also evolved as a global price benchmark, e.g. for financial hedging by LNG suppliers and/or buyers²¹. Notably, the latter (financial) use of the TTF has resulted in a churn rate of 70.9, higher than that of the American Henry Hub (53.9)²².

Figure 4: Hub Churn Rates

Table 8: Global Benchmark churn rates, 2018

| Representative churn rates 2018 (trading/consumption) | | |
|--|---|---------|
| Country | Hub | Churn |
| United States | HH | 53.9 |
| Netherlands | TTF | 70.9 |
| Britain | NBP | 16.9 |
| FR-DE-AT-CZ-Benelux | TTF | 16.7 |
| UK-IE | NBP | 15.9 |
| Austria | VTP | 6.9 |
| Germany | NCG+GPL | 3.3 |
| Belgium | ZEE+ZTP | 3.1 |
| Rest of Europe | FR,IT,CZ,ES | 0.3-1.7 |
| Asia | No hubs yet but increasing spot trading | |
| CN-JP-KR-TW | JKM | 0.2 |

Sources: JODI, Platts, LEBA, ICIS, ICE, ICE-Endex, PEGAS, CME, GME, MIBGAS; T.Bros, P.Heather

Source: Heather, OIES Energy Insight 55, page 11.

The TTF’s role as a ‘global price benchmark’ is not limited to the function of providing price signals to would-be LNG sellers. Rather, it has become an important element in the global gas market, where not only suppliers, but also *buyers* closely monitor the price action on the U.S. Henry Hub (‘HH’), in East-Asia, monitored e.g. by the ICIS Heren East-Asia index (‘EAX’), in South-America, monitored e.g. by the ICIS Heren South-America index (‘SAX’) and in Europe, monitored e.g. by the ICIS Heren Northwest-European index (‘NEX’), equivalent to the TTF.

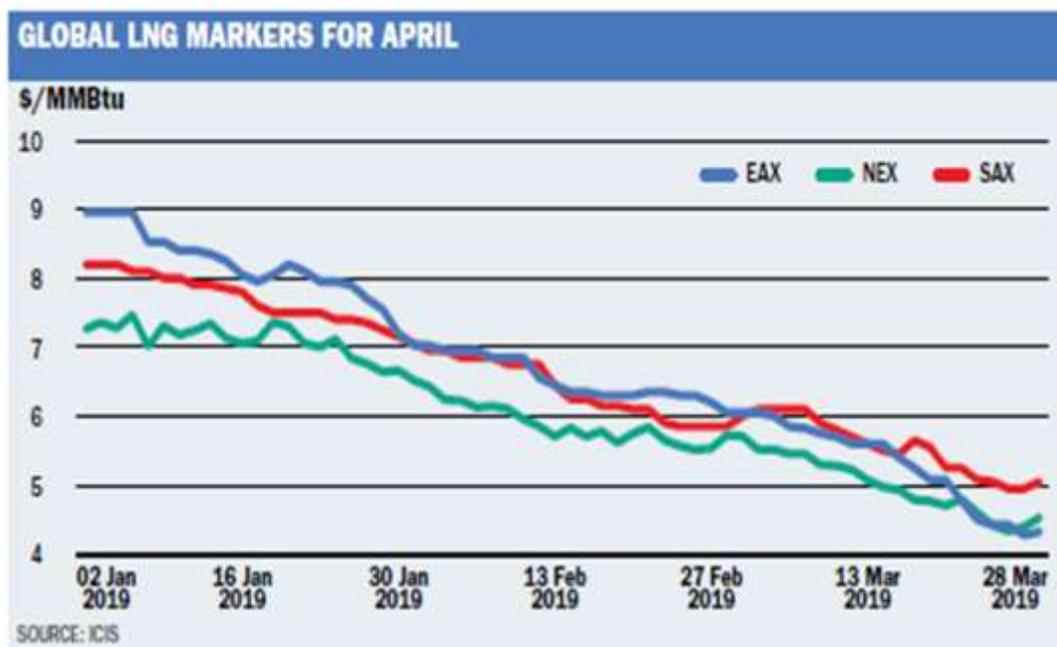
²⁰ ACER GMMR 2019, page 41.

²¹ IEA GGSR 2020, page 18.

²² Heather, OIES Energy Insight 55, page 11.

An illustration of what gas professionals across the world look at is the below chart of ICIS Heren²³. E.g. a would-be seller of U.S. LNG would look at the global price developments and ask himself: What are the spreads between HH (constituting the sourcing costs) and the EAX, SAX and TTF respectively and where can I, considering transport costs etc., thus achieve the highest net-back?²⁴

Figure 5: Monitoring price action in a global gas market



Source: ICIS Heren, GLM 15.13 of 28 March 2019.

That such global price monitoring is driven by commercial considerations (and not just out of ‘analytical interest’) is perhaps best illustrated by an occurrence in Europe in September 2019, where a ‘triple whammy’ of news caused a (temporary) price spike in the European traded markets: (i) the surprise ECJ Opal decision constraining once more the onward flow of gas delivered by Nord Stream (1), (ii) an announcement of the Dutch government about an even earlier demise of the Groningen field and (iii) problems with various French nuclear power generation units.

The below graph of ICIS Heren illustrates that the Asian EAX reacted to the European price action with a time lag of one day only. Whilst Asian spot prices reacting to European spot prices is admittedly a rare phenomenon, I consider it strong support for my hypothesis that a truly global gas market has evolved or, at least, is far advanced in its making.

²³ ICIS Heren, Global LNG Markets, GLM 15.13 of 28 March 2019, page 16 (subscription required).

²⁴ It may be worth noting that 1Q2019 LNG imports to South America were, despite the SAX showing a higher spread, absent storage capacity, limited to grid demand. In contrast, Europe absorbed large quantities of LNG beyond grid demand, injecting the surplus into storages.

Figure 6: Asian spot price follows TTF



Source: ICIS Heren, GIF 26.19 of 15 October 2019

This confirms that, if European traded wholesale market prices should rise for whatever reason, the 'price signal' will be 'received' and responded to by global LNG commercial operators. It further demonstrates that Asia and Europe are competing for global LNG by price.

2.3 Europe avails of significant redundant import infrastructure

Europe avails, besides an impressive storage capacity of ~116 bcm, of a vast grid of import pipelines and interconnectors and of a multitude of LNG re-gas terminals. Collective pipeline and LNG re-gas capacities exceed Europe's required import capacity by far, resulting in significant *redundant import infrastructure capacities*. Redundant means that, if a certain import source fails to perform, for whatever reason, there is sufficient alternative capacity to fill the gap.

The European import pipeline and interconnector grid has grown impressively over decades. The amount of intra-Union connections (interconnectors, to a large extent now bi-directional) grew significantly since the EU set out to create a Single European Gas Market.

Figure 7: European gas pipeline grid



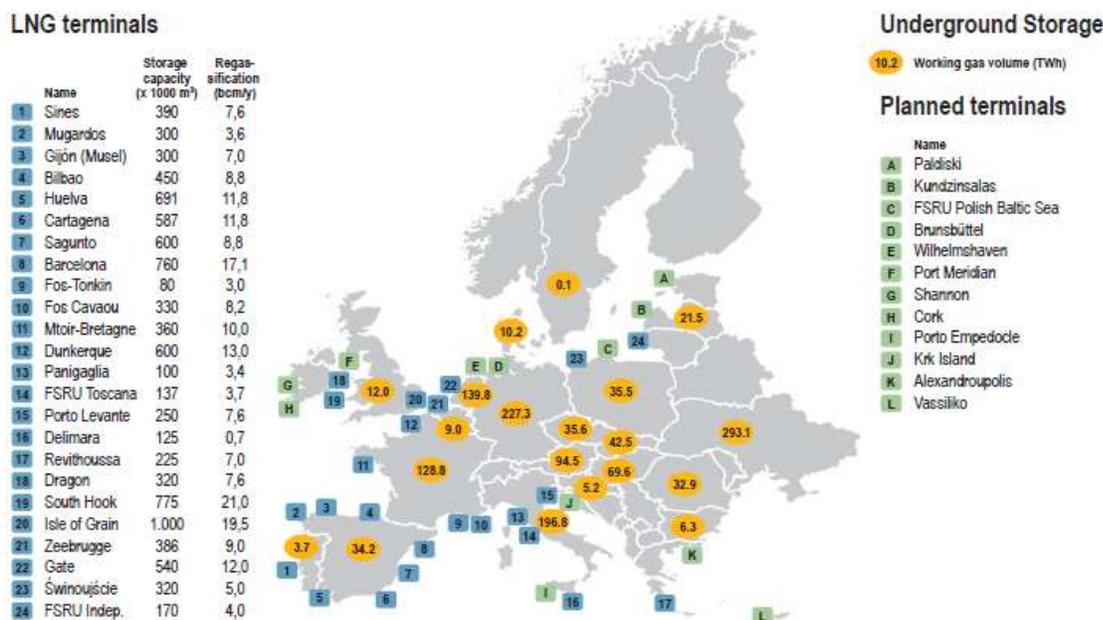
Map created by [entso](http://entso.eu) (European Network of Transmission System Operators for Gas)

Source: <https://britishbusinessenergy.co.uk/2017-gas-network/>

The ~116 bcm storage capacities, dispersed all across Europe, comprise seasonal storages as well as multiple cycle storages of different sorts and also LNG tank capacities. They constitute considerable 'buffer capacity' in case of high demand, but also space to absorb LNG supplies beyond grid demand.

Figure 8: European storage sites and LNG re-gas terminals

Figure iii: Overview of EU LNG terminal and UGS capacities per MS – 2019



Source: ACER calculation based on GIE (2019)

Note: The design capacity of the Latvian Inčukalns UGS is 24,2 TWh. In 2019, the capacity offered was limited to 18,5 TWh due to technical restrictions.

Source: ACER GMMR 2019, page 63.

Most important in this context is Europe's LNG re-gas capacity. It comprises at present some 220 bcm/a, with more capacity being built or planned. Europe avails thus of LNG import capacity larger the entire volume of gas supplied to Europe by Russia. While the utilization of the LNG terminals was low for many years in the past, Europe saw, since October 2018, an increased influx of LNG as a consequence of global oversupply and a collapse of the TTF/EAX spread. In 2019, European LNG imports grew exponentially by 90% YoY, accounting for a record 20% of EU gas demand.²⁵ In the face of prices dropping to ten-year lows²⁶ and the European and Asian spread converging, Europe served as the 'market of last resort'. But, importantly, it also demonstrated that Europe is 'open for business' and is capable of absorbing large quantities of LNG.

The remaining question in the context of analyzing whether Russian dependency exists or not, is thus whether sufficient quantities of LNG would also be available, if global LNG price levels do not necessitate to use Europe as 'market of last resort'. In other words, if the European market is capable of sending out price signals to attract alternative sources of LNG supply, and

²⁵ ACER GMMR 2019, page 16.

²⁶ ACER GMMR 2019, page 21.

avails of redundant infrastructure to receive such alternative LNG supplies, are such alternative LNG supplies readily available to respond to such price signals - and if so, how fast?

2.4 Abundant destination-flexible LNG would respond to European price signals

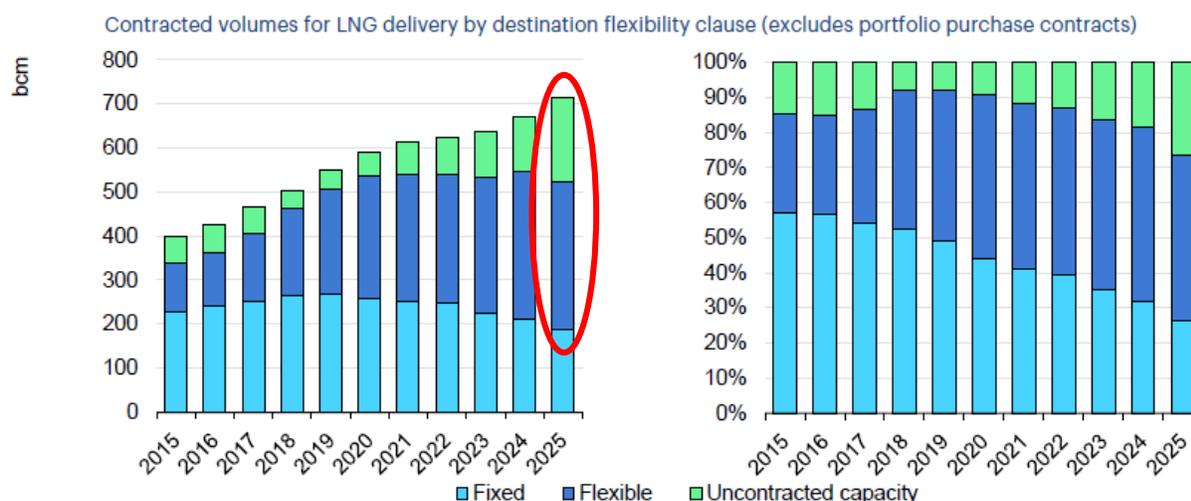
Already in its World Energy Outlook 2016²⁷, the IEA spoke of a ‘second gas revolution’, namely, after the ‘shale gas revolution’, of the ‘LNG revolution’, transforming the segmented regional gas markets around the world into a global gas market. Not least fostered by the exponential expansion of U.S., but also Russian LNG export capacity²⁸, a growing volume of destination-flexible or even destination-free supply of LNG emerged - and keeps growing.

