

Central Asia
Regional Workshop
Long-term capacity expansion planning
of renewables

March 2019
Astana, Kazakhstan



Agenda

- Uzbekistan overview
- Uzbekistan energy sector and smart systems
- Energy outlook and renewables



General Information

Area: 447 400 km²

Population: over 32 million

GDP: 48,8 bln USD (2018)

GDP growth: 5,1 %

Export: 14,3 bln USD (2018)

The main export items are services, gold, energy and oil products, textile products, ferrous and non-ferrous metals, food products, chemical products.



Uzbekistan is a landlocked country in Central Asia and comprising 12 provinces, one autonomous republic, and a capital city.

Uzbekistan is bordered by five landlocked countries: [Kazakhstan](#) to the north; [Kyrgyzstan](#) to the northeast; [Tajikistan](#) to the southeast; [Afghanistan](#) to the south; and [Turkmenistan](#) to the southwest.

Along with [Liechtenstein](#), it is one of the world's only two doubly landlocked countries.



Uzbekistan has significant untapped reserves of oil and gas: there are 194 deposits of hydrocarbons in Uzbekistan, including 98 condensate and natural gas deposits and 96 gas condensate deposits. The Uzbek national gas company, Uzbekneftegas, ranks 11th in the world in natural gas production with an annual output of 60 to 70 billion cubic meters.

The country has the largest uranium deposits (twelfth), the gold deposits (fourth), the copper deposits (tenth) in the world.



The largest corporations involved in Uzbekistan's energy sector are the China National Petroleum Corporation (CNPC), Petronas, the Korea National Oil Corporation, Gazprom, Lukoil, and Uzbekneftegas.

Energy consumption in our country is growing steadily, as in the world. If electricity in 2000 all segments of the domestic market collectively consumed 46,8 billion kWh, then by 2017 this figure had already increased over 23% this is 57,5 billion kWh and continued to grow in subsequent years.

