Ljósmynd: Emil Þór Sigurðsson / Image: Emil Þór Sigurðsson

Typical water power station is set up so the water comes from the channel and accumulates in a reservoir. The water then runs by afflux dyke or tunnel towards a mountain edge where it can achieve high drop in the shortest distance. There the water goes into pipes or down-pipes, usually inside the mountain, were the water falls down into the powerhouse. In the house there are waterwheels or turbines which spin at much speed, and they are connected to generators that produce electricity. The electricity that comes from this progress is brought in to the substation and from there to the user by high voltage cable. When the water has finished its role it runs by effluent dyke and most of the time into its old course again. The water power is the second biggest energizer in Iceland after geothermal heat.

The biggest stations have to have reservoir where the water is kept until it is used. The most suitable areas for the reservoir are usually low in the highlands. We can expect that environmentalists' and those who promote protection of vegetation are against these reservoirs because the ground surface and the channel can change and it may have an effect on the biosphere. To get a power station going some major projects have to be undertaken. Roads have to be made, bridge have to be built, the reservoir has to be made and of course the power station itself. The dam is used to black the reservoir so the water can concentrate and be used to harness more water power. The drop is important in stations because the higher it goes the more electricity is produced by the station.

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It is necessary to use the electricity right away because it is not possible to store. In Iceland we

use less electricity in the summers than in the winters, but unfortunately there is more flow in the rivers during the summer. The reservoir is formed in order to accumulate enough water to use over the winters so it is possible to produce enough electricity. Electricity is mainly used for heating up the houses and general electricity in everyday life such as when we turn on the lights.

Three conditions are necessary to activate water power: climatic, geographical and geological. An example of a climatic condition is rain but that is one of the main conditions for activating water. Another condition for activate the waterpower is the size of the catchment area, drop, bedrock and placement of the reservoir.

Pros of water power stations are that the waterpower is a renewable resource. You can use the water again because the water runs again in its course and you can have another water power station beneath. For example on Þjórsár- and Tungnaár area it has been enabled in five phases. Other pros for enable water are that the water does not pollute and is cheap energy source.

One disputed aspect of the operation of water energy are the reservoirs, but they are nessasary when the glacial rivers are harnessed. Also it is a great regret that the landscape will disappear under the reservoir, especially when the area is all covered with vegataion. The environment often change significantly with these projects. Many stations are large and when they begin to grow old repairs are too expensive so instead of repare they are torn down. Although the dams are removed is unlikely that the former ecosystems come back.

Presentation held in Lithuania

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