

THE EVOLUTION OF ENERGY POLICIES IN THE CONTEXT OF THE WAR IN UKRAINE: A REVIEW OF THE DISCUSSIONS OF AN ONLINE SCIENTIFIC SEMINAR

The online scientific seminar “Evolution of energy policies in the context of the war in Ukraine” was held by Brasov Subsidiary of the Romanian Committee for History and Philosophy of Science and Technology (CRIFST) of the Romanian Academy on 16 June, 2022. The high actuality topic of the event evoked interest and attracted attention of research community, both as speakers and listeners.

The session was opened by Ana Bazac, PhD, Professor at Politehnica University of Bucharest, with her presentation “*First, we need to address prejudices — A note on war, politics, and energy policies*”. Ana started her contribution with a question: “What does it mean for the present political situation of the world?”, and then she revealed some reflections regarding the subject proposed for the symposium. In her presentation, she pointed out some meanings related to war. The war is irrational, it is opposed to the feature of human beings, reason, the most unanimously feature sustained by thinkers. The war destroys what reason — and its specific manifestations, the sentiments — constructs.

What can be more shocking than the coexistence of the formidable development of science and technology nowadays, and of the formidable impetus of the human creativity — with the destructive practices of war, but also of “peace”? Ana underlined the connection between the war and energy policy. Accordingly, energy policies should involve their treatment in an integrative manner, and more, their integration with other policies, such as the war and defence policies, the environmental policies, the resources and waste policies, the healthcare policies at both the national and world level.

The next presentation was given by Alla Lytvynko, Dsc (History), leading researcher of Dobrov Institute for Scientific and Technological Potential and Science History Studies of the National Academy of Sciences (NAS) of Ukraine, with a topic that attracted much debate: “*Reorientation of the activi-*

ties of the National Academy of Sciences of Ukraine towards military-technological and social issues, in response to the Russian invasion”.

Alla described the activities of the National Academy of Sciences of Ukraine after the Russian invasion, which began on February 24, 2022. The research policy within the National Academy of Sciences of Ukraine has been reoriented towards products, technologies and humanitarian aspects that must support the military and civilians, for the defense of their homeland.

Because of the war, key challenges arose in the science of Ukraine: weakening the human resources and ties between the scientific and industrial spheres, destroying scientific infrastructure, significantly reducing the financial and resource support, expansion of the research on the defense, security and the development of strategic sectors of the Ukrainian economy. The activity of institutions of the National Academy of Sciences of Ukraine was significantly complicated. Institutes in Kyiv, Kharkiv, Mykolaiv and Sumy, Chernobyl Institute for the Safety of Nuclear Power Plants were damaged. Many researchers moved to other regions of Ukraine or temporarily left the country. Luhansk Nature Reserve, Crimean Astrophysical Observatory, Marine Hydrophysical Institute, Black Sea Biosphere Reserve and Kherson Hydrobiological Station are now on the territories captured by Russia. It should be noted that after the annexation of the Ukrainian territory Crimea and Donbass in 2014, the National Academy of Sciences of Ukraine has broken scientific cooperation with Russian scientific institutions. On April 9, 2022, international agreements in the field of science and education between Ukraine and Republic of Belarus, which provided its territory for aggression against Ukraine, were terminated.

On May 4, 2022, the Commission for the Restoration and Development of Ukraine in the war and postwar periods was established in the Academy. Now the Academy is conducting research focused on strengthening the defense capabilities and security of the country and studying the social consequences of the war. Some results have already been received. Among them the creation of the first domestic models of transparent armor that meet NATO standards, X-band radar station and drone detection system, camouflage composite coatings, new elements of radio and optoelectronics for weapons. Developments are aimed at improving the tactical and technical characteristics of ammunition, missile systems, the level of ballistic protection, the survivability of equipment. Biomaterials for bone regeneration, modern cryopreservation technology for blood cells, hemostatic agents and bandages for complex burns and wounds have been developed for military medicine. New functional substances and materials of chemical production, cybersecurity of critical infrastructure objects, ultrasonic methods of surface modification and diagnostics of new metallic materials are being developed.