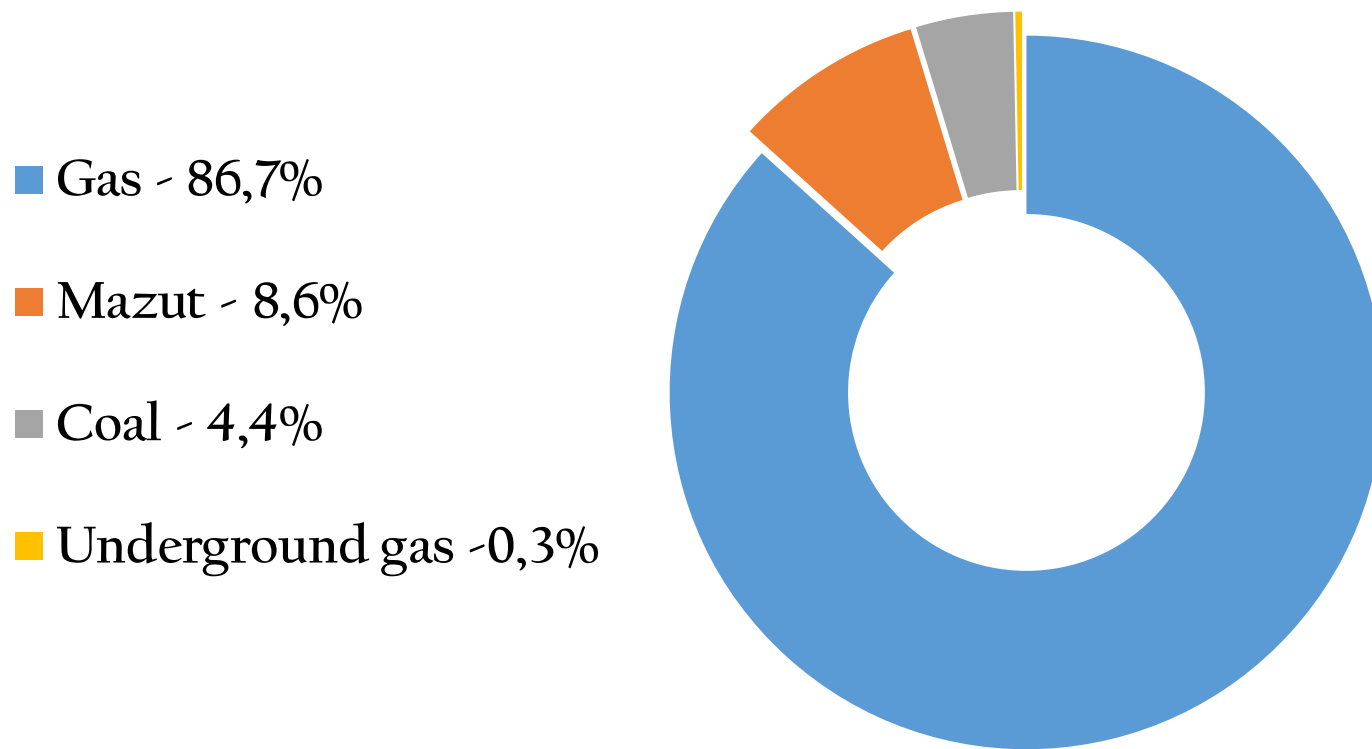


JSC "Uzbekenergo", being a specially authorized body in the field of electric power, provides centralized power supply to the economy and population of the republic, as well as heat supply to industrial and municipal consumers in several cities of the republic.

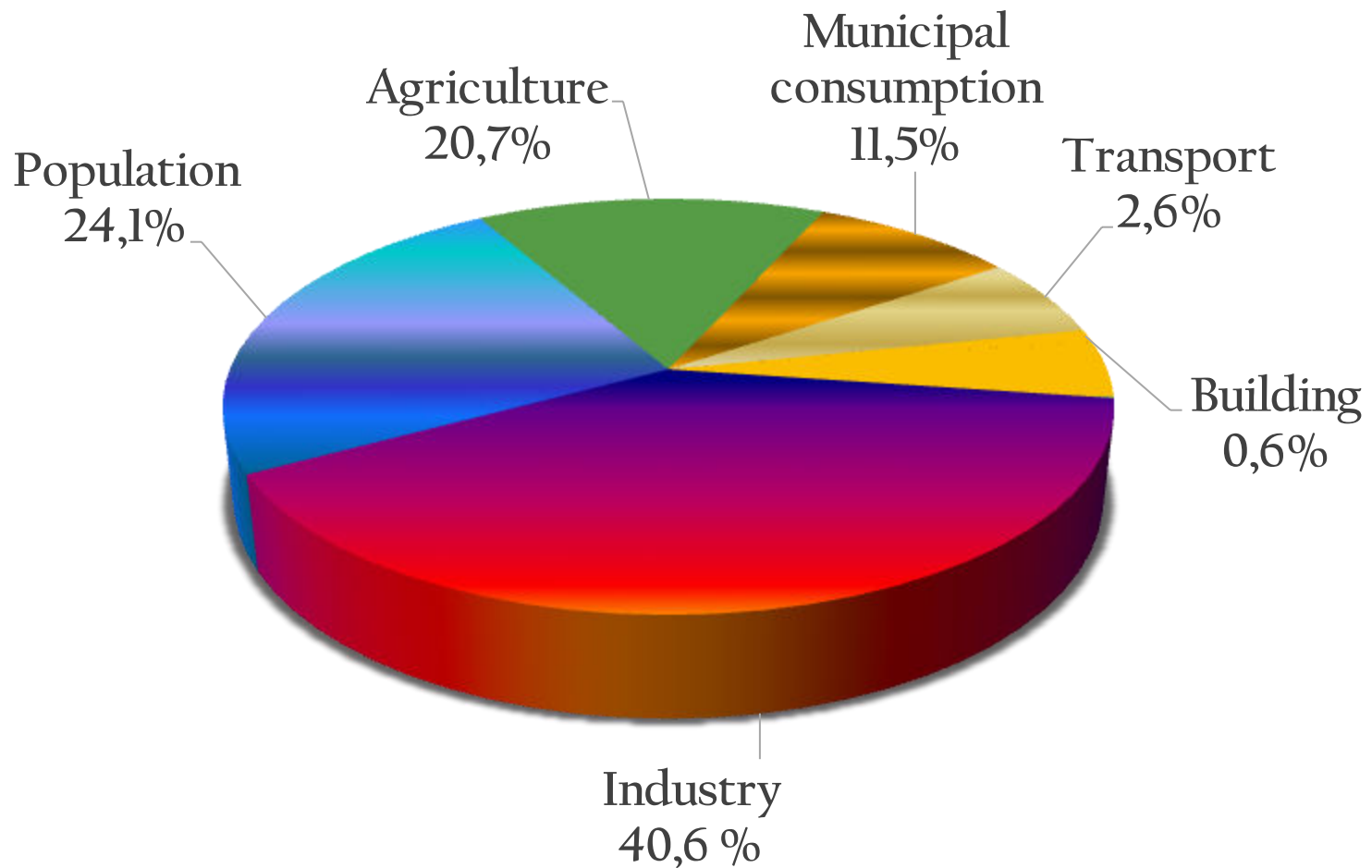
JSC "Uzbekenergo" includes 49 enterprises, including 36 joint-stock companies, 6 unitary enterprises, and 8 limited liability companies.