Figure 9: Destination-flexible global LNG

Global Gas Security Review 2020

Update on LNG market flexibility

Destination-flexible volumes represent the largest market share from 2020, while uncontracted volumes increase through to 2025



IEA 2020. All rights reserved.

Note: Analysis is based on project nameplate capacity.

Source: IEA analysis based on ICIS (2020), ICIS LNG Edge, <https://lngedge.icis.com/> (subscription required).

Source: IEA GGSR 2020, page 15.

Destination-flexible means that either the seller or the buyer is entitled under its contract to divert an LNG cargo to the destination where it fetches the highest netback. Destination-free means that the volume is not even under contract and hence sitting there ready to go for the highest netback wherever that may be. The IEA observes that, in 2020 for the first time, the share of destination flexible LNG will exceed volumes with fixed destinations. Due to the expiry of contracts with fixed destinations, the share of destination flexible LNG will grow further. The IEA projects, by 2025, a quantity of more than 500 bcm/a²⁹.

²⁷ IEA WEO 2016, page 161 ff.

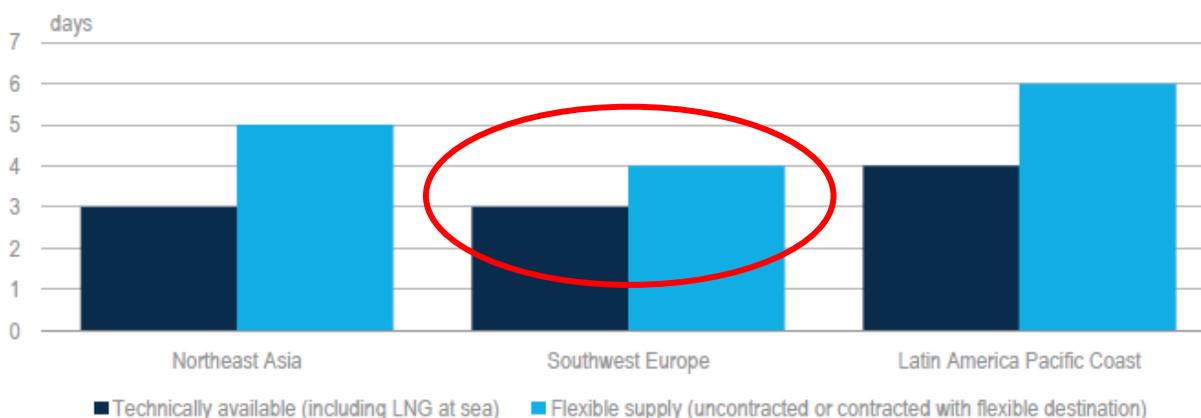
²⁸ Peters, NS2 Hypocrisy, page 11/12.

²⁹ IEA GGSR 2020, page 13.

Also the response time has come down impressively. The IEA calculated that an unplanned additional cargo can be dispatched within 3 to 4 days³⁰.

Figure 10: LNG response time

Figure ES.1 • Number of days needed to receive and regasify an unplanned additional LNG cargo



Source: IEA GGSR 2018, page 11.

The unprecedented demand shock and, in consequence, the biggest price drop seen in a decade, caused by the pandemic, has not affected response capabilities, quite the contrary. While LNG suppliers saw cargo cancellations and substantial underutilization of their liquefaction terminals³¹, a practice common in oil trading evolved: using considerable parts of the LNG tanker fleet as ‘floating storage’. The IEA describes: “In 2020 ... LNG volumes in floating storage increased counter-seasonally starting in February, and remained at elevated levels through most of the year to date. This is a clear signal that the LNG shipping fleet is being used – for the first time – as a complementary flexibility mechanism ... Estimates vary, but one indicator suggests that it reached about 9% of monthly LNG trade volume ...”³²

In other words, there are LNG cargos sitting out there ‘locked and loaded’, which would undoubtedly respond to European price signals, whether caused by technical failures or an attempted ‘political blackmail’.

For Europe, with its ‘beyond demand’ (redundant) import capacities of both pipeline and LNG supplies, this creates the best of two worlds: Both LNG and pipeline suppliers may compete in the European markets keeping prices low. But if Asia pays higher prices, Europe does not have to compete for LNG on a *permanent* basis due to ample pipeline supplies.

Important in the context of this paper is a further aspect: The availability of destination-flexible LNG responding to price signals puts a *ceiling* on the maximum achievable price for pipeline suppliers to Europe: LNG acts as the ‘policeman’. If prices rise such that LNG supplies to Europe become equally or even more attractive than to Asia, LNG would flow to Europe.

³⁰ IEA GGSR 2018, page 11.

³¹ IEA GGSR 2020, page 23 ff.

³² IEA GGSR 2020, page 27 ff.

The market reality described is thus the complete opposite of the UOKiK's view of how the markets work.

2.5 Security of supply now a 'functionality of global price signals'

The author's two-fold conclusion is thus that:

- the water-borne LNG trade with an ever increasing armada of LNG tankers floating around the world carrying destination-flexible LNG has *transformed gas into a fungible commodity* comparable to crude oil.
- the massive market changes both in Europe and globally have transformed the once '*bilateral physical dependency*' (indeed prevailing in various Member States in 2009) into a '*functionality of global price signals*' (prevailing today).

Hence, any assertions of European dependency on Russia are '*yesterday's news*'.

During the Frankfurt Gas Forum conference in December 2017, Sue Saarnio, at the time special envoy of the U.S. DoE³³, asked a couple of European gas experts: "*Do you think that President Putin might use gas as a political weapon?*" While some of my colleagues were beating around the bush alluding to '*mutual dependency*' and also to the '*decades of uninterrupted reliable Russian gas supplies even during the cold war period*', my own answer was: "*Yes he might, but perhaps nobody told him that it would not work anymore.*"

2.6 ENTSOG's SoS Simulation Report confirms absence of Russian dependency

Besides markets creating security of supply through the functionality of global price signals, insights into dependencies (existing or not) can also be drawn from infrastructure resilience tests.

Frontier Economics emphasizes that "*A central indicator of security of supply is the robustness of the energy system against failures of large infrastructure.*"³⁴ Frontier inter alia points to an analysis of the British Department for Business, Energy and Industrial Strategy ('*BEIS*') for the year 2016, published in 2017³⁵.

BEIS resilience assessment 2016

The BEIS looked, for the months of January through March 2016, inter alia at the maximum peak capacity needs transpiring in individual European Member States versus the capacities available.

While Poland does not come out best in class, it scores very well with some 200% peak capacity available versus the peak capacity actually needed. This underscores my observation in the GVC Polish Gas Market Study that Poland is not only well diversified in supply sources but even more so with regard to diversity of infrastructure³⁶.

³³ Department of Energy.

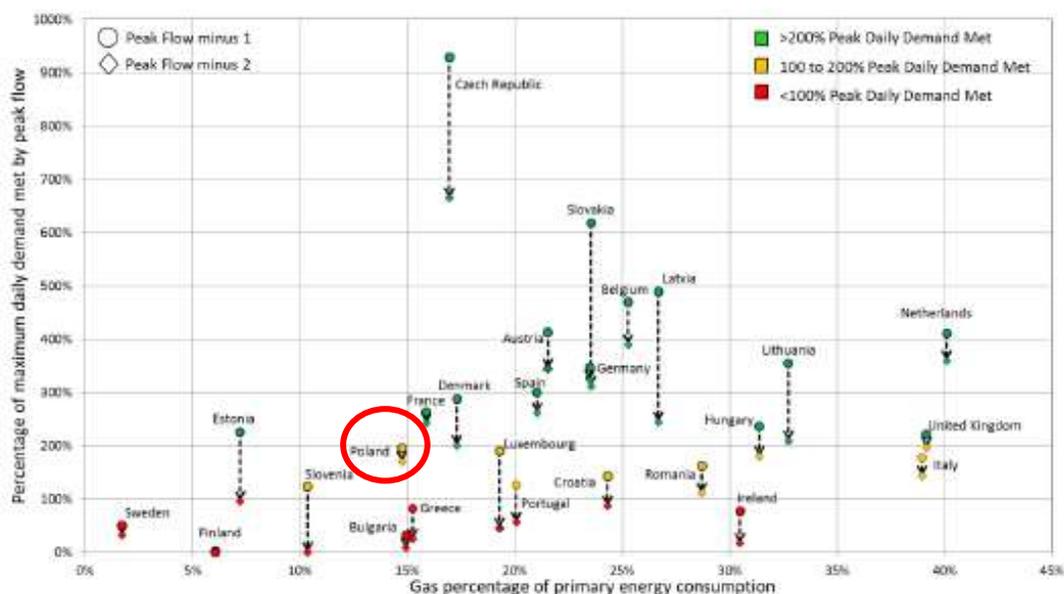
³⁴ Frontier Economics, Infrastructure Effects 2020, page 12.

³⁵ BEIS gas flows 2016. Unfortunately, the BEIS series was discontinued and updates thus not available.

³⁶ GVC Polish Gas Market Study, 24.

Figure 11: BEIS gas infrastructure resilience assessment 2016

Chart 3: EU-28* gas infrastructure resilience versus percentage of primary energy consumption met by gas, 2016



Source: BEIS gas flows 2016, page 85.

Even more striking than the BEIS assessment are the findings of the ENTSOG Union-wide SoS Simulation Report 2017.

ENTSOG's Union-wide SoS simulation report 2017

ENTSOG's Union-wide SoS simulation report 2017³⁷ had been prepared in parallel to finalizing the amended security of supply regulation of the European Union³⁸. The existing European regulation had already required e.g. the N-1 rule, i.e. that there must be surplus import capacity in each country equal to its largest source. It had also already required that interconnection points must be bi-directional, fostering further intra-community interconnectivity. In the wake of the 2009 gas crisis shock, many shortfalls regarding these requirements had already been fixed. The approach in the amendment, much influenced by the pronouncement of the 'Energy Union' with emphasis on solidarity, was to look beyond mere infrastructure capabilities towards intra-community gas flows enabling curtailment mitigation by acts of 'solidarity'.

³⁷ ENTSOG SoS simulation report 2017.

³⁸ European Security of Supply Regulation (2017/1938) - Amended (https://ec.europa.eu/info/news/securing-europes-gas-supply-new-regulation-comes-force-2017-oct-27_en); its article 7 ('Risk assessment') 'instructs' ENTSOG to undertake such analysis.

Figure 12: European Security of Gas Supply Regulation Amendment



A new Regulation [aimed at improving the security of gas supply in](#)

Source: https://ec.europa.eu/info/news/securing-europes-gas-supply-new-regulation-comes-force-2017-oct-27_en

Importantly, ENTSOG chose a much more stringent approach than the BEIS, which 'only' looked at 'as is data' of the given period. ENTSOG developed 13 different risk groups of Member States and 19 different disruption scenarios.

Figure 13: ENTSOG risk clusters and disruption scenarios

| | Risk Group | # | Disruption scenario |
|--------------------------|-----------------------|----|--|
| Eastern gas supply | Ukraine | 1 | Disruption of all imports via Ukraine |
| | Belarus | 2 | Disruption of all imports via Belarus |
| | Baltic Sea | 3 | Disruption of one Nord Stream offshore pipeline |
| | | 4 | Disruption of the onshore receiving facility of Nord Stream (Greifswald station) |
| | North-Eastern | 5 | Disruption of all imports to the Baltic states and Finland |
| | Trans-Balkan | 6 | Disruption of the largest infrastructure to the Balkan region |
| North Sea gas supply | Norway | 7 | Disruption of the largest offshore infrastructure to the UK (Langeled) |
| | | 8 | Disruption of the largest offshore infrastructure to continental EU (Europipe 2) |
| | | 9 | Disruption of the largest onshore infrastructure from Norway (Emden station) |
| | Low calorific gas | 10 | Disruption of the largest L-gas storage (Gas Platform) |
| | | 11 | Disruption of the L-gas supply (Gas Platform) ² |
| | Denmark | 12 | Disruption of the largest infrastructure to Denmark (Ellund) |
| | United Kingdom | 13 | Disruption of Forties pipeline system |
| North-African gas supply | Algeria | 14 | Disruption of the largest offshore infrastructure to Italy (Transmed) |
| | | 15 | Disruption of the largest offshore infrastructure to Spain (MEG) |
| | | 16 | Disruption of imports from Algeria, including LNG |
| | Libya | 17 | Disruption of all imports from Libya |
| South-East gas supply | Southern Gas Corridor | 18 | No existing infrastructure |
| | Eastern-Mediterranean | 19 | No existing infrastructure |

Table 1: Disruption scenarios

Source: ENSOG SoS simulation report 2017, page 7.

In those scenarios, it did not work with 'as is data' of a given year or time period, but rather assumed 3 different cases of maximum demand: (i) a historical high demand winter (case 1), (ii) a period of two weeks of exceptionally high demand (case 2) and (iii) a 1 day peak of exceptionally high demand (case 3). Case 1 uses the highest winter demand (January/February) that had materialized simultaneously across the EU since 2009/10. Cases 2 (15 February – 28 February) and 3 (15 February) apply exceptionally high demand with a

statistical probability of occurring once in 20 years. ENTSOG explains: “*The high demand cases are meant to capture the capability of the gas system to cope with the most challenging demand situation...*”³⁹ Where the extreme peak capacity requirements were not met, ENTSOG computed the degree of supply disruptions, both those needed to ‘help’ other European Member States by means of ‘*uniform curtailment allocation*’, or ‘*distance-based allocations*’, where infrastructure limitations would not allow ‘rescue missions’ all the way.

