

**24th meeting of the EU-Russia Gas Advisory Council's
Work Stream on Internal Market Issues (GAC WS2)**

01 December 2017

10:00 – 16:00

European Commission Representation in Austria

**Wipplingerstraße 35,
1010 Vienna,
Austria**

MINUTES

The agenda and list of participants are attached to the Minutes.

1. Greetings / Opening remarks

Mr. Vasak of the European Commission (EC) in Austria, welcomed participants on behalf of Ambassador Mr. Wojahn and wished a successful meeting.

The GAC Work Stream 2 Co-Chairs Mr. Boltz and Mr. Konoplyanik thanked the EU delegation for hosting the meeting and welcomed the participants.

Mr. A. Konoplyanik (co-chair Work Stream 2) explained modifications agreed by the Co-Chairs regarding the order of agenda items due to time limitations of some participants. (Changes are reflected in the Minutes below).

2. Progress and status reporting on recent topics of the WS2 discussions and on current issues of specific interest of any party:

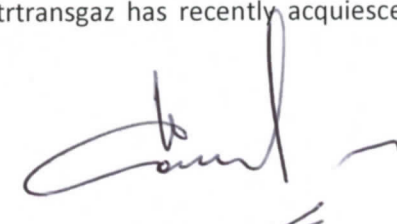
2.1. Pressure at RUS/UKR border; state of play

Mr. Ingwersen presented the state of play of fact finding on the pressure issues at the UKR/RUS border which ENTSG is following now already for a while. ENTSG's attempt is to do a neutral fact finding. Most recent activity was a meeting in St. Petersburg between ENTSG and Gazprom/GPE in July which was helpful to get a better picture of the situation. Some issues might be related to the commercial contracts, which ENTSG does not have access to. Mr. Ingwersen invited Gazprom to actively contribute to the Daily Gas Flow Reports (which Ukrtransgaz is already participating in) in sharing data.

Mr. D. Emelianov (Gazprom) explained that all information is available at the webpage of Gazprom.

Mr. K. Kovács (EC) stated that the EC has sent letters to both Gazprom and Naftogaz/Ukrtransgaz to release the now terminated technical agreement between the parties that apparently contains the agreed pressure conditions.

Mr. Emelianov (Gazprom) explained that Gazprom responded to the official letter of the European Commission on this issue which informs that Gazprom is transparently publishing this kind of information. Mr. Emelianov confirmed that Gazprom has also already stated its agreement that the Ukrainian side could share that full technical agreement with the EC/ENTSG. Mr. Kovács reported that Naftogaz/Ukrtransgaz has recently acquiesced to



sharing that contract with the EC/ENTSOG as well. Regarding a pressure drop in May 2017 he explained that this was due to technical issues and the transported volumes at this point of time.

Mr. Pavlov gave an expanded overview of the Ukrainian transmission system and numbers on daily gas flows and average daily pressure in October 2017. The presentation made by Mr. Pavlov was prepared on the basis of real technical functioning of the Ukrainian grid confirmed by detailed technical data. He explained that "pressure drop issue" is mainly caused by Ukraine which in contempt of its contract obligations is currently not buying (and thus not receiving) gas directly from Gazprom. Therefore the flows to Ukraine from the East are lower by about 100 mcm/day as compared to the conditions set out in the technical agreement between Gazprom and Naftogaz/Ukrtransgaz which was initially based on the obligation of Ukrainian side to purchase certain gas volumes from the Russian side. The decrease of transport flows is implying corresponding decrease of delivery pressure. The flows (and pressure) at Sudja decreased in 2017 as well. In 2009 nine compressor stations were in operation at the eastern Ukrainian border, in 2017 five of them are closed. The flows at the main Sudja station (three entry pipelines) decreased to 209 mcm/day, this means the pressure has also dropped correspondingly within the given throughput capacity of these three pipelines.

Furthermore, Mr. Pavlov explained (based on hydraulic simulations and transparent presentation materials) that the pressure level of 53 bar in Sudja is based on the transported volumes and corresponding supply contracts as well as physics within the given pipeline capacity of three pipelines. According to Mr Pavlov, the technical agreement was thus reached to close one pipeline in order to upgrade back the pressure to the contractual levels, and it was accepted by both the Russian and Ukrainian sides.