For example, Paton Electric Welding Institute handed to the Ukrainian army modern high-tech optical devices; devices for welding living tissues (PATONMED) and instruments for surgery; welding materials for battalions to the Armed Forces of Ukraine and the Territorial Defense of Kyiv. The Institute of Renewable Energy gave an autonomous portable solar power plant for use in combat. Bakul Institute of Superhard Materials despite a missile strike by the Russian armed forces, has developed technologies for the production of 5th class silicon carbide bulletproof vests, boron carbide bullets for bearings, mortar barrels and grenade launchers. The State Border Guard Service and the Armed Forces of Ukraine adopted domestic unmanned aerial vehicles, which onboard equipment includes systems developed by the International Research and Training Center for Information Technologies and Systems developments.

The historic, sociological and other humanitarian aspects of the war are also studied. The forming of Putin regime has been studied in the publications by V. Gorbulin (“Armed struggle in the context of the fourth industrial revolution”), S. Kulchytskyi (“Putin surpassed Hitler, racism is worse than Nazism”) and L. Yakubova (“Beast from the abyss. How did Putin’s fascism come about and what does it seek”).

I. Yegorchenko discussed how the war will affect Ukrainian science and stated that if fundamental science is destroyed now, there will be no applied science and own weapons in future.

The results of sociological survey of socio-psychological state of the population of Ukraine during the war conducted in the Academy showed that since the beginning of the war, the dominant socio-psychological atmosphere in society has been historical optimism, consolidation and hope for victory in Ukraine. Ninety percent of respondents feel hope, which is three times higher than in pre-war times. 98% of respondents support the activities of the Armed Forces of Ukraine, 93% — the President of Ukraine, 84 % — the actions of local leadership, 80% of respondents are willing to defend the territorial integrity of Ukraine with weapons in hand, which is much more than in pre-war times (against 59% in 2020).

Professor E. Libanova, Director of Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine, stressed that for the first time in the history of independent Ukraine, the word “We” has become more important than “I”. And the main thing Ukraine can and should do is to maintain close contact with those people who have gone abroad.

A significant part of the Academy’s employees carries out volunteer activities and transfer own funds to help the Armed Forces and refugees. It is encouraging that this scientific research and activity benefits from international support. Numerous letters of support from people and organizations from all over the world were sent to the President of the National Academy

of Sciences of Ukraine. Programs to support Ukrainian scientists, both those who work in Ukraine and those who were forced out of the country due to the war, are offered. Ukrainian scientists also send statements to governments of countries, scientific and public organizations. The Statement “Ukrainian humanitarian scientists address governments and peoples of the world” became widely known in the world. The Statement of Historians of Science and Technology of Ukraine was posted on the website of the International Committee for the History of Technology (ICOHTEC).

Irina Mastan, a young researcher, PhD in History and Philosophy, with her presentation “*War and peace — thoughts from the past and present*”, added new elements to the concept of war and the war-peace dilemma. Irina started her presentation with the remark: “There is no war in the world that everyone agrees on. For that matter there is no peace either. Some might attribute the cause of war to one root cause, such as race for resources, expansion of living space. The one indisputable fact about war and peace is that one universal consensus cannot be reached. As such, we will not endeavour in such an adventure as to explore the countless ‘what ifs’ and hypothesis. What we will try is to understand how war and peace came to be what we know them to be today. And finally, we will listen to first hand testimonies of people who had to face the atrocities of war and came to find peace in Brasov”. And, she revealed some pages of the history of wars.

The second part of Irina’s contribution was devoted to C.A.T.T.I.A — the Refugee Centre in Brasov, organised in the city’s business centre at the Brasov City Hall’s initiative with the help of the local volunteers. This was the first operational centre opened in the country, shortly after the war broke out in Ukraine. The community’s response was overwhelming, helping sustain the centre for the first two months. In the first two weeks, all actors in the community got involved including 450 volunteers, individual donators, and companies in all industries.