Structure of fuel consumption on electric power plants of JSC “Uzbekenergo”



Structure of electric energy consumption in different fields of economy



The population of Uzbekistan is growing rapidly. At the same time, energy consumption is growing due to the use of household electrical appliances by the population. Statistical data from Uzbekenergo show that if in 1990 the population accounted for 10.3% of the total electricity consumption, in 2018 it was over 24%. This is a significant increase.

Until 2030, the demand for electrical energy in Uzbekistan is expected to increase by up to 2 times (105 billion kWh), various options are being considered to provide consumers with uninterrupted and high-quality electrical energy.



Strategy of Uzbekistan for development of alternative energy

Nuclear Energy

In order to meet the growing needs of the population and the economy of the country in electricity, as well as to ensure sustainable energy supply by increasing generating capacity, diversity of the energy sector, peaceful use of nuclear energy and introducing advanced innovative technologies, the Agency for the Development of Nuclear Energy was established in 2018 (“Uzatom”).



Up to 2028 it is going to build plans to build two modern units of generation “3+” VVER-1200, with a total capacity of 2400 MW in Uzbekistan.

Construction site - Navoi region.

Saving natural gas - 3.7 billion cubic meters.

CO2 emissions - 3 million tons per year.

A draft law on the use of atomic energy for peaceful purposes is being prepared.



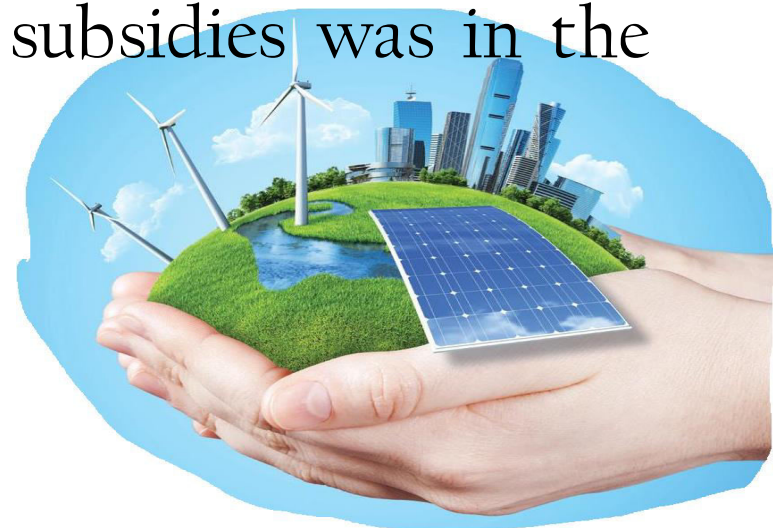
Strategy of Uzbekistan for development of alternative energy

Renewable energy sector

Combined with the desire of many countries to meet the challenges of enhancing energy security, reducing pollution and greenhouse gas emissions, the further spread of solar energy has good prospects. According to the IEA forecast, by 2040 electricity generation at solar power plants will increase by 9 times, providing 6.2% of electricity production in the world.



According to the IEA, the normalized cost of electricity (Levelized Energy Cost, LCOE), obtained at industrial (large) photovoltaic power plants, decreased by 65% in the period 2010-2015, closely approaching that of fossil fuels, even without taking into account subsidies. According to IEA estimates, in 2015, the LCOE of typical industrial photovoltaic stations without subsidies was in the range of \$ 100-195/MWh, and by 2021 it would drop to \$ 60-150/MWh.



