

March 2020

Implications of the Russia-Ukraine gas transit deal for alternative pipeline routes and the Ukrainian and European markets

1. Introduction

In a recent OIES Insight,¹ Simon Pirani and Jack Sharples analysed the new 5-year gas transit agreement that was signed by Gazprom and Naftogaz at the end of December 2019, providing for the export of Russian gas to Europe via Ukraine. That Insight examined how the two sides reached that agreement, and how the agreement is likely to work in practice, in the context of Gazprom's likely gas transit requirements. The authors concluded that the agreement, whereby Gazprom agreed to a ship-or-pay commitment of 65 bcm in 2020 and 40 bcm in 2021–24, would most likely provide sufficient transit capacity in 2020 and from 2022 onwards, with 2021 as the 'bridge year' in which Gazprom may be obliged to book additional transit capacity. In analysing the extent to which the agreement would meet Gazprom's need for transit via Ukraine, that Insight raised questions about the role of non-Ukrainian gas pipeline routes to Europe, thus setting the scene for the present publication.

This Insight therefore discusses the likely evolution of Russian gas pipeline routes to Europe – and specifically, Nord Stream 2, TurkStream and the Yamal-Europe pipeline route through Poland – in the light of the Russia-Ukraine gas transit agreement. It also examines the impact of the deal on the Ukrainian gas market, and the likely short-term price effects in the European market. In doing so, this Insight analyses the broader context surrounding the Russia-Ukraine gas transit agreement, and the impact of the agreement on relevant markets and related Russian pipeline export routes.

2. Non-Ukrainian gas transit routes to Europe

In the early 1990s, following the disintegration of the Soviet Union and the emergence of Russia, Ukraine, and Belarus as independent states, over 90% of Russian gas exports to Europe were delivered via Ukraine. This was a legacy of gas production in western Ukraine providing the source of early Soviet exports to Europe, and that pipeline infrastructure continued to serve as the conduit for Soviet exports even after the majority of Soviet gas production had shifted to north-western Siberia. In the post-Soviet period, although Ukraine remained the single largest export route, Gazprom pursued several projects to reduce its dependence on Ukrainian transit, including the Yamal-Europe pipeline (to Germany via Belarus and Poland), the Blue Stream pipeline (direct from Russia to Turkey under the Black Sea), and, of course, Nord Stream (direct from Russia to Germany under the Baltic Sea). Two new pipelines, Nord

¹ Simon Pirani and Jack Sharples, 'The Russia-Ukraine gas transit deal: opening a new chapter', *OIES Insight* 64, February 2020



Stream 2 (in parallel to Nord Stream 1) and Turkish Stream (from Russia to Turkey, under the Black Sea) will augment Russia's existing pipeline gas export capacity.

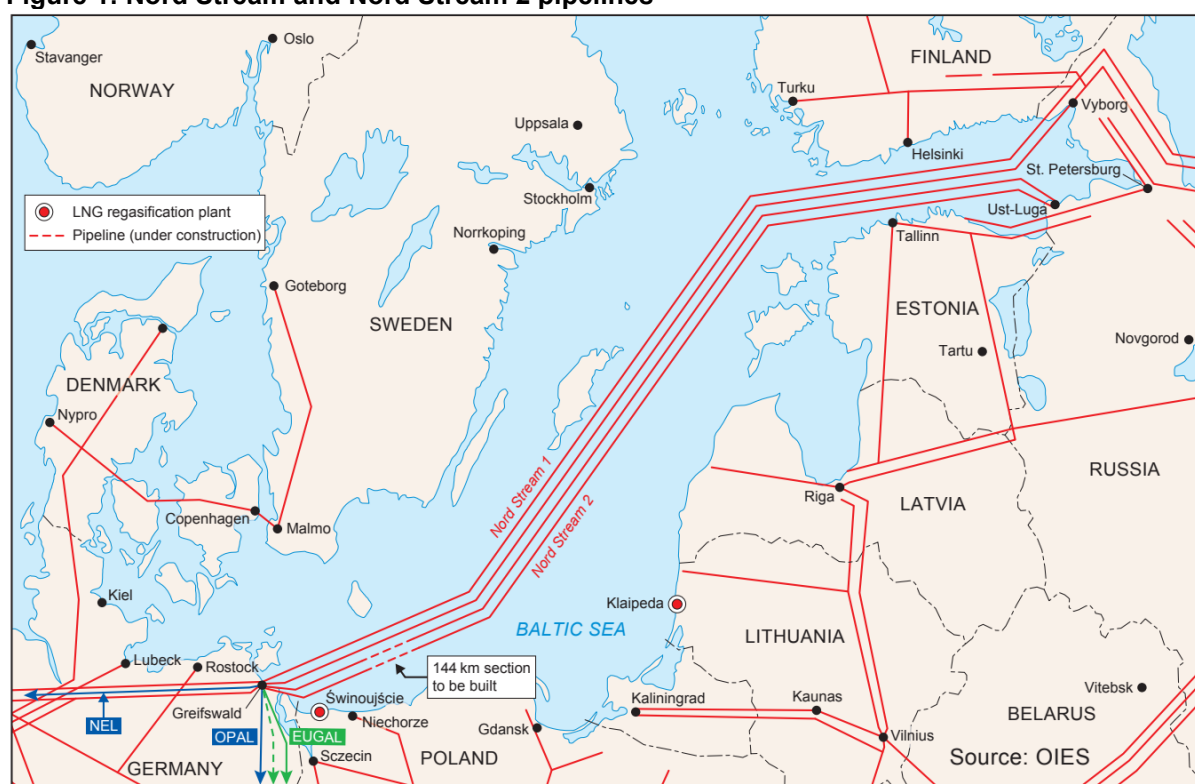
As the previous Insight noted, while the launch of Turkish Stream in January 2020 will reduce Gazprom's need for transit via Ukraine to a certain extent, the fact that the related pipelines in Bulgaria and Serbia (to enable Turkish Stream supplies to Hungary and potentially Austria) will not be complete until late 2021, and the delay to Nord Stream 2 caused by US sanctions, meant that Gazprom will still need substantial transit via Ukraine in 2020-21, and smaller transit volumes from 2022 onwards.

In this context, it is important to understand how the signing of a new Ukrainian gas transit agreement will impact upon Gazprom's utilisation of non-Ukrainian export routes, just as the development of those non-Ukrainian export routes influenced the extent to which Gazprom was willing to commit to gas transit via Ukraine. There is now no serious doubt that Nord Stream 2, and Turkish Stream, will be completed, together with the onshore pipelines to carry their gas further into Europe. There is still some doubt over the timing of these projects, though. The completion of the Ukraine transit deal may also affect the future of Russian gas transit via Poland, where the current arrangements expire in the middle of 2020.

Nord Stream 2

Nord Stream 2 is likely to be commissioned in 2020 or 2021. US sanctions may cause some further delay but will not stop the project's completion. This is the main factor that would enable Gazprom to reduce transit across Ukraine further (Figure 1).

Figure 1: Nord Stream and Nord Stream 2 pipelines



Source: OIES

Construction permits for Nord Stream 2 were granted by Germany, Finland, Sweden and Russia in 2018 (see Appendix 1 for further background on the project). The Danish permit was severely delayed and only granted on 30 October 2019, nearly three years after the application was first submitted (see Appendix 4). Offshore pipe-laying began in Finland's Exclusive Economic Zone (EEZ) in September 2018. The first line of the Finnish section was completed in April and the second line in August 2019.



By the end of October 2019, the Swedish and Russian sections had also been completed; in total, 2,100 km of offshore pipes had been laid – 85% of the combined length of the two lines (2,460 km).

The Danish section consists of two lines of 147 km each (a total of 294 km). Construction of these began on 4 December 2019 – as Nord Stream 2 was obliged to wait for one month from the date of permit being granted to allow any potential appeals to be heard – and was due for completion by mid-January 2020. However, construction was halted following the adoption of the US National Defence Authorisation Act (NDAA), which threatened an imposition of sanctions if pipelaying was not stopped.² The NDAA was passed by Congress and the Senate on 11 and 17 December respectively, and signed into law by President Trump on 20 December, after the trilateral EU-Russia-Ukraine agreement on gas transit was reached. The sanctions target “involved parties that have knowingly sold, leased, or provided vessels that are engaged in pipe laying at depths of 100 feet or more below sea level for the construction of Nord Stream 2” and threatens to impose sanctions “unless related parties immediately demonstrate good faith efforts to wind-down”.³ On 21 December Allseas, the construction company which had been pipe-laying, announced that it had halted these activities.⁴ The Director General of Gazprom Export, Elena Burmistrova, stated at the Vienna gas conference on 28 January that the pipeline was 94% complete. Bloomberg estimates that there are 140 km left to lay, of which 108 km are in the Danish section and 32 km in the German EEZ.⁵

Unless and until the US provides further guidance that could enable Allseas to lift suspension and re-start pipelaying activities – which seems unlikely given the strongly-worded guidance issued by the US Office of Foreign Assets Control (OFAC) to clarify the sanctions provisions⁶ – the remaining section of Nord Stream 2 will have to be completed by companies that would not be deterred by sanctions. President Putin stated at a meeting with business leaders on 25 December that there are no critical issues because “we have a pipe-layer (vessel)”, and that the only challenge is a delay of several months.⁷ This view was repeated by the Russian Energy Minister, Alexander Novak, on 27 December, when he also suggested that the work would be completed by the end of 2020.⁸

On 11 January, Putin stated: “We will certainly be able to complete it on our own without inviting foreign partners. The timeframe is the only question.” He said the work would be completed by the end of 2020 or in the first quarter of 2021. At the same press conference German chancellor, Angela Merkel, stated that Germany believes that “the extraterritorial sanctions are the wrong path”, adding that it “will continue to support” the project.⁹ The assurance that Nord Stream 2 will be completed without foreign assistance was repeated by representatives of Gazprom Export and Gazprom.

While there are Russian vessels capable of laying pipelines offshore – such as *Fortuna* (owned by the Russian company, MRTS) and *Akademik Cherskiy* (owned by Gazprom’s subsidiary, Gazprom Flot) – their pipe-laying speed is understood to be significantly lower than that of Allseas vessels. The *Fortuna* can lay pipes at a rate of 1 km/day, while *Akademik Cherskiy* is slower, at 0.34 km/day, according to

² National Defence Authorisation Act, Section 7503(d), 20 December 2019, <https://www.congress.gov/bill/116th-congress/senate-bill/1790/text>

³ ‘Fact Sheet on US opposition to Nord Stream 2’, *US government press release*, 27 December 2019, <https://www.state.gov/fact-sheet-on-u-s-opposition-to-nord-stream-2/>

⁴ ‘Allseas suspends Nord Stream 2 pipelay activities’, *Allseas press release*, 21 December 2019, <https://allseas.com/wp-content/uploads/2019/12/2019-1221-Media-statement-Allseas-discontinues-Nord-Stream-2-pipelay.pdf>

⁵ ‘Pipeline unlikely to come on before 4Q 2020: Bloomberg NEF’, *Gulf Times*, 26 December 2019, <https://www.pressreader.com/qatar/gulf-times-business/20191226/281681141788167>

⁶ ‘FAQ 815’, OFAC, https://www.treasury.gov/resource-center/faqs/sanctions/pages/faq_other.aspx

⁷ ‘Бизнес приняли на мировом уровне’, *Kommersant*, 26 December 2019, <https://www.kommersant.ru/doc/4207397>

⁸ ‘Новак: «Северный поток-2» будет запущен до конца 2020 года’, *Kommersant*, 27 December 2019, <https://www.kommersant.ru/doc/4213631>

⁹ ‘News conference following Russian-German talks’, President of Russia, 11 January 2020, <http://en.kremlin.ru/events/president/news/62565>



Bloomberg NEF.¹⁰ Other sources suggest a slightly faster rate of 1 km/day for *Akademik Cherskiy*.¹¹ This is significantly slower than the 3-5 km/day achieved by the Allseas vessels.¹² At those rates, it would take either vessel around five months (at best) to complete the pipe-laying. At present the *Fortuna* is stationed in the Baltic Sea near Germany, whereas *Akademik Cherskiy*, which left Nakhodka in the Russian Far East on 10 February, has since passed Singapore and, as this paper is being published, is going towards Sri Lanka, possibly for upgrading.¹³ It is not clear whether such upgrading is for enabling it to continue work on the gas fields in the Russian Far East (where the vessel was engaged prior to its departure to Singapore) or for laying the remaining section of Nord Stream 2.