While the ENTSOG scenarios are entirely indifferent as to the reasons or causes for a critical piece of infrastructure failing (e.g. be it a technical glitch, a cyber-attack or a deliberate act of attempted political blackmail), we can use the disruption scenarios to draw conclusions in the context of this paper. Clearly, we cannot explore all 19 scenarios. But we shall attempt to address those which would help to scrutinize the Russian dependency assertions of the UOKiK and others.

Nord Stream (1) disruption reveals no Russian leverage

Since i.a. the Polish government fiercely already opposed Nord Stream (1), asserting increased dependency on Russia⁴⁰, it appears useful to look at ENTSOG’s ‘*Scenario #4 – Disruption of the onshore receiving facility of Nord Stream*’.⁴¹

This scenario, with a loss of some 55 bcm/a of Russian supplies, emulates the picture frequently painted by NS2 opponents, and Poland in particular: The Russian president would curtail a significant portion of Russian gas supplies to Europe for political (blackmail-) purposes. The findings of the ENTSOG simulations revealed that Nord Stream (1) does not affect the security of supply of Europe at large and also not of Poland.

- The simulated historically cold winter (case 1) shows no curtailments anywhere, including Poland⁴².
- The 2 week disruption scenario (notably 15 February – 28 February with already diminished storage fill-levels) reveals that no demand curtailment transpires, also not in Poland.
- The same is assessed for the 1 in 20 years peak day (simulated on 15 February): Besides Denmark and Sweden⁴³ no demand curtailments occur, also not in Poland.

³⁹ ENTSOG SoS simulation report 2017, page 8.

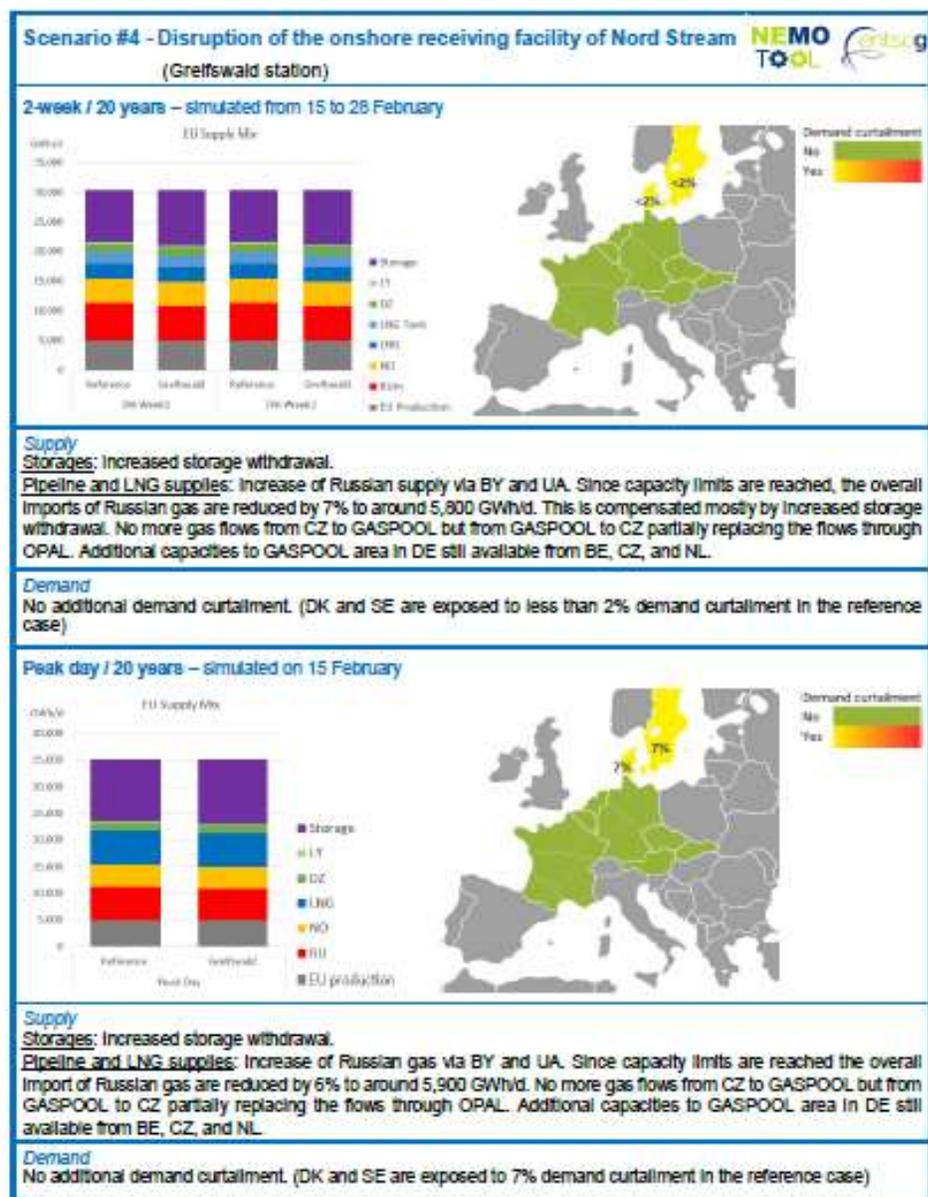
⁴⁰ In April 2006, the then Polish Minister of Defense, Radek Sikorski, went as far as to compare Germany’s acceptance of the project with the ‘*Hitler-Stalin Pact*’: <https://www.spiegel.de/wirtschaft/indirekter-hitler-vergleich-polnischer-minister-poltert-gegen-schroeder-und-merkel-a-413931.html>

⁴¹ ENTSOG SoS simulation report 2017, page 33 ff.

⁴² See ENTSOG SoS simulation 2017, page 33.

⁴³ For specific reasons having to do with the work-over of the Danish Tyra field.

Figure 14: Disruption Greifswald



Source: ENTSG SoS simulation report 2017, page 34.

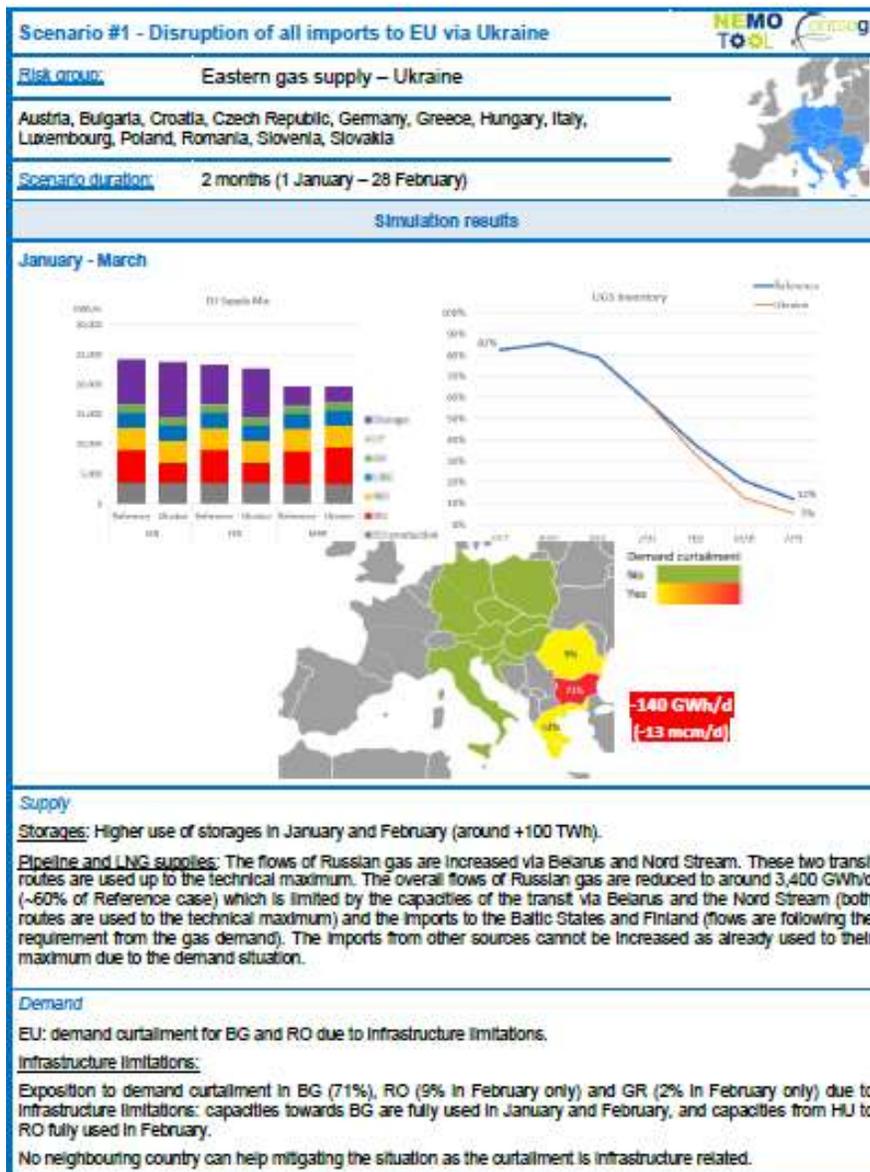
Nordstream (1) alleviated the previous Ukrainian 'concentration risk'

Indeed, Nord Stream (1) rather *increased* security of supply, by reducing Europe's biggest concentration risk at the time: up to 120 bcm/a of Russian supplies (i.e. >50%) through one single transit corridor, namely the Ukraine. This becomes apparent in ENTSG's 'Scenario #1 – Disruption of all imports to EU via Ukraine.'

This scenario essentially emulates the 2009 'Ukrainian gas crisis', only now – in 2017 - with the Ukrainian concentration risk alleviated by some 55 bcm/a of gas flowing through Nord Stream.

ENTSOG describes: “The flows of Russian gas ... via Belarus and Nord Stream ... are used up to the technical maximum.”⁴⁴ In consequence, and unlike the situation in 2009, no supply disruptions occur except in Romania and Bulgaria, due to infrastructure limitations.

Figure 15: Disruption of all imports to EU via Ukraine



Source: ENTSOG SoS simulation report 2017, page 25.

Importantly, Poland is not affected at all. Indeed, in the 2-week / 20 years scenario, ENTSOG even simulates Poland, along with e.g. Germany, the Czech Republic and others as to voluntarily accepting a 1% supply ‘disruption’ to help out its neighbor Romania in an act of solidarity.⁴⁵

⁴⁴ ENTSOG SoS simulation report, page 25.

⁴⁵ ENTSOG SoS simulation report 2017, page 26.

3. Alleged Polish dependency on Russia is ‘fake news’

Even worse than falsely claiming European dependency on Russia is the UOKiK assertion that Poland is dependent on Russia. The UOKiK i.a. asserts: “*Completion of this project increases the economic dependence on Russian gas – not only in the case of Poland*”⁴⁶...⁴⁷. As shall be re-explained, the Polish market, with 5 different sources of supply, is so well diversified (and continues with further diversification in at times economically doubtful fashion) that the allegation of dependency on Russia can hardly be the cause of ignorance. Rather, it stands to reason that the UOKiK’s assertions regarding the Polish market were put forward against better knowledge, rendering them nothing less than ‘fake news’.

3.1 Five supply sources and an RSI of 117% already in 2017

As analyzed in detail in the GVC Polish Gas Market Study 2018, Poland scores well with regard to ACER’s ‘market health metrics’. ACER considers a market ‘healthy’, if it avails of three ‘distinct origin sources of supply’ or more. Already in 2017, Poland availed of **five** distinct ‘origin sources of supply’, with the diversity of delivery-/interconnection points (‘IP’) even larger:

- (i) Indigenous Polish production.
- (ii) LNG imports via the LNG terminal Świnoujście.
- (iii) Imports from the German gas hub GPL via the IPs Mallnow and Lasow.
- (iv) Imports from the Czech gas hub VOB via the IP Ciezyn.
- (v) Imports from Russia via the IPs Kondratki and Wysokoje (Belarus) as well as the IP Drozdowicze (Ukraine)⁴⁸.

A further, important health metric is the so-called residual supply index (‘RSI’). Essentially, it divides all sources of supply minus the largest source of supply (not counting storage capacities) by domestic consumption⁴⁹. It is obvious that, if the result equals or exceeds 100%, the largest supplier has no leverage to influence pricing. Indeed, ACER considers the RSI closely related to the concept of ‘pivotality’, a concept used in the competition space, which determines whether the largest supplier has price-setting power:

*“The RSI is closely linked to the concept of pivotality which determines if a certain source of supply is pivotal, i.e. the market cannot be supplied without supply from that specific source. Therefore the RSI **focuses on capacity** and determines the relationship between the sum of the supply **capabilities** of all suppliers except the largest source – and total demand in the market. This ratio is the RSI. .. If the RSI is less than 100 %, the respective supplier is considered to be pivotal.”*⁵⁰

The GVC Polish Gas Market Study 2018 computed, in a first step, for Poland an RSI of 101%. While physical reverse flow from the German hub Gaspool at the IP Frankfurt an der Oder / Mallnow was included, Yamal virtual reverse flow capabilities were not⁵¹.

⁴⁶ Emphasis added.

⁴⁷ UOKiK press statement, page 3.

⁴⁸ GVC Polish Gas Market Study 2018, page 10.

