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Annotation

The research is dedicated to the collection, updating and assessment of prospects for hydrogen, especially green hydrogen production, its potential, economic, environmental benefits, as well as state of the art of renewable energy sources (RES) in Armenia. The progress in development of PV plants in Armenia, the characteristics of the world's leading solar PV panels, the capacity factors/efficiencies of power plants operating from RES in Armenia in 2022 were studied and appropriate data are presented. The total capacity of PV plants in 2022 was 408.1MW, of which 196.9 MW of industrial scales PV plants.

The international experience in the area of green hydrogen production was studied, including in the EU, CIS countries, where it is considered as one of the prospective options to reduce dependence on gas and oil imported from Russia and other fossil fuel rich countries and to reduce emissions of greenhouse gases and harmful gases. In 2021, the hydrogen demand in the world was 94 million tons. Less than 5% of total hydrogen production is produced using renewable and low-carbon energy sources (so called “green” hydrogen) through electrolysis. By now there no operational electrolyzers of industrial scales in Armenia. The research will be useful to experts, teachers and students involved in study and work in that area.

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