Mr. Pavlov informed that one day Ukrainian side opened unilaterally the valves on one pipe which was earlier closed according to above mentioned technical agreement. Moreover, this was done in the presence of the invited media and without informing the Russian side. The pressure on Ukrainian side has dropped which was documented by the media and then this news was circulated in the public domain, mostly in the West.

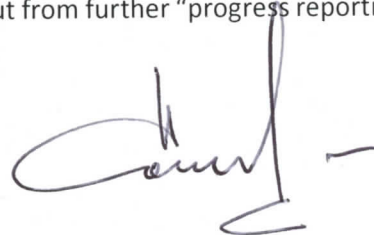
Mr. Kovács inquired whether there was a written agreement to close one line at Sudja or whether any document was available to underpin the apparent technical-level agreement that Gazprom insists was made. Mr. Pavlov explained it was an agreement on technical level without any written record which is in line with the normal operational business practice. He also added that communication between the two sides is still ongoing on a day-by-day basis.

Mr. A. Krutko (GPE) asked Mr. Ingwersen about the feedback received from the technical experts. Mr. Ingwersen responded that he does not have any information to counter what was presented by Gazprom but added that ENTSOG also does not have full knowledge of the facts to conclude unequivocally on the matter. He underlined the importance of an ongoing exchange of information since this is the basis for mutual understanding and solid base for discussions.

Mr. Krutko underlined that Gazprom is ready to co-operate on a transparent exchange of information. Taking into account the results of aforementioned fruitful discussion Mr. Krutko proposed to all participants to agree upon joint approach that there is no security of supply issue here anymore and that this is a pure commercial issue which is not undermining flows to EU. Proposed position was acknowledged by participants of the meeting.

Mr. Emelianov added that the previous technical agreement was drafted in the frame of the prior supply conditions and that it was necessary to adapt those technical agreements based on the new supply contracts/framework. He underlined that GP always fulfils contracts based on the demand of customers and has been a reliable supplier.

Mr. Konoplyanik proposed that this issue (correlation between the flows, throughput capacity, its utilization and pressure) is followed up in the existing co-operation structure. But he has also proposed that the issue of pressure drop on the Russia-Ukraine border which was raised earlier as an urgent one by the EU side can now be considered as clarified and settled and thus can be closed in the WS2 agenda and taken out from further "progress reporting".



Mr. Kovács added that with both sides willing to disclose the technical agreement, this issue is now best pursued in a tri- or quadrilateral format including also the Ukrainian side without continuation of discussion in a framework of GAC WS2. An outcome of further discussions can then be reported back to the GAC WS2 if needed. He welcomed the readiness of Gazprom to co-operate.

Mr. Mazilov summarized that as far as it is difficult for all sides to bring expanded technical experts groups to the meetings it would be much more useful to have this topic discussed on the technical level only. However, in case there are new essential outstanding issues which might need personal attention and involvement of GAC WS2 members than this issue could be discussed in this framework again.

2.2. Trans-Balkan Transportation contract

Mr. Kovács explained that his understanding is that the extension of the agreements (DESFA-Bulgartransgaz interconnection agreement and Bulgartransgaz-Gazprom protocol) on the Bulgarian-Greek border were signed.

Mr. A. Krutko (GPE) informed that GPE tries to organise a meeting in December to discuss implementation of a long lasting situation.

Mr. Mazilov added that separately, as a result of the changes in the Bulgarian system as of 1 October 2017, at Negru Voda there was an issue between the Bulgarian counterparts (Bulgargaz-Bulgartransgaz) regarding measurement protocols. This was an important issue for Gazprom as reliable metering values are necessary for proper protocolling of gas supply. He asked for support from the European Commission to solve this issue. It is not understandable why Bulgartransgaz has changed their approach towards this issue. From GPE point of view it is a pure technical issue and such position of Bulgarian side is artificially extending discussions and delaying agreement upon a permanent solution.

Mr. Kovács will come back on this issue on a bilateral basis.

Mr. Kovács inquired GPE point of view regarding (physical and virtual) reverse flow in this region – apart from the arbitration issue with Naftogaz.

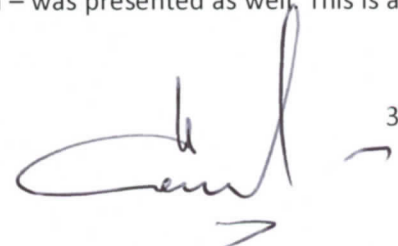
Mr. Krutko explained so far flows are inside the EU Gazprom is reasonably and duly accepting the existing EU legislation and regulation. With respect to EU border points (to third countries) – where those rules do not apply – Gazprom is not ready to do so, especially where the requested changes are violating existing transportation contract through the territory of Ukraine. Mr. Krutko has also noted that the system is working properly.

3. Update on the results of the Madrid Forum

Mr. J. Ingwersen (ENTSOG) gave a brief update and informed that the conclusions are available on the EC webpage. The forum was expressing a strong note for an important role of gas (natural and renewable) in the future. However, gas has to contribute to decarbonisation – which is the challenge for the European gas industry now.

He added that the EC announced an opening of the existing Gas Directive regarding new pipelines entering the EU from third countries and that the so called 'mirroring' exercise (lifting gas-specific amendment from the Clean Energy Package into the Gas Directive and Regulation) has been slowed down. 2018 will be the year to analyse where the Gas Regulation needs an update and in 2019 concrete proposals may be developed which would need to be discussed with a new European Commission in 2020.

Furthermore, there was a discussion on gas market functioning based on the ACER market monitoring report. The general message was that the EU gas market regulation has delivered and prices are almost everywhere aligned in the EU. The Functionality Platform – a platform to highlight issues related to market rules harmonization and the implementation of Network Codes which might not work or should be improved – was presented as well. This is a joint activity from ACER and ENTSOG.



Mrs. M. Loudon (Eurogas) underlined that in 2018 the thinking of the future role of gas is important. Eurogas thinks more needs to be done regarding implementation of Network Codes in order to improve the EU gas market.

Mr. D. Wood (EFET) highlighted as well the strong role of gas and the different speeds in the EU to implement the EU regulation. He called for robust justification of new infrastructure as shippers will have to pay for it.

Mr. Konoplyanik agreed that implementation of EU regulation is an important issue and related this also to the Quo Vadis study and possible amendments of the Gas Regulation which seems to be aimed to have an effect beyond the EU.

Mr. Ingwersen added that ENTSOG agrees that not all Network Codes are everywhere efficiently implemented so far. The current market model is working quite well, however, some specific changes might be necessary. Problems need to be identified in order to propose solutions.

Mr. Boltz reminded that discussions on the Third Package started in 2005 and we will not see results from the incremental capacity allocation process (the last Network Code change alongside tariffs) before April 2019. Judging from that, proposals being discussed in the next year may not fully take effect before 2030. Consequently, it is not possible to wait until all effects of the Third Package are visible before starting thinking about possible improvements.

4. EU Quo Vadis study

Mr. Kovács gave a short update on the envisaged time plan and progress made so far. He informed that on 13 December a workshop will take place in Brussels to update stakeholders in more detail. He invited all interested parties to participate and to voice issues there in order to follow them up (deadline for feedback 12 January 2018). Mr. Kovács also thanked the Russian side for their valuable input. He also underlined – managing expectations – that the study will not on its own lead to proposals to revise the Gas Regulation. Not changing the regulation in the end is still an option on the table. However, the EC sees some complexities with the Entry/Exit system which might need attention and furthermore broader issues like decarbonisation, sector coupling, renewable gas, etc. might also necessitate new policy response as well.

Mr. Konoplyanik explained concerns of the Russian side on the proposals envisaged in the study. He underlined that Quo Vadis project, according to its ToR developed by the DG ENERGY, was aimed at defining efficiency of the EU gas market regulatory system established through 2010-2016 on the basis of the Third EU Energy Package. Instead, Quo Vadis has proposed a system of radical changes to this system. Mr. Konoplyanik presented brief analysis of possible negative consequences for Russia of five Quo Vadis scenarios proposed for quantitative modelling. He thus underlined the special interest of Russia in this study. The set-up of the study is biased towards mid-streamers and the interests of Russia/Gazprom – key long-term large-scale pipeline gas exporter to the EU covering about 1/3 EU gas demand - are ignored. Costs are shifted to non-EU suppliers; benefits are left with the EU consumers. Welfare is modelled based on wholesale and not retail prices. Moreover, in its current structure Quo Vadis seems to be factually aimed at justification of substitution in the EU of more cheap Russian pipeline gas by more expensive US LNG. This might lead not to increase of EU welfare (the stated aim of Quo Vadis project to be developed proposals, according to its ToR) but to decrease of EU welfare.