⁴⁹ For more detailed explanation, see GVC Polish Gas Market Study 2018, page 12.

⁵⁰ Ibid.

⁵¹ It should be noted that the author used name-plate capacities as opposed to ACER which, contrary to its own explanation that capacities and capabilities (and not historical or actual flows) are relevant for computation of the

Figure 16: Polish RSI 2017 with Yamal physical but no virtual reverse flow

| Poland | bcm/a | GWh/d | GCV (GWh/mcm) |
|--|--------------|-------|---------------|
| Domestic consumption | 19.14 | | |
| Indigenous production | 5.79 | | |
| LNG | 5.00 | 158.0 | 11.55 |
| Mallnow physical reverse | 6.05 | 184.8 | 11.075 |
| Lasow | 1.59 | 48.2 | 11.15 |
| Cieszyn | 0.90 | 28.0 | 11.235 |
| Sum 'distinct origin sources' | 19.33 | | |
| RSI without Mallnow interruptible | 101% | | |

SOURCE: Own calculations based on IEA and ENTSOG data

Source: GVC Polish Gas Market Study, page 15.

We further computed the Polish RSI 2017 by including Yamal virtual reverse flow but not the Yamal physical reverse flow (since gas cannot flow in two directions at the same time in one pipe)⁵². The result was an RSI of even 117%.

Figure 17: Polish RSI 2017 with Yamal virtual but no physical reverse flow

| Poland | bcm/a | GWh/d | GCV (GWh/mcm) |
|--------------------------------------|--------------|-------|---------------|
| Domestic consumption | 19.14 | | |
| Indigenous production | 5.79 | | |
| LNG | 5.00 | 158.0 | 11.55 |
| Mallnow physical reverse | - | 184.8 | 11.075 |
| Mallnow virtual reverse | 9.08 | 81.92 | 11.075 |
| Lasow | 1.59 | 48.2 | 11.15 |
| Cieszyn | 0.91 | 28.0 | 11.235 |
| Sum 'distinct origin sources' | 22.37 | | |
| RSI | 117% | | |

Limit: PWP exit capacity

Source: GVC Polish Gas Market Study, page 24.

RSI, applied significant discounts to various import capacities such as e.g. the LNG terminal. For more detailed discussion see GVC Polish Gas Market Study, page 11 ff.

⁵² See however GVC's explanations of 'mock physical reverse flow', where physical reverse flow (while East-West flows are prevailing) is booked. The TSO, instead of rejecting the (physically not possible) booking, accepts it and diverts the respective quantity out of the East-West stream into the Polish VTP, see GVC Polish Gas Market Study, page 19 ff.

The ultimate (capacity) limitation⁵³ for such virtual reverse flow was the exit capacity from the Yamal transit line into the Polish grid, the ‘*Punkt Wzajemnego Połączenia Rewers*’ (‘PWP’)⁵⁴, thus limiting virtual reverse flow capabilities to 9.08 bcm/a.

At the time, I found it “*difficult to accept that Polish voices, ranging from government-, administration- and state-owned PGNiG representatives towards even members of the European Parliament, so loudly claim, in ‘crying wolf’ fashion⁵⁵, their ‘terrible dependency’ on Russia/Russian gas. ... The absence of Poland’s integration into the Northwest-European traded markets ‘behaving like a single transnational price area’ is not the consequence of dependency, but rather of its own deliberate obstruction of free cross-border trade and free trade at the VPGS.*”⁵⁶

Frontier Economics makes short work with Poland’s unfounded dependency assertions: “*Poland has sufficient import capacity to meet gas demand without Russian imports already today, and plans to further expand its infrastructure.*”⁵⁷

3.2 Loss of Yamal virtual reverse flow would not affect Poland’s independence

The UOKiK states: “*The launch of NS2 will **threaten the continuity of natural gas supplies to Poland***”^{58, 59}

This is an amazing statement given that both Polish politicians and PGNiG managers never tire to emphasize that Poland will not extend the long-term gas supply agreement with Gazprom, which expires in 2022. Indeed, PGNiG has served the contractually required notice three years ahead of expiration, on 15 November 2019⁶⁰. The PGNiG’s website posting reads: “*In line with the Republic of Poland’s aspiration to achieve security of energy supplies ... we have taken ... steps to diversify the sources of natural gas supply to Poland. We have concluded long-term LNG supply contracts and have been acquiring natural gas deposits on the Norwegian Continental Shelf, which, combined with the activities of the transmission system operator to expand the gas pipeline system, makes it possible for us to **terminate the Yamal Contract on the originally set date***”⁶¹; said Piotr Woźniak, President of the PGNiG Management Board⁶².

While the UOKiK is silent about which type of ‘*continuity of gas supplies*’ it means, let’s give it the benefit of the doubt and assume – for argument’s sake – that the UOKiK is concerned about

⁵³ For a detailed explanation of other technical requirements see GVC Polish Gas Market Study, page 18.

⁵⁴ Minimum off-take obligations under the Russian long-term contract were not a constraint, since they could be supplied through other IPs, see GVC Polish Gas Market Study, page 22.

⁵⁵ See Marzec-Manser, ‘Crying wolf’, ICIS Heren EGM 25.09.

⁵⁶ GVC Polish Gas Market Study, page 16.

⁵⁷ Frontier Economics, Infrastructure Effects 2020, page 34.

⁵⁸ Emphasis added.

⁵⁹ UOKiK press statement, page 3.

⁶⁰ 15.11.2019 Declaration of will to terminate Yamal Contract effective December 31, 2022.

Polskie Górnictwo Naftowe i Gazownictwo SA announces that on November 15th 2019 ... it notified PAO Gazprom and OOO Gazprom Export of its intent to terminate the contract for purchase and sale of natural gas to the Republic of Poland ... with effect from December 31st 2022 (<http://en.pgnig.pl/news/-/news-list/id/declaration-of-will-to-terminate-yamal-contract-effective-december-31-2022/newsGroupId/1910852>).

⁶¹ Emphasis added.

⁶² <http://en.pgnig.pl/news/-/news-list/id/declaration-of-will-to-terminate-yamal-contract-effective-december-31-2022/newsGroupId/1910852>

a potential future under- or non-utilization of the Yamal transit pipeline in the face of both Nord Stream (1) and NS2 operating at full capacity. We already discussed that, besides straight physical West-East reverse flow capacities at Mallnow from Germany to Poland, East-West gas flows through Yamal to Germany enable the so-called '*virtual reverse flow*'.

If indeed the transit flows through Yamal were diminished or would subside, Poland's ability to import gas from Germany via virtual reverse flow could be affected.

If that, however, were indeed the point the UOKiK was trying to make, it would be an astonishing reversal of Poland's previous '*ideological physicality*'⁶³. Namely, virtual reverse flow means that Russian gas supposed to transit through Yamal towards Germany is diverted and injected into the Polish grid, while the entitled recipient of such gas at the Mallnow border station receives gas purchased at the German Gaspool hub. Previously, all Polish voices were refusing such scheme since it entailed for the Polish market to continue to receive Russian molecules⁶⁴, i.e. '*ideological physicality*' was standing in the way.

It stands to reason that also after NS2 becomes fully operational and the (reduced) Ukrainian transit capacity is strongly utilized since the 2019 accord is based on '*ship-or-pay*'⁶⁵, the further use of Yamal for the transit of Russian gas can be expected.⁶⁶

But even if indeed there were no Yamal transit flows at all and, subsequently, no virtual reverse flow would be possible, the Polish security of gas supply would not be affected. As discussed in the previous chapter, the Polish RSI amounts to 101% if only physical reverse flow, but no virtual reverse flow, occurs at Mallnow⁶⁷.

Also Frontier Economics concludes that "*...also without virtual reverse flow via Yamal there is enough capacity to meet Poland's import demand.*"⁶⁸

In the context, it appears useful to come back to the ENTSOG Union-wide SoS simulation report 2017, namely to '*Scenario#2 – Disruption of all imports to EU via Belarus*'⁶⁹.

ENTSOG's finding is that Poland is, even when applying the extreme conditions of the ENTSOG Union-wide SoS simulation report 2017, not exposed to any sort of supply disruption if the Yamal pipeline fails.

⁶³ See GVC Polish Gas Market Study, page 8.

⁶⁴ See GVC Polish Gas Market Study, page 8, where I describe that the last time I was confronted with such archaic arguments was in 1996/97, when Czech negotiators threw out all Western suppliers who had 'any Russian molecules' in their portfolio.

⁶⁵ Pirani/Sharples, OIES Energy Insight 64, page 5.

⁶⁶ So also Frontier Economics, Infrastructure Effects 2020, page 34, with further references.

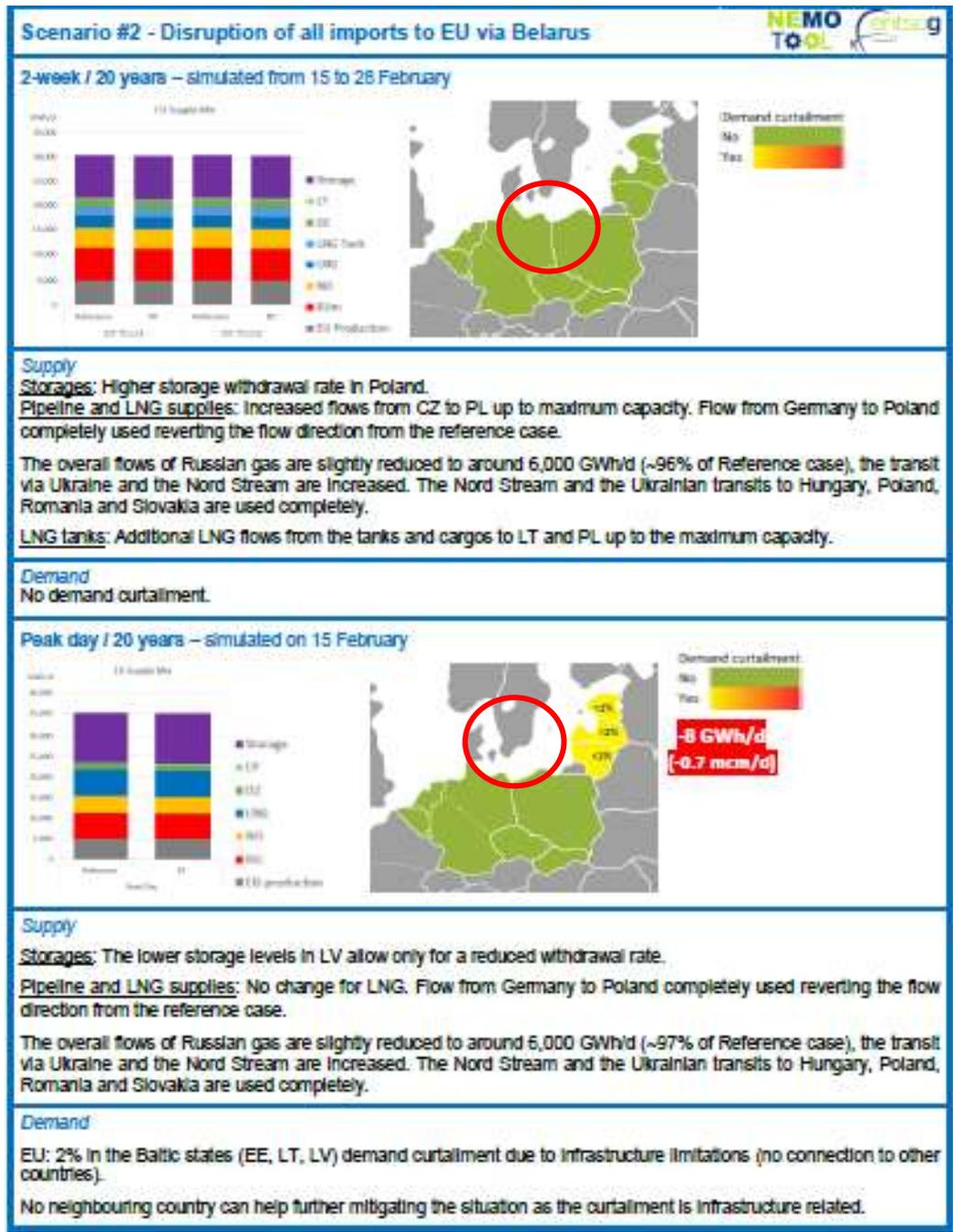
⁶⁷ See Figure 16 above.

⁶⁸ Frontier Economics, Infrastructure Effects 2020, page 35.

⁶⁹ ENTSOG Union-wide SoS simulation report 2017, page 29 ff.

This goes for the historical winter demand (case 1)⁷⁰. And it applies also for the 1 in 20 years 2 week peak demand and 1 day peak demand.

Figure 18: Disruption of all imports to EU via Belarus



Source: ENTSOG Union-wide SoS simulation report 2017, page 30.

⁷⁰ ENTSOG Union-wide SoS simulation report 2017, page 34.

4. Not NS2, but Poland is ‘dividing’ Europe with its ‘pivotal hub’ aspirations

The UOKiK asserts that NS2 is dividing Europe: “As far as energy security is concerned, the undertaking **splits Europe in two parts**⁷¹...”⁷² As we shall demonstrate, it is not NS2, but rather Poland which is working hard to ‘divide’ Europe, namely by putting up barriers to extend the Northwest-European transnational market to the Baltic States and Finland, thus preventing its neighbors to become part of the nearly completed ‘European Henry Hub’.