In addition to the Russian pipelaying vessels' lower speed, the *Fortuna*'s lack of dynamic positioning (DP) capability presents another challenge, as the Danish permit states it is "assumed that laying will be carried out using a lay vessel equipped with dynamic positioning".¹⁴ This might explain why *Akademik Cherskiy* – which has DP capability – was originally touted by the Russian Energy Minister, Novak, as potentially being used for laying the remaining section.¹⁵ However, given that the permit also says that laying will be carried out "from a lay vessel with dynamic positioning (DP vessel) or an anchored vessel", adding that Nord Stream 2 "expects one DP vessel to be used", it appears to provide for a possibility of using a vessel without DP capability should the DEA and Nord Stream 2 AG agree. In early February 2020 the DEA was reported as saying that under the existing permit it would be possible to consider the possibility of using a pipelaying vessel *not* equipped with DP *together* with other auxiliary vessels that are equipped with DP capability, to finalise the construction of the remaining section.¹⁶ Should this be possible and *Fortuna* be allowed to finish the construction of the remaining section, the Nord Stream 2 launch date could potentially be brought forward.

While US sanctions target the construction of the pipeline, the operation of Nord Stream 2 once it is complete also faces uncertainty from EU regulation. In February 2019, acting on the proposal made by the EC, the EU reached a political agreement to amend the Third Gas Directive to make it applicable – including its provisions on transmission unbundling, TPA, and tariffs – to pipelines from non-EU countries. The proposal was an *ad hoc* instrument, aimed primarily at Nord Stream 2 and was advanced with extreme urgency to enter into force prior to the pipeline's scheduled start of operation at the end of 2019.¹⁷ The amendment came into force in May 2019 and has extended the application of the Directive's provisions to pipelines from non-EU countries up to the territory or the territorial sea of the EU member state, where the first interconnection point of such pipelines with the member state's network is located – which in the case of Nord Stream 2 is Germany.¹⁸ Notably, the amended Directive envisages a possibility for those pipelines that have been "completed" before 23 May 2019 to apply for a derogation under Article 49a, with the National Regulatory Authority (NRA) to decide on the derogation by 24 May 2020. Pipelines that have not been "completed" before 23 May 2019 are not eligible for a derogation and are only eligible for an exemption under Article 36, in respect of which the final decision is taken by the EC, rather than the NRA.

¹⁰ 'Pipeline unlikely to come on before 4Q 2020: Bloomberg NEF', *Gulf Times*, 26 December 2019, <https://www.pressreader.com/qatar/gulf-times-business/20191226/281681141788167>

¹¹ 'Фортуна или Академик Черский? Кто спасёт Северный поток – 2', *Natsional'naya Sluzhba Novostei*, 9 January 2020, <https://nsn.fm/society/eksperty-rasskazali-kak-rossiya-dostroit-severnyi-potok-2>

¹² 'Pipeline construction information leaflet', *Nord Stream 2*, <https://www.nord-stream2.com/media/documents/pdf/en/2018/10/leaflet-construction-pipeline-en-201809.pdf>

¹³ 'Nord Stream 2 pipelayer changes course', *Natural Gas World*, 25 February 2020, <https://www.naturalgasworld.com/nord-stream-2-pipelayer-changes-course-76804>

¹⁴ 'Nord Stream 2 permit', *DEA*, https://ens.dk/sites/ens.dk/files/OlieGas/permit_nord_stream_2.pdf

¹⁵ 'Новак заявил, что "Северный поток - 2" запустят до конца 2020 года', *TASS*, 27 December 2019, <https://tass.ru/ekonomika/7438593>

¹⁶ 'NS2 not required to alter Danish permit to use non-DP Russian pipelaying vessels', *Gas Strategies*, 11 February 2020; 'Оператор «Северного потока-2» опроверг новый план достройки газопровода', *RBC*, 11 February 2020, <https://www.rbc.ru/business/11/02/2020/5e41700b9a79473bdc08f749>

¹⁷ See Yafimava 2019 for detailed analysis of the Gas Directive amendment: Yafimava, 'Gas Directive amendment: implications for Nord Stream 2', *OIES Energy Insight* 49, OIES 2019

¹⁸ Amended Third Gas Regulation, April 2019.



The amended Directive must be transposed into the national legislation of EU member states by 24 February 2020. On 13 November 2019 the German parliament adopted the amended Energy Act, transposing the Directive amendment into German law.¹⁹ The bill was signed into law on 5 December, and entered into legal force on 12 December.²⁰ The wording of the amended Energy Act appears to allow for several interpretations of whether the Nord Stream 2 pipelines can be considered “completed” before 23 May 2019, thus potentially enabling the German NRA to grant a derogation.²¹

Furthermore, the parliament’s report accompanying the amendment contains a special declaration, which states that the amended Directive “privileges existing investments” in the sense of the protection of legitimate expectations through derogations under Art. 49a. Accordingly, due to the “lack of specific Union legislation for pipelines from and to third countries before the date of entry into force of this Directive, [...] the Member States should be allowed to derogate from certain provisions of Directive 2009/73/EC for pipelines completed prior to the date of entry into force of this Directive”. It further reads that against this background, when determining whether the pipeline has been completed before the date of entry into force, account must be taken of all the circumstances of the case.²²

This wording suggests that the German NRA could potentially decide that NS2 was completed for the purposes of granting a derogation – a decision that would not require the EC’s approval. Nord Stream 2 AG applied for a derogation in January 2020, with a decision to be reached by 24 May 2020.²³ The fact that Nord Stream 2 AG applied for a derogation (rather than exemption) suggests that it is arguing that NS2 was indeed completed by 23 May 2019. The amended Energy Act appears to make it possible for the German NRA both to consider Nord Stream 2 as “completed” (because the German territorial waters section, to which the amended Directive applies, was built before 23 May 2019) or not “completed” (because construction of NS2 in the Danish EEZ has not been finished yet).

In our view, it is possible that the German NRA will grant Nord Stream 2 a *partial* derogation from the amended Directive’s requirements thus creating a regulatory regime which would not be too different from that applicable to Nord Stream 2 at the time of investing.

Unless such derogation is granted, the German section of Nord Stream 2 would have to be made compliant with the amended Directive. One of this paper’s authors has analysed various options of doing so through certification, exemption, or an intergovernmental agreement, concluding that certification would result in lower regulatory uncertainty than the other options.²⁴ However, none of these options would preserve the regulatory regime which was applicable to the project at the time of

¹⁹ The draft amendment to the Energy Act was adopted by the German parliament on 13 November 2019 <http://dipbt.bundestag.de/dip21/btd/19/134/1913443.pdf>, as amended by the Economic Committee, see <http://dipbt.bundestag.de/dip21/btd/19/148/1914878.pdf> (amendment by the committee). All documents are available here (in German), <https://www.bundestag.de/dokumente/textarchiv/2019/kw46-de-energiewirtschaftsgesetz-668032>

²⁰ ‘Gesetz zur Änderung des Energiewirtschaftsgesetzes zur Umsetzung der Richtlinie (EU) 2019/692 des Europäischen Parlamentes und des Rates über gemeinsame Vorschriften für den Erdgasbinnenmarkt’ (Law amending the Energy Economics Act implementing Directive (EU) 2019/692 of the European Parliament and of the Council on common rules for the internal gas market), *Bundesgesetzblatt (Federal Law Gazette)*, 11 December 2019, https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl119s2002.pdf#_bgbl_%2F%2F%5B%40attr_id%3D%27bgbl119s2002.pdf%27%5D_1582892788301

²¹ ‘Energiewirtschaftsgesetz vom 7. Juli 2005 (BGBl. I S. 1970, 3621), das zuletzt durch Artikel 1 des Gesetzes vom 5. Dezember 2019 (BGBl. I S. 2002) geändert worden ist’ (Energy Economics Act of 7 July 2005 (BGBl. I p. 1970, 3621), which was last amended by Article 1 of the Law of 5 December 2019 (BGBl. I p. 2002)), also referred to as the ‘Gesetz über die Elektrizitäts- und Gasversorgung’ (Electricity and Gas Supply Act), *Bundesministerium der Justiz und für Verbraucherschutz (Federal Ministry of Justice and Consumer Protection)*, http://www.gesetze-im-internet.de/enwg_2005/index.html#BJNR197010005BJNE013025377 [Accessed 28 February 2020].

²² ‘Recommendation and report of the Committee on Economic and Monetary Affairs (9th Committee) on the federal government’s draft law - Printed matter 19/13443, 19/14285, 19/14495 No 2 - Draft law amending the Energy Economics Act transposing Directive (EU) 2019/692 of the European Parliament and the Council on common rules for the internal gas market’, *German Bundestag publication*, 6 November 2019, <http://dipbt.bundestag.de/dip21/btd/19/148/1914878.pdf>

²³ ‘Freistellung von der Regulierung gemäß § 28b EnWG’, *BNetzA press release*, 10 January 2020, https://www.bundesnetzagentur.de/DE/Service-Funktionen/Beschlusskammern/1_GZ/BK7-GZ/2020/BK7-20-0004/BK7-20-0004_Verfahrenseinleitung.html?nn=361360

²⁴ Yafimava, ‘Gas Directive amendment: implications for Nord Stream 2’, *OIES Energy Insight* 49, March 2019.



the investment. In an attempt to preserve this regime, in July 2019 Nord Stream 2 lodged a request with the Court of Justice of the EU (CJEU) to annul the amendment.²⁵ In September 2019, it also filed for arbitration under the auspices of the Energy Charter Treaty (ECT) against the EU, arguing that by initiating the amendment the EU has breached its obligations under ECT investment protection and promotion provisions.²⁶ Both of these initiatives could take several years to conclude, during which time the regulatory regime applicable to Nord Stream 2 would remain uncertain.

A new pipeline, EUGAL, is designed to connect to Nord Stream 2 at Lubmin, on Germany's northern coast, and bring gas to Deutschneudorf, on the German-Czech border. The entry capacity of EUGAL will be 55 bcm/year, with 45.1 bcm of exit capacity on the German-Czech border and 9.9 bcm of exit capacity "to the West". All of the marketable capacity in EUGAL (80%) was allocated under legally binding contracts during auctions in March 2017 for 20 years ahead, thus suggesting that an imposition of a significant cap on the amount of Nord Stream 2 capacity that Gazprom would be able to utilise is unlikely, as it would come in direct conflict with EUGAL contracts.²⁷ Importantly neither the German NRA nor the European Commission (EC) have raised any objections in respect of EUGAL capacity allocation procedure.

Regarding the 'western' exit capacity the EUGAL pipeline will be connected to the NEL pipeline at Lubmin. As it flows southwards, it will have other network connection points at Kienbaum and Radeland. These latter two are on the route of the JAGAL pipeline, which brings gas from the Yamal-Europe pipeline on the Polish-German border to southern Germany. Thus, flows via Nord Stream 2 and EUGAL could influence flows to Germany via the Yamal-Europe pipeline. Although the EUGAL pipeline will not be fully utilised until Nord Stream 2 is complete, a physical tie-in means that EUGAL can receive some gas from Nord Stream. This is useful for Gazprom, given the restrictions imposed on its use of the OPAL pipeline. The first line of the EUGAL pipeline (with a capacity of 30.9 bcm/year) was commissioned on 1 January 2020. The second line, bringing EUGAL to full capacity, is scheduled for commissioning in January 2021.²⁸ Despite the fact that Nord Stream 2 is not yet fully built (and no gas is entering EUGAL via Nord Stream 2), exit flows from EUGAL at the German-Czech border ramped up at the end of December 2019, and from 2 January 2020 reached a plateau of around 56 mmcm/d (the equivalent of 20.4 bcma). This suggests that EUGAL is already being used to compensate for the loss of capacity on OPAL, and to keep Nord Stream flowing at full capacity.

In conclusion, although both the late grant of the Danish permit and the adoption of the US sanctions legislation have delayed it past its original schedule, it is highly likely that the remaining section of Nord Stream 2 will be built and that the pipeline will become operational sometime in the early 2020s. While an optimistic estimate could see construction complete by the end of 2020 and the pipeline fully operational by the end of Q1 2021, a more conservative estimate could see construction completed in the first half of 2021, with the pipeline fully operational by the end of Q3 2021. Once it is operational, Nord Stream 2 gas supplies will flow mostly through EUGAL to the German-Czech border and thence to the Baumgarten hub in Austria. Once deliveries to Baumgarten have been achieved, it will be possible for those flows to be delivered on to Italy, one of Gazprom's largest European export destinations, thus potentially replacing the current flows to Italy via Ukraine, Slovakia, and Austria.

