

President of the United States Donald Trump said on June 1, 2017 that the United States is planning to withdraw from the Paris Climate Agreement. Trump listed the compelling reasons for withdrawing from the Agreement. According to the head of state, the treaty redistributes American wealth to other countries, and the implementation of the agreement could result in the country losing 2,7 million jobs by 2025. In addition, by 2040 the losses of individual industries of the country will increase from 12 % to 86 %. The GDP losses by this period are estimated at 3 trillion dollars. The president also stressed that for other major industrial countries like China and India, the terms of the agreement do not envisage such restrictions.

To date, the Trump solution is assessed in different ways by the world community. Companions-party members, leaders of both chambers of the US Congress supported Trump. Some analysts and journalists reacted positively to this decision. So, Luke Kemp, a lecturer at the Department of International Relations and Environmental Policy of the Australian National University, a professor at a number of European universities, regularly taking part in international climate negotiations, believes that there will be less harm from the USA withdrawal from the Treaty than if they stayed in it. If the USA remained in the agreement, they could use the consensual voting system that has been used by the United Nations in recent decades. This voting system is characterized by a way of coordinating the positions of the participating states without holding a vote and in the absence of formal objections to the decision in general. This means that solutions are being developed that all the participants in the conference can agree on. Thus, the USA could even insist on the suspension and overload of negotiations, demanding amendments to the Paris Agreement.

At the same time, many politicians of the country categorically disagree with Trump's decision: Democrats in the Senate and the USA Congress, as well as former Presidents Bill Clinton and Barack Obama, criticized Trump's decision. Thus, according to the UN, 17,9 % of the world's anthropogenic emissions of greenhouse gases are currently in the USA. One of the prominent Western experts in the field of global environmental policy, Jonathan Pickering acknowledges that both China and India plan to adhere to the Agreement, regardless of what the USA will do. However, Jonathan believes that it is not certain that the USA withdrawal from the Agreement will inspire China and India to do more than they are doing now. Also, the USA withdrawal from the Paris Agreement will weaken the financing of weak and vulnerable countries, especially African countries, parts of Asian and some South American countries. Moreover, the withdrawal from the USA agreement can also demotivate other countries. The decision of the American leader could encourage Russia to take similar actions, which is a big risk for the ecological well-being of Eurasia, as Russia is the fifth largest source of harmful emissions in the world. Russia does not plan to ratify the Paris Agreement until at least 2019. Also, there are other countries whose position can be affected by the USA decision. They are Saudi Arabia and the Philippines (who ratified the agreement), as well as Iran and Turkey (who did not). Therefore, the risk of the "domino" effect is a real problem for the world's ecological well-being.

Despite the fact that the USA plans to withdraw from the Paris Climate Agreement, Trump assured the world community that the USA will continue to implement environmental protection programs, but did not specify which ones and how. Moreover, the American leader did not indicate how much money is planned to be spent for these purposes. The question of whether the global climate policy will be more effective if one of the world's largest countries, including those on greenhouse gas emissions, leaves the Paris Agreement and what the environmental and economic consequences for the weak and vulnerable countries remain today is one of the most important for the world community.

## **DATABASE OF INTEGRATED INFORMATION SYSTEM FOR ANALYSIS OF POTENTIAL OF RENEWABLE ENERGY SOURCES**

---

**E. Maslovskaya<sup>1</sup>, B. Tonkonogov<sup>2</sup>**

*<sup>1</sup>Belarusian National Technical University  
Minsk, Republic of Belarus*

*<sup>2</sup>Belarusian State University, ISEI BSU,  
Minsk, Republic of Belarus  
zhenya\_masl@mail.ru*

Some characteristics and features of database of integrated information system for analysis of potential of renewable energy sources are considered, that will allow to analyze the energy potential of certain types of renewable energy sources and the economic efficiency of the decisions taken to use them, and will also be an information source on the technical characteristics of various renewable energy equipment.

*Keywords:* database, integrated information system, analysis of potential, renewable energy sources.

The development of information systems in the field of renewable energy is currently being given great attention in the countries of the far and near abroad. In particular, in the USA, many developments in this direction have been carried out by the National Renewable Energy Laboratory – with the use of geographic information system technologies databases of renewable resources of the country's states have been created and models and software tools for analyzing of the efficiency of renewable energy sources have been developed (HOMER, Interactive mapping tools, REFlex and others). Similar databases with different volumes of content have been created in other countries: China, Japan, Denmark and Latvia. There are also reports of the beginning of such developments in the Russian Federation and Ukraine. Proceeding from the above, the development of such systems is an actual scientific and practical task, the solution of which will create conditions for expanding of the use of renewable energy sources in the Republic of Belarus and improving the energy security of our country.

The architecture of the integrated information system for analysis of potential of renewable energy sources developed at the Belarusian National Technical University is flexible and open for expansion and implementation of additional functionality, in particular the development of special algorithms and software modules for interaction with the external database. A special logical level of access to information stored in this database has been created for use by means of the software user interface.

The general purpose of the database within the specified system is to implement certain remote calculations and store information. To perform both analytical calculations based on information stored in the database, and directly providing the data itself, the program code that performs the above operations can be placed both on the server side and on the client one. However, considering that the information system being created is a network resource, the program code that operates with data must be placed as close as possible to the processed data itself, that allows to avoid sending a lot of commands across the network and, in particular, the need to transfer large amounts of data from the client to the server. To implement the database, Microsoft SQL Server database management system was used, which provides the ability to host server-side code as stored procedures, user functions and views.

Basic information to be stored in the database is associated with:

- renewable energy equipment with reference to spatial coordinates (solar batteries, solar collectors, wind power plants, biogas plants, boilers and hydroelectric power stations);
- energy potential and efficiency of renewable energy sources linked to regions (solar radiation, wind flow, biogas, biomass and water resources);
- possible locations for the installation of renewable energy equipment (territorial-economic units of different levels).

Thus, the creation of a database as part of an integrated information system for analysis of potential of renewable energy sources will make it possible to analyze the energy potential of certain types of renewable energy sources and the economic efficiency of the decisions taken to use them, and will also be an information source on the technical and operational characteristics of various renewable energy equipment. Practical application of this development can also be found if to integrate it into the information system of the State cadastre of renewable energy sources.

---

## **V. I. VERNADSKY'S IDEA OF THE NOOSPHERE AS A WAY OF FORMING POSITIVE SPIRITUAL AND SOCIAL VALUES IN SOCIETY**

---

**A. Rebeeva, A. Korotkevich**

*Belarusian State University, ISEI BSU,  
Minsk, Republic of Belarus  
rebeeva@mail.ru*

There is nothing stronger than thirst for knowledge, the power of doubt... And this search, this aspiration is a basis of any scientific activity... you look for the truths, and feel that I can die, I can burn down, looking for it, but it is important to me to find and if not to find, then to seek to find it, this truth, it is kind of bitter, illusive and nasty I was! (V. I. Vernadsky).

*Keywords:* noosphere, spiritual and social values, society.

In the conditions of modern society, it becomes especially necessary to study the various phenomena of human existence. At the present stage of the development of science and technology, the question remains open: "What is a man?" And it is impossible to answer it with the help of only one philosophy without involving natural sciences and vice versa.