EDITORIAL

Global challenges and scientific research goals

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24.08.2022, Warsaw, Poland

Dear colleagues!

We happen to live in a historical period when large-scale changes in the global system with unpredictable but significant political and economic consequences are taking place in front of our eyes. Europe is situated at the centre of a political and socio-economic crisis that has exacerbated the key contradictions of long-term development, deepening conflict between society and nature. The key concepts of the civilized world – the principles of democracy, the rule of law and cultural values – are under threat. The Russian military machine is blackmailing the world with a nuclear disaster, causing large-scale pollution of the natural environment and deliberately destroying infrastructure facilities, and the social and humanitarian spheres of my country. Access to energy resources, water and food products is becoming the means of pressure. Climate change has become a problem of particular sharpness.

Ukraine found itself at the centre of the struggle for the values of the civilized world, for the ideas embedded in the principles of sustainable development, the rule of law and democracy. The importance of moral values and the role of the scientific community in shaping a new agenda in these extremely difficult conditions will be discussed. I want to share my thoughts with my colleagues and call for unity and support of scientific research that should shape a new agenda aiming at achieving the global Sustainable Development Goals (SDG) and the European Partnership strategy.

Our geopolitical goals are formed under the influence of gas and nuclear blackmail from the country-aggressor. The strategy of European countries should be focused on scientific research that can ensure the fastest transition to renewable energy sources and mitigate the climate change problem. The global climate change trend is one of the most urgent ones with a long-term negative impact on the population, environment and the economy. This multidisciplinary research has a complex character. Energy-efficient technologies are a key area of mitigating the global climate change on land resources, agriculture, forestry, water resources, energy, infrastructure, biodiversity, public health and emergencies.

Energy efficiency has a priority among climate change adaptation measures. The key issue is the need to rid Europe of energy dependence on Russia. In the coming decades, the energy industry will have to solve a double task – to radically reduce the carbon footprint and at the same time increase the reliability and sustainability of the energy supply. Climate change adaptation measures in the energy sector involve assessing the impact of climate change on the energy sector and modelling future energy demand.

The SDG-7 "Affordable and clean energy" is related to the SDG-9 "Industry, innovation and infrastructure". More than half of the world's population lives in cities, so research on public transport and renewable energy sources as well as the development of new industries, information and communication technologies are becoming increasingly important. Technological progress is also important for finding optimal solutions for economic and environmental problems, in particular, improving the efficiency of energy use. Scientific research and innovation in the field of energy-efficient industries are important factors contributing to sustainable development research on public transport and renewable energy sources; the development of new industries, information and communication technologies are becoming increasingly important. Technological progress is also important for finding optimal solutions for economic and environmental problems, in particular, improving the efficiency of energy use. Scientific research and innovation in the field of energy-efficient industries are important factors contributing to sustainable development.

Given the relevance of new threats associated with climate change, it is necessary to increase the awareness

of practitioners on the best available technologies. It means that anthropogenic pressure is undoubtedly the dominant factor. My deep conviction is that any "burning" technology is linked to the energy sector and climate change issues, similar to the statement "there is no waste-free technology". Any technological process such as mining, transportation, enrichment of raw materials, recycling of secondary materials, and even so-called "environmentally clean technologies" convey the threat of environmental pollution.

Nature has no protection against millions of artificial substances produced by the industry. However, the reverse process will inevitably lead to ecological "boomerangs", the nature of which and extent are difficult to assess. Therefore, two more topics – preservation of biodiversity and waste management – should be relevant areas of research.

Last, but not least, I would like to emphasize the importance of SDG-17 "Partnership for sustainable development" among the energy-related goals. Today, the world is more interconnected than ever before. The war in the very centre of Europe opened Pandora's box and caused a wound the size of the territory of Ukraine, the largest country in Europe. This wound is another hitherto unseen and unfathomable environmental challenge that will have to be overcome by joint efforts in the post-war period. We can already see that the damage caused exceeds the scale of the Second World War in the number of forced refugees, broken military equipment, destroyed infrastructure facilities, smashed landscapes, and mined territories and water areas.

We appreciate the willingness of European countries to participate in the reconstruction of our country while understanding that the lion's share of this work will fall on the next generation. Technological breakthroughs and the transfer of available renewable technologies are other challenges of today. Improving access to technology and knowledge is an important means of sharing ideas and developing innovation. Among the millions of my compatriots who were forced to leave their homes, hundreds of Ukrainian scientists continue to work in scientific and educational institutions in Poland, Lithuania, Estonia, Sweden, Denmark, the Netherlands, Germany, Italy and other EU countries. In this unity, we feel more than ever the corporate spirit of the scientific intelligentsia, we appreciate the support of the governments of the countries of the European Community. Unity in achieving strategic goals, forming a new vision of political alliances, security and further development, is precisely the mission of the scientific community. Together, we will overcome existing barriers and set a new agenda for the 21st century.

On behalf of the editorial board, I would like to emphasize that the policy of EREM, as an international journal, is built on the principles of partnership, promoting interaction between industry and academic circles, and providing authoritative support for research papers on sustainable development policy. Our goal is to promote the transformation of public consciousness, and the introduction of new effective technologies, as well as to form the foundation for the training of the young generation of researchers in the new geopolitical realities. Thematic research in the field of interdisciplinary sciences and the best available technologies for industry provide a wide opportunity for communication and information exchange in a multinational space. EREM aims to become a reliable, world-renowned source of information for researchers, industry and the global community. I sincerely invite you to cooperate.

Thank you.