Mr. Konoplyanik proposed a joint EU-Russian scenario modelling, separate from and complementing Quo Vadis study. The aim shall be to identify a win-win situation for both sides. Mr. Konoplyanik explained his vision of possible technical organization of such study on the balanced and neutral approach mutually appropriate, from his view, to both parties.

Mr. Kovács responded that the EU side is not ready to engage in such a bilateral exercise but continues to welcome and consider all comments and proposals submitted by the Russian side.

5. Progress and status reporting on recent topics of the WS2 discussions and on current issues of specific interest of any party (resumption of item 2 of the agenda):

5.1. CEGH-SPIMEX co-operation

Mr. B. Cherny (SPIMEX) and Mr. G. Steiner (CEGH) gave an update on the co-operation of the two companies. Mr. Cherny informed that since the last WS2 meeting two seminars – in Vienna and in Moscow – took place. During one-week Vienna workshop 27 representatives of Russian gas market discussed topics concerning commodity exchange's gas market practices in Russia as well as in Austria, specific to the GTS balancing process. SPIMEX has in the meanwhile approved a first version of market rules based on the lessons learnt from these workshops.

Mr. Steiner thanked SPIMEX for the valuable co-operation for both sides during the last three years. He added, that the Russian market is – from his point of view - very competitive, but also very complicated which is partially due to the size of the market and the country itself. He concluded that if a coherent regulatory system is set-up there is a huge potential for a Russian gas hub. The co-operation between CEGH and SPIMEX will continue in the future.

6. Methane leakage along the gas value chain. Fact finding on EU and Russian side; discussions of IEA proposals to develop and implement a coherent and credible monitoring system

Mr. Boltz gave a short overview about activities on methane leakage in Europe. He highlighted difficulties to attribute methane emissions to specific sources as estimations from the European Environmental Agency as well the International Energy Agency clearly show. Furthermore, he informed about an initiative of eight major gas and oil producers who committed themselves to further reduce methane emissions. In general, he believes that a transparent reporting is essential on this.

Mr. C. McGlade (IEA) informed about the work of IEA to monitor methane leakage which was one of the focus issues of this year's World Energy Outlook. 60% of long-distance gas trade will be LNG in 2030 – which is a significant change to today. Methane emissions threaten the benefits of natural gas against other fossil fuels. 76 Mt of methane emissions worldwide stemmed from the natural gas industry in 2015. Gas is more efficient for the production of electricity as for heat especially if it is with low methane emissions. Three quarters of the current level of worldwide methane emissions can be reduced by the measures proposed by IEA without net cost (on a global basis). This is equivalent to reducing global warming by 0.1 degree Celsius, which could otherwise be achieved by immediately closing all coal power stations currently operating in China.

Mr. Boltz asked whether there is any kind of global co-ordination on this. Mr. McGlade explained that this is not the case currently, however, some major producers are active.

Mrs. Loudon asked whether also mid- and down-stream emissions are being assessed and how emissions are being measured (especially down-stream). Mr. McGlade explained that companies often monitor emissions as this is also a safety issue, however, more should be done.

Mr. V. Feygin inquired how measurement is done and how this relates to the non-man-made methane emissions. Mr. McGlade explained that in the U.S. methane emissions is a large issue and more scientific efforts are being undertaken also regarding measurement.

Mr. Konoplyanik inquired the value of reporting methane emissions in a situation without a necessity to report and the need for co-operation regarding measurement methodologies. Mr. McGlade explained that co-ordinated regulation will be necessary, however, avoiding accidental leakages saves money for companies as well without regulation.

Mr. A. Gnatyuk (GPE) highlighted that in case gas prices are very low as in the US the logic of avoiding emissions is more difficult as flaring is cheaper.

