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### **Hydropower Plants and Their Problems**

Approximately 23% of the world electric power is produced by hydroelectric power plants (HPP). This kind of power stations convert the kinetic energy of the falling water into the mechanical energy of the turbine's rotation, and the turbine drives the electric machine current generator. The construction of hydroelectric power plants is usually more capital intensive than thermal power plants. Reservoirs make the climate more moderate. There can be two main factors for effective power generation at HPPs: guaranteed availability of water throughout the year and possibly large deviations of the river.

As Ukraine can boast by a great amount of water resources, this type of producing energy is considered to be quite promising. There are six large investment projects to be implemented in Ukraine until 2025. As a result, the hydrogenation capacities will be doubled. In addition, 3357 MW of new capacities are going to be commissioned. According to the head of Ukrhidroenergo, if all the scheduled timeframes are sustained, the first unit of the future station will be launched in 2018. Then, another hydropower unit will come into action.

However, this type of producing energy can cause a number of negative effects that can be listed as following: the destruction or accident of the hydroelectric power plant causes catastrophic flood below downstream of the river; constructing hydroelectric power plant is ineffective in flat districts; extensive drought results in reducing and cutting electric power production; constant and sharp changes of the water level in artificial storage pools. According to the research, the construction of dams reduces the oxygen level in the water as a normal river flow greatly decreases. It can cause the death of fish in an artificial storage pool and make a negative effect on a vegetable life in a storage reservoir and around it.

Taking into account all these negative effects, we should find an answer to the following question: "What is the reason of constructing so many hydro-electric power stations?" Most places for building of the hydroelectric power stations are already used. Amount of dams and storage pools that can be built on the river is limited. The energy taken away by the power station at the river already cannot be used below downstream. If we build too many power stations on the river, the economic conflicts related to energy distribution are inevitable.

What can we do to reduce the number of HPPs? First of all, it is necessary to consider the reconstruction and technical re-equipment of existing facilities. Secondly, extending the use of renewable energy sources, which have a mass application in foreign countries and reducing import prices.

Foreign countries show us a good example of how to produce electricity. We must learn from them and implement that into practice.