УДК 620.91
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RENEWABLE ENERGY IN THE US AND CHINA

A careful analysis of the level of global primary energy consumption allows us to conclude that there are multidirectional trends in economically developed countries and in the rest of the world. So, in the countries that are members of the Organization for Economic Co-operation and Development primary energy consumption in the period from 2005 to 2015 decreased by 3% (in the EU - by 10%). The rest of the world saw an increase in energy consumption by 31%.

World energy revolution is changing the traditional relationship between economic growth and increased energy consumption. Gradually, the main trend in the global energy industry is a decrease in energy intensity and an increase in the use of renewable energy sources (RES). How this happens in practice can be considered in the examples of the USA and China. In the twentieth century, the world entered the era of oil under the leadership of the United States, which became its largest consumer. Until the mid-seventies, the US was also an exporter of oil. Because of the energy crisis in 1975, the United States introduced a ban on the sale of oil abroad. In the following decades, the States will become the largest importer of oil: in 2005, foreign purchases accounted for 67% of total consumption. Such dependence on energy imports created serious problems for the country in terms of energy security. The solution to the problem of volatility in the United States is carried out in two main directions: increasing hydrocarbon production and developing renewable energy. Moreover, the American state and business managed in a short time to achieve impressive results that led to revolutionary changes in the global energy field. The USA became the first in the world who managed to overcome the resource constraint with the help of the latest technologies - to extract previously inaccessible oil and gas from shale rocks, which sharply expanded the offer in this energy-deficient country until recently. Such measures stimulated fundraising in the development of renewable energy. Over the past decade, US investment in renewable energy amounted to about 375 billion dollars. Already in 2005, the United States took first place in the world in the number of electric wind installations, and in terms of RES consumption - second after the EU countries. In general, the consumption of renewable energy resources in the country for the period 2005-2015 increased by 3.5 times. In the US, the world's largest electricity market, wind and solar power are gradually becoming competitive with natural gas plants. The share of renewable energy in

electricity production in 2015 was 14%, which is comparable to the US nuclear industry.

China, unlike the US, does not have significant reserves of oil and gas, and at the expense of its own production provides only part of its needs. Therefore, the country has become one of the largest importers of hydrocarbon resources. At the same time, two-thirds of China's energy balance is coal, which is the largest source of emissions of carbon dioxide and other greenhouse gases. The leading role in the development of renewable energy in China belongs to a focused government policy that provides priority for renewable energy suppliers. A law was also adopted regarding renewable energy, the issue of buying clean electricity at preferential and full tariffs was resolved. Special funds have been created to finance development in the field of renewable energy, create new technologies, and conduct research. Medium and long-term programs for the priority development of wind energy, hydropower, waste management, solar energy and bioenergy were adopted. It took China only ten years to become a leader in global renewable energy. Its world share over this period has grown by almost two and amounted to 24%. This is followed by the EU - 17% and the United States - 11%. Even more impressive are the growth rates of wind and solar power. Over the past decade, Chinese wind energy has grown almost 57 times, its total capacity exceeded, for example, the volume of generation of all electricity in Ukraine last year.

Conclusion: Such trend will continue for the few coming decades. According to the forecasts by British Petroleum (BP) until 2035, global energy consumption will grow by 34%, while countries outside the ECO will provide 96% of the increase. Thus, global energy demand will continue to grow, but the main consumption of hydrocarbon energy sources will shift to developing countries, and the energy supply structure will change towards more environmentally friendly fuels.