Mr. D. Leonov (GP) presented methane emission regulation in Russia and GP efforts to reduce methane emissions in the last 25 years which led to its massive reductions. Furthermore, there was also an issue regarding

measurement methodology. IPCC Guidelines for national GHG inventories are being applied. Russia has national statistics of methane emissions since 1989 and started in 2016 to develop own emission factors. Mr. D. Leonov also mentioned that an accurate data on methane emissions along the gas value chain are presented in annual Gazprom environmental reports, State Environmental bulletins from Rosstat. KPMG will verify (independent auditing) by the end of year the Gazprom GHG emission report.

Mr. Boltz concluded that the general public picture of the gas industry as a less emitting industry is the important one.

Mr. Kovács added that work related to methane leakage is becoming increasingly present on the Commission's radar screen as it is a very important issue with respect to natural gas as a whole. The Commission will carefully assess the results of the IEA study in considering possible action on the matter.

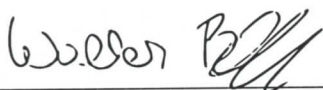
Mr. I. Gudkov (GP) underlined that with respect to methane leakage it seems that both sides are on the same page. In light of the EU CO₂ emission paths to follow it is clear that in the next five years' methane leakage might not be a big issue for the European Commission.

7. GP/GPE vision of (steps to promote) competitive gas market(s) in the EU

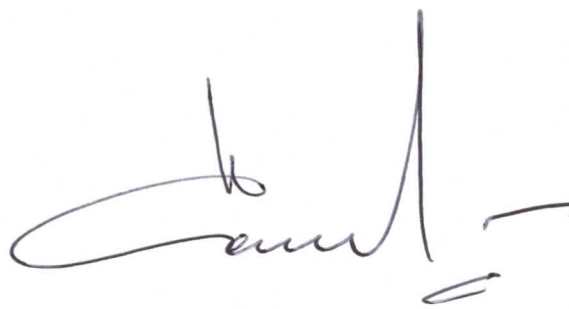
Mr. A. Gnatyuk (GPE) explained GP's vision in this respect. He highlighted that EU import needs as well as competition between importers will increase in the future. He underlined, that Gazprom has competitive advantages compared with other importers. In particular, Gazprom is the largest supplier of natural gas to EU, providing more than 30% of demand for natural gas and successfully covering peak demand of the winter season. He added that Gazprom organized trading on the European hubs via Gazprom Export LLC and other subsidiaries; consequently, there is a direct competition even with its customers, which sell natural gas, bought under a long-term contract, on the European hubs. He noted that US LNG will be a source of competition in Europe in the future and yet hypothetical deliveries set certain price benchmark. He informed that European retail market is characterized by a high competition among suppliers, but GP is investing into new niche markets for final consumption, among them are small-scale LNG, gas in transportation and gas-to-power. Mr. Gnatyuk summarised that new delivery routes constructed by GP provide reason for local and regional infrastructure construction.

8. Any other business / concluding remarks / next meetings WS2 consultations

The WS2 Co-Chairs thanked participants for the fruitful discussions and announced that the next meeting will be held in Q1 2018 (particular date will be further clarified), thanked the host of the meeting and all participants for the intensive discussion and closed the meeting. They noted that the points "SoS Regulation" and "Future role of gas" will be made up at the forthcoming meeting.



Co-Chair Mr. Boltz



Co-Chair Mr. Konoplyanik

24th meeting of the EU-Russia Gas Advisory Council's
Work Stream on Internal Market Issues (GAC WS2)