4.1 Polish ‘pivotal hub’: locking up to the West and ‘creaming off’ to the East

As already indicated, the Polish gas market is, unlike its Czech neighbor, detached from the ‘transnational Northwest-European market acting like a single price zone’. Given the high degree of interconnectivity and diversity of sources, this is entirely unnecessary and a consequence only of Poland locking up its market by multiple ‘non-physical entry barriers’, thereby i.a. stifling free cross-border intra-community trade.

At the same time, Poland is pursuing its dream of becoming a ‘pivotal hub’: It aspires to import non-Russian gas beyond its own needs and supply the surplus to the Baltic states, Finland, Ukraine and the Central European neighbors at large. Given the impressive steps towards a ‘European Henry Hub’ – the author’s metaphor for a completed ‘Single European Gas Market’ - it is surprising that Poland comes forward with such an archaic concept. It is even more surprising that European politicians fall for it and allow huge amounts of tax payers’ money to support it.

In an interview with ener|gate, shortly after the release of the GVC Polish Gas Market Study, I qualified the Polish pivotal hub aspiration as “putting the fox in the henhouse” by “locking up to the West and creaming off to the East”⁷³. Indeed, the only obstacle of e.g. the Baltic states (and thanks to the Baltic interconnector recently completed also Finland) becoming part of the above mentioned Northwest-European market ‘behaving like a single price zone’, just like the Czech Republic already is, is the Polish market sitting ‘in-between’ like a ‘cork in the bottle’⁷⁴.

What else can be more ‘divisive’ than Poland deliberately preventing other European Member States from becoming part of the ‘European Henry Hub’?

4.2 Political horse play Poland/U.S: ‘now we are going to save Ukraine’

With big fanfare in August 2019, a U.S. LNG-based import deal between Polish incumbent PGNiG and a Ukrainian company was celebrated (and widely advertised). The below picture

⁷¹ Emphasis added.

⁷² UOKiK press statement, page 3.

⁷³ https://gasvaluechain.com/cms/wp-content/uploads/2018/08/Peters_-Part-2_Es-fehlt-am-politischen-Willen-f%C3%BCr-gesamteurop%C3%A4ischen-Markt_-energate-messenger.pdf: „Geographisch sitzt Polen wie ein Korken in der Flasche zwischen den nordwesteuropäischen Handelsmärkten und den baltischen Staaten. Das Oxford Institute charakterisiert die nordwesteuropäischen Hubs als ein transnationales Marktgebiet, das sich wie eine einzige Preiszone verhält. Diese Preiszone könnte sich ausdehnen. Das polnische Konzept stellt sich für mich anders dar: nach Westen dichtmachen und im Osten absahnen. Leider sieht das Brüssel noch nicht.“

⁷⁴ Ibid.

shows U.S. Energy Secretary Perry and Polish Energy Minister Naimski shaking hands. They are not ashamed to proclaim that they signed a ‘supply security deal for Ukraine’⁷⁵.

Figure 19: The U.S and Poland set out to ‘save Ukraine’

PGNiG signs gas supply deal with Ukrainian firm

Poland's state-owned oil and gas incumbent PGNiG will supply natural gas to Ukrainian energy company ERU from November until the end of the year, both companies said in a joint statement on 29 August.

PGNiG told ICIS it had purchased an American LNG cargo which, following regasification, will equal 90 million cubic metres (mcm) of gas, and will be exported to Ukraine via the Hermanowice border point.

PGNiG declined to comment whether it was part of an existing LNG deal with US or a newly purchased cargo but said the amount of gas equals a single LNG delivery of a conventionally sized tanker.

PGNiG also said it planned to increase its

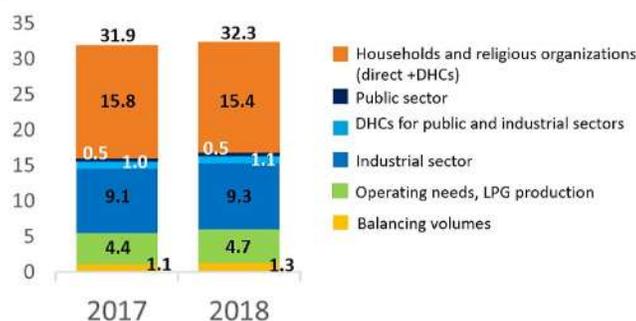


Source: ICIS Heren, GIF 26.16 of 30 August 2019

In my book, the event is a politically orchestrated ‘*much ado about nothing*’: The mentioned volume of 90 million m³, representing the capacity of ‘a conventionally sized tanker’⁷⁶ comprises, relative to Ukrainian consumption of 32.3 bcm/a, less than 0.3% of Ukrainian domestic demand.

Figure 20: Ukrainian domestic consumption

Gas consumption in Ukraine, 2017-2018, bcm



2018 data are operational and may be updated

Sources: Naftogaz, Ministry of Energy and Coal Industry of Ukraine, State Statistics Service of Ukraine

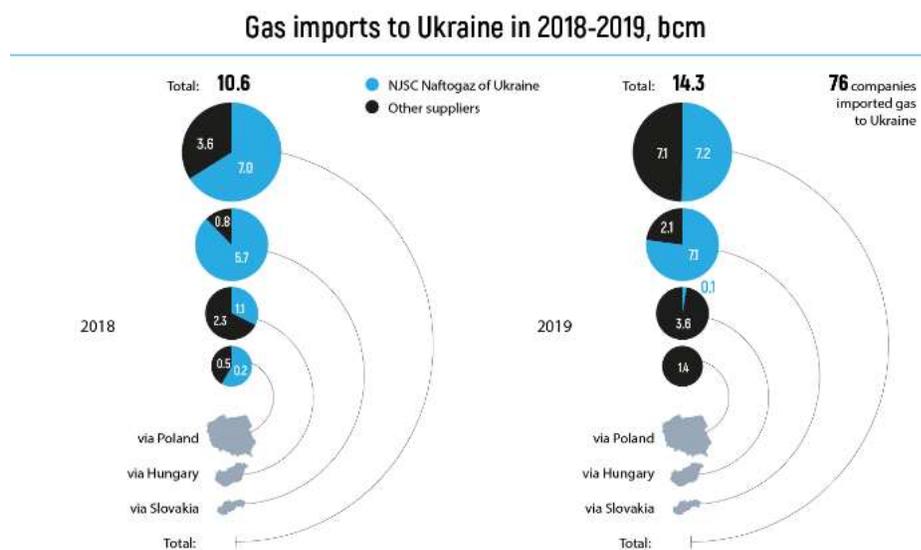
Source: <https://naftogaz-europe.com/article/en/gasconsumptioninukraine20172018>

It should further be noted that reverse flow supplies for sourcing Naftogaz import demand from the West (via IPs in Hungary, Poland and Slovakia) were always by far the lowest (but at the same time the loudest) from Poland via the IP Hermanowice.

⁷⁵ <https://fr.reuters.com/article/us-poland-usa-energy/u-s-to-help-poland-ukraine-disconnect-from-russian-gas-idUKKCN1VLOHH>

⁷⁶ The re-gasified quantity of 90 million m³ equals an LNG cargo size of 150,000 m³.

Figure 21: Ukrainian Western imports 2018/2019 by source



Gas imports to Ukraine by source in 2018-2019, bcm

| | 2018 | 2019 | +/- % |
|--------------------------------|-------------|-------------|-------------|
| Total | 10.6 | 14.3 | 34.9 |
| from Russia | 0 | 0 | — |
| from the European market total | 10.6 | 14.3 | 34.9 |
| from Slovakia (Budnice GMS) | 6.5 | 9.2 | 41.5 |
| from Hungary (Beregdaroc GMS) | 3.4 | 3.7 | 8.8 |
| from Poland (Hermanowice GMS) | 0.7 | 1.4 | 100 |

Source: <https://www.naftogaz-europe.com/article/en/gasimportstoukraine20182019>

The orchestration of Poland and the U.S. ‘saving Ukraine’ is another piece of Poland’s (successful) strategy to turn from ‘culprit into victim’. Here, by pretending to ‘heroically liberate’ a neighbor with much fanfare, but no substance.

Besides the miniscule quantity of the ‘savior deal’, another aspect demonstrates once more that many politicians do not understand developed markets (or, alternatively, pursue a hidden agenda against better knowledge): Even Poland avails of a ‘virtual point’, i.e. its entire grid is supposed to operate as a hub, where ‘title transfer’ can occur⁷⁷. The Polish virtual point contains commingled molecules from 5 different sources of origin. Hence, the perception that physical U.S. LNG molecules injected into the grid at the Polish Baltic Sea coast will ever reach Ukraine and thereby help to ‘save Ukraine’ is a fairy tale. More likely it will be predominantly Russian molecules injected into the Polish hub via the IP Drozdowicze at the Polish/Ukrainian border, hopefully not at the elevated price levels prevailing in the Polish market.

⁷⁷ The virtual point concept essentially means that the entire grid contains energy units of ‘commingled anonymous molecules’ (as opposed to molecules with ‘labels of origin’), which can be traded multiple times between traders active on the hub, for details see GVC Polish Gas Market Study, page 7.

5. Gazprom cannot ‘increase’ wholesale prices, let alone consumer prices

The UOKiK claims that, if NS2 became operational, Gazprom might increase end consumer prices: “Such a situation may bring about serious consequences for the economy of Poland ..., and by **increasing prices of gas to end consumers**⁷⁸. ... with the said increase being borne by Polish consumers.”⁷⁹

This reveals either blatant ignorance on the functioning of gas markets or a misleading populist statement against better knowledge. Gazprom is an upstream importer at the wholesale level. Whether it can influence the price level on such wholesale market, depends on the type of price formation on the wholesale market. Only if Gazprom were able to influence the wholesale price level, might this feed through to end-consumer price levels by means of procurement costs. We already established in section 2 that the European gas markets, especially the Northwest-European gas market, features 95% gas-on-gas (i.e. hub-driven) price formation. Also Gazprom could not escape the fundamental market changes. As we shall see it has, meanwhile, turned ‘price-taker’ in the European wholesale traded markets. Hence, it is in no position to ‘dictate’ wholesale prices, let alone to unilaterally – as the UOKiK narrative asserts - ‘increase end-consumer prices’.

In conjunction with the ‘NS2 debate’, the aspect of consumer benefits/welfare losses has and continues to be a ‘frequently asked question’. There is a difference in quality of such though:

Some (mostly uninformed politicians, acting self-appointed energy experts) simply play on emotions by alleging that e.g. Russia (Gazprom), by means of NS2 or otherwise, might be able to ‘raise prices’ to the detriment of European consumers or even misuse gas as a political weapon. Also the UOKiK falls into that emotional category now.

Others (e.g. gas economists with a thorough understanding of the gas markets) give credence to the fact that price formation occurs at the wholesale traded market level featuring hub trading prices, i.e. price levels are driven by supply and demand on both European and global markets. This enables a more sober (and economically sound) assessment of the effects of volume availabilities from competing suppliers, both pipeline gas and LNG, vs. demand (in different places in the world) and the ensuing price impacts.

5.1 Overview of professional wholesale market price impact assessments

Ewi assessment

Ewi, in its ‘Impacts of Nord Stream 2 on the EU Natural Gas Market’ study of September 2017, recognizes the existence of a global gas market and assesses the impact of pipeline and global LNG supply competition on European wholesale traded market price levels. Put in simple terms, the more pipeline gas there is, the lower the need for LNG imports. Conversely, if pipeline supplies (e.g. Russian gas via NS2) were curtailed or ‘blocked’, the need for LNG imports would be higher. Ewi distinguishes a ‘low global LNG demand’ and a ‘high global LNG demand’ case.

Ewi concludes that NS2 volumes create a universal welfare benefit for European consumers by means of lower European wholesale traded prices: “In the Low Global LNG Demand scenario, EU wholesale gas prices will be up to 13 % lower in 2020 if Nord Stream 2 is available,

⁷⁸ Emphasis added.

⁷⁹ UOKiK press statement, page 3.

compared to a scenario without Nord Stream 2. Consumers in the EU-28 countries enjoy a total welfare benefit of 7.9 billion €. In the High Global LNG Demand scenario in 2020, the EU-28 consumers enjoy a total welfare benefit of 24.4 billion € compared to a situation in which Nord Stream 2 is unavailable. EU gas wholesale prices will be up to 32 % lower in 2020 compared to a scenario where Nord Stream 2 is not available”⁸⁰.

Ewi concludes further with regard to Poland: “For **Poland alone**⁸¹, the consumer welfare effect is between 0.4 billion € in 2020 with Low Global LNG Demand, and 1.3 billion € with High Global LNG Demand.”⁸²

Naturally, such benefit would only transpire if Poland would cease to lock-up its market and become part of the transnational Northwest-European market, ‘behaving like a single price zone’.

Figure 22: Polish NS2 welfare benefits

| | Low Global LNG Demand | High Global LNG Demand |
|-----------------------------|---|---|
| Nord Stream 2 available | Scenario A1 Gas Price in Poland: 18.8 €/MWh | Scenario B1 Gas Price in Poland: 22.0 €/MWh |
| Nord Stream 2 not available | Scenario A2 Gas Price in Poland: 20.7 €/MWh Consumer Welfare Loss by not using NSP2: 393 million € | Scenario B2 Gas Price in Poland: 28.1 €/MWh Consumer Welfare Loss by not using NSP2: 1,297 million € |

TABLE 6: COUNTRY-SPECIFIC PRICE AND CONSUMER WELFARE EFFECTS FOR POLAND

Source: ewi impacts of Nord Stream 2, page 22.