In this way, the use of Nord Stream 2 and EUGAL at their full capacities could displace much of the Ukrainian gas transit that reaches the European market via Uzhgorod/Velké Kapušany from mid-2021

²⁵ 'Nord Stream 2 calls on Court of Justice of the European Union to annul discriminatory measures', *Nord Stream 2 press release*, 26 July 2019, <https://www.nord-stream2.com/media-info/news-events/nord-stream-2-calls-on-court-of-justice-of-the-european-union-to-annul-discriminatory-measures-133/>

²⁶ 'Nord Stream 2 sues the EU over new gas rules', *Politico*, 26 September 2019, <https://www.politico.eu/article/nord-stream-2-sues-the-eu-over-new-gas-rules/>

²⁷ For details see Yafimava, 'Building new gas transportation infrastructure in the EU: what are the rules of the game?', *OIES Paper (NG134)*, July 2018.

²⁸ 'EUGAL: First string ready to transport gas from 1 January 2020', *EUGAL Press Release*, 20 December 2019, <https://www.eugal.de/en/media-library/press-releases/press-release/news/eugal-first-string-ready-to-transport-gas-from-1-january-2020-1/>

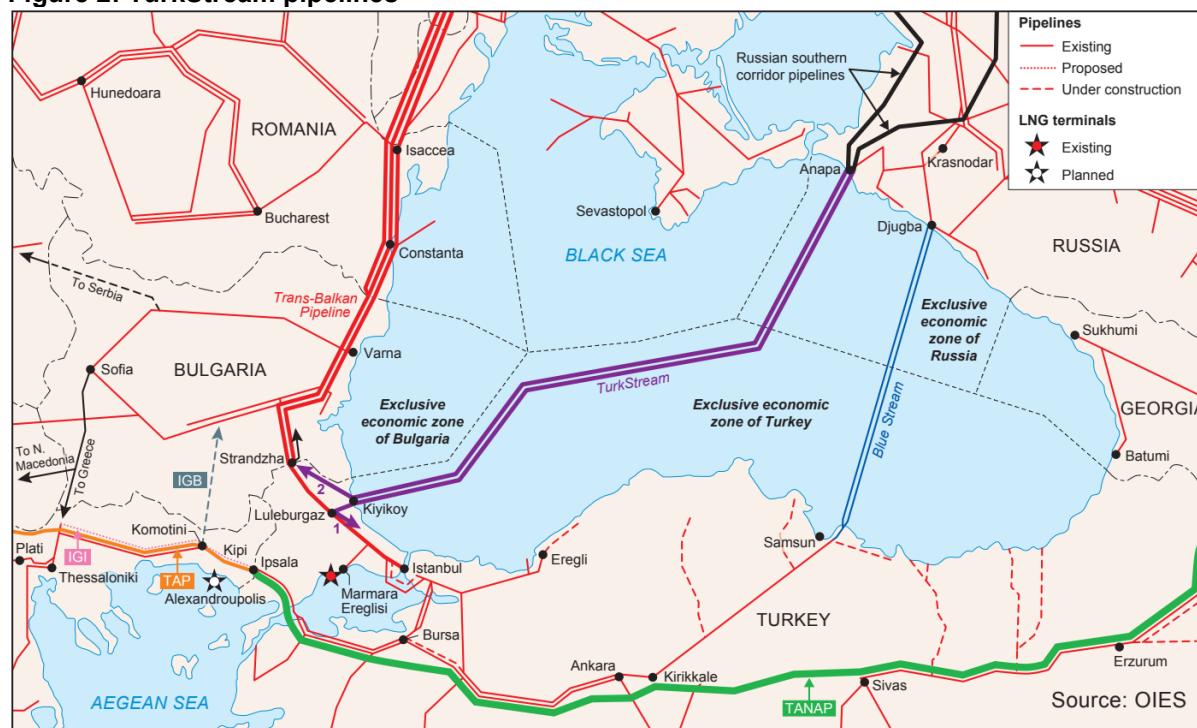
at the earliest and the end of 2021 at the latest. Compared to the 45 bcma exit capacity of EUGAL on the German-Czech border, gas flows from Ukraine into Slovakia at Uzhgorod/Velké Kapušany ranged from 48 to 56 bcma in 2017-2019.

TurkStream

The construction of TurkStream, like Nord Stream 2, is part of Gazprom's transit diversification strategy, which reflects its desire – supported by the Russian government – to develop a new route for delivering Russian gas to southern Europe and western Turkey and reduce dependence on transit via Ukraine (See also Appendix 1 below).

TurkStream consists of two offshore parallel pipelines (15.75 bcma each), connecting the Beregovaya compressor station near Anapa on the Russian coast with the receiving terminal at Kiyikoy on the Turkish Black Sea coast as well as two onshore pipelines – one connecting the terminal with the Turkish gas transmission system at Luleburgaz and another – proceeding from the terminal further onwards on Turkish territory 'up to neighbouring countries'.²⁹ Turkish Stream is underpinned by the Russian-Turkish Inter-Governmental Agreement (IGA), which provides for the construction of these two offshore and onshore pipelines. Notably, as neither Russia nor Turkey are EU member states, the issue of the IGA's compatibility with the *acquis* – which contributed towards derailing South Stream – is irrelevant. The IGA does not specify a border (or borders) where the second onshore pipeline would arrive.

Figure 2: TurkStream pipelines



Source: OIES

Given that TurkStream was developed with a view to supplying Turkey and south east Europe, geography suggested that its second onshore pipeline could arrive either at the Bulgarian-Turkish border at the Strandzha – Malkoclar Interconnection Point (IP), or at the Greek-Turkish border at the Kipi – Ipsala IP. Although both IPs were under consideration, the decision was made to build the pipeline

²⁹ 'Russian-Turkish IGA', *Russian Ministry for Foreign Affairs publication*, https://www.mid.ru/ru/foreign_policy/international_contracts/2_contract/-/storage-viewer/bilateral/page-39/51663



from Kiyikoy to the Turkish-Bulgarian border, where a new IP – Strandzha 2 – has been created,³⁰ in addition to the already existing Strandzha IP (which is the Trans Balkan pipeline crossing point between Bulgaria and Turkey).³¹ From there gas is transported through a new short pipeline – built by Bulgartransgaz – to the Strandzha compressor station.³²

The terms for the construction of the second onshore pipeline connecting the receiving terminal with Turkey's neighbouring countries are not defined in the IGA but are set out in a separate protocol.³³ This protocol established additional conditions in respect of the second onshore pipeline and – together with the IGA – constitutes its regulatory framework. The protocol – whose signature was made a pre-condition for the pipeline construction – was signed by the Turkish government and Gazprom, the latter transferring its rights and obligations to a new company, responsible for the second onshore pipeline from the moment when such new company was established.

According to the IGA, Gazprom was to build and own the entire offshore part of TurkStream i.e. two pipelines under the Black Sea. The first onshore TurkStream pipeline, connecting the receiving terminal with the Turkish transmission system (for supplies to the Turkish market) was built and paid for by the Turkish (100% state-owned) company Botaş. The second onshore pipeline, connecting the receiving terminal with the Turkish-Bulgarian border at Strandzha 2 (for supplies to south east Europe) was built by a Gazprom-Botaş JV, established under the protocol, each company having a 50% share.

Construction of both TurkStream offshore pipelines, the receiving terminal and two onshore connecting pipelines was completed by the end of 2019. From the beginning of January 2020, Russian gas started to flow to Turkey through the first string of TurkStream, and to Bulgaria, Greece, and North Macedonia (the latter two via Bulgaria) through the second.³⁴ The official launch ceremony was held on 8 January 2020. Under the IGA, the delivery point for Russian gas supplies to Turkey has been changed from the Strandzha – Malkoclar IP on the Turkish-Bulgarian border to the Kiyikoy receiving terminal on the Turkish Black Sea coast, thus allowing the re-routing of gas supplies, which have been previously supplied through the Trans Balkan pipeline (crossing Romania and Bulgaria), away from Ukraine.³⁵ On 27 January 2020, Gazprom announced that it had already delivered 1 bcm of gas via TurkStream, of which 54% went to Turkey and 46% was delivered to the Turkish-Bulgarian border.³⁶

However, there are currently no further connections beyond Bulgaria towards Serbia, Hungary, and Austria that would enable supplies of Russian gas to these countries through the second string of TurkStream. The construction contract for the Bulgarian section (from its border with Turkey to its border with Serbia) was awarded in September 2019, with a deadline of 615 days (26 May 2021) for completion.³⁷ In December 2019, President Putin met with his Serbian counterpart, Aleksandar Vučić, and stated that 90% of the Serbian section had been laid, although the compressor stations had not yet

³⁰ In January 2019 Bulgartransgaz made an FID on the expansion of its transmission system to accommodate gas to be delivered through the second string of Turkish Stream, see 'TurkStream extension set to shift SE European gas dynamics', *Platts European Gas Daily*, 12 February 2019.

³¹ Interestingly, Gazprom Export's website still refers to Ipsala (Kipi) at the Greek-Turkish border as the delivery point for European consumers. Notably, Ipsala – Kipi is also an IP where TANAP connects with TAP.

³² Although it would have been possible to transport the TurkStream gas to the Bulgarian border through the existing pipeline on Turkish territory, which is owned by Botaş and was historically used for transporting Russian gas to the Bulgarian-Turkish border via the Trans Balkan pipeline, the decision was made to build a new pipeline – owned by Gazprom and Botaş on a parity basis – in line with the IGA's protocol.

³³ Unlike the IGA, the protocol does not appear to be publicly available.

³⁴ The pipelaying for TurkStream took 15 months and was completed ahead of schedule in November 2018; the construction of the receiving terminal near the Kiyikoy settlement in Turkey was finished in 2019. See: 'TurkStream gas pipeline officially launched in grand ceremony', *Gazprom press release*, 8 January 2020, <https://www.gazprom.com/press/news/2020/january/article497324/>

³⁵ Moldova and Romania continue to be supplied via Ukraine.

³⁶ 'First billion cubic meters of gas supplied via TurkStream', *Gazprom press release*, 27 January 2020, <https://www.gazprom.com/press/news/2020/january/article498525/>

³⁷ 'Bulgartransgaz, Arkad Engineering sign deal to extend Bulgarian TurkStream gas line', *Platts*, 18 September 2019



been built.³⁸ According to Gastrans (51% Gazprom, 49% Srbijagas), the Serbian section (from its border with Bulgaria to its border with Hungary) complete by November 2020.³⁹ In November 2019, the Hungarian TSO, FGSZ, suggested that the Bulgarian and Serbian sections would enter into commercial operation at full capacity on 1 October 2021.⁴⁰

The onward section of TurkStream (referred to as “Balkan Stream” by the Bulgarian government) will have 19.9 bcma of entry capacity at the Turkey-Bulgaria border and 13.9 bcm of export capacity from Bulgaria into Serbia. Capacity at the Serbia-Hungary border is planned to be 10.1 bcma. These capacities could entirely re-route supplies that Hungary and Serbia currently receive via Ukraine.⁴¹

The outlook for these connections on EU territory – Bulgaria and Hungary – and the Energy Community Treaty (EnCT) territory – Serbia – always seemed more uncertain due to the fact that their progress was dependent on Gazprom’s and relevant TSOs’ ability to develop these pipelines in line with the EU/EnCT acquis.⁴² While this is certainly possible, it is more difficult, not in the least because the European Commission (EC) has not been supportive – and arguably has been hostile – to the development of any new pipelines delivering Russian gas to Europe as these could potentially result in lower transit across Ukraine, and did not shy away from politicising the acquis to place constraints limiting Gazprom’s ability to utilise its new export pipelines.⁴³

The Hungarian and Bulgarian TSOs plan to develop their pipeline connections with Serbia (and the Hungarian TSO potentially with Austria⁴⁴) under the incremental capacity procedure, stipulated in the Capacity Allocation Mechanism Network Code (CAM NC), rather than apply for an exemption under Article 36 of the Third Gas Directive. The Serbian TSO decided to develop its connections with Bulgaria and Hungary under the exemption procedure and has applied for an exemption. Although the Serbian NRA has granted the exemption, the Energy Community Secretariat, while not rejecting the exemption altogether, has requested several amendments, in particular recommending that there should be no TPA exemption in respect of the 30% and 25% of capacity on the Bulgarian and Hungarian borders respectively, with this capacity to be auctioned and third parties able to participate.⁴⁵ (See Appendix 2 below). Nonetheless, the Serbian NRA preserved its original exemption. Despite being not legally binding, the Secretariat’s heavily caveated opinion is an indication that the onshore pipeline connections on EU and EnCT territory enabling gas deliveries via Turk Stream might face further regulatory queries. But these queries are unlikely to cause significant changes and delays, and it is reasonable to assume that with some further fine-tuning of capacity allocation issues between the relevant NRAs, these connections will be completed and gas from the second string of Turk Stream will start flowing through Bulgaria in the early to mid-2020s. In the event of any unforeseen obstacles, it is also possible that this gas could flow via the Trans Adriatic pipeline (TAP), which is currently undergoing an open season process to expand its capacity and is expected to finalise its legally binding stage at the end of 2020.⁴⁶

³⁸ ‘News conference following Russian-Serbian talks’, *President of Russia press release*, 4 December 2019, <http://en.kremlin.ru/events/president/transcripts/62240>

³⁹ Gastrans, ‘About the project’, <https://gastrans.rs/about-the-project/?lang=en> [Accessed 26 February 2020].

⁴⁰ FGSZ, ‘About the project’, <https://gastrans.rs/about-the-project/?lang=en> [Accessed 26 February 2020].

⁴¹ See: ‘2019 - 2028 Ten-Year Network Development Plan of Bulgartransgaz EAD’, Bulgartransgaz, 23 April 2019 (<https://www.bulgartransgaz.bg/files/useruploads/files/amd/tyndp%202017/TYNDP%202019-2028%20EN.pdf>) and ‘Ruling deposition’, Energy Agency of the Republic of Serbia (AERS), 5 March 2019 (https://www.aers.rs/FILES/AktiAERS/luzeca/Eng/2019-03-05%20Exemption%20Act%20Ruling-Disposition_EN.pdf)

⁴² Yafimava, ‘The revived Turkish Stream: what, where, and when?’, *Oxford Energy Forum*, Issue 107, November 2016.

⁴³ The 2009 OPAL exemption and the 2019 amendment of the Third Gas Directive are examples of such politicisation.

⁴⁴ ‘Draft project proposal for incremental capacity between the entry-exit systems of Hungary (‘HU’) and the Austrian Market Area East (‘AT’), FGSZ, 14 January 2020, https://fgsz.hu/file/documents/1/1599/publish_art_27_huat_draft_project_proposal.pdf

⁴⁵ ‘Opinion 1/2019 on the exemption of the Gastrans natural gas pipeline project from certain requirements under Directive 2009/73/EC by the Energy Agency of the Republic of Serbia’, *Energy Community Secretariat publication*, 1 February 2019, https://www.energy-community.org/dam/jcr:dbeac342-80e3-47bb-950e-c0cc61c6a914/ECS_Opinion_119_Gastrans.pdf.

⁴⁶ European Gas Conference, Vienna, January 2020.

The future of gas transit via Poland

The transit deal between Gazprom and Naftogaz Ukrainy has left Gazprom with what was considered at the time of the deal to represent sufficient pipeline export capacity for deliveries to Europe at the levels registered for Russian gas pipeline exports in 2018 and 2019 – around 200 Bcm/year. The expected launch of Nord Stream 2 in the beginning of 2021 (according to the latest official statements by Gazprom and different Russian officials)⁴⁷ would bring total pipeline export capacities available to Gazprom to more than 250 Bcm.

The triple whammy of record European storage levels, warm winter, and readily available LNG at very low prices in early 2020 may, however, reduce Europe's call on Russian pipeline gas in 2020 and result in significant surplus of export pipeline capacity for Gazprom. If Nord Stream 2 becomes operational this would further exacerbate the surplus pipeline capacity. Absent robust gas demand growth in Europe from 2021, Gazprom will have to make two important choices regarding the export pipeline capacity surplus: first, which export routes to load up to their maximum capacity and which to leave underutilised, and second, which routes to use for covering seasonal flexibility needs and during the maintenance of the undersea pipelines.

We expect that Gazprom's top priorities for maximum load are going to be new direct pipelines from Russia to target markets: Nord Stream, leading to Northwest Europe, and Turk Stream, leading to Western Turkey and on to Southeast Europe. Indeed, Nord Stream utilisation exceeded its nameplate capacity in 2018, reaching 58.7 Bcm (107% of 55 Bcm). It declined slightly in 2019 owing to the regulatory restrictions imposed on Gazprom's use of the OPAL pipeline. In January 2020, as new capacity in the EUGAL pipeline became available, Nord Stream utilisation exceeded its nameplate capacity again.

With regards to the third-country transit routes – via Ukraine and via Poland – prior to 2020 it was Ukraine that had large underutilised capacity and was the prime provider of flexibility for Gazprom on its exports to Europe. In 2018 Gazprom transited 86.8 Bcm via Ukraine. It estimated that this amount was equal to about 65% of Ukraine's available transit capacity to Europe that year. In 2019 Russian gas transit through Ukraine went up 3%, to 89.2 Bcm. It is noteworthy that Gazprom only had to pay for the actual transited volumes under the terms of its previous contract with Naftogaz.

The new deal with Ukraine, however, is different. According to the agreement, the transit payment terms are not flexible because the annual booked capacity of 65 Bcm in 2020 and 40 Bcm in 2021-2024 has been spread over equal daily bookings: 178.1 million cubic metres/day in 2020 and 109.6 million cubic metres/day in 2021-2024. Gazprom has to pay for the booked transit irrespective of actual transit volumes; the contract, therefore, works as a classical ship-or-pay arrangement. In effect, Ukraine has managed to secure transit revenue irrespective of actual flows of Russian gas via its system through to the end of 2024. In 2020 so far, mild temperatures and full gas storages affected Gazprom's use of the Ukrainian route, even under the new inflexible terms. According to the Ukrainian TSO, Gas Transmission System Operator of Ukraine (GTSOU), in January 2020 the transit of Russian gas via Ukraine amounted to 2.548 Bcm while Gazprom paid for transit of 5.518 Bcm, so the utilisation of prepaid transit capacity was only 46%. The data for the first three weeks of February suggest that the utilisation of the prepaid transit capacity via Ukraine increased to about 70%.

If Gazprom stops treating the Ukrainian transit corridor as the balancing route, to increase the payback on the transit payment it has agreed, this would leave the other third-country transit route Gazprom has been using, via Poland, very exposed to the risk of lower and seasonally uneven utilisation. For this to happen, of course, the total pipeline export capacity to Northwest and Central Europe available to Gazprom should significantly exceed the European demand for Russian pipeline gas exports.

The second important condition is Gazprom's ability to switch and/or optimise loads on the alternative pipelines without sacrificing its contractual obligations. After transiting Poland, Russian gas arrives to

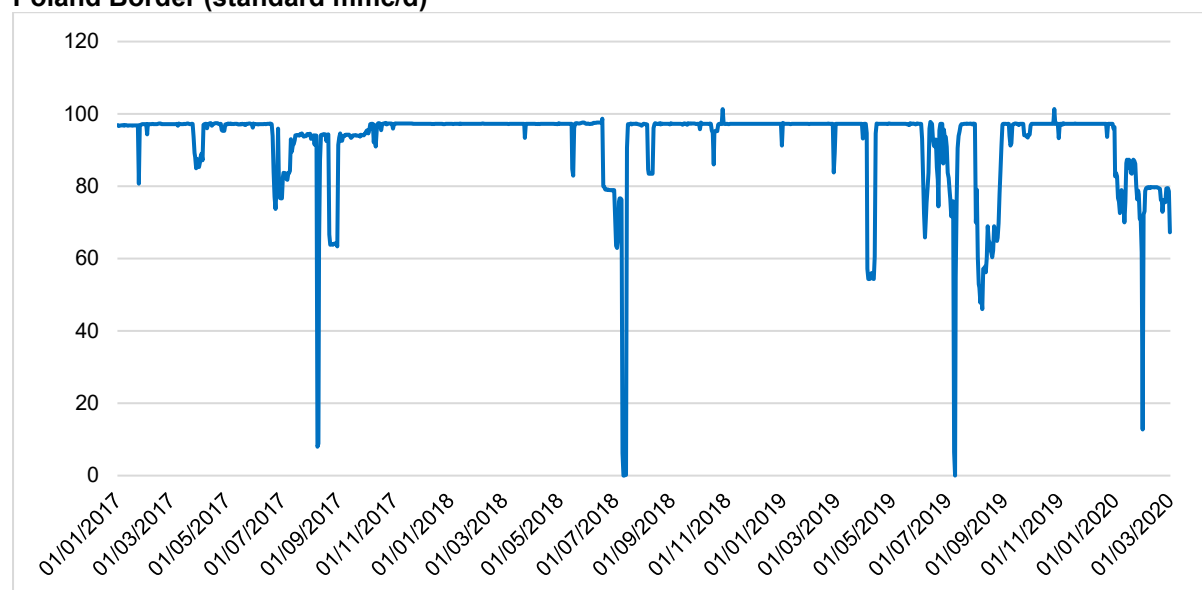
⁴⁷ 'В Минэнерго подтвердили сроки завершения "Северного потока – 2"', *RIA Novosti*, 18 February 2020, <https://ria.ru/20200218/1564934332.html>



the area east of Berlin in Germany, not far from where two major extensions from Nord Stream and Nord Stream 2 – OPAL and EUGAL – are running south (See Appendix 3, Figure 8). The start-up of Nord Stream 2 will mean that the deliveries via EUGAL will ramp up further. This might make some of the transit capacity in EuRoPol that had been targeting Germany redundant for Gazprom. Even if the probability of such a scenario is small, its potential impact upon the organisation of the gas flows in North-Eastern Europe is substantial and merits careful consideration.

Since 2006, about 30 bcm/year of Russian gas has transited Poland, via the Yamal-Europe pipeline, to European destinations. Poland also was one of the largest buyers of Russian gas in Eastern Europe, about 10 bcm/year. Historically, the transit flows via Poland have been remarkably stable. In the past three years there has been relatively low seasonality (with the exception of short-term maintenance periods). In Q1 in 2017, 2018, and 2019, flows on the Belarus-Poland border at Kondratki consistently averaged 96-97 mmcm/d. However, in January 2020, that fell to a daily average of 78 mmcm/d, a level maintained in February, reflecting the present situation of oversupply in Europe (See Figure 3).

Figure 3: Russian Gas Flows to Europe via Yamal-Europe Pipeline at Kondratki on Belarus-Poland Border (standard mmcm/d)



Source: Data from ENTSOG, graph by the author

Since Gazprom financed the construction of the Polish section of the Yamal-Europe pipeline, the 2003 intergovernmental agreement between Russia and Poland stipulated that the transit tariff paid by EuRoPol Gaz should be set in a way that is sufficient to cover the operational costs of running the pipeline plus very moderate profit. The issue of what exactly constitutes reasonable profit has divided the Polish and Russian shareholders in EuRoPol Gaz from the start. The representatives of PGNiG insisted on a higher transit tariff while the Gazprom people argued that the tariff should be lower.

In 2006, when the pipeline throughput reached its design capacity of 33 Bcm the transit tariff for EuRoPol was \$1.94/mcm/100 km, and the transit fee for shipping gas from Kondratki to Mallnow thus equalled \$13.7/mcm.⁴⁸ After a series of disputes between the shareholders the Polish regulator set a much higher tariff of \$2.7/mcm/100 km. Gazprom, however, insisted on a rate set by an intergovernmental agreement and continued to pay for transit at a previous tariff rate. It filed a suit against Poland, which it won in 2008.⁴⁹

⁴⁸ 'EuRoPol Gaz reduces transit charges from January 2006', ICIS, 19 December 2005, <https://www.icis.com/explore/resources/news/2005/12/19/9284432/europol-gaz-reduces-transit-charges-from-january-2006/>

⁴⁹ Orban, A., 2008. *Power, Energy and the New Russian Imperialism*. p.129



At the end of October 2010 Russia and Poland introduced amendments to the 2003 IGA which mostly concerned any increases in deliveries of Russian gas to Poland, and transfer of the technical operation of the Polish stretch of the Yamal-Europe pipeline from EuRoPol Gaz to the Polish state-owned grid operator, Gaz-System. The transit tariff was still left for EuRoPol Gaz to agree. It continued to be based on the principle of covering operating costs and interest payments, plus a modest profit (EuRoPol Gaz had to repay a loan to Gazprombank). The Polish state's transit revenue has been relatively small.⁵⁰

But now when the gas supply and transit contracts between Gazprom and Polish companies are approaching their end, Polish officials have expressed their displeasure with the existing contract terms. Piotr Naimski, a Polish official in charge of energy security, said that Poland pumps about 30 bcm of gas to Germany through its section of the gas pipeline every year, and maintaining the transit of such an amount of raw materials is "a matter of business". Poland currently receives 21 million zlotys/year (\$5.4 million) for the Russian gas transit and such fee is "actually equal to zero," the official is quoted as saying. Gazprom should pay the market price for its gas transit, Naimski noted.⁵¹

The 1996 long-term contract on gas supply from Russia, under which Polskie Gornictwo Naftowe i Gazownictwo (PGNiG), Poland's largest state-run oil and gas company has been purchasing around 9-10 Bcma (9 Bcm in 2018) is expiring on 31 December 2022. On 15 November 2019 PGNiG informed Gazprom officially that it is not going to renew the long-term supply contract, as it plans to switch to different sources of imported gas – from Norway and LNG.⁵²

Furthermore, the existing long-term gas transit contract between Russia and Poland expires on 18 May 2020. The Polish grid operator, Gaz-System, said that from 1 July 2020 it would offer capacity for the Polish section of the Yamal pipeline for the first time. Currently this capacity is tied up by the long-term transit contract between Gazprom and Europol Gaz, the owner of the Polish section of the pipeline⁵³. Interested shippers will be able to book annual capacity, in particular at Kondratki, the entry point of EuRoPol to Poland and at Mallnow, the exit point to Germany for up to 15 gas years, while quarterly, monthly, daily, and within-day products will be available as well, in line with the EU rules that require TSOs to offer standard products at every interconnection point with other transmission systems.⁵⁴

The key question now is whether Gazprom intends to book the transit capacity that Gaz-System has offered for the second half of 2020 and beyond. With only a few months remaining until the end of the present transit agreement, there has been no expression of interest from Gazprom. It probably has decided to take a "wait-and-see" approach. Having agreed to what could be called an expensive insurance policy with regards to the Ukrainian transit, Gazprom is under no pressure to make any long-term transit commitments on the transit route through Poland. Indeed, after the expiration of the current transit deal with Poland, Gazprom has the option of booking capacity in EuRoPol under the European rules on a short-term basis and only for the volumes that it needs.

Annual deliveries of Russian gas to Germany via Nord Stream in 2020 (with the more than 100% utilisation we are currently seeing) might amount to 58 Bcm, just as they did in 2018. Gazprom's reported sales to Germany in 2019 were 53.5 Bcm. Of course, some Russian gas that arrives in Germany is re-sold to other Northwest European countries. Gazprom's combined sales to North West Europe (Germany, France, Belgium, Netherlands, Denmark and Great Britain) amounted to 90.4 Bcm

⁵⁰ 'Gazprom and PGNiG settle cooperation issues in gas sector', *Gazprom press release*, 30 October 2009, <https://www.gazprom.com/press/news/2009/october/article70291/>

⁵¹ 'Polish authorities intend to increase price of Russian gas transit — news agency', *TASS*, 14 August 2019, <https://tass.com/economy/1073410>

⁵² 'Declaration of will to terminate Yamal Contract effective December 31, 2022', *PGNiG press release*, 15 November 2019, <http://en.pgnig.pl/news/-/news-list/id/declaration-of-will-to-terminate-yamal-contract-effective-december-31-2022/newsGroupId/1910852?changeYear=2019¤tPage=1>

⁵³ Europol Gaz is co-owned by Gazprom and Polish state-controlled incumbent PGNiG (48% each) and Polish trader Gas-Trading (4%). See: 'Poland's competition Authority approves two energy market takeovers', *Polish Office of Competition and Consumer Protection press release*, 25 May 2015, https://www.uokik.gov.pl/news.php?news_id=11666

⁵⁴ 'Gaz-System has presented offer of products that will be made available in annual auction', *Gaz-System press release*, 4 June 2019, <https://en.gaz-system.pl/press-centre/news/information-for-the-media/artykul/202972/>

in 2019. If the call on the Russian gas in North West Europe is lower this year owing to full storage, warm winter and availability of cheap LNG, Gazprom's need for Polish transit in the second half of 2020 may become relatively low and secured by short-term capacity bookings rather than a new long-term transit contract. The next important signpost for Polish transit is the timing for the finalisation of Nord Stream 2, since the availability of the extra 55 Bcm of capacity there would create another competitor to the transit via Poland.

The extremely low gas price environment in Europe in 2020 is also putting additional pressure on Gazprom. When gas prices in Europe go below \$130/mcm, Gazprom's export margin is negative (i.e. export netbacks are lower than Russian domestic regulated prices). In this situation it might be in Gazprom's interests to keep its sales to Europe at minimum contract levels waiting for a price recovery. Other suppliers to Europe have higher costs of supply, and low gas prices are going to hurt them more. With most analysts now predicting very low prices in Europe (below \$100/mcm) for Q2 and Q3 of 2020, Gazprom will be under pressure to rationalise its sales channels and cut overall transit costs. Nord Stream has been operating under a ship-or-pay principle, and the key to lower unit transit tariff is high utilisation – exactly what has been happening.

The Ukrainian route – after a deal driven more by politics than economics – can be considered a sunk cost, and will be utilised at maximum possible levels, since Gazprom has to prepay for its use. The only transit route where Gazprom will not have long-term ship-or-pay obligation after mid-May 2020 is EuRoPol, exposing EuRoPol to the risk of lower transit flow in the situation of possible transit capacity surplus. Obviously, future EuRoPol utilisation depends on how commercially advantageous it is for Gazprom to use other routes. Since Poland is an EU country, Gazprom can follow European rules and book capacity as it sees fit. If the Polish regulator sets the tariff very high, then Gazprom may decide against using it. If the tariff is competitive, the chances for higher usage of EuRoPol are higher.

In 2021, if Nord Stream 2 starts early, gas transit via Poland might become “collateral damage” to the excess of transit capacity available to Gazprom. We do not expect that Poland would get the same kind of “political” transit deal that Ukraine managed to get from Russia. Poland still may secure some transit on a short-term basis by auctioning capacity in EuRoPol if there are delays with Nord Stream 2, but it is unlikely that all 33 Bcm of available transit capacity will be needed. Longer term, the fate of Polish gas transit depends on the market situation. If European demand for Russian gas is high *and* European gas prices are high, this capacity could be used by Russian exporters.

3. Prospects for Ukraine's gas business

The incorporation and certification of GTSOU, and the completion of the transit deal, lay down a clear framework for the next stage of Ukrainian gas market reform and for the reconfiguration of the transport network. Integration into the European gas market is likely to move forward. And with a much clearer picture of future transit requirements – i.e. that after 2022 volumes are unlikely to exceed 40 bcm/year – plans can now be made to reduce the high-pressure pipeline network capacity.

Prior to the unbundling of GTSOU, Ukrainian gas market reform had moved unevenly.⁵⁵ The market consists of two segments: (1) at deregulated prices, 14.4 bcm in 2019, comprising industrial consumers served by non-Naftogaz suppliers (11.3 bcm), and Naftogaz consumers (mostly fuel gas for pipeline compressors) (3.1 bcm); and (2) at regulated prices, 15.4 bcm, comprising households (8.0 bcm), heat produced for households (4.6 bcm) and other use by district heating companies (2.8 bcm).⁵⁶ At the end of 2018, unregulated prices were about 50% higher than regulated prices, although this differential was eroded during 2019 as unregulated prices stagnated. The supply of industrial customers is almost

⁵⁵ For background on energy sector reform, see: Low Carbon Ukraine, *Quarterly Monitoring Report on the Implementation of Ukraine's Energy Action Plan* (various issues, 2017-19); Agha Bayramov and Yaroslava Marusyk, 'Ukraine's unfinished natural gas and electricity reforms: one step forward, two steps back', *Eurasian Geography and Economics* 60:1 (2019), pp. 73-96; and S. Pirani, 'Adversity and Reform: Ukrainian Gas Market Prospects', (*Oxford Energy Insight* 7, March 2017)

⁵⁶ '2019 results: gas demand in Ukraine fell by 7%', *Naftogaz Ukrainy press release*, 7 February 2020

completely (95%) in the hands of traders not linked to Naftogaz; these non-Naftogaz traders have about a one-third share of imports, which since 2016 have all been from EU suppliers via “reverse flow” (west to east transportation).⁵⁷ The reform of gas distribution, and of the regulated market segment, has stalled, in large part due to unpaid debts.

Two obstacles to reform have now been removed. First, the unbundling of GTSOU will help government and companies to define and deal with issues that have obstructed reform in general, and cross-subsidies in particular. Second, the end of previous transit arrangements and the move towards EU-compliant interconnection agreements on Ukraine’s western border means that the physical reverse flow trade, via which all of Ukraine’s 10-12 bcm/year of imports have been supplied in recent years, may soon be superseded by virtual reverse flow arrangements, cutting transportation costs. Ukraine’s storage services can now be integrated into the European market, and may be attractive both to Gazprom, which had stopped using them due to the poor political and corporate relationships of recent years, and also e.g. to customers in Poland and other central European countries seeking to leverage low summer prices.⁵⁸

Major reform issues identified by European officials and Ukrainian company executives since the Gazprom-Naftogaz deal was signed⁵⁹ include:

- *Unauthorised offtake of gas and the accumulation of unpaid debts.* If this issue is not resolved, GTSOU expects losses on the provision of balancing services to reach 10-12 billion UAH (\$400-\$480 million) in 2020, i.e. 50% of expected revenue. Naftogaz estimated the accumulated debt up to mid-2018 at 34 bn UAH (\$1.2 bn); it continued to rise thereafter. In 2020 Naftogaz bears the losses on sales, GTSOU on transportation. The main causes are that Naftogaz and GTSOU are obliged to sell and transport gas under a public service obligation (PSO); regional gas supply companies manipulate the market for financial advantage;⁶⁰ and heat supply companies accumulate debts. A government decree of October 2018 gave Naftogaz some rights to cut off supplies to some categories of egregious offenders among heat companies. At the time of writing Naftogaz has issued warnings of a cut-off in February to 37 of these.⁶¹ The government has also set a deadline of May 2020 for price liberalisation and removal of the PSO.
- *Price reform of the regulated sector.* In January, as a step towards full price liberalisation, the government ordered that the wholesale gas price for the regulated sector be calculated as: the TTF price + spread between TTF and Ukrainian border price + entry tariff to Ukrainian transmission system + Naftogaz trade margin (1.9%).⁶²
- *Incomplete monetisation of subsidies.* A scheme introduced in 2015 to distribute cash subsidies, mostly to regional gas companies, to cover the cost of supply to households as regulated prices rose, requires further reform. Both international institutions and Naftogaz say a large amount of funds are mis-directed.
- *Regulation of gas distribution,* including the setting of distribution tariffs by the UNEURC, is undeveloped.

⁵⁷ Naftogaz Ukraine *Annual Report 2018*, pp. 24-29

⁵⁸ ‘Ukraine as a cornerstone’, op. cit; ‘Ukraine i RF smogut vernut’sia k voprosu sotrudnichestva po khranenniu gaza’, *Zerkalo Nedeli*, 9 January 2020

⁵⁹ See for example ‘Ukraine as a cornerstone’, op. cit

⁶⁰ Research published by Naftogaz concluded that regional gas companies “gain monetary benefit by ‘selling’ gas to so called ‘dead souls’”; improve their liquidity by buying gas for households and selling it to industrial customers; and reallocating gas volumes in their accounts to reduce the amount of subsidies they are required to return to the state budget. Regional gas companies, especially those owned by the Firtash group, accumulate debts, as do district heating companies. See Naftogaz Ukraine, 2017. *Retail gas supply under PSO act: manipulations with volumes and subsidies by RSCs*, http://www.naftogaz.com/files/Information/170926_Report_re_RSCs_v2-pdf_ENG.pdf. See also: Tsentr Ekonomichnoi Strategii, 2015. *Chi povinna tsyna na gaz buti rinkovoiu* (CES, Kyiv)

⁶¹ ‘Naftogaz Ukrainy s 1 fevralia mozhut ostanovit’ gazosnabzhenie’, *Interfax-Ukraine*, 24 January 2020

⁶² Ukraine government resolution #17, 24 January 2020; ‘Naftogaz updates gas price for January 2020’, *Naftogaz Ukraine press release*, 29 January 2020



- *The establishment of a gas exchange is required.* Most gas in Ukraine is traded under bilateral contracts. A daily balancing system was introduced in March 2019, but ran into severe problems during 2019, because the use of last-month pricing led to gaming of the system.
- *Corporate reform of Naftogaz Ukrainy.* Now that unbundling is complete, the government is preparing a new charter for Naftogaz, which, in addition to its agency agreement with Gazprom, retains oil and gas production and wholesale marketing assets. This charter, together with a new law on corporate governance currently going through parliament, will provide a framework for the next stage of reform at the company. It is expected that authority will shift from the shareholder (the state) to the executive board. In preparation for this, the composition of the executive board has been adjusted: Mykola Havrylenko, CEO of the oil transport company Ukrtransnafta and another board member have been removed, and two western European executives appointed: Petrus van Driel, now Naftogaz chief financial officer, who has spent much of his career in senior jobs at Shell, and Otto Waterlander, now Naftogaz chief transformation officer, who joins from McKinsey. The board now consists of van Driel; Waterlander; Naftogaz CEO Andriy Kobolev; first deputy chairman Sergiy Pereloma; and Yaroslav Teklyuk.⁶³

Two final points may be made about the evolution of the Ukrainian gas market. The first is that it may continue to contract in volume terms. Total consumption was 31.8 bcm in 2017, 32.3 bcm in 2018, and 29.8 bcm in 2019. Consumption in 2019 was at an all-time low, and little more than half of the level of 2010-13. Nationally, consumption was down 7% year-on-year, but in some regions, there were much sharper falls, as efficiency measures in the heating and residential sectors took effect.⁶⁴ As cross-subsidisation and distribution sector reform moves forward, this downward trend may continue.

The second point is that direct Russian gas sales to Ukraine would push market development forward considerably – but it is unclear whether, and when, they might be resumed. In December 2019, negotiators on transit agreed to put this issue to one side and return to it in the new year. Since then, both Ukrainian government ministers and Naftogaz executives have indicated that the company would insist on such direct sales being made at Ukrainian market prices; moreover, due to continuing political tension, a government order would be required.⁶⁵ From the Russian point of view, such sales may appear to be a double-edged sword. On one hand, they would renew access to what was at one time Russia's largest gas export market; on the other, volume sales at Ukrainian market prices (i.e., essentially, TTF minus transport) would re-open the possibility of such volumes being bought in Ukraine and re-sold further west, and would have to be considered in the context of the overall strategy for exports to Europe.

The reconfiguration of Ukraine's gas transport system is another area in which progress may now be expected, after a delay of many years. As argued above (*Agreed transit volumes and Gazprom's likely requirements*), the transit volumes stated in the contract (i.e. 40 bcm/year from 2021) may not be sufficient in 2021 – as Nord Stream 2 and the on-shore continuations of Nord Stream 2 and Turkish Stream may not be complete – but should suffice from 2022 onwards. Any capacity booking by Gazprom across Ukraine after 2024 is likely to be at this level or lower, but certainly not higher. Now that this is clear, appropriate infrastructure investments can be made: the CEO of GTSOU has stated that plans are in hand to reconfigure the Ukrainian system to allow for transit volumes of about 40 bcm/year, both before and after 2024. Initially, pressure will be reduced, and maintenance scaled back in parts of the system, but pipes will not be decommissioned. The stated aims of GTSOU's 2020-24 18.5 bn UAH (\$750m) investment programme include optimisation of the system to reflect this future demand; increased firm capacity at the western border; and lower maintenance costs and fuel gas consumption.⁶⁶

⁶³ 'Supervisory board of Naftogaz amends composition of Executive Board', *Naftogaz Ukrainy press release*, 22 January 2020

⁶⁴ See for example a report of a 22% year-on-year reduction in household gas consumption in Zakarpattia: 'Zakarpattgaz Sbyt v 2019 g. klienty kompanii sokratili potreblenie', *RBK-Ukraina*, 31 January 2020

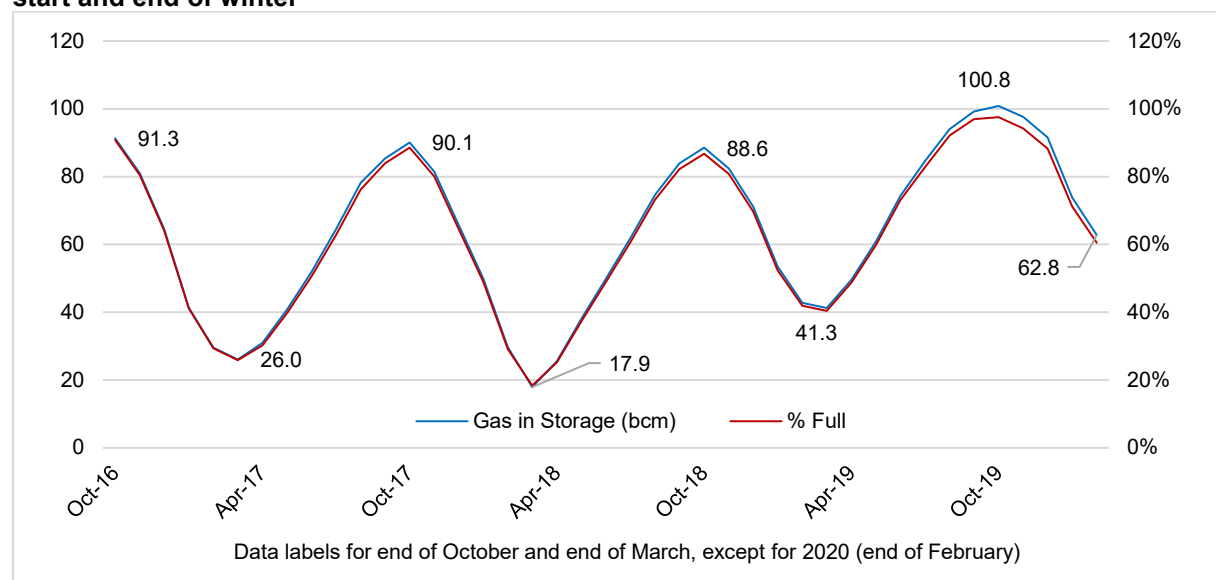
⁶⁵ 'Vitrenko: kontraktov i peregovorov net', *Ukrainska Pravda*, 13 January 2020; 'Vosmozhnost' zakupki Naftogazom gaza u Gazproma budet zaviset', *Interfax-Ukraina*, 20 January 2020

⁶⁶ 'GTS Ukrainy modernizuiut', *Zerkalo Nedeli*, 14 January 2020; 'GTSOU Unbundling Process 2018-2020', presentation, op. cit

4. Short-term impact on European gas prices⁶⁷

Throughout the second half of 2019, European market participants prepared for a potential failure of Russia and Ukraine to agree a new transit deal – and the related possible disruption of Russian gas transit via Ukraine – by injecting volumes into European gas storage sufficient to raise stocks to record levels by the start of winter. The availability of gas for injection into storage was boosted by the increasing volumes of LNG coming into Europe. Figure 4 highlights gas in storage at the end of October (maximum) and at the end of March (minimum), plus the amount of gas in storage at the end of February 2020 (latest data). The amount of gas in storage reached 100.8 bcm (97.5% of storage capacity) at the end of October 2019 and fell to 91.7 bcm (88% of capacity) by the end of December. Therefore, storage stocks at the end of December (i.e. in midwinter) were slightly higher than stocks at the *start* of winter (i.e. at the end of October) for any previous year.

Figure 4: European gas in storage (bcm) and stocks as a percentage of storage capacity at the start and end of winter

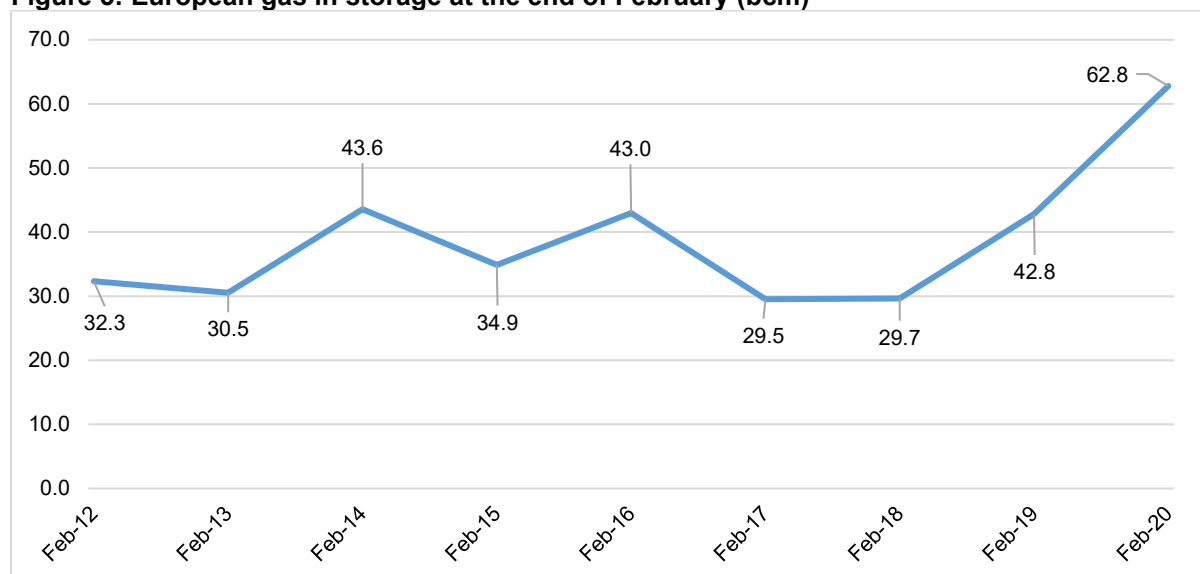


Source: Data from Gas Storage Europe, graph by the author

Once it became clear that those stocks would not be needed to cope with a transit disruption, their owners began withdrawing gas from storage. Storage withdrawals in January-February 2020 (29.0 bcm) were slightly higher than those in January-February 2019 (27.1 bcm) and January-February 2016 (25.7 bcm), but markedly lower than in January-February 2018 (35.8 bcm) and in January-February 2017 (35.1 bcm). As a result, Europe ended February 2020 with its highest ever storage stocks for that time of year – 62.8 bcm, or 61% of storage capacity – as illustrated in Figure 5.

⁶⁷ The authors thank Mike Fulwood for his input to this section

Figure 5: European gas in storage at the end of February (bcm)

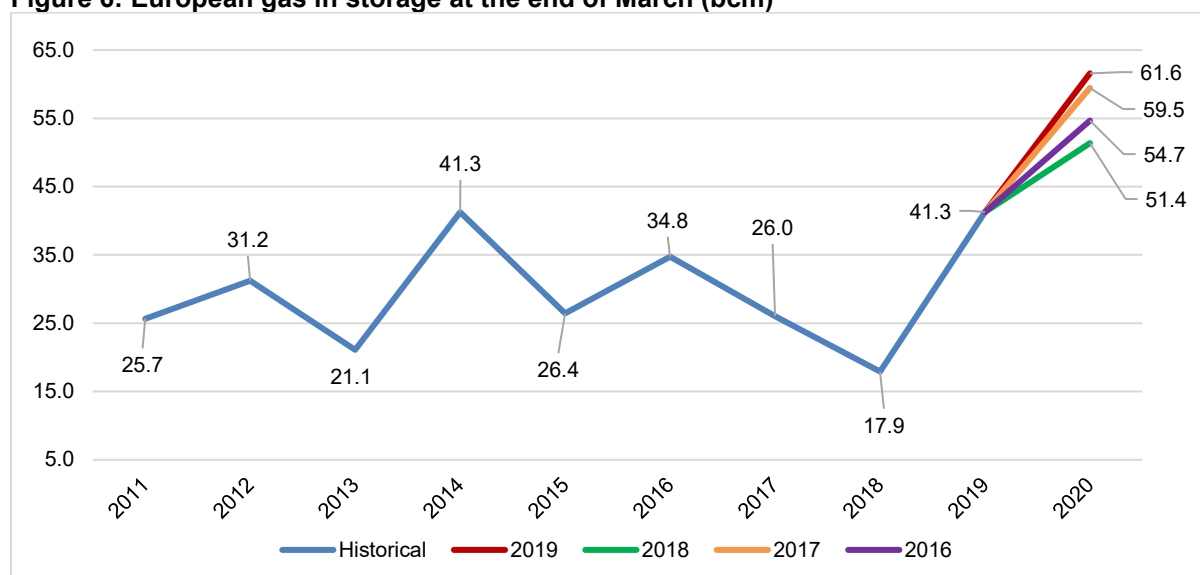


Source: Data from Gas Storage Europe, graph by the author

The amount of gas that is likely to be left in storage at the end of March – that is, at the end of the winter heating season – can be estimated based on net storage withdrawals in March in recent years. In 2019, mild weather led to limited net storage withdrawals of 1.2 bcm in March. By contrast, the cold weather of March 2018 induced withdrawals of 11.4 bcm. In 2017 and 2016, March withdrawals were 3.3 bcm and 8.1 bcm, respectively.

If those volumes are taken as indicative, a period of mild weather could see Europe reach the end of March with over 61 bcm still in storage. By contrast, a prolonged spell of unusually cold weather could induce withdrawals sufficient to bring stocks down to around 51 bcm. In a moderate-weather scenario, withdrawals of 3-8 bcm in March 2020 would bring stocks down to 55-60 bcm by the end of March 2020.

Figure 6: European gas in storage at the end of March (bcm)



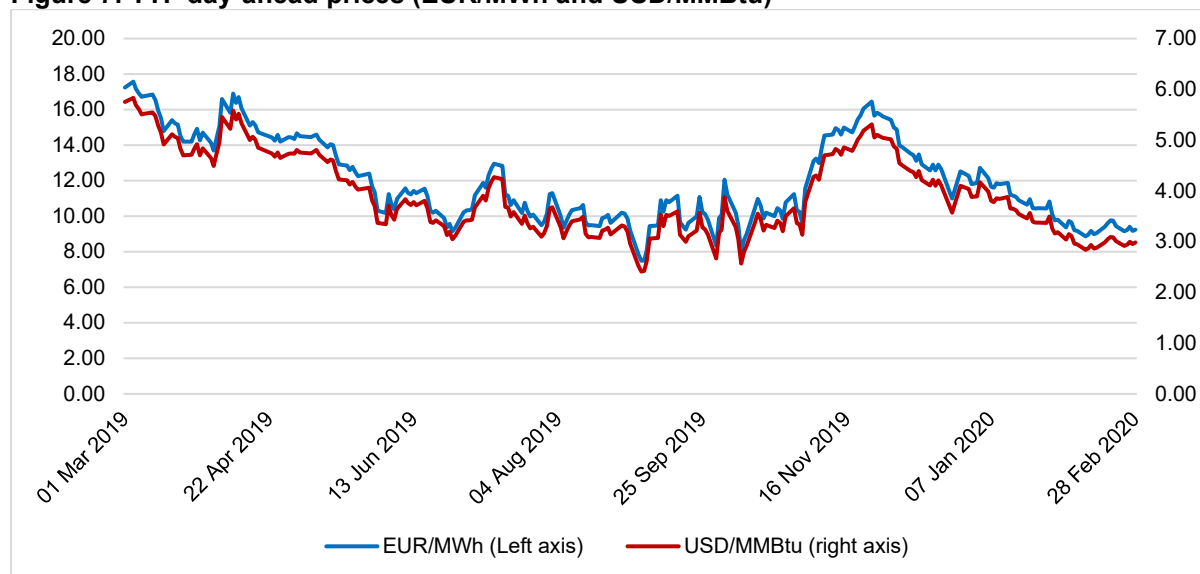
Source: Data from Gas Storage Europe, graph by the author

Therefore, it is likely that Europe will end the winter with unprecedented high levels of storage stocks. Even a moderate weather scenario for March suggests stocks at the end of that month could be 32-44% higher than at the end of March 2019. The range of potential storage stocks at the end of March

2020, calculated by subtracting actual storage withdrawals in March in 2016, 2017, 2018, and 2019 from the actual storage level at the end of February 2020, are presented in Figure 6.

The uninterrupted continuation of Russian pipeline gas deliveries to Europe in January 2020 not only freed up storage stocks for withdrawal as an additional source of supply to the European market. The Russian pipeline flows themselves ensured that the European market remained well-supplied (despite the decline in daily Russian gas flows via Ukraine)⁶⁸, at a time when the global market remains extremely well-supplied with LNG. The result has been a decline in European hub gas prices from their already-low levels. On 6 February, the day-ahead price at the TTF hub in the Netherlands fell to 9.20 EUR/MWh, or 2.96 USD/MMBtu, half their levels of 12 months ago (see Figure 7). Indeed, in the period since January 2004, only once before has the TTF day-ahead price fallen to a level of 9.20 EUR/MWh or below in Q1, an event that occurred in February 2007. On 10 February, prices fell to 8.88 EUR/MWh (2.84 USD/MMBtu) – their lowest since 10 October 2019. The subsequent recovery was modest, with prices remaining below 9.78 EUR/MWh (3.09 USD/MMBtu) throughout February.

Figure 7: TTF day-ahead prices (EUR/MWh and USD/MMBtu)



Data from Argus, graph by the author. Prices in EUR/MWh on left axis, USD/MMBtu on right axis

Therefore, the impact of the Russia-Ukraine transit deal – and related avoidance of an interruption in Russian gas transit via Ukraine – has been to place downward pressure on European gas prices in the immediate short term (Q1 2020). That downward pressure is likely to be sustained throughout the summer in Q2-3 2020, as storage stocks are likely to be quickly replenished. As a result, the ability of European storage facilities to absorb excess supplies during the summer could be limited, and prices in late summer 2020 could hit new lows – a scenario discussed by Mike Fulwood in his October 2019 Oxford Energy Comment, ‘Could we see \$2 gas in Europe in 2020?’. In his Comment, Fulwood suggested that European hubs could see ‘\$2 gas’ – that is, a monthly average price of 2.99 USD/MMBtu or lower – in the summer of 2020. In fact, the monthly average day-ahead price at the TTF from 1 February to 28 February 2020 was 2.98 USD/MMBtu (9.32 EUR/MWh). With global LNG prices continuing to face further downward pressure as the coronavirus outbreak has curtailed LNG demand in China due to the related decline in economic activity, and the European market remains well-supplied with pipeline and LNG supplies, the current storage and pricing situation in Europe begs the question of whether prices could fall even further in the summer of 2020.

⁶⁸ See Figure 3 in Simon Pirani and Jack Sharples, The Russia-Ukraine gas transit deal: opening a new chapter (OIES Insight, 2020)

5. Conclusions

The conclusion of the transit deal, the first significant agreement between Russia and Ukraine in any economic sphere since 2014, brings benefits to both sides.⁶⁹ For Russia, it paves the way to the realisation of its transit diversification strategy: upon the completion of Nord Stream 2, TurkStream, and onward pipelines, there will be a considerable surplus of gas pipeline capacity to Europe. For Ukraine, it marks a recognition that the transit business is in decline, allowing economic and human resources to be concentrated on pressing energy policy issues including market reform and cutting wasteful consumption.

With regard to *transit of Russian gas to Europe*, although onshore connecting pipelines from both Nord Stream 2 and Turkish Stream on EU and Energy Community territory could potentially face some regulatory obstacles, these are resolvable, and unlikely to result in significant caps on Gazprom's ability to utilise their – and hence Nord Stream 2 and Turkish Stream – capacity. While there are uncertainties about exactly when Nord Stream 2 and Turkish Stream will be able to operate at full capacity, conclusion of the Russia-Ukraine transit agreement has made it less urgent for Gazprom to have access to this capacity. It has also strengthened Gazprom's position in respect of negotiating a new contract for transiting its gas through Poland. Overall, Gazprom finds itself in a comfortable position of having surplus export capacity in the early 2020s, and once Nord Stream 2 and Turkish Stream are completed, it will have significant flexibility between its export corridors to Europe in the 2020s and beyond.

Nord Stream 2 has been delayed beyond its original schedule, by both the late grant of the Danish permit and the adoption of the US sanctions legislation. Nonetheless, it is highly likely that it will be built in its entirety – two lines of 27.5 bcma each – and will become operational sometime in the early 2020s. While an optimistic estimate could see construction complete by the end of 2020 and the pipeline fully operational by the end of Q1 2021, a more conservative estimate could see construction completed in the first half of 2021, with the pipeline fully operational by the end of Q3 2021.

TurkStream has already been built – two lines of 15.75 bcma each, one connected to the Turkish domestic system and the second to Strandzha on the Turkish-Greek border. In January 2020 commercial deliveries started through the first line to Turkey and through the second line to Bulgaria, Greece and North Macedonia. Further onshore connections in Bulgaria, Serbia and Hungary, enabling the second line to reach its design capacity, are under construction and are scheduled to be operational in 2022; progress already made suggests this schedule is realistic.

On the EuRoPol system through Poland, gas transit flows have been remarkably stable in the past few years. But the expiry of the Russia-Poland gas transit contract on 18 May 2020, and the new ship-or-pay arrangements in Gazprom's transit deal with Naftogaz, may lead Gazprom to make the Polish transit corridor the balancing route that would act as a shock absorber in times when gas transit capacity available to Gazprom exceeds the call on Russian pipeline gas in Europe. The important signpost to watch is Gazprom's decision with regards to either negotiating a new long-term transit contract with Poland in May or merely booking capacity in the Polish transportation system on a short-term basis in accordance with new European rules. Nord Stream 2 might become an important game-changer since it would give Gazprom an opportunity to deliver gas into the same market area where gas via EuRoPol currently arrives thus making some capacity in the Polish corridor redundant for Gazprom.

In the Ukrainian market, the transit deal, and the unbundling of Naftogaz's transportation assets into GTSOU that preceded it, mark an important point in the market reform process. The expiry of the previous transit contract, and the conclusion of interconnection agreements with the TSOs on Ukraine's western border, mean that Ukraine's entire gas import requirement (10-12 bcm/year, or less, in the next few years) could be delivered by virtual, rather than physical, reverse flow. This may reduce import prices. The unbundling of the transportation assets should also give an impetus to further reforms of the domestic gas sector, including ending price regulation (scheduled for the first half of 2020),

⁶⁹ For more on the deal itself and how it was arrived at, see the accompanying Insight: Simon Pirani and Jack Sharples, 'The Russia-Ukraine gas transit deal: opening a new chapter', *OIES Energy Insight*, February 2020.

developing a gas exchange, and ending cross-subsidisation and chains of debt. As for the transportation infrastructure, GTSOU is now able to plan on the basis that, from 2022 or so not only to the end of the current agreement in 2024, but further, transit flows will be 40 bcm/year or less. Plans can thus be made to invest in capacity reductions, and to improve the efficiency of the infrastructure that stays in use.

In the European market, in the months preceding the expiry of the previous transit agreement, concerns that failure to conclude a new agreement would cause an interruption in Russian gas transit motivated market participants to inject substantial volumes into European storage. As a result, storage stocks rose to record levels by the end of December 2019. With continued transit now assured, those storage stocks are now exacerbating the downward pressure on European gas prices, by acting as additional supplies in an already supply-long market. In the context of plentiful pipeline and LNG supplies on the market, we therefore expect European hub prices to be lower in summer 2020 than they were 12 months earlier. Indeed, the downward pressure on hub prices is already evident, with TTF day-ahead prices falling below 10 EUR/MWh (3 USD/MMBtu) in February. The new Ukrainian transit agreement therefore not only prevented the price spike that would have accompanied a transit interruption, but has also freed up storage stocks that are placing downward pressure on already-low prices.

Appendix 1. Genesis of Nord Stream 2 and Turkish Stream

Gazprom began planning *Nord Stream 2* in 2012, as it was completing Nord Stream 1, although the project only began to gain momentum in 2015. The Nord Stream 2 consortium originally consisted of six shareholders: Gazprom (Russia), BASF Wintershall (Germany), Uniper (Germany), OMV (Austria), Shell (Netherlands), and ENGIE (France). The shareholder agreement, signed in September 2015, gave Gazprom a 50% shareholding, and 10% stakes to each of the European participants. That shareholder agreement was terminated in November 2016, with Gazprom consolidating its 100% shareholding, because the Polish anti-monopoly watchdog, the UOKiK (Urząd Ochrony Konkurencji i Konsumentów) refused to grant its approval. Although the pipeline would not pass through Polish territory or waters, the approval of the UOKiK was required because the consortium members own assets in Poland, and their actions could have implications for the competitiveness of Poland's domestic market.