The refugees can get shelter here until they find a long-time residence. They have access to free meals, counselling, classes and medical care. They can get guidance for finding jobs, the Romanian language classes and kindergarten services. The centre gained international attention and numerous distinctions. UNICEF and the Japanese government awarded the Blue Dot distinction for the quality service and accommodation offered to the Ukrainian refugees on April 14, 2022. As a volunteer at C.A.T.T.I.A, Irina described the life in this refugee centre, and shared an impressive interview with a refugee from Kyiv.

Dumitru Chisalita, Senior Consultant in Gas & Energy and President of Intelligent Energy Association addressed the topic “*Romania’s energy independence between myth and reality. Romania’s need for energy security*”. Dumitru pointed that Romania’s Energy Strategy was created for the time

horizon of 2019—2030, with the perspective of 2050, taking into account the needs and international obligations of Romania, but also the realization of the optimal scenario for the development of the national energy system. But the current geopolitical situation requires the reconsideration of some of Romania's strategic directions.

A study carried out by the Intelligent Energy Association, three months ago, showed that “the price of energy will double each of the next decades”. But, the worrying conclusions of this study were omitted. Last year, the increase in the price of natural gas began in July, following the reduction of gas supplies from Russia, amid the lack of long-term contractual obligations and some technical problems. This situation led to an increase in the price of gas by 463 % compared to the maximum price recorded before the start of the conflict in Ukraine.

History repeats itself this year. The reduction of gas deliveries to the European countries will lead to gas prices in winter, which never existed before for this product. Thus, the commodity natural gas is expected to cost over 200 EUROS/MWh. The impact on large consumers in Romania, those who consume more than 50,000 MWh and who do not benefit from the price cap, will be devastating; the high probability being that most of them will close their doors, with all the negative effects: unemployment, reduction of funds in state budgets and so on. The natural tendency of interventionism on the part of the state, both by price and by taking over some companies or developing some with supply activities, is apparently an alternative to the activity on the natural gas market. The decisive role of the state is to adequately prepare consumers for any possible situation that we may face this winter and to carry out detailed procedures for all consumers and companies in the market, but above all to carry out appropriate communication to the population and to the simulation of crisis situations in gas delivery and the initiation of measures to ensure minimum heating conditions begins now.

The last communication was presented by Nicolae Bulz, Professor, PhD engineer in Automatic Systems/Human-Machine Interface/Operative Decision-Making Systems with the topic “*Report on the project ‘Does the Generosity—Creativity—Solidarity Triad Matter on Contemporary Energy Security Inquiries?’*”.

The theme resulting from the title of the project, centered on the effects of Generosity—Creativity—Solidarity triad for Energy Security, may seem in a way collateral to the current tragic context of the war in Ukraine, and to the war as an enlarged tragic state of us, of humanity. There is no need to elaborate on the long-term drama of the COVID 19 pandemic state. But all this could raise the level of our understanding/explanation for the necessity of peace on the scale of our planet and of (pre)internalizing operative actions in the face and in the depth of the tragedies and dramas of our humanity. Thus,

it seems that a possible understanding of the need for peace could be encompassed by the prior involvement of the Generosity—Creativity—Solidarity triad. The project aims to answer the question: Does the Generosity—Creativity—Solidarity triad matter on contemporary energy security inquiries?”

All these communications generated great interest of the participants, wide debates, and many proposals for new actions.

*Elena HELEREA,
Professor at Transylvania University of Brasov,
President of Brasov Subsidiary of CRIFST
of Romanian Academy
Alla LYTUVYNKO,
Dsc (History), leading researcher,
Dobrov Institute for Scientific and Technological Potential
and Science History Studies
of the National Academy of Sciences of Ukraine*