

## ECONOMIC DEVELOPMENT AND ENERGY SECURITY OF RUSSIA IN CONDITIONS OF GLOBAL TRANSFORMATION OF WORLD ECONOMIC SYSTEM

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**Abstract:** The article considers the influence of new world development trends on the country's energy security. The subject of analysis is the problem of transition to new renewable energy sources in the context of global transformation of the world economic system. An attempt is made to generalize new trends, and then to predict the further course of events to establish a new world order and identify new geopolitical centers of power. We consider the threats of power fail interrupt, and based on this, make paradoxical conclusions about the opportunities and prospects for further economic development. The article shows that the leaders of the new world order of the USA and China are trying to overcome the crisis of expanded reproduction by moving to the sixth technological order. Russia, however, stands apart from the prevailing trends, relying on the old raw, largely hydrocarbon economy, which is leaving the stage, and which will not allow it taking its rightful place in the new world economic system. The article authors see the key to success in creation of the "distributed energy" as well.

**Key words:** economic development, energy security, renewable energy, global transformation, global economy

### 1 Introduction

In October 2018, the Anniversary XV Annual Meeting of the Valdai Discussion Club was held in Sochi. The club's meeting this year was opened by a report of the forum's organizers, entitled "Living in a Crumbling World," which set the tone for all the discussions that unfolded on this site. One of the main thoughts of the report authors was the opinion that "the previous order no longer exists. There is nothing new and it's not even clear what it should be like". And further, "the construction of the world building stands, but it crumbles before our eyes, turning into a deformable frame, the skeleton of a once solid structure" (Life in a Crumbling World. Annual Report of Valdai Club). The report authors give accurate characteristics of the reality that exists today, someone talks about the transit world, but the forum did not say where we are going and where there is a stop. For our part, we saw this lighthouse in the writings of the famous American economist Jeremy Rifkin.

### 2 Methods

In 2011, it was published the book of Jeremy Rifkin "The Third Industrial Revolution: How Horizontal Interactions Change Energy, Economy and the World as a Whole". In it, J. Rifkin identified five principles or pillars on which a new development strategy should develop: "1) transition to renewable energy sources; 2) transformation of all buildings on each continent into mini-power plants that generate electricity in the place of its consumption; 3) use of hydrogen and other technologies in each building to accumulate periodically generated energy; 4) use of the Internet technology to turn the energy system of each continent into an intelligent electric grid that provides energy distribution, similar to the distribution of information on the Internet (millions of buildings that generate small amounts of energy can transfer surpluses to the electricity network and share them with other continental consumers); 5) transfer of the fleet to electric cars with recharge from the network or fuel cell vehicles that can receive energy from the intellectual continental electric grid and transfer surpluses to the network" (Rifkin, 2014).

From our point of view, the sequence of numbering points is of great importance. It is impossible, for example, to develop information technology and create electric cars, "without turning all the buildings into mini-power plants". This also applies to the development of the digital economy, which is now spending huge amounts of money. The more administrative, financial and other

functions will be converted to digital format, the more chaos will be when a sniper hits the "heart of a hydroelectric power station". Risks of the infrastructure termination are increasing many times. Therefore, it is important to maintain balance and consistency. Jeremy Rifkin himself this well and called the developing countries the leaders of the new industrial revolution. "In fact, developing countries have a great advantage over developed countries, which, strangely enough, lies in their lack of infrastructure" (Rifkin, 2014).

According to the leading experts, the transition to the era of renewable energy will take about half a century. We believe that the process will develop much faster, and now we see numerous signs of the end of the hydrocarbon era and the onset of a new post-carbon era. In our opinion, one of the main signs is the sale of oil from strategic reserves that has begun in the USA. This did not happen even in the most difficult times, and now the strategic reserve has been opened. Perhaps it has lost its relevance, and we are close to ending the era of hydrocarbons.

The USA can safely be called the leader in the transition to a new energy sector, where they even announce the creation of a working model by 2024. In February 2018, Lockheed Martin managed to obtain a patent for a compact fusion reactor, which "can fit in a truck's body," with a capacity of 100 MW. This is enough to provide electricity to a city with a population of 80 thousand people. Some well-known experts in this field are very skeptical about this idea, but we remember that something similar has happened with the production of shale oil.

We observe similar trends in China, which is the largest resource consumer. The Communist Party of this country even fixed the course towards the construction of an "ecological civilization" in its constitution. This is reflected not only in the legislative actions, but also in the plans of the thirteenth five-year plan (2016-2020). China is becoming a leader in the field of alternative energy in front of our eyes. By the middle of the century, the country should receive eighty percent of its energy from renewable sources.

But the main issue for renewable energy is the price. Although the cost of clean (solar and wind) energy is decreasing every year, it loses competition to the oil and gas sector, especially when the oil prices remain low. But it was not always so. In 2008, oil quotes reached almost 150 US dollars per barrel. And this gave a powerful impetus to the transition to alternative energy.

In our opinion, such a scenario will be repeated again soon. We can even try to predict the actions of various players. In order for the prices to again steadily exceed 150 US dollars per barrel, we need geopolitical tensions and cessation of oil supplies from the main exporting countries. We include, first of all, Saudi Arabia and Russia here, Iraq and Iran can also be added, although their export potential is much lower. Also, the USA carries high risks for oil as the oil price is formed in US dollars on exchanges. It is no accident that the Shanghai International Energy Exchange, which trades in yuan futures, was created in China.

But the situation swaying systematically continues. The US Congress is drafting the bill called No Oil Producing and Exporting Cartels Act (NOPEC), which gives the US court the right to consider antitrust lawsuits against OPEC member countries and other countries that are suspected of a cartel conspiracy. Although US Secretary of Energy, Rick Perry, previously warned that such actions could stimulate a sharp rise in oil prices.

Saudi Arabia reacted quite sharply to this initiative and threatened Washington to abandon the US dollar in payments for oil supplies, if the US administration continues to prepare an anti-cartel bill. The then their statements were disavowed, saying that this information was incorrect and did not reflect the position of Saudi Arabia on this issue.

We have no doubt that the USA deliberately destroy the existing world order, and they will strive to manage these changes in their favor. But we will find out later whether they will succeed or not.

According to media reports, the residents of 21 of 23 states of Venezuela were left without energy in March 2019. The shutdown methods were different: from a cyberattack, a fire, to the actions of a sniper that damaged the "heart of a hydroelectric power station". Venezuelan President Nicolas Maduro accused "American imperialism" of what happened, but the US authorities rejected their involvement in the massive power cutoffs.

In this situation, we see the use of new weapons in the form of power cutoffs. The military has a term - an electromagnetic threat. Thus, power cutoff is a special case of this electromagnetic threat. In fact, we are witnessing hybrid warfare using new means. This is not to say that such a threat was unknown. Power cutoffs have existed before. If we recall, there was a cascade cutoff of about 100 power plants in the USA in 2003. About 40 million people in the USA and 10 million more in Canada were left without light. The reasons were called tall trees that touched the power lines, which led to a short circuit. But such an example has nothing to do with overthrowing a legitimate government or putting pressure on it in contrast to the interruption in the electricity supply to the Crimea, which was supposed to be carried out by the united electric networks of Ukraine. Pressure was exerted on Russia, but the Russian government coped with the difficulties by introducing additional capacities, which made it possible to ensure the energy security of Crimea. It is a completely different matter when the power cutoff is used to replace unfavorable regimes of power, as in Venezuela.

If we return to power cutoff, then, according to media reports, over 33 thousand people were left without electricity in the state of Florida, where Donald Trump has a residence, in March 2019. The reason was the explosion at the power plant. Some agencies point to lightning, others do not. The reason is clear. If this is not a lightning strike, then perhaps the answer is Venezuela. Then we can talk about the first conflict in the new electromagnetic theater of military operations.

