Fjallapower 1 – Letter to the Energy Minister

Cover letter

Mr. Guðlaugur Þór Þórðarson June 17. 2023
Minister of Environment, Energy and Climate

Subject: Fjalla Power Project

Introduction

Recently, we, the undersigned Skúli Jóhannsson and Friðrik R Jónsson, both engineers, have worked together and discussed among ourselves the possibility of mobilizing domestic and renewable energy resources of nature to be able to gain increased production capacity of the electricity power system and make it possible to deal with the Third Energy Transition for transportation, which are imminent. The National Parliament, Alþingi has decided and enshrined in law that domestic sustainable energy sources should be used instead of imported fossil fuels and that domestic energy production will thus be carbon-free by 2040.

If we do not meet these obligations, we are expected to face fