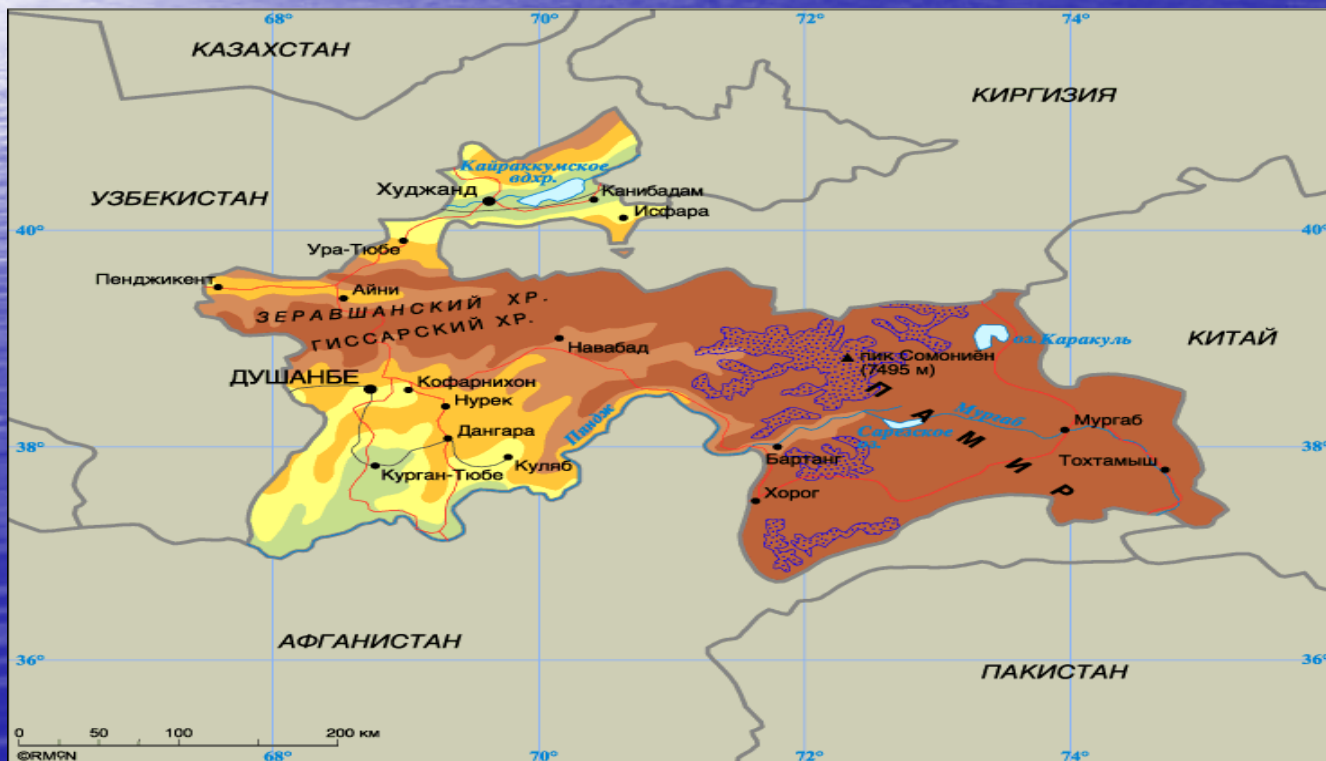


Republic of Tajikistan

Area: 143.1 thousand km²

Population: 8.0 million.

Density of the population:
52.4 person/km²



Capacity assessment

- Tajikistan has significant reserves of renewable energy resources.
- Hydropower is a major renewable energy resource in Tajikistan; its annual capacity is 527 billion kWh, which is significantly higher than the country's need for energy. Other renewable energy sources, such as solar and wind energy, biomass energy, and thermal springs can meet nearly 10% of the country's energy needs.

- Up to 10% of Tajikistan's population lives in mountainous areas, in the valleys of small rivers and streams. Non-conventional renewable energy sources are most promising here: energy of small rivers, solar, geothermal, water, wind and biomass energy.

It is particularly important that small watercourses are distributed evenly across the most area of Tajikistan and have vast capacity. Currently, priority projects in the area of renewable energy sources in the country are the construction of small hydropower plants located in close proximity to consumers for the avoidance of construction of expensive transmission lines.

Findings of preliminary surveys indicate that it is both technically and economically feasible to build more than 900 small hydropower plants with a capacity of 100 to 3000 kW on tributaries of rivers in the mountainous regions of the country.



In 2009, the Government of the Republic of Tajikistan adopted a program of construction of small hydropower plants at the expense of domestic and foreign investors for the period of 2009-2020.

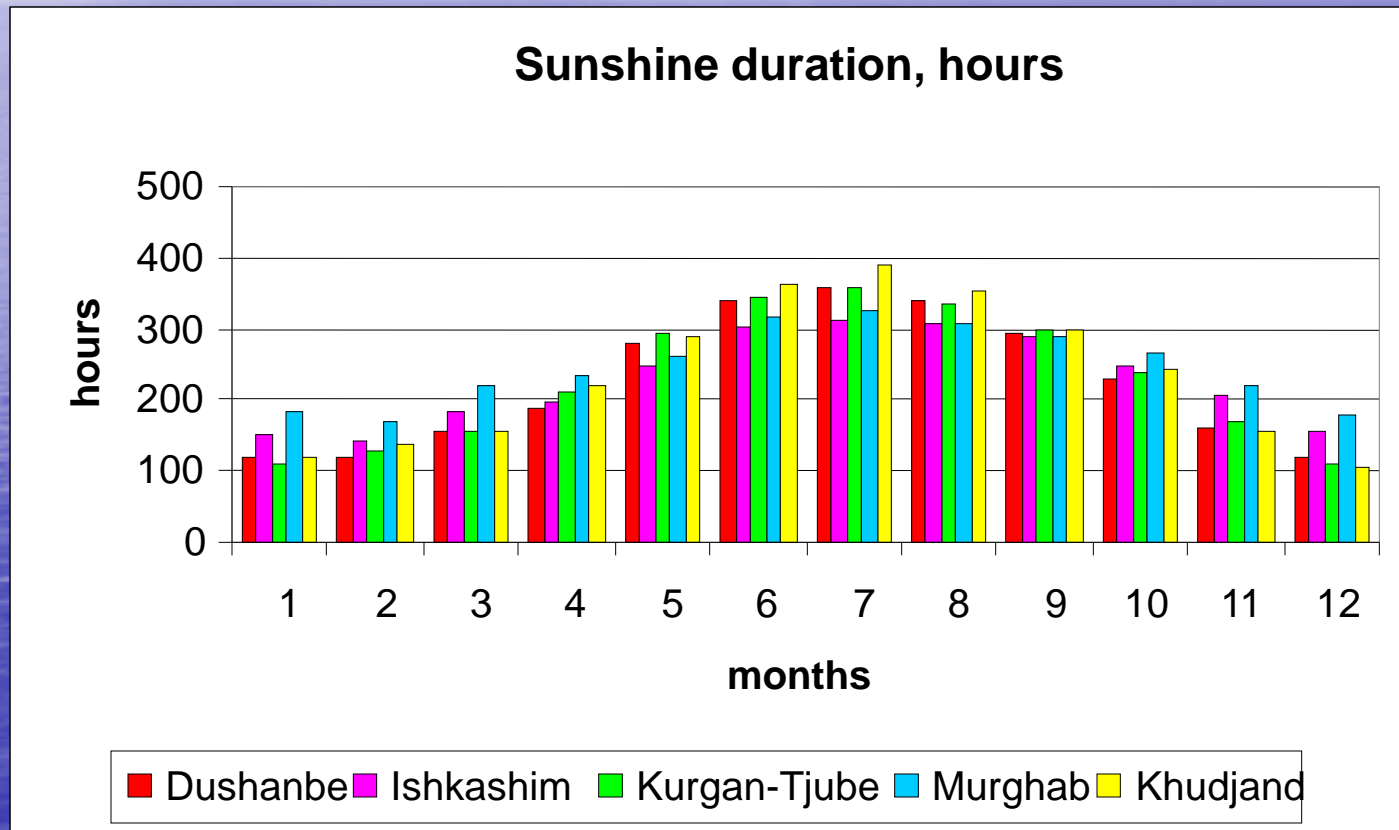
This Program provides for the construction of 189 small hydropower plants with a total capacity of 103.6 MW and generation of 800 million kWh of electricity per year.

At present, 320 micro-, mini- and small hydropower plants with a total capacity of 132 MW function in the Republic of Tajikistan.

According to experts, small river energy can meet 50-70% (in some cases, 100%) of demand for electricity of approximately 500-600 thousand people living in remote areas of the country. Today, the population of mountain regions starts building micro- and mini-hydropower plants, both with its own and donor funds.

Solar energy may be one of the solutions to the energy-saving problem. At the first stage, it is not a high technology of direct conversion of solar energy into electricity, but a low-grade conversion of solar energy into thermal energy.

Solar energy capacity assessment



Barriers to the broad implementation of renewable energy sources:

- **Absence of a well-functioning technology of mass production of plants adapted to the specific operating environment;**
- **High cost of non-conventional renewable energy plants and low cost of conventional power generation (1 kilowatt of electricity costs 2.0 U.S. cents in the domestic market);**
- **Difficulties in promoting investment**

The following steps need to be taken to resolve the existing problems:

- Creation of a relevant infrastructure for the design, manufacture and distribution of efficient renewable energy generation plants in Tajikistan.
- Training of specialists in the design, creation and maintenance of alternative energy generation devices;
- Establishment of a center for the study and dissemination of the best practices in the use of renewable energy devices;
- Informing and educating local communities in the use of alternative energy plants;
- Raising awareness of the business community, government officials and the public about the possibility of the use of clean energy, energy-saving and energy-efficient technologies.

The following steps need to be taken to resolve the existing problems:

- Encourage establishment of joint ventures for the manufacture of a variety of renewable energy plants, promote investors and stakeholders to development of the country's renewable energy market;
- Implement demonstration and pilot projects of using renewable energy sources;
- Create an inventory of renewable energy resources in the country (by energy types, regions and specific areas).
- Assess possibility of using a specific type of renewable energy source in a particular area;
- Support research, conferences and seminars in this area.

An aerial photograph of the Nurek Dam, a massive concrete structure spanning a deep gorge. The dam is surrounded by steep, rocky mountains. To the left, a large reservoir of turquoise water is visible. The sky is clear and blue. The text "Thank you!" is overlaid in large yellow letters on the left side of the image.

Thank you!

*Насыпная плотина на Нурекском водохранилище (300м)
Bulk dam on the Nurek water reservoir (300m)*