GVC assessment: the 50 billion Euro ticket

The author takes liberty to apply a less granular approach than ewi, by ‘holistically’ looking at the European traded wholesale market – the ‘European Henry Hub’ - at large⁸³. Before fall 2018, when LNG oversupply was building and, at the same time, the EAX/TTF spread collapsing, Asian LNG prices were on average some 3.3 \$/MMBtu higher than European wholesale prices. If Europe were to throw out Russian supplies by derailing NS2 or otherwise, Europe would have to compete for much larger quantities of LNG with Asia on a *permanent* basis.

In order to compete for such global LNG supplies pricewise, and assuming ewi’s ‘high global LNG demand’ case, European consumers would thus have to pay a premium of on average ~3.3 \$/MMBtu. This equals roughly a 10 €/MWh higher wholesale price. If we multiply this simply with 5,000 TWh of European consumption⁸⁴, the welfare loss, or conversely the welfare benefit of NS2 volumes, for European consumers could be well in the order of magnitude of € 50 billion per year.

⁸⁰ ewi impacts of Nord Stream 2, page 6.

⁸¹ Emphasis added.

⁸² Ewi impacts of Nord Stream 2, page 22.

⁸³ Also ewi confirms that ‘European wholesale gas prices’ would be up to 32% higher without NS2 in place, see ewi impacts of Nord Stream 2, page 6.

⁸⁴ We chose simple numbers for schematic illustration; actual 2919 EU demand was higher.

During a conference in 2018, I called the respective recommendation of our American allies to favor (American) ‘*freedom molecules*’ over ‘*malign*’ (Russian) molecules an ‘*indecent proposition*’⁸⁵.

5.2 Misguided Navalny debate: ‘*construction stop*’ confused with ‘*gas embargo*’

In the context of quantifying welfare benefits/-losses it appears appropriate to drop a note on the misguided ‘*Navalny debate*’: While the author hastens to emphasize that the incident is an inexcusable crime, the political discussion about possible punitive reactions against Russia is entirely misguided. E.g. German MP Röttgen, once more a politician acting self-appointed energy expert, requests a ‘*Baustopp*’ (stop of construction) for NS2⁸⁶.

He (and others) completely ignores that a stop of NS2 construction would predominantly hurt the Western Companies (and a multitude of Western contractor companies in a multitude of EU Member States). Gazprom, however, could continue to supply Russian gas to Europe at undiminished levels: If indeed NS2 were ‘*stopped*’, the stipulated capacities in the Ukrainian transit accord of 2019 could be re-negotiated and increased.⁸⁷

In other words, a ‘*real punishment*’, if politically deemed expedient, would mean an **embargo** of substantial quantities of Russian gas. The consequence would undoubtedly be the above discussed rise in wholesale traded market prices caused by the need to attract global LNG. In other words, European consumers would, depending on the global LNG demand situation, sustain welfare losses ranging between the above assessments of ewi and GVC. It would be interesting to see whether politicians, including MP Röttgen, would have the ‘*guts*’ to tell European citizens what they would have to pay in order to ‘*really punish*’ Russia.

Another aspect in this complex debate are the transit countries: If one would really consider an embargo on significant portions of Russian gas imports to Europe, one might just as well choose delivery locations where transit income (e.g. Belarus, Poland, Ukraine) would not be affected. These are the beaching points Greifswald for Nord Stream (1) and Lubmin for NS2.

The somewhat startling conclusion is thus that especially those who think they have an axe to grind with Russia and demand a ‘*Baustopp*’, should instead do the utmost to **expedite completion of NS2**: It would provide the EU with more ‘*punitive leverage*’ (collectively some 110 bcm/a) against Russia without having to be concerned about affecting transit countries’ income.

5.3 Poland stands out with high wholesale market price levels, by its own doing

ACER, in its latest Gas Market Monitoring Report 2019, expresses satisfaction with a further progression of market integration in Europe conform ACER’s Gas Target Model. It observes: “*The spot price correlation between TTF and other EU hubs increased in 2019, indicating both the growing role of the Dutch hub as a pricing benchmark as well as stronger*

⁸⁵ For further details see Peters, NS2 Hypocrisy, page 30.

⁸⁶ <https://www.spiegel.de/politik/deutschland/nord-stream-2-norbert-roettgen-fordert-baustopp-wegen-nowitschok-anschlag-auf-alexej-nawalny-a-310c268f-6dc2-45ad-89b9-0d47b3b68671>

⁸⁷ Of course this is only possible in the short term. Once the Ukrainian plans to mothball or even decommission unused Ukrainian infrastructure, this possibility disappears, exacerbating the lack of buffer capacity.

interdependence of EU hubs^{88, 89} Moreover, ACER concludes that supply sourcing cost convergence between Member States has further improved: “... *European gas supply sourcing costs have converged to a significant extent since gas markets were liberalized... EU gross welfare losses remaining due to supply price discrepancies ... reached 3 billion Euros in 2019... a drop by more than 60 % since 2013*”⁹⁰.

As we shall see, 2019 Polish average hub price levels, although one of the markets which should have benefitted from rock-bottom priced spot LNG, are high in comparison to other European hubs. It stands to reason that Poland does not belong to the group of Member States reaping significant benefits if any from the observed further sourcing cost conversion.

Polish hub still in ‘poor’ condition

ACER ranks the various national hubs into categories by degree of development. Poland, despite ample interconnections and a multiplicity of supply sources, continues to score very poorly by remaining in the category of ‘*emerging hubs*’.

Figure 23: European hubs by category



Source: ACER GMMR 2019, page 8.

Polish wholesale price levels considerably higher than in most other Member States

Subsequently, ACER compares wholesale price levels on both reported annual average import price levels and hub prices. Polish average import price levels were not (made) available, but Polish hub price levels were. The Polish average hub price level (21.5 €/MWh) is considerably above the TTF benchmark (17.5 €/MWh) and other neighboring hubs comprising the transnational Northwest- European market area. Particularly noteworthy is that Poland’s CEE neighbor, the Czech Republic, scores in the category of ‘*advanced hubs*’ equal to e.g. the

⁸⁸ Emphasis added.

⁸⁹ ACER GMMR 2019, page 41. It should be noted that ACER also observed ‘outliers’ on hub price conversion in 2019 i.a. due to the uncertainty about Ukrainian transit and exposure to LNG influx, see ACER GMMR 2019, page 7.

⁹⁰ ACER, GGMR 2019, page 7, Footnote 11.

German NCG or the French PEG and features an import price level even *below* TTF at € 17.3 and a hub price level equal to the German NCG.

Figure 24: Import- and hub price convergence

Figure 11: 2019 estimated average suppliers' gas sourcing costs by MS and EAC CP and delta with TTF hub hedging prices – euros/MWh



Source: ACER calculation based on Envestra Connect, IGD and MRAs from both MSs and EAC CPL.

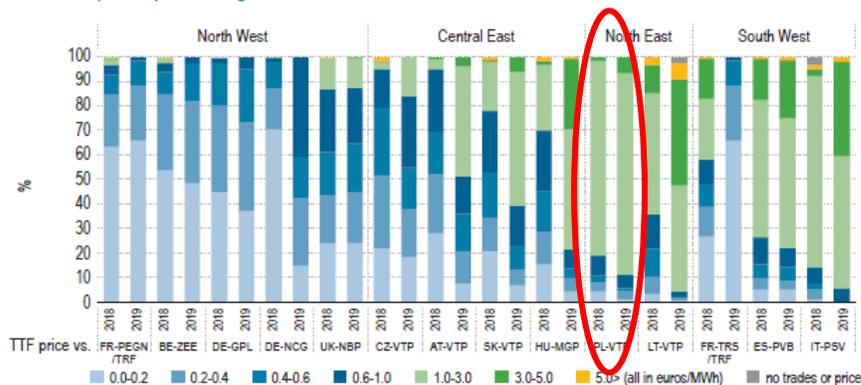
Source: ACER GMMR 2020, page 31.

Polish hub features one of the largest TTF DA deltas

In ACER’s assessment of DA (day-ahead) price convergence Poland scores particularly poor. Even if one discounts the temporary price distortions caused by the uncertainty of the Ukrainian transit extension⁹¹, Poland is the EU-country with the largest TTF DA (day-ahead) price delta in the category of 1 to 3 €/MWh spreads (light green in the graph) and with still a considerable share of TTF DA price deltas in the category of 3 to 5 €/MWh spreads (dark green in the graph).

Figure 25: DA hub price convergence/divergence

Figure 25: DA price convergence between TTF and selected EU hubs – 2017–2019 - % of trading days within given price spread range



Source: ACER calculation based on Platts and ICIS Heren prices data.

Source: ACER GMMR 2020, page 42.

⁹¹ ACER GMMR 2019, page 7.

This is the consequence of Poland locking up its market, keeping international traders out by a prohibitive storage obligation and thereby suffocating free trading. In the GVC Polish Gas Market Study I qualified the transactions at the Polish hub as *'take it or leave it puts'* by the incumbent⁹², i.e. in stark contrast to the usual price discovery process via multiple parties' bids/offers at real hubs, both OTC and via exchange.

This underscores once more that Poland (the UOKiK) would be well advised to clean up in front of its own doorsteps by finally embracing the liberalized European gas market with free trading instead of playing a 'blame game' with Gazprom and 'warning' the rest of Europe in sanctimonious hypocrisy fashion.

In the context, it appears appropriate to take a closer look at Gazprom's import-practices and -pricing. As we shall see, the powerful European traded markets have, in the initial stages of the transformation 'helped' by price reviews and arbitrations, essentially *'forced'* Gazprom to predominantly act as *'price taker'*, i.e. accepting wholesale traded market prices.

5.4 Gazprom is meanwhile *'price-taker'* at wholesale traded market price levels

The year 2019 saw massive price declines i.a. due to global LNG oversupply. Varied competitive responses of pipeline suppliers were seen. With LNG volumes up significantly and spot prices down, Norwegian volumes shrunk considerably, while Russian year-on-year volumes remained relatively stable in 2019.

Figure 26: European gas supply mix 2019



Source: ICIS Heren, GIF 26.23 of 20 December 2019

Norwegian Equinor withheld significant quantities since they considered the market prices *'too low'*⁹³. In contrast, Gazprom, its LTC-volumes affected by down-nominations to min-take levels from its import customers, significantly increased its sales via the so-called ESP (electronic

⁹² GVC Polish Gas Market Study, page 25.

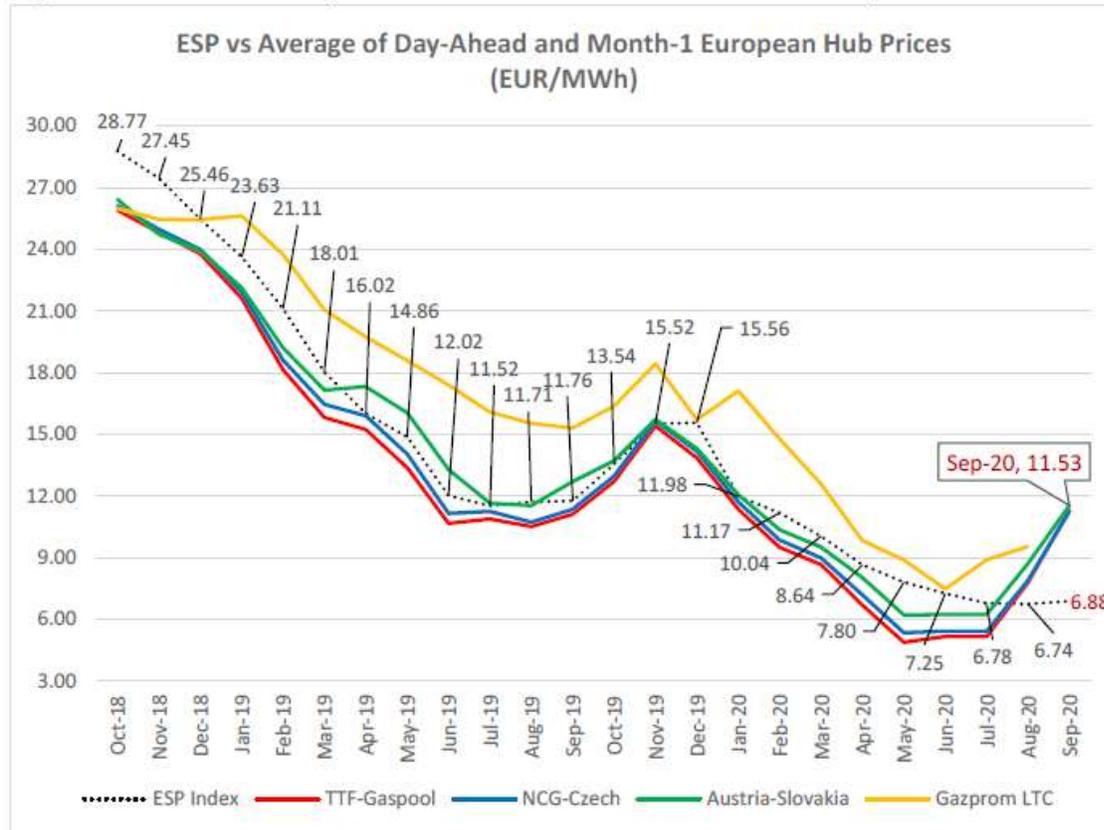
⁹³ ICIS Heren, GIF 26.23 of 20 December 2019, page 6.

sales platform⁹⁴). According to the OIES, Gazprom’s total ESP sales in 2019 comprised 14.9 bcm – equivalent to 7.5 % of Gazprom’s LTC exports to Europe in 2019⁹⁵.

