

Futures of Energy in Eurasia in a Global Context

IIASA project

“Challenges and Opportunities of Economic Integration
within a Wider European and Eurasian Space”

Workshop Report

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Background

The 4th workshop within the IIASA project “Challenges and Opportunities of Economic Integration within a Wider European and Eurasian Space” held on 12-13 May, 2015 in Laxenburg, Austria delivered the latest insights into the risks, uncertainties, trends and opportunities around energy trade and energy security of the EU, EAEU and neighboring countries. The discussions focused mostly on natural gas covering conventional, LNG and shale gas, on nuclear energy, as well as on the potential for a common electricity market between some EU, EAEU and neighboring countries.

To foster interdisciplinary and international dialogue on the topic, the workshop invited distinguished academics and policymakers from around the world, including Tair Mansurov, Member of the Board – Minister in charge of Energy and Infrastructure, Eurasian Economic Commission; Péter Balás, Deputy Director General, DG Trade, European Commission and Head, Support Group for Ukraine; Jean-Arnold Vinois, European Commission Directorate General for Energy; Pavel Kabat, Director General and Chief Executive Officer, IIASA; Evgeny Vinokurov, Director, Centre for Integration Studies, Eurasian Development Bank; among many others, with a total of 48 participants.

The participants had impassionate exchanges over sometimes rather different views, yet they were able to concur on a number of points. This demonstrates the value of IIASA as a platform for open exchange of views between European and Eurasian experts and policymakers on currently controversial issues in the context of Euro-Eurasian economic integration.

Selected Seminar Highlights:

During the course of the seminar, the experts brought forward the following proposals:

- Creation of a common EU - EAEU electricity market could be useful, since it could stimulate large-scale construction of various types of generation assets in the Kaliningrad Region and in Belarus (nuclear, hydro and thermal power stations), that could provide power to Poland, Lithuania and other neighboring countries.
- Euro-Eurasian energy cooperation could be enhanced on the basis of the Energy Charter Treaty (1998) mechanism (although in case of Russia only if it decides to revise its earlier decision to leave the Treaty).
- Development by the Eurasian Economic Commission of a common Emissions Trading System (ETS) in line with EU norms can help increase compatibility in the future thus enhancing prospects of a common EU - EAEU emission inventory market.
- Joint development of the Arctic shelf can be a promising and prestigious long-term project of economic and investment cooperation between the EU and Russia.

- Commitment towards the work of the EU - Russia Gas Advisory Council and the “EU-Russia Gas Cooperation Roadmap till 2050” could be increased by both – Russia and the EU member states.
- An international gas research cooperation program between the European Commission and research institutes of different regional players (not only Russia) could be established which might help gaining objectivity and transparency on forecasts in the gas market.
- The repeated gas supply crises between Russia and the EU over supply to and transit via Ukraine make the efforts on maintaining cooperation and dialogue between the two even more important.
- Despite the fact that Ukraine intends to integrate its energy system into the European Network of Transmission System Operators for Electricity (ENTSO-E), maintaining interconnections with the Russian and Belarusian electricity grid can help them decrease electricity price inflation during the transition period.
- Energy efficiency in the Ukrainian household sector is a topic of joint interests and needs. Participants of the seminar proposed cooperation between the Eurasian Economic Commission and the respective Ukrainian research institutions for comparing approaches being adopted both in Ukraine and by the member states of the Eurasian Economic Union.
- IIASA’s role as a platform for discussing energy matters between the EU and Russia/EAEU as equals can be crucial.

Seminar Focus Areas:

During the workshop the participants came to distinguish six game changers that currently affect Euro-Eurasian energy relations and policies.

- 1. Gas supply diversification of the European market and the rise of shale and LNG**
- 2. Two cornerstones of the EU energy policy – anti-monopoly and supra-national regulations**
- 3. Prospects and implications of energy efficiency improvements and climate change targets across the region**
- 4. Local and regional effects of the Ukrainian crisis onto Euro-Eurasian energy relations and policies**
- 5. Perspectives of the new energy deals between China and Russia**
- 6. Perspectives of EU - EAEU energy market integration**

1. Natural gas supply diversification of the European market and the rise of shale and LNG

General information:

The total EU gas demand in 2015 was 435 bcm, of which 287 bcm was imported, of which 135 bcm came from Russia. Russia's gas export capacity limit to the EU was 290 bcm with transit via Ukraine and would have been 175 bcm without transit possibilities via Ukraine. (Rogner)

The EU has become increasingly dependent on gas imports over the last several decades: the share of imported gas increased from 40% in 1960 to 70% in 2006. Yet, Russia's share in the EU's imported gas declined from 55% in 1990 to 40% in 2006. (Breitenfellner)

The US unconventional gas production is estimated to rise from 1 to 10 mboe/d (2010-2035). (Breitenfellner) Opinions on the future course of action were disputed between the participants.

The participants of the seminar put forward a number of arguments in favor of the EU's diversification of gas supply, including the following:

- The European Commission's "Strategy to a resilient Energy Union" (25 February 2015) states the need to diversify gas supply to the EU (in terms of sources, suppliers and routes), thus the EAEU member states will have to expect a stronger regulatory role of Brussels in the European energy market.
- Russia is not perceived as a reliable gas supplier by Europe, as is said to be demonstrated by several delivery disruptions, most recently during the Russo-Ukrainian conflict of 2014-2015. A possible cessation of Russian gas transit via Ukraine after 2019 would mean a contract breach by Gazprom of existing long term contracts with Slovakia and Hungary.
- It is estimated, that if Russia does not transit gas via Ukraine, does not build the Blue Stream gas pipeline and prices for liquidated natural gas (LNG) are low, then the total EU gas demand in 2025 will be 489 bcm, of which 387 bcm will have to be imported. Only 75 bcm of this amount will be from Russia (with a maximum capacity of 120 bcm from Russia). In this scenario Russian gas exports to Europe would be less than the half of Norway's. (Rogner)
- There are major concerns about the conditions and restrictions applied by Russia related to its exports to the EU, and to various EU MS. The serious suspicions of anti-competitive behavior led the European Commission to opening a competition case against Gazprom, which is still ongoing.

The participants of the seminar also put forward a number of arguments in favor of stronger links of the EU energy market with the EAEU gas suppliers:

- According to Russian experts, Russia should be seen as a reliable gas supplier and the focus should be on long-term contracts. Russian delivery disruptions to the EU were due to the fact that according to Russia gas was taken by Ukraine from the pipeline without payment, in particular in 2014-15 it was simply stolen by the Ukrainian interim government, thus the responsibility is not on the Russian side. (Noginsky) Except for transit problems via Ukraine Russia has been a reliable partner, in particular, for example, there has been no problem ever with the gas supply from Russia to Europe through the North Stream pipeline.
- In the scenario of the continued gas transit from Russia to the EU via Ukraine after 2019, the total EU gas demand in 2025 is estimated to be 526 bcm; 435 bcm of this amount will have to be covered by imported gas, 190 bcm of which would be supplied by Russia. The total Russian gas export capacity to the EU would be 290 bcm. If gas imports from Norway and North Africa increase, there will be no need to import LNG from ex-regional players, e.g., North America. (Rogner)
- In the scenario, in which there is no Russian gas transit to Europe via the Ukraine after 2019, yet LNG prices are high and the Russian Blue Stream pipeline to Turkey is not built, then the total EU gas demand is estimated to be 480 bcm in 2025, 383 bcm of which will have to be

imported. 135 bcm would come from Russia, with a total capacity to be exported to the EU being 175 bcm. (Rogner) Other estimates suggest that Russian gas imports in this scenario would be at 125 bcm with an estimated total supply capacity up to 180-200 bcm after 2019. (Shirov)

The proposals that were made in the course of the seminar:

- The participants suggested that the continuation of the work of the EU-Russia Gas Advisory Council would be useful for preventing ambiguities in Russian gas supplies to the EU.
- The experts proposed to introduce an international gas research cooperation program to enhance cooperation between the European Commission and research institutes of different regional players (not only Russia), which might help gaining objectivity and transparency on forecasts in the gas market.

2. Two cornerstones of the EU energy policy – anti-monopoly and supra-national regulations

The participants of the seminar discussed the centralization of the EU energy policy, including the following issues:

- The European Commission's "Strategy to a resilient Energy Union" (25 February 2015) outlines distinct policy aims, which will lead to energy market centralization in Europe and must be taken into consideration by energy suppliers, including: improvement of energy efficiency to moderate demand; de-carbonization through EU Climate policy and becoming the leader in renewables; technological leadership via research, innovation and competitiveness.
- The EU will speak more and more with one voice in energy matters due to the centralization process; energy related trade regulations are already exclusive to Brussels. Thus the EU is working towards an energy monopsony.

The participants of the seminar discussed the energy trade liberalization within the EAEU, including the following issues:

- At the same time, harmonization and liberalization of the energy market is being planned in the Eurasian Economic Union: according to the decrees passed by the Eurasian Economic Commission, a common electricity market will be established within the EAEU by 2019, and a common oil and gas market by 2025. This means the liberalization of supply within the EAEU. A perfect substitutability of energy goods between the EAEU member states is expected to take place after 2025.
- Russian experts stated that Russia was ready to supply gas following the rules of Third Energy Package. They also agreed with the European participants about the need to fight against energy monopolies. But, on the other hand, they also argued against the EU becoming a monopsony. Liberalization and trust should come from both sides, demand and supply.

The proposals that were made in the course of the seminar:

- Experts and policy makers of both sides once again argued for the need to have a joint think-tank or platform where it will be possible to discuss energy matters between the EU and Russia/EAEU as equals. IIASA's role might be crucial as such a place.

3. Prospects and implications of energy efficiency improvements and climate change targets across the region

General information:

In the past energy intensity of production in the EU has decreased from 0.29 toe/thousand 2000 US\$ in 1970 to 0.19 toe/thousand 2000 US\$ in 2007. (Breitenfellner)

Situation in Russia:

- Russia managed to reduce greenhouse gas emissions after the 2008 crisis and presumably will not exceed the emission levels of 1990 by 2060. (Bashmakov, Myshak)
- Most projections agree that Russia's GDP growth rates will be moderate and declining in the next 45 years, with an annual growth rate of 2-4% in 2013-2030 and 1-3% in 2031-2050. It is very likely that Russia's energy-related greenhouse gas emissions will approach the peak before 2060 at a level of at least 11% below the 1990 emissions. (Bashmakov, Myshak)
- It is likely that oil reserves of Russia will not be sufficient to sustain oil production at the current level for another 10 years. Therefore, it is time to launch a petroleum products substitution programs in the transport sector. A moderate favorable scenario assumes the growth of Russia's crude oil production from 510 mln t in 2015 to 531 mln t in 2020 and then a slight decrease to 502 mln t till 2035. (Feygin)
- Investments in low-carbon technologies and energy efficiency improvements do not provide any significant investment load on the economy. The available estimates do not provide any ground to claim that investments in low-carbon and energy efficiency technologies will hamper Russia's economic growth. Investments in low-carbon technologies and energy efficiency improvements allow for savings on investments in very capital-intensive oil & gas sector and fossil fuel energy generation. According to other opinions, the most viable "greener" alternative in Russia is likely to be nuclear energy.

Proposals that were made in the course of the seminar:

- Participants of the seminar argued, that the post-Soviet states should not only develop their own national Emission Trading Schemes (ETS), but, moreover, that the Eurasian Economic Commission should develop a common ETS in line with the EU norms in order to increase their compatibility thus enabling prospects of a common EU - EAEU emission inventory market in the future.

4. Local and regional effects of the Ukrainian crisis onto Euro - Eurasian energy relations and policies

The participants of the seminar discussed the local effects of the Ukrainian crisis onto Euro - Eurasian energy relations and policies, including the following aspects:

- The recent changes in energy imports by Ukraine are related to the conflict with Russia (reverse gas flows via Slovakia, coal imports from South Africa, Poland, etc). Ukraine decreased gas consumption by 16% in 2014 and increased the share of gas imports from Europe. (Kosse)
- As a part of taking the Third Energy Package transparency pledge, in 2014 Ukraine decided to publish all data about the cross-border gas flows and one can now see how much gas is flowing through Ukrainian pipelines, and from where to where.
- Participants of the seminar were split about the risks of changing the nuclear fuel supplier to Ukrainian nuclear plants from Rosatom (Russia) to Westinghouse (USA). While one side argued to be very cautious about safety and possible hazards, as well as about an estimated 30-50% increase in costs (Noginsky), arguments on the other side spoke for the market-based competition and Ukraine's effort in attaining energy independence from Russia.
- One of the biggest problems of the Ukrainian energy market were said to be the high subsidies to consumers, amounting to 2.9 bln Euros in 2011, which will have to decrease (Kosse), also due to the commitments taken by Ukraine towards the IFIs and the EU. The full transition to market rates is expected to be achieved by 2017. Yet, a large downside of this, (recently already started process) is already a big burden on the household incomes. For this reason, some experts appealed to the Western, including EU policy-makers to increase financial support to the Ukraine's ongoing energy market reforms and their "European choice". (Emerson, Shimkin)
- The Ukraine intends to integrate its energy system into the European Network of Transmission System Operators for Electricity (ENTSO-E). However, transition to the EU standards in the electricity grid will be costly and difficult. (Kosse)

The participants of the seminar discussed the regional effects of the Ukrainian crisis onto Euro - Eurasian energy relations and policies, including the following:

- European experts and policymakers underlined that the Russo-Ukrainian gas disputes in the past years, especially in 2014 showed Russia to be an unreliable gas supplier to the EU. Russia's decision to cease gas transit via Ukraine after 2019 was referred to as an example of Gazprom's contract breach of long-term contracts with Slovakia and Hungary.
- According to Russian experts, Russia should be seen as a reliable gas supplier and the focus should be on long-term contracts. Russian delivery disruptions to the EU, especially during the Russian-Ukrainian conflict in 2014-2015 were due to the fact that gas was taken from the pipeline without payment, i.e. it was simply stolen by the Ukrainian interim government, thus the responsibility is not on the Russian side. (Noginsky) Except for transit problems via Ukraine Russia has been a reliable partner, in particular, for example, there has been no problem ever with the gas supply from Russia to Europe through the North Stream pipeline.

The proposals that were made in the course of the seminar:

- The repeated gas supply crises between Russia and the EU via Ukraine make the efforts on maintaining cooperation and dialogue between the two even more important.
- Despite the fact that Ukraine intends to integrate its energy system into the European Network of Transmission System Operators for Electricity (ENTSO-E), maintaining interconnections with the Russian and Belarusian electricity grid can help decrease electricity price inflation during the transition period.

- Energy efficiency in the Ukrainian household sector is a topic of joint interests and needs. Participants of the seminar proposed cooperation between the Eurasian Economic Commission and respective Ukrainian research institutions for comparing approaches being adopted both in Ukraine and by the member states of the Eurasian Economic Union.

5. Perspectives of the new energy deals between China and Russia

In what concerns natural gas:

- China's domestic gas demand is expected to rise from 200 bcm in 2015 to 471 bcm gas in 2030. The potential of gas imports from Russia is as high as 130–140 bcm. (Paik)
- According to Russian views Western sanctions pushed Russia into China's arms. Russia is now constructing the Altai gas pipeline to China. Upon the completion of this project, Russia will become a swing supplier between the European market and the Asian market, namely, Russia will be able to choose to whom to supply gas. However, the impact of this project on the European gas market will be limited.
- Yet, the Altai gas pipeline is not a key priority for China, which is currently most interested in the establishment of the Silk Belt corridor.
- More inland pipeline gas supply to China from Russia, as opposed to supplies in the form of LNG shipped by sea, will put pressure on the LNG price in the Asian-Pacific market.
- Western sanctions on Russia are likely to delay the construction of the Vladivostok LNG terminal.

In what concerns coal:

- The new Russian gas deals will help in the expansion of the gas use in China and the decline of coal's share below 50% in China's energy mix by 2030. It will be one of the most important contributions for the global climate change initiative. (Paik)
- A gigantic Russian-Chinese project of coal-fired electricity generation plants and transmission lines to China is being constructed in Siberia, which may ultimately export as much as 60 billion kWh annually to China). (Vinokurov)

6. Potentials of EU - EAEU energy market integration

The participants of the seminar discussed potentials of a common electricity market between the EU and the EAEU, including the following issues:

- According to the decrees passed by the Eurasian Economic Commission, a common electricity market has to be established within the EAEU by 2019.
- Creation of a common EU - EAEU electricity market could be useful, since it could stimulate large-scale construction of various types of generation assets in the Kaliningrad Region and in Belarus (nuclear, hydro and thermal power stations), that could provide power to Poland, Lithuania and other neighboring countries.

A prospective framework for energy integration between the EU and the EAEU was also discussed:

- The planned EAEU energy market reforms (by 2019 and 2025) draw on the experiences of the EU regulations and are in line with the WTO rules. . This increases the compatibility between the European and the Eurasian Economic energy unions.
- The Euro - Eurasian energy cooperation could be enhanced on the basis of the Energy Charter Treaty (1998) mechanism. Most EU-EAEU member states are participants of this treaty (except for Russia and Serbia). The Energy Charter mechanism could provide effective tools for the promotion of political dialogue and cooperation on regulatory issues and further regional/cross-border electricity projects, such as between Armenia and Iran.

In what concerns cooperation in the Arctic:

- By 2020, the decline in oil and gas production in the traditional Russian regions needs to be offset by the increase in production in Eastern Siberia and the development of some difficult-to-extract reserves. By 2021 - 2035 the main contribution to the stabilization of production levels should come from the development of the Arctic shelf. (Shirov)
- Several participants of the seminar argued in favor of lifting sanctions restraining Russian oil companies' access both to innovative technologies and equipment from Europe and to international financial markets resources needed for key investment projects. A joint development of the Arctic shelf is seen by the experts as a promising and prestigious long-term project of economic and investment cooperation between the EU and Russia. However, economic, ecological and political factors need to be thoroughly analyzed beforehand.
- Long-term investment in infrastructure projects (e.g. pipelines and joint Arctic energy exploration) between the EU and the EAEU would in any case mean more stability for both supply and demand than dependence on spot prices and demand fluctuations for gas and oil in Asia.

Results of the seminar illustrate once more the importance of IIASA as a platform for the open exchange of views.

References

Presentations at the workshop

Bashmakov A.; Myshak A. Center for Energy Efficiency (CENEF), Russia. *Costs and Benefits of Low-Carbon Economy and Society Transformation in Russia. 2050 Perspective.*

Breitenfellner A. Austrian National Bank. *Energy Prices - Determinants and Impact on Economic Developments and Financial Stability.*

Emerson M., Centre for European Policy Studies (CEPS), Belgium; Shimkin V. Housing and Municipal Reform Support Center, Ukraine. *A Household Energy Saving Initiative for Ukraine.*

Kosse I. Institute for Economic Research and Policy, Ukraine. *Energy Market Reforms in Ukraine.*

Feygin V. Institute for Energy and Finance, Russia. *An approach to analysis of complex energy systems development and several illustrations.*

Mityaev D. Federal Governmental and Academic Institute, Council for the Study of Productive Forces (CSPF), Ministry of Economic Development and Russian Academy of Sciences, Russia. *Energy complementarity of the EU and the EEU as the basis of the long-term economic integration and peace in Eurasia.*

Noginsky O. Ukrainian Association Suppliers of the Customs Union, Ukraine. *Possible Risks and Consequences from Experiments with Ukraine's Nuclear Power Industry.*

Paik K. Oxford Institute for Energy Studies, United Kingdom. *Sino-Russian Gas and Oil Cooperation : The Reality and Implications.*

Rogner H. IIASA, Sweden. *Modeling Framework and Illustrative examples: Modeling Subgroup of the EURussia Energy Dialogue Gas Advisory Council.*

Shirov A. Institute for Economic Forecasting (IEF), Russian Academy of Sciences. *Russia and Europe: energy union or energy conflict?*

Vinokurov E. Centre for Integration Studies, Eurasian Development Bank (EDB), Russia. *Transborder Investments in Electric Power and the Logic of Common Electric Power Markets.*

The presentation slides and report texts given at the workshop are available by request from the project manager Anastasia Stepanova - stepanov@iiasa.ac.at

Appendix 1: Agenda

IIASA, 12-13 May 2015

Day 1

Introduction and Goals of the Workshop

Chair and moderator - Pavel Kabat

Welcome - **Pavel Kabat**, Director General and Chief Executive Officer, International Institute for Applied Systems Analysis (IIASA)

Introductory remarks - **Tair Mansurov**, Member of the Board – Minister in charge of Energy and Infrastructure, Eurasian Economic Commission (EEC)

Introductory remarks - **Péter Balás**, Deputy Director General, DG Trade, European Commission and Head, Support Group for Ukraine (SGUA)

Introductory remarks - **Vladimir Yasinsky**, Managing Director and Member of the Board, Eurasian Development Bank (EDB)

Session I. Eurasian Energy Markets and Cooperation

Chair and moderator - Peter Havlik

Andrey Lipin, Deputy Director, Department of Macroeconomic Policy, and Head, Macro Research, Eurasian Economic Commission (EEC): *CGE-model for the Eurasian Economic Union: energy items*

Jean-Arnold Vinois, Advisor on European Energy Policy, Notre Europe-Jacques Delors Institute and Honorary Director, European Commission Directorate General for Energy: *What is the impact of the Energy Union on the Eurasian developments?*

Iryna Kosse, Senior Research Fellow, Institute for Economic Research and Policy Consulting: *Energy market reforms in Ukraine*

Keun-Wook Paik, Senior Research Fellow in Asian Energy Issues, Oxford Institute for Energy Studies: *Sino - Russian oil and gas cooperation: the reality and implications*

Janez Kopač, Director of the Energy Community: *Energy Community: a successful instrument of regional cooperation*

Gokce Mete, Research Fellow, Energy Charter Secretariat, European Commission (EC): *Regional Electricity Cooperation Initiatives as Building Blocks for Eurasian Integration*

Oleg Noginsky, Director, Ukrainian Association of Suppliers of the Customs Union: *Security risks of Russia and Europe, due to the use of fuel for Ukrainian nuclear power plants and third-party design changes without the consent of the NPP Chief Designer*

Dmitry Mityaev, Vice-President, Federal Governmental and Academic Institute, Council for the Study of Productive Forces (CSPF), Ministry of Economic Development and Russian Academy of Sciences: *Energy complementarity of the EU and the EEU as the basis of the long-term economic integration and peace in Eurasia*

Day 2

Summary of the First Day and General Remarks

Chair and moderator - Pavel Kabat

Welcome and reflections on the first day

Session II. Energy Resource, Infrastructure and Investment Challenges

Chair and moderator – Evgeny Vinokurov

Evgeny Vinokurov, Director, Centre for Integration Studies, Eurasian Development Bank (EDB): *Trans-border investments in electric power and the logic of common electric power markets*

Michael Emerson, Associate Senior Research Fellow, Centre for European Policy Studies (CEPS) and **Vladimir Shimkin**, President, NGO Housing and Municipal Reform Support Center: *A grass-roots household energy saving initiative in Ukraine*

Andreas Breitenfeller, Senior Expert, Foreign Research Division, Oesterreichische Nationalbank (OeNB): *Energy prices - determinants and impact on economic developments and financial stability*

H-Holger Rogner, Senior Research Scholar, International Institute for Applied Systems Analysis (IIASA): *Vulnerability to natural gas disruptions*

Vladimir Feygin, President, Institute for Energy and Finance: *An approach to analysis of complex energy systems development and several illustrations*

Oleg Pluzhnikov, Deputy Director, Industry Round Table for Cooperation with the European Union: *Ecological implications of energy investments*

Nadejda Komendantova, Research Scholar, International Institute for Applied Systems Analysis (IIASA) and **Thomas Schinko**, Research Scholar, Wegener Center, University of Graz: *Impacts of the investment environment on renewable energy deployment*

Session III. Long-Term Energy Visions in Eurasia

Chair and moderator – Aleh Cherp

ZhongXiang Zhang, Distinguished Professor and Chairman, Department of Public Economics, School of Economics, Fudan University: *China's climate commitments, programs and initiatives, energy prices, and market-based instruments*

Igor Bashmakov, Executive Director, Center for Effective Energy Use: *Costs and benefits of low-carbon economy and society transformation in Russia*

Jean-Arnold Vinois, Advisor on European Energy Policy, Notre Europe-Jacques Delors Institute and Honorary Director, European Commission Directorate General for Energy: *EU 2030 energy goals*