01 December 2017

10:00 – 16:00

European Commission Representation in Austria

Wipplingerstraße 35,
1010 Vienna,
Austria

AGENDA

| Time | Items | Presenters |
|---|--|--|
| Morning Session 10:00-12:30 | <ol style="list-style-type: none">1. Greetings / Opening remarks2. Progress and status reporting on recent topics of the WS2 discussions and on current issues of specific interest of any party:<ul style="list-style-type: none">- Pressure at RUS/UKR border; state of play- Trans-Balkan Transportation contracts3. Update on the results of the Madrid Forum4. EU Quo Vadis study:<ul style="list-style-type: none">- Short update: time plan and process- Russian concerns and proposals- Discussion | W. Boltz (EU), A. Konoplyanik (GPE) ENTSOG (Jan Ingwersen) GPE (Andrey Krutko / Vladimir Mazilov) GPE (Andrey Krutko / Vladimir Mazilov) EC (Kristof Kovács) ENTSOG (Jan Ingwersen) EC (Kristof Kovács) GPE (Andrey Konoplyanik) |
| Sandwich Lunch 12:30-13:30 (at the premises of European Commission) | | |
| Afternoon Session | <ol style="list-style-type: none">5. Progress and status reporting on recent topics of the WS2 discussions and on current issues of specific interest of any party (resumption of item 2 of the agenda):<ul style="list-style-type: none">- CEGH - SPIMEX cooperation6. Methane leakage along the gas value chain. Fact finding on EU and Russian side; discussions of IEA | CEGH (Gottfried Steiner) SPIMEX (Boris Cherny) |

| | | |
|-------------|--|---|
| 13:30-16:00 | <p>proposals to develop and implement a coherent and credible monitoring system:</p> <ul style="list-style-type: none"> - Status of IEA attempts to monitor methane leakage - Review of ongoing activities in Russia - Review of ongoing activities in the EU - Discussion <p>7. GP/GPE vision of (steps to promote) competitive gas market(s) in the EU:</p> <ul style="list-style-type: none"> - Discussion <p>8. Any Other Business</p> <p><u>Items 9 & 10 were postponed to the next WS2 meeting due to the lack of time in result of intensive debate on the previous items of the agenda</u></p> <p>9. Future role of gas</p> <ul style="list-style-type: none"> - Update on discussions in EU - Update on discussions in RF - Discussion on further activities <p>10. Overview of new Gas SoS Regulation:</p> <ul style="list-style-type: none"> - Introduction of the Regulation - Russian questions & comments - Discussion | <p>IEA (Christophe McGlade)</p> <p>GP (Denis Leonov)</p> <p>EU (tbc)</p> <p>GPE (Alexey Gnatyuk)</p> <p>W. Boltz (EU), A. Konoplyanik (GPE)</p> <p>CEER (Bernhard Painz), EU (Walter Boltz) GP (Denis Leonov)</p> <p>EU / Bernhard Painz, (E-Control / CEER Gas Working Group) GP (Ivan Gudkov)</p> |
|-------------|--|---|

Co-chairs: W.Boltz – A.Konoplyanik

[Handwritten mark]

[Handwritten signature]

List of participants

| Russian side | | |
|--------------|------------|--|
| Cherniy | Boris | Saint-Petersburg International Merchandise Exchange (SPIMEX) |
| Emelianov | Denis | Gazprom |
| Feygin | Vladimir | Foundation "Institute for Energy & Finance", GAC Co-Speaker/ GAC WS1 Co-Chair |
| Gnatyuk | Alexey | Gazprom export |
| Gudkov | Ivan | Gazprom |
| Konoplyanik | Andrey | Gazprom Export/Russian State Gubkin Oil & Gas University, GAC WS2 Co-Chair |
| Krutko | Andrey | Gazprom Export |
| Leonov | Denis | Gazprom |
| Mazilov | Vladimir | Gazprom Export |
| Meshek | Alexey | Gazprom |
| Pavlov | Sergey | Gazprom |
| Shtilkind | Theodore | Ministry of Energy/Russian Energy Agency, GAC WS3 Co-Chair |
| Sudarev | Nikolay | Gazprom-NGV |
| EU side | | |
| Boltz | Walter | Walter Boltz Consulting, GAC WS2 Co-Chair |
| Czető | Daniel | Eustream |
| Holubowsky | Stephanie | ENI |
| Ingwersen | Jan | ENTSOG |
| Ischia | Alessandro | E-Control |
| Kawnik | Mariusz | PGNiG |
| Kovács | Kristof | European Commission |
| Krug | Markus | E-Control |
| Loudon | Margot | Eurogas |
| McGlade | Christophe | IEA |
| Painz | Bernhard | E-Control |
| Steiner | Gottfried | CEGH |
| Vasak | Jozef | European Commission |
| Vitovsky | Jan | ENTSOG |
| Wernig | Kerstin | Walter Boltz Consulting |
| Wood | Doug | EFET |