

# THE OVERVIEW TRENDS OF RENEWABLE ENERGY SOURCES DEVELOPMENT IN UKRAINE AND IN THE WORLD

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**The aim of the work** was to carry out a comparative analysis of data about renewable energy sources development in Ukraine and in the world, as well as to determine the growth rates of the sector and the prospects for replacing fossil fuels by alternative sources.

**Results:** During the work, the materials of the International Energy Agency, the British company British Petroleum (BP), The International Renewable Energy Agency (IRENA), the State Statistics Service of Ukraine and the State Agency on Energy Efficiency Energy Saving of Ukraine (SAEE) were reviewed.

In 2016, world Total Primary Energy Supply (TPES) was 13761 Mtoe, of which 13,7%, or 1882 Mtoe (from 1819 Mtoe in 2015), was produced from renewable energy sources.

Renewable power (excluding hydro) grew by 14.1% in 2016, below the 10-year average, but the largest increment on record (53 Mtoe). In 2017 renewable power (not including hydro) grew by 17% or 69 Mtoe, higher than the 10-year average (16.2%) and the largest increment on record. The share of renewables in total power generation increased from 7.4% to 8.4% globally, and from 16.5% to 18.3% in Europe, a new high.

The forward progression can be seen in that 69,4 Mtoe (from 417,4 Mtoe in 2016 to 486,8 Mtoe in 2017) of the increase in primary energy consumption total world was provided by renewable energy. According to BP data in 2017 renewable energy consist 3,6% (486,8 Mtoe from 13511,2 Mtoe) of world primary energy consumption. For comparison, in Europe the annual growth rate of primary energy consumption which was provided by renewable energy - 17,6 Mtoe (from 144,2 Mtoe in 2016 to 161,8 Mtoe in 2017). In 2017 around 0,5% (0,4 Mtoe from 81,9 Mtoe) of primary energy consumption of Ukraine was provided by renewable energy.

Since 1990, renewable energy sources have grown at an average annual rate of 2%, which is slightly higher than the growth rate of world TPES 1,7%. Growth has been especially high for solar photovoltaic and wind power, which grew at average annual rates of 37,3% and 23,6%, respectively, from very low bases in 1990. Biogases had the third highest growth rate at 12,3%, followed by solar thermal (11,5%) and liquid biofuels (10%).

**Conclusions:** The share of non-fossil in 2017 is actually a little lower than it was 20 years ago, as the growth of renewables hasn't offset the declining share of nuclear. China, India and Other Asia accounting for almost half of the growth in global renewable power generation.