The below OIES graph puts in context Gazprom’s average LTC prices, somewhat higher than average traded spot- and curve price levels but essentially trailing TTF prices. Its ESP sales, comprising all manner of traded products, are more or less matching TTF spot and curve prices.⁹⁶ In August and September 2020, ESP sales prices even dipped below TTF price levels.

Figure 27: Gazprom LTC and ESP pricing

Figure 1.3: The Price at Gazprom’s Electronic Sales Platform versus European Hubs



Source: GazpromExport, Argus Media, OIES

Source: OIES Quarterly Gas Review October 2020, page 6.

While the bulk of products were curve products throughout 2019, indicating that Gazprom wanted to make up ‘lost’ LTC volumes but not engage in a short-term price war, January and February 2020 showed “a dramatic increase in volumes of short-term gas...”⁹⁷, presumably adapting to market requirements in the context of the pandemic.

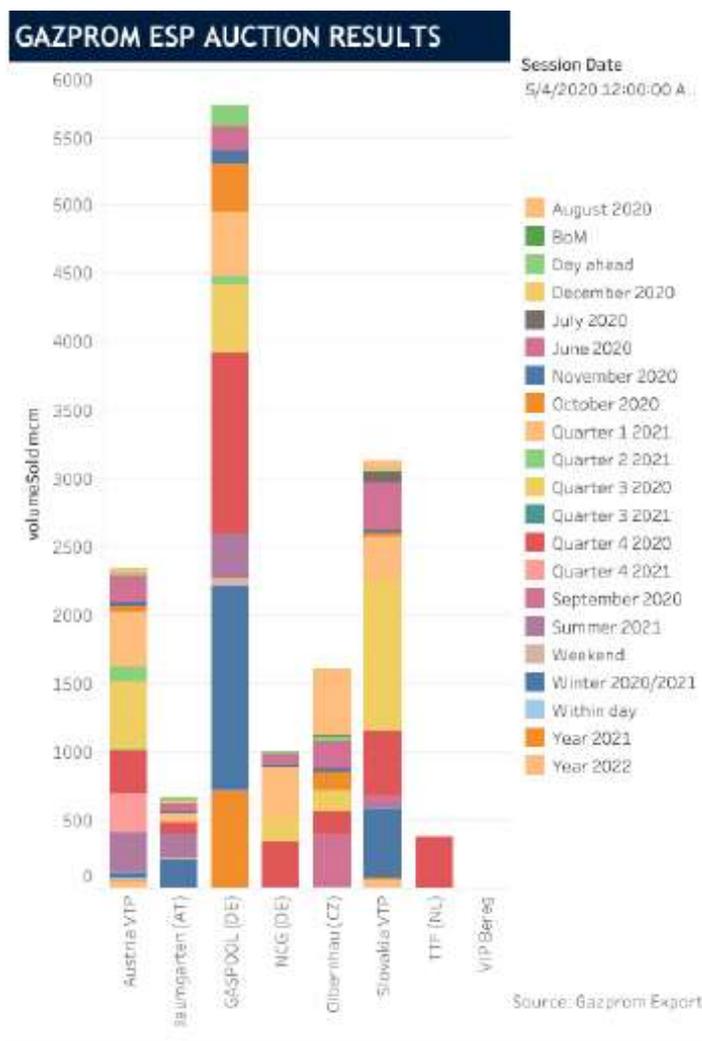
⁹⁴ Gazprom’s ESP platform, to which any trader can subscribe (and many have) operates similar to an exchange.

⁹⁵ OIES Quarterly Gas Review January 2020, page 16.

⁹⁶ OIES Quarterly Gas Review October 2020, page 6.

⁹⁷ OIES Quarterly Gas Review October 2020, page 5.

Figure 28: Gazprom's ESP sales products



Source: ICIS Heren, GIF 27.20 of 16 November 2020

This shows that Gazprom has increasingly been submitting to market forces. In other words, a far cry from exercising 'price-setting power'. Rather, it has become a 'price-taker'.

5.5 NS2 costs affect the producer net-back but not the achievable price in the wholesale traded market

The UOKiK claims that "...*The **high costs of implementing the undertaking may be set off by higher bills***⁹⁸ paid by Polish recipients of natural gas, and the negotiating position of the consortium leader, i.e. Gazprom, will be strengthened considerably both in relations with Poland and with other European Union Member States."⁹⁹

This assertion reveals, once more, complete ignorance of how traded markets work. The achievable price for an importer - be it under long-term contracts properly indexed to hub prices

⁹⁸ Emphasis added.

⁹⁹ UOKiK press statement, page 2.

or direct spot sales - is, as explained above, nothing more or less than the wholesale traded market price. The cost of transportation cannot affect the traded market price. Instead, it will impact the well-head net-back of the producer.

It goes too far for the purposes of this paper to explain in all detail the well-head net-back mechanism. It may suffice to emphasize that (i) the achievable price is a '*given*' and (ii) the costs of transport as well as all other cost to '*ship to market*' (besides transport e.g. treatment and extraction costs, but also taxes) affect the profitability (the net-back) of the producer but have no relevance for the achievable traded market price.

As an aside, the view of the UOKiK underscores once more how far away Poland is from understanding and embracing the liberalized European markets with functioning hubs and free cross-border trade.

6. Gazprom committed towards the EC to abstain from imposing '*territorial restrictions*' and accept '*competitive pricing*'

The UOKiK claims that "*Such a situation may bring about serious consequences for the economy of Poland and of the European Union, in particular by introducing **territorial restrictions**¹⁰⁰ affecting the deliveries of natural gas, and by **increasing the prices**¹⁰¹ of gas to end customers, in particular Polish consumers.*"¹⁰²

Such assertion stands in stark contrast to the settlement the EC (DG Comp) reached with Gazprom on 24 May 2018 regarding its (anti-) competitive behavior in Central European Member States. Gazprom accepted a variety of commitments¹⁰³ ('DG Comp/Gazprom settlement'). Inter alia, it committed to abstain from imposing '*territorial restrictions*' and also to facilitate, where necessary, price reviews and adjustments accepting '*competitive prices*'¹⁰⁴.

Poland, as the only European Member State, took legal action against this settlement since it had wanted a hefty fine to be imposed on Gazprom¹⁰⁵. For the UOKiK, however, to now impose such fine itself i.a. on the grounds that Gazprom would violate such settlement, is distasteful and, I dare say, '*ultra vires*': It is for the EC to react to any violation by Gazprom of the settlement commitments and not for Poland to assume such breach in advance and impose respective punishment.

Danila Bochkarev, Senior Fellow at the EastWest Institute, is quoted in Euractiv in this respect in no uncertain terms: "*In May 2018, the Commission imposed on Gazprom a number of obligations ... This deal allows the EU's competition watchdog to fine the Russian gas company without having to prove infringement ... the absence of such a fine has been the best proof of absence of any serious market misconduct*".¹⁰⁶

¹⁰⁰ Emphasis added.

¹⁰¹ Emphasis added.

¹⁰² UOKiK press statement, page 3.

¹⁰³ For a detailed analysis see Stern/Yafimava OIES Paper EC Settlement 2017.

¹⁰⁴ "*Gazprom has committed to introduce competitive benchmarks, including western European border and hub prices*", Stern/Yafimava OIES Paper EC Settlement 2017, page 20.

¹⁰⁵ <https://www.euractiv.com/section/energy/news/poland-attacks-eus-gazprom-deal-in-court/>

¹⁰⁶ Danila Bochkarev in Euractiv, <https://www.euractiv.com/section/energy/opinion/poland-fights-uphill-battle-over-nord-stream-2/>

Further *‘living proof’* that the DG Comp/Gazprom settlement is not a *‘toothless tiger’* is the price cut Bulgaria achieved with Gazprom in March 2020. The EC Quarterly Report European Gas Markets Q1 2020 informs: *“On 3 March 2020 Bulgaria achieved a 40% cut in the price of gas it imports under its long-term contract with Russia, its dominant gas supplier. Bulgaria, which relies on Russian imports for more than 80% of its gas needs, achieved a price cut after the European Commission finalized an antitrust investigation against Gazprom in 2018 by way of commitments concerning eight east European countries. The price cut was achieved on the basis of the price revision clause set out by the commitments and after Gazprom agreed to link a significant part of the Bulgarian price to European gas hubs... The new agreement is retroactively valid as of August 2019, and gas customers are to be reimbursed on price differential up to March 2020.”*¹⁰⁷

7. Poland has not removed its multiple *‘non-physical entry barriers’*

In the GVC Polish Gas Market Study, we qualified Poland’s behavior as *“deliberate obstruction of European market integration”*.¹⁰⁸ We based that on the fact that Poland did not have *‘physical barriers’* hindering free cross-border trade (e.g. pipeline capacity constraints etc.). Rather, it had put up multiple *‘non-physical entry barriers’*.¹⁰⁹

The *‘storage obligation’*

The perhaps most painful *‘non-physical’* barrier (besides many others revealed e.g. by the *Kantor Report*¹¹⁰) is the so-called storage obligation, imposed not only on retailers, but also on mere wholesale trading companies. With storage costs in Poland sky-high, foreign traders reverted to storage in adjacent markets only to find out that, by further tightening of the respective law, they were obliged to book firm transport capacity without being allowed to use it for other purposes, e.g. arbitrage transactions. In consequence, some 20 international traders surrendered their Polish import and trading licenses due to the prohibitive economics resulting from this.¹¹¹

Danila Bochkarev, a Senior Fellow at the EastWest Institute, is quoted in Euractiv on the subject in his usual outspoken manner: *“... the national gas market in Poland remains partly shielded from competition and restricted to the new entrants due to the strict storage regulations amended in 2016. These storage obligations – one of the costliest in Europe – are ... perceived ... as inefficient and counterproductive, representing the barrier to the development of a secure, liquid and competitive market in Poland and increasing cost of energy for Polish consumers.”*¹¹²

At the time, DG Energy issued a *‘Letter of Formal Notice’* to Poland. Almost 3 years later, in November 2019, it issued a *‘Reasoned Opinion’*. The respective press statement reads: *“The Commission has today decided to send a reasoned opinion to Poland on the grounds that their national rules do not comply with the Security of Gas Supply Regulation (Regulation (EU) 2017/1938). The Polish legislation imposes certain gas storage obligations on undertakings*

¹⁰⁷ EC Quarterly Report European Gas Markets Q1 2020, page 21.

¹⁰⁸ GVC Polish Gas Market Study, page 25.

¹⁰⁹ GVC Polish Gas Market Study, page 29 ff.

¹¹⁰ See GVC Polish Gas Market Study, page 33 ff.

¹¹¹ GVC Polish Gas Market Study, page 30.

¹¹² Danila Bochkarev in Euractiv, <https://www.euractiv.com/section/energy/opinion/poland-fights-uphill-battle-over-nord-stream-2/>

importing gas to Poland, which are inconsistent with the EU law provisions... The **Commission is of the view that the Polish law requirements concerning gas storage are incompatible with the EU measures to safeguard the security of gas supply**¹¹³. The Regulation lays down requirements to be respected by all Member States in order to prevent and respond to potential supply disruptions in the EU. Poland has two months to reply to the arguments raised by the Commission. Otherwise the Commission may decide to refer the case to the Court of Justice of the EU.”¹¹⁴

Apparently, Poland was not very impressed with the 2-month deadline set by the EC. E.g. ERO, the Polish regulator, happily informs, in its ‘ERO National Report 2020’, about one of its ‘important activities’: monitoring the compliance with the storage obligation¹¹⁵.

Finally, on 31 August 2020, the Polish government came forward with a ‘break-through’ draft amendment of the ‘Act on Reserve of crude oil, refinery products and natural gas’¹¹⁶. To make a long story short: the amendment proposal is, in the most modest of terms, a ‘joke’: It proposes a ‘gradual moderation’ of the storage obligation only with regard to LNG imports. The ‘catch-22’ is that the entire re-gas capacity at the Świnoujście LNG terminal has been booked by incumbent PGNiG until 2034¹¹⁷.

Unsurprisingly, an avalanche of agitated protests transpired. While the author has seen individual company statements (of the harshest kind) which cannot be made public, we can look at the reaction of EFET, the European Federation of Energy Traders. In its letter to Mr. Michał Kurtyka at the Polish Ministry of Climate¹¹⁸, EFET states inter alia: “We hope ... this consultation ... **kick starts the trifling level of wholesale market competition**¹¹⁹ ... the storage obligations are counterproductive and increase the costs of gas consumed in Poland... Obligations on mandatory holding of gas storage capacity ... represent a significant barrier to the development of market liberalization. The proposed changes to the Act ... provide an additional advantage to the already dominant state-controlled incumbent in a way that will further prejudice the development of competition ... a gradual removal of the obligation imposed on LNG imports **does nothing in terms of reopening the effectively foreclosed Polish gas market to competition**¹²⁰ ...”¹²¹

One could of course argue that a ‘Federation of Traders’ is ‘talking into its own pocket’ by painting a picture of the Polish traded market serving its own purposes. This is clearly not the

¹¹³ Emphasis added.