This is how the authors of the report "Life in a Crumbling World" interpret future conflicts: "But, speaking of military affairs, the ministries of defense of the leading countries of the world are still preparing for a potential conflict of the future. Although, the purpose of the war is changed: from destroying the enemy's armed forces and production means to neutralizing its modern digital infrastructure, dazzling and stunning its digital sensors and control systems. The task is technologically pushes the enemy back to the XX century" (Life in a Crumbling World. Annual Report of Valdai Club). Here we are not dealing with the enemy drop in XX, but even further into XIX century.

The question is why these global changes are needed. And here we have a whole range of different opinions. Jeremy Rifkin says that we are entering the era of "distributed capitalism" and cooperation. According to academician S. Glazyev, a new integral management model is emerging that combines planning with market self-organization. Also, the academician warned that such serious transformations do not occur without conflict, so the path to a new world economy will go "through world shocks, a world hybrid war" (Glazyev, 2019). Professor S. Gubanov sees the future as a neo-industrial paradigm and vertical integration of labor and property (Gubanov, 2012). In the works of many domestic and foreign scientists, the influence of the new industrial revolution on the future of the labor market and the development of the world economy, the determination of the place and role of countries in the global change of technological structure, the search for new sources of economic growth are considered (Kuznetsov et al., 2015; Safiullin et al., 2013; Askhatova et al., 2013; Alpatova et al., 2014; Maksyutina et al., 2018). There are also opinions that since we are in a hybrid war, then the economy should have a mobilization character.

We also do not expect a big war due to the senselessness of such actions. It is obvious to everyone that there will be no large-scale

nuclear strike. No one needs the consequences of a nuclear winter. But there will be local conflicts. There will be the so-called "hybrid wars" using new types of weapons, in particular, power cutoffs. And one shall be prepared for this. Moreover, such actions will stimulate the transition to a new "distributed" energy.

### 3 Results and Discussion

In the context of the global transformation of the world economic system, the main power centers will be the USA and China. But the hegemony of the USA will be significantly narrowed and limited to the American continent. The European Union will be forced to pursue its own policy and significantly lag behind the USA in transforming the infrastructure that will enable the transition to the fourth industrial revolution, according to the classification of the chairman of the World Economic Forum in Davos, Klaus Schwab (Schwab, 2017).

Already now we see how Germany is forced to transfer its funds (in the form of fines) for the development of US infrastructure. And claims are increasing every day. If earlier the Volkswagen concern was the target of attacks, now there are claims to the entire German auto industry. In April 2019, the European Commission announced a conspiracy between German car manufacturers and a violation of antitrust laws. We are even afraid to imagine how much can it result in. The German economy is rapidly slowing, gradually sliding into a recession. It seems that the leadership of the German automobile industry comes to the end, and the entire European Union passes to the background with it. In this situation, the EU can be imaginatively presented as a US donor. It is no coincidence that Great Britain leaves the European Union by declaring Brexit; it appears that the pressure on the EU countries will only increase.

In the east, the undisputed leader is China, which is trying to build relationships with other countries for itself. The main tool of this approach is the Shanghai Cooperation Organization and the project "One Belt, One Way", which offers the construction of large-scale "economic corridors".

Russia is calm about this initiative, as it is interested in increasing cargo turnover through its territory. It also offers energy cooperation in the form of an "Asian Super Ring". The project should include Russia, Mongolia, China, Korea and Japan. The priority in the project will be aimed at the supply of clean electricity generated from renewable energy sources and hydroelectric power plants.

Such geopolitical integration will pave the way for strengthening political relations and resolving differences. But not the project is in development stage. Perhaps the right moment has not come or relevance is lost due to the future prospects of "distributed energy".

Particularly curious in this region is the situation with Japan, which, we believe, will come out of the influence of the USA. Unlike Germany, Japan is not under pressure now, which occurred ten years ago during the scandal with the Toyota concern. These events entailed significant financial and image costs. Toyota executives were forced to give explanations in the US Congress, which ultimately led to a fine of 1.2 billion US dollar and the loss of concern leadership in the vehicle production.