Jörn Richert, Assistant Professor of Energy Governance, St. Gallen University: *Turkey's regional leadership ambitions: energy security concerns and the role of sustainability*

Jessica Jewell and Nils Johnson, Research Scholars, International Institute for Applied Systems Analysis (IIASA): *Climate policy and fossil energy: Trade and energy asset implications in Eurasia*

Alexander Shirov, Deputy Director, Institute for Economic Forecasting (IEF) of the Russian Academy of Sciences: *Russia and Europe: Energy union or conflict*

Concluding Session

Chair and moderator - Pavel Kabat

Appendix 2: List of participants

Namat B. Abu Al-Soof	Energy Advisor, Corporate Planning & Economic Services, OPEC Fund for International Development (OFID), Austria
Victoria Alexeeva	Energy Planner, Economist 3E Analysis Unit, Planning and Economic Studies Section, Department of Nuclear Energy, International Atomic Energy Agency, Vienna International Centre, Austria
Michael Ja. Antonovsky	Chairman of Department, Institute for Global Climate and Ecology, Russia
Vasily Astrov	Senior Economist, The Vienna Institute for International Economic Studies (wiiw), Austria
Péter Balás	Deputy Director General, DG Trade, European Commission (EC) and Head, Support Group for Ukraine (SGUA), Belgium
Igor Bashmakov	Executive Director, Center for Energy Efficiency (CENEf), Russia
Andreas Breitenfellner	Senior Expert, Foreign Research Division, Oesterreichische Nationalbank (OeNB, Central Bank of Austria)
Aleh Cherp	Professor, Faculty Member, Department of Environmental Sciences and Policy, Central European University, Hungary
Michael Emerson	Associate Senior Research Fellow, Centre for European Policy Studies (CEPS) and Senior Research Scholar, International Institute for Applied Systems Analysis (IIASA), Austria
Vladimir Feygin	President, Institute of Energy and Finance, Russia
Marina Galyamov	Consultant, Administration of the President of the Russian Federation, Russia
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Nikolay Grunin	Advisor, Department of Transport and Infrastructure, Eurasian Economic Commission (EEC), Russia
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Nils Johnson	Research Scholar, International Institute for Applied Systems Analysis (IIASA), Austria
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Janez Kopač	Director, the Energy Community, Austria
Iryna Kosse	Senior Research Fellow, The Institute for Economic Research and Policy Consulting (IER), Ukraine
Ivan Kurenkov	Adviser, Office of Member of the Board - Minister in charge of Energy and Infrastructure, Eurasian Economic Commission (EEC), Russia
Chin-Min Lee	Special Advisor to the IIASA Director General and Chief Executive Officer, International Institute for Applied Systems Analysis (IIASA), Austria
Andrey Lipin	Deputy Director, Department of Macroeconomic Policy and Head, Macro Research Division, Eurasian Economic Commission (EEC), Russia
Anna Lowry	Postdoctoral Researcher, Aleksanteri Institute, University of Helsinki, Finland
Tair Mansurov	Member of the Board – Minister in charge of Energy and Infrastructure, Eurasian Economic Commission (EEC), Russia
Gökçe Mete	Research Fellow, Energy Charter Secretariat, European Commission (EC), Belgium
Georgy Mikhno	Deputy Permanent Representative of the Russian Federation to the International Organizations in Vienna, Austria
Dmitry Mityaev	Vice-President, Federal Governmental and Academic Institute, Council for the Study of Productive Forces (CSPF), Ministry of Economic Development and Russian Academy of Sciences, Russia
Nebojsa Nakicenovic	Deputy Director General and Deputy CEO, International Institute for Applied Systems Analysis (IIASA), Austria
Oleg Noginsky	Director, Ukrainian Association Suppliers of the Customs Union, Ukraine
Keun-Wook Paik	Associate Fellow, Energy, Environment and Resources department, Chatham House, Senior Research Fellow, Oxford Institute for Energy Studies, United Kingdom
Oleg Pluzhnikov	Deputy Director, Industry Round Table for Cooperation with the European Union (NP IRT), Russia
Olesya Polyakova	Expert, Group of Methodology and Analysis, Department of Macroeconomic Policy, Eurasian Economic Commission (EEC), Russia
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