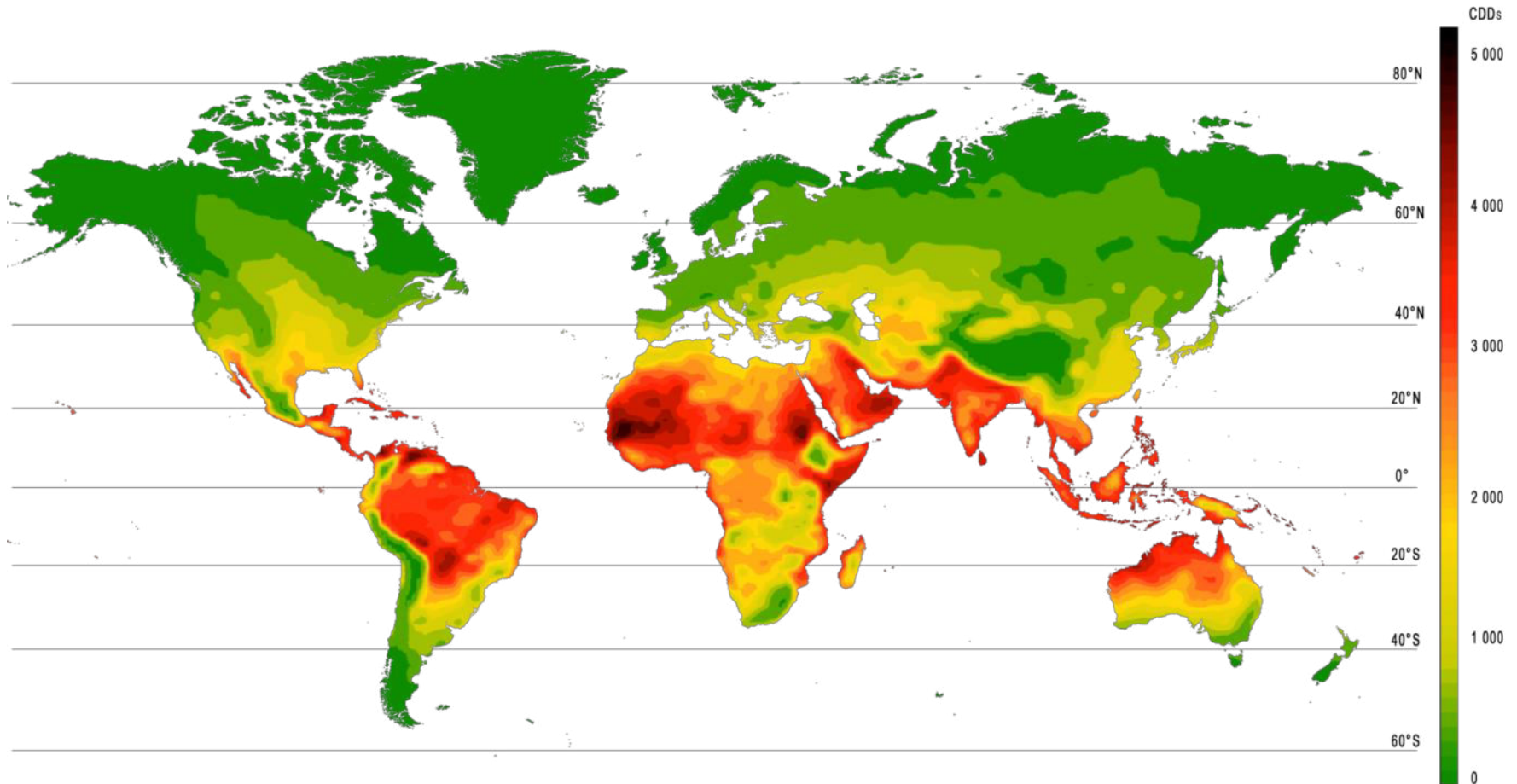
On the basis of the “road map” developed jointly with the Asian Development Bank, the technical assistance project UZBTA 8008, if appropriate measures are taken, then in 2030 the task of generating 6% of all electricity produced in Uzbekistan using the solar energy will be quite feasible, for which will require less than 0,1% of the country, which is approximately 88 km². In this regard, in this direction, concrete actions have been taken by the government to widely attract foreign investment and modern technologies.