¹¹⁴ https://ec.europa.eu/commission/presscorner/detail/en/INF_19_6304

¹¹⁵ ERO National Report 2020, page 87.

¹¹⁶ <https://legislacja.rcl.gov.pl/projekt/12337651> [published 31.08.2020]

¹¹⁷ See Yafimava, OIES Paper Global LNG in Europe, page 19: “In October 2017, an agreement between Polskie LNG and PGNiG entered into force, under which the latter contracted the terminal’s entire primary capacity (570,000 Nm³/hour, ~5 bcma) until the end of 2034.”

¹¹⁸

https://efet.org/Files/Documents/Gas%20Market/Security%20of%20Supply,%20Storage%20and%20LNG/EFET%20response%20to%20the%20consulted%20Storage%20Act%20revision_final.pdf

¹¹⁹ Emphasis added.

¹²⁰ Emphasis added.

¹²¹

https://efet.org/Files/Documents/Gas%20Market/Security%20of%20Supply,%20Storage%20and%20LNG/EFET%20response%20to%20the%20consulted%20Storage%20Act%20revision_final.pdf

case here. As we have already seen, the Polish average hub price levels are way above those of other European hubs, as a direct consequence of keeping competition out.

Even the Polish regulator, ERO, usually going out of its way to demonstrate that Poland is complying with all European regulations, observes in its National Report 2020: “*Wholesale trade on the Polish gas market focusses on the commodity exchange, mainly due to the obligation of public sale of gas by the largest entities (currently PGNiG S.A.), arising from the legal provisions. The level of liquidity is high in comparison to final consumption. However, a large part of transactions is executed between entities from the PGNiG group, which **may impact the transparency of price terms***”¹²² ¹²³

The retail market: ‘commercial no-go area’ for new entrants claims the first ‘victims’

In the GVC Polish Gas Market Study of 2018, the author qualified the Polish gas retail market as a ‘commercial no-go area’ due to the prevailing ‘predatory pricing’ and/or ‘margin squeeze’ practices of incumbent PGNiG¹²⁴, tolerated by the regulator (and obviously also by the UOKiK). The years 2018 and 2019 saw PGNiG’s market share increase. ERO explains: “*The observed increase of the PGNiG Group’s share in the sale of gaseous fuel to final customers since 2017 was due ... to taking over of part of customers by PGNiG OD Sp. z o.o. under launching **last resort supply after a collapse of several suppliers***”¹²⁵ *at the end of 2018 and in 2019.*”¹²⁶ In other words, the ‘commercial no-go area’ has claimed its first ‘victims’.

Cleaning up in front of its own doorsteps

The annoying antics of Poland obstructing inclusion in the ‘Single European Gas Market’ continue. The same goes for not embracing the European liberalized market regime with free and fair competition. This underscores once more the urgency for the UOKiK to take action and clean up in front of its own doorsteps.

8. Poland has made progress in further diversifying its gas supply sources

The (false) assertions of Poland at large and the UOKiK in particular that Poland is dependent on Russian gas supplies could imply that Poland might be constrained in its efforts to ‘liberate’ itself. It has clearly been the strategy of Poland to turn its true role of ‘culprit’ into the role of ‘victim’ and, thereby, successfully collecting huge amounts of European taxpayers’ money. The insinuated ‘dark cloud of coercion’ or ‘victimization’ is, however, not visible, quite the contrary: Poland has made significant progress in achieving its aspired further (and at times economically questionable) supply diversification projects.

Back to the ‘stone ages’: the Baltic pipe project

A prime example of this is the progress of the so-called ‘Baltic pipe project’, an endeavor we qualified in the GVC Polish Gas Market Study as ‘going back to the stone ages’.¹²⁷ ‘Stone age’ because punching a hole into a fully utilized Norwegian pipe (Eurogas 2), beaching in

¹²² Emphasis added.

¹²³ ERO National Report 2020, page 80/81.

¹²⁴ GVC Polish Gas Market Study, page 44 ff.

¹²⁵ Emphasis added.

¹²⁶ ERO National Report 2020, page 81.

¹²⁷ GVC Polish Gas Market Study, page 51 ff.

Dornum/Germany with entry into the German hub Gaspool makes no sense. Instead of physically diverting partial gas carried in the Eurogas 2 pipeline via the Danish North-Sea, Danish onshore territory and an offshore connection from Denmark across the Baltic Sea to Polish beaches for billions of Euros, Poland (PGNiG and/or others) could have simply booked entry at Dornum into the Gaspool hub and simultaneous exit at Mallnow for a few €cents/MWh. Such 'stone age' approach has of course much to do with the Polish '*ideological physicality*', fostered by the lack of political will to embrace the liberalized European traded markets.

The Polish regulator ERO, in its ERO National Report 2020, is happily reporting on the progress of the project: "*The Poland-Denmark gas interconnection project involves the construction of a gas pipeline that will connect the natural gas transmission systems of Poland and Denmark. ...*

In 2019 a number of steps were taken to implement the project:

- *an agreement was signed with the Innovation and Networking Executive Agency (INEA) to co-finance construction work for the Baltic Pipe under the Connecting Europe Facility,*
- *the relevant EIA reports, applications for building permits and applications for environmental decisions were submitted,*
- *appropriate environmental decisions, building permits and location decisions were obtained,*
- *a cross-border consultation on the ESPOO report was conducted,*
- *work was carried out on the design documentation and executive design in the offshore part and the content of the intersection agreements was agreed with the owners of the offshore infrastructure with which the Baltic Pipe will intersect,*
- *within the proceedings of the offshore component, a company responsible for the supply of pipes was selected,*
- *archaeological surveys and UXO surveys in the coastal and offshore parts of the gas pipeline route were completed,*
- *a contract was signed for the supply of compressor units for 3 gas compressor stations,*
- *construction projects for all onshore projects under the Baltic Pipe PL Onshore Programme were approved.*¹²⁸

European subsidies continue despite Polish obstinacy

The author, in the GVC Polish Gas Market Study, recommended to withhold all further European subsidies, be it through the '*Connecting Europe Facility*' or otherwise, until Poland has removed all its non-physical trade barriers.¹²⁹ Such advice was ignored and Poland was free to continue obstructing market integration on the one hand and pursue diversification aspirations, beyond its own needs for the purpose of its '*pivotal hub*' dream on the other hand, lavishly subsidized by the EU:

- In November 2019, the Commission approved a € 130 million euro grant for the expansion of Świnoujście LNG.
- The initial terminal's construction was also supported by a €224 million EU grant.

¹²⁸ ERO National Report 2020, page 71/72.

¹²⁹ GVC Polish Gas Market Study, page 63.

- In April 2019, the Baltic Pipe project received another EU grant of € 215 million.¹³⁰

At least, there is some hope that the long-term booking of Baltic-pipe capacity by incumbent PGNiG, necessary to allow FiD, might not result in an economic disaster by having entered into multi-billion Euro ship-or-pay payment obligations over many years without having secured the supplies to ship through. In the GVC Polish Gas Market Study, I called it a '*looming multi-billion blunder*'¹³¹. It was clear that the acclaimed acquisition of Norwegian production assets (some 2 bcm/a) would never be sufficient to fill the Baltic pipe ship-or-pay capacity booked by PGNiG. According to ICIS Heren¹³², PGNiG has now signed an import deal with Danish Orsted over some 6.4 bcm/a from January 2023 to 1 October 2028. This is not matching the tenor of the capacity booking, but at least 'a start'.

Expansion of LNG capacities beyond import demand

The Baltic pipeline project is not the only supply diversification project pursued by PGNiG. The expansion of the Swinoujscie LNG terminal and yet a further LNG terminal are underway.

Frontier Economics¹³³ summarizes Poland's expansion plans: "*The capacities of the existing **LNG terminal in Swinoujscie** are currently being expanded. From 2022 the terminal will be able to import **7.5 bcm/a**. In addition, the commissioning of a new LNG terminal in the Bay of Gdansk is planned for 2023 increasing LNG capacities by 8 bcm/a to up to 15.5 bcm/a. The **Baltic Pipe**, which allows imports of **up to 10 bcm/a** from Denmark (or, indirectly, Norway), is expected to be commissioned at the end of 2022.*"¹³⁴

It will go too far for the purposes of this paper to discuss every Polish expansion project in detail. It is clear, however, that Poland will soon have non-Russian import capacities way beyond its domestic needs. Its efforts to achieve such are (i) politically welcomed and financially supported by the European institutions despite Poland's continued obstruction to embrace the Single European Market and (ii) clearly in no way '*hampered*' by Russia, e.g. leveraging on its (non-existing) dominance in the Polish market as Polish voices so loudly assert.

¹³⁰ For further details see Danila Bochkarev in Euractiv, <https://www.euractiv.com/section/energy/opinion/poland-fights-uphill-battle-over-nord-stream-2/>

¹³¹ See GVC Polish Gas Market Study, page 53.

¹³² ICIS Heren, GIF 27.19 of 30 October 2020.

¹³³ Frontier Economics, Infrastructure Effects 2020, page 35 ff.

¹³⁴ Frontier Economics, Infrastructure Effects 2020, page 35.

9. Conclusions and Outlook

Naturally, Gazprom has challenged the UOKiK decision¹³⁵. We assume so have the Western Companies, while respective public information could not be attained. Legal experts assume that it could be a protracted legal battle over many years¹³⁶. While it stands to reason that such proceedings will not hold up the eventual completion of NS2, they are doubtless a further '*spanner in the works*'.

In the eyes of a gas advocate, the annoying thing is that Poland, while falsely claiming that it is being '*victimized*', might in fact be the one endangering *Europe's* security of supply. Moreover, it is definitely obstructing climate efforts of the gas industry.

In my recent paper '*Nord Stream 2 caught between politicization, hypocrisy and ignorance: a few inconvenient truths - Both U.S. sanctions and EU regulation obstruct climate efforts and pose risks to security of supply*', I reason inter alia that the '*tacit optimism*' that NS2 will – somehow - be completed and operational with only a minor delay, poses an unnecessary risk to security of gas supply. The current capacity arrangements, hinging on such optimism, are all '*stitched tightly on edge*', i.e. do not cater for any buffer capacity to speak of e.g. for cold spells, should the delay be longer. If there were another extremely cold winter (e.g. another '*beast from the East*') and Asian LNG demand (and prices) were up at the same time, the unavailability of NS2 could result in a serious security of supply issue, not causing supply curtailments but causing prices to go through the roof, up to the required level to attract global LNG, to the detriment of European consumers¹³⁷.

Currently, the demand destruction caused by the pandemic and the continued global oversupply may have squashed the sense of urgency for timely completion and operability of NS2. If, however, the pandemic is in check and demand recovers, tightness could quickly arise in the European gas market, especially if the Asian recovery is faster and along with it rising LNG demand and Asian price levels. Thus, it could eventually be the European citizens at large having to pay dearly for the Polish foolhardiness.

Last but not least, I emphasized the significant contribution NS2 would bring to battle climate change, in that modern, state-of-the-art infrastructure, i.e. new pipelines and new energy efficient compressors such as NS2 features contribute significantly to reduce the carbon footprint of fossil gas along the entire gas value chain. 55 bcm/a carried by NS2 would save ~11 million tons of CO₂equ per annum vs. transit through the Ukraine.¹³⁸ The '*relief*' stands (almost) ready, but is rebuked by Poland.

¹³⁵ <https://pgjonline.com/news/2020/11-november/gazprom-files-appeal-in-poland-against-hefty-nord-stream-2-fine>

¹³⁶ See e.g. Politico citing legal experts interviewed: [Poland hits Gazprom with the world's largest competition fine – POLITICO](#)

¹³⁷ Peters, NS2 Hypocrisy, page 18 ff.

¹³⁸ Peters, NS2 Hypocrisy, page 16.

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Wolfgang has been working in the oil and gas industry for some 37 years: for Mobil Corporation, for Duke Energy and thereafter for RWE. He held senior management positions across the entire value chain in a variety of countries. After some 15 years in the international upstream business, he was i.a. twice responsible for market entry into the liberalizing Dutch retail market. Later, he was engaged in the midstream segment, i.a. as RWE's chief negotiator for Nabucco supplies in Azerbaijan, Iraq and Turkmenistan. Moreover, he served as CCO and later CEO of RWE Transgas a.s. (later renamed RWE Supply & Trading CZ a.s.) in the Czech Republic from 2008 to 2016. He experienced hands-on the 2009 Ukrainian gas crisis and the 'break-out' of traded markets subsequent the financial crisis in 2008. With Gazprom, he negotiated and litigated about the decoupling of oil and gas pricing. He retired as CEO of RWE Supply & Trading CZ a.s. in March 2016. Wolfgang now runs his own company, 'The Gas Value Chain Company GmbH' (GVC). GVC offers its services as 'commercial operator' (instead of mere consultancy), e.g. in project management and negotiations. Wolfgang also acts as commercial expert in arbitrations and mediations. He strongly supports gas as a means to effectively battle climate change. His gas advocacy engagement has rendered multiple publications (<https://gasvaluechain.com/publications-interviews/>) and presentations (<https://gasvaluechain.com/news-events/>). Wolfgang has also continued to maintain cooperation with Brussels-based Eurogas (www.eurogas.org), where he served as board member for 8 years: GVC joined Eurogas as its first new 'liaising member' in 2016. From September 2019 to October 2020, Wolfgang served, in accordance with requirements of the European Commission, as interim Chairman of the Supervisory Board of Česká republika a.s. in Prague.

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