### 4 Summary

Summing up, we can draw definite and in some sense paradoxical conclusions about the further economic development of Russia in the transformation conditions of the world economic system.

The main thing we wanted to pay attention to was the use of power cutoffs to replace unwanted power regimes. The danger and at the same time the effectiveness of these actions is in the fact that it is not clear who has committed them. It is not clear where are the goals and decision centers for which a retaliation strike is possible. Even if the attackers are identified, for example, this is a small terrorist group that has been eliminated, the

possible damage from their actions can be calculated in huge numbers. We draw attention to the fact that we can cope with new challenges and threats only by developing a new "distributed energy".

Based on these considerations, we can draw the following conclusion, which relates to the development of the digital economy. The more administrative, financial and other functions will be converted to digital format, the more chaos will be during a power cutoff. Risks of the infrastructure termination are increasing many times. We are not against the development of the digital economy, but the increased risks tell us that we need to suspend or duplicate the functions of the conventional and digital formats. A similar measure shall act until the energy becomes "distributed". Imbalances in this matter can lead to grave consequences.

In our opinion, another important conclusion is the vulnerability of urban centers, where a large part of the population, capital, economic and political power is concentrated. It seems to us more correct from the point of view of "distributed energy" and distributed development of human settlements. An example is the settlements in the USA, the so-called "one-story America".

### 5 Conclusions

The leaders of the new world order of the USA and China are trying to overcome the crisis of expanded reproduction by moving to the sixth technological order. Russia, however, stands apart from the prevailing trends, relying on the old raw, largely hydrocarbon economy, which is leaving the stage, and which will not allow it taking its rightful place in the new world economic system. We see the key to success in creation of the "distributed energy" as well.

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### Literature:

1. Life in a Crumbling World.: Annual Report of Valdai Club <http://en.valdaiclub.com/files/22596/>
2. Rifkin, J.: Third Industrial Revolution: How Horizontal Interactions Change Energy, Economy and the World as a Whole - M.: Alpina Non-Fiction, 2014. 410 p.
3. Glazyev, S. Yu.: Priorities for the accelerated development of the Russian economy in a changing technological environment. *Economic Revival of Russia*. 2019. No. 2 (60) - P. 12-16.
4. Gubanov, S. S.: Sovereign breakthrough. Neo-industrialization of Russia and vertical integration - M.: Knizhny Mir, 2012. 224 p.
5. Kuznetsov, B., Gimpelson, V. E., Yakovlev, A. A.: Industrialization in the Russian Federation, in: Structural Change and Industrial Development in the BRICS. NY : Oxford University Press, 2015. Ch. 6. P. 138-161.
6. Safiullin, M. R., Samigullin, I. G. Safiulli, L. N.: Model of Management of Competitiveness of a Machine-building Complex. *World Applied Sciences Journal*, 2013, 27(13): 212-216.
7. Askhatova, L. I., Fatkhiev, A. M. Safiullin L. N. Safiullina, A. M.: Competitive Strategies Formation in High Technology Enterprise. *World Applied Sciences Journal*, 2013, 27(13): 20-23.
8. Alpatova, E. S., Makarov, A. N., Maksutina, E. V., Nazmeev E. F.: Modern labor market in Russia and its regulation. *Life Science Journal*. 2014. V. 11. № 6s. P. 350-353.
9. Maksyutina, E. V., Makarov, A. N., Sokolova, I. A., Golovkin, A. V., Galiakberova A.A.: Neoindustrial paradigm of Russia based on fourth industrial revolution technologies and human capital development. *Advances in Economics, Business and Management Research, International Conference Economy in the Modern World (ICEMW 2018): ATLANTIS PRESS, 2018, volume 61, - C.364-368*
10. Schwab, K.: The fourth industrial revolution: translation from English. - Moscow: Publishing House "E", 2017. 208 p.

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