Throughout 2015-16, Nord Stream 2 AG awarded tenders for materials and contractors and submitted applications for construction permits. On 22 February 2017, Gazprom announced that Allseas had been awarded the tender for laying both the offshore lines of Nord Stream 2. The pipe-laying would be conducted by three vessels: The *Pioneering Spirit*, *Solitaire*, and the *Audacia*. As noted in the main text, most of the construction permits were issued in 2018, and the majority of pipe-laying took place between September 2018 and October 2019.

TurkStream is a scaled-down descendant of South Stream, a four-string (15.75 bcma each) pipeline system that was designed to connect Russia with Bulgaria via the Black Sea. In 2014 the EC initiated an infringement procedure against Bulgaria on the grounds that its intergovernmental agreement (IGA) on South Stream with Russia was incompatible with the EU energy acquis and alleged irregularities in procurement procedures, resulting in Bulgaria halting construction on its territory in June 2014. Bulgaria failed to provide its regulatory approvals for an onshore section of South Stream. For these reasons the project was judged too risky to proceed and in December 2014, the Russian president, Vladimir Putin, and the Gazprom CEO, Alexei Miller, announced that South Stream was cancelled and that the Turkish Stream project was launched.⁷⁰

Although TurkStream only made glacial progress during 2015, being marred by various regulatory and commercial disagreements, and put on hold altogether by Russia in 2016 due to a sharp deterioration of political/security relationship with Turkey,⁷¹ it was re-activated and proceeded swiftly, once both countries had reconciled their differences in August 2016, with several permits (re)issued in September 2016 and the IGA signed in October 2016. Construction began in mid-2017, and was completed at the end of 2019, ahead of the official launch at the beginning of January 2020.

⁷⁰ Yafimava, 'Building new gas transportation infrastructure in the EU: what are the rules of the game?', *OIES Paper (NG134)*, July 2018. It can also be argued that the cancellation of South Stream has provided an impetus to the development of Nord Stream 2.

⁷¹ Yafimava, 'The revived Turkish Stream: what, where, and when?', *Oxford Energy Forum*, Issue 107, November 2016.

Appendix 2. Regulatory provisions for onshore continuations of TurkStream

The Hungarian and Bulgarian TSOs have decided to develop their respective pipeline connections with Serbia (and the Hungarian TSO potentially with Austria) under the incremental capacity procedure, stipulated in the Capacity Allocation Mechanism Network Code (CAM NC),⁷² rather than apply for an exemption under Article 36 of the Third Gas Directive. The incremental capacity procedure established auctions as a default allocation mechanism, while also allowing an Alternative Allocation Mechanism (AAM) to be used.⁷³ While CAM NC did not specify the nature of the AAM – and left it to the TSOs to design and the NRAs to approve – it prescribed that at least 10% and up to 20% of the technical capacity at each cross-border Interconnection Point (IP) must be reserved for short term bookings. CAM NC also stipulated that if an auction is used, at least 10% of capacity must be reserved for short term bookings while setting no upper limit. Under the CAM NC incremental capacity procedure, the NRAs and TSOs have a significant degree of discretion in respect of incremental capacity projects, with little role for the EC.

While CAM NC is part of the EU acquis, it has not (yet) been made a part of the Energy Community Treaty (EnCT) acquis,⁷⁴ and hence its incremental capacity procedure is not applicable in Serbia. The Serbian TSO decided to develop its connections with Bulgaria and Hungary under the exemption procedure, stipulated in Art. 36 of the Third Gas Directive (which is a part of the EnCT acquis). It has applied for and was granted an exemption by the Serbian NRA. The Energy Community Secretariat, while not rejecting the exemption altogether, has requested several amendments. In particular, it recommended Transportgas Srbija to be unbundled and certified as the TSO in respect of domestic gas system currently operated by Srbijagas. Also, while agreeing with the exemption from third party access (TPA) for 70% of capacity at the Serbia-Bulgaria border and for 75% of capacity at the Serbia-Hungary border, it recommended there should be no TPA exemption in respect of the remaining 30% and 25% respectively, with this capacity to be auctioned and third parties would also be able to participate.⁷⁵ It remains to be seen which caps the Hungarian and Bulgarian regulators decide to require for their interconnection sides with Serbia i.e. whether they will match those required by the Secretariat or not. Notably, CAM Network Code already applies in both Hungary and Bulgaria (and hence they could use AAM) but their regulators have a right not to apply CAM Network Code on the borders with non-EU countries.

Despite the Secretariat's criticism and recommendation of amendments,⁷⁶ the Serbian NRA preserved its original exemption. Unlike the EC, which has the power to amend, and even deny, an exemption granted by a member state's NRA, the Secretariat can only express an opinion which is not binding and the Serbian NRA is under no obligation to amend its exemption accordingly.⁷⁷ Nonetheless, the Secretariat's heavily caveated opinion was an indication that the onshore pipeline connections on the EU and EnCT territory enabling gas deliveries via Turkish Stream might face further regulatory queries, either from the Secretariat or from the EC. As argued above, however, this is unlikely to result in significant delays to these projects.

⁷² The incremental capacity process is analysed in detail in Yafimava, 'Building new gas transportation infrastructure in the EU: what are the rules of the game?', *OIES Paper (NG134)*, July 2018.

⁷³ If it is reasonable to conclude that an auction is not suitable, and that the project involves more than two entry–exit systems and bids with a duration of more than one year (namely long-term) are requested.

⁷⁴ CAM NC as well as the Tariffs NC will have to be implemented by Ukraine by March 2020.

⁷⁵ Notably, these caps recommended by the Secretariat are higher than the maximum cap of 20% that could be imposed on a project if it is carried out under the EU CAM Network Code under alternative allocation mechanism (AAM).

⁷⁶ 'Opinion 1/2019 on the exemption of the Gastrans natural gas pipeline project from certain requirements under Directive 2009/73/EC by the Energy Agency of the Republic of Serbia', *Energy Community Secretariat publication*, 1 February 2019

⁷⁷ Serbia did not have an option of developing these connections under the incremental capacity procedure as the CAM NC is not yet applicable there.

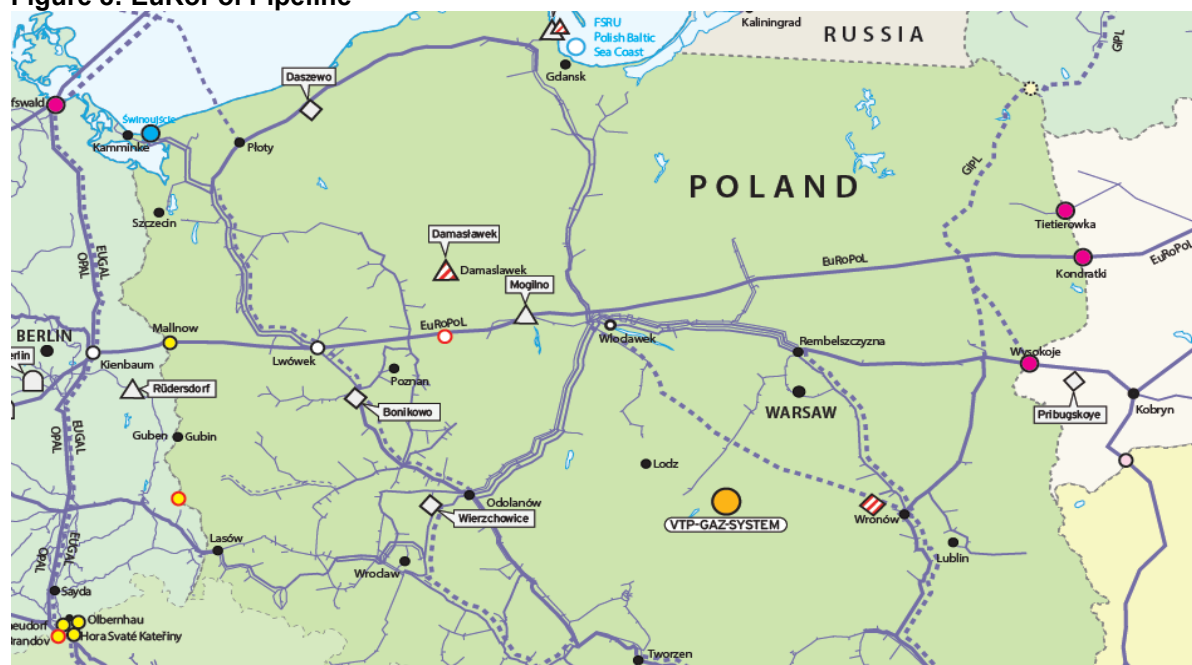
Appendix 3. The Russia-Poland gas relationship

Deliveries of Russian natural gas to Poland and transit via its territory are covered by long-term contracts concluded under an Intergovernmental Agreement of August 25, 1993 on Russian gas supply to Poland and on the creation of a gas pipeline system for gas transit through Poland to Western Europe as part of the transnational Yamal – Europe project. The Yamal – Europe large-diameter high pressure gas pipeline system starts in Torzhok in Russia and runs across Belarus and Poland to Germany.

Gas pipeline construction started in 1994, and in 2006 the Yamal – Europe gas pipeline reached its design capacity of 32.9 bcma. 14 compressor stations pump gas through the 60-inch (1420-mm) pipeline for over two thousand km. In Russia, the trunk line runs from the Torzhok gas transmission hub in the Tver Oblast where it receives gas from the Northern Tyumen Regions (SRT0) – Torzhok gas pipeline. The Russian section is 402 km long and has three compressor stations. The pipeline then crosses into Belarus. Gazprom is the sole owner of the 575-km Belarusian gas pipeline section that has 5 compressor stations.

The Polish section (referred to as EuRoPol) consists of a 683-km linear part and 5 compressor stations. This section of the gas pipeline is owned by EuRoPol Gaz, a Russian-Polish joint venture established in 1993 to design, finance, and build gas transit pipeline systems on the Polish territory. The starting point for EuRoPol in Poland is the Kondratki compressor station and the end point is the Mallnow compressor station near Frankfurt an der Oder in the vicinity of the German-Polish border where the gas pipeline links up with the YAGAL-Nord gas transmission system, which is, in turn, connected to the STEGAL – MIDAL – Rehden UGS gas transmission system. The German section of the gas pipeline is owned by WINGAS (see Figure 8).

Figure 8: EuRoPol Pipeline



Source: ENTSG System Development Map, 2018-2019

Appendix 4. The Danish permit for Nord Stream

In April 2017, NS2 applied to the Danish Energy Agency (DEA) for a permit in respect of the southern route (139 km long, passing south of the Danish island of Bornholm through the Danish territorial sea). In November 2017 Denmark passed a law which would allow it to reject a permit in respect of pipelines in its territorial waters not only on environmental grounds but also on foreign and security policy grounds, whereas previously rejection on the latter grounds was only possible in respect of pipelines in its EEZ. It is understood that the new law, allowing the Danish government to reject a permit in respect of the southern route – if it were to decide so – was adopted to allow Denmark more time to decide on the permit and wait for a common EU position on NS2.

In August 2018, following this change in law and still lacking a response from the DEA in respect of the southern route application, NS2 also applied for a permit in respect of the northern route (175 km long, passing north of Bornholm through the Danish EEZ, but not its territorial sea). In spring 2019 the DEA asked NS2 to apply for a new third route. This route would run further south of the original route so that it would no longer be in the Danish territorial sea but only in its EEZ. This route was not available at the time when NS2 applied for its permits in respect of the original southern and alternative northern routes due to an unresolved territorial dispute between Poland and Denmark in respect of the section of the Baltic Sea through which this route would be passing. It was not until November 2018 that a delimitation agreement was signed by the two countries, under which this section would become part of the Danish EEZ.

Meanwhile, in February 2019 the EU has reached an agreement – supported near-unanimously by the Council – to amend the Gas Directive so that it would apply to Nord Stream 2 up to the border of Germany's territorial sea. This agreement suggested that, despite the opposition of some individual member states (particularly Poland), the EU overall was not against NS2 being built, provided there exists a regulatory instrument ensuring that NS2 will not have an adverse impact on the functioning of the EU internal market and competition. As such, this agreement made it easier for Denmark to grant a permit to NS2, which it did in October 2019 in respect of the third route.

Acknowledgements

The authors gratefully acknowledge the help of their colleagues Julian Bowden, Mike Fulwood, James Henderson, Tatiana Mitrova and Jonathan Stern. The views expressed, and any mistakes, are ours alone. We also express thanks to Darren Lingard for the creation of the OIES maps in Figure 1 and Figure 2.