<http://www.uzbekenergo.uz/ru/activities/tenders/current/stroitelstvo-solnechnoy-fotoelektricheskoy-stantsii-moshchnostyu-100-mvt-v-navoiyskoy-oblasti-respub/>

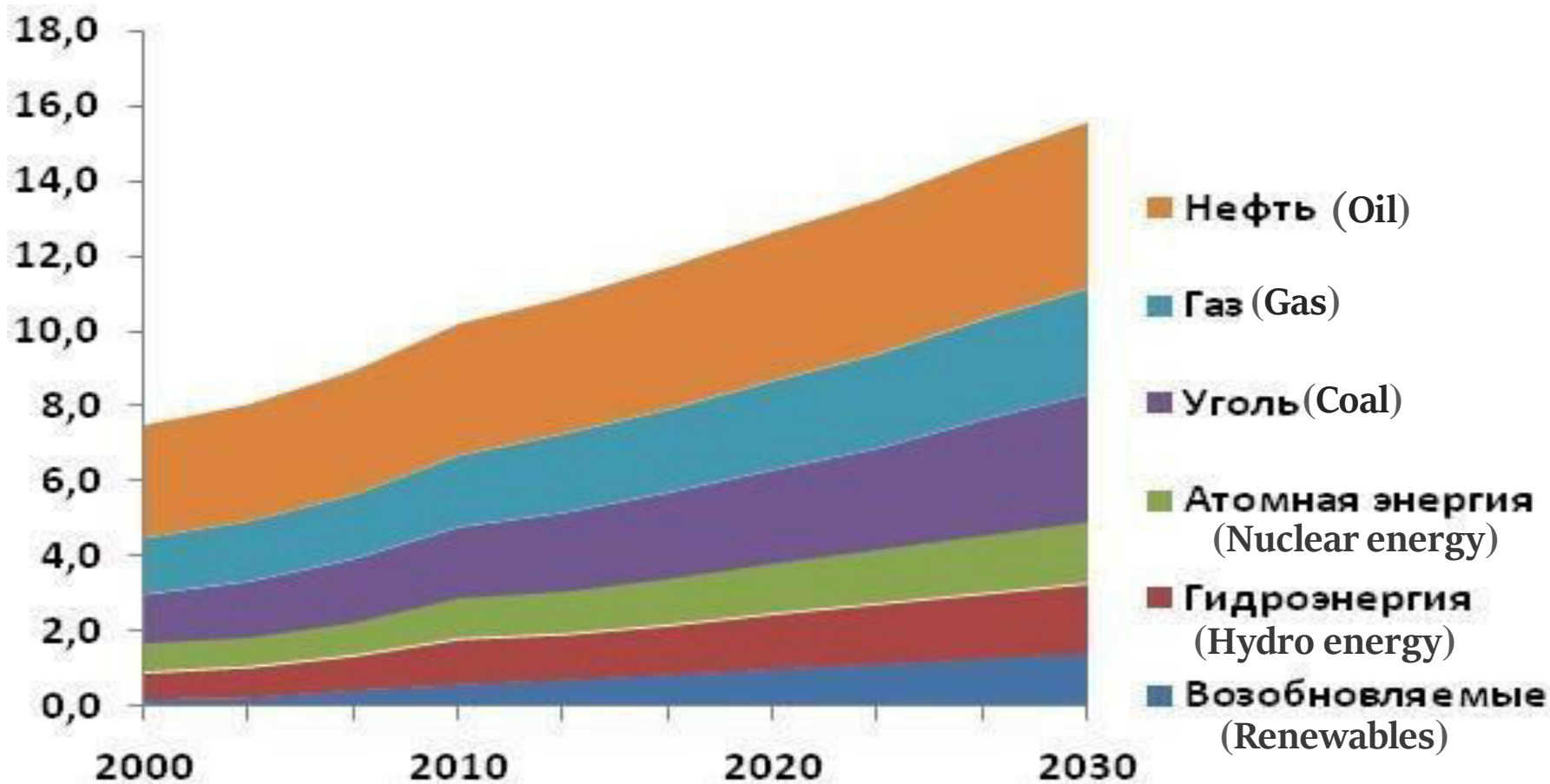


Solar Energy Development in Uzbekistan

Mean annual cooling degree days around the world, 2007-2017. There are about 300 sunny days a year in Uzbekistan.



Forecast of changes in the structure of world energy consumption (billion tons of oil equivalent)



Source: BP Energy Outlook 2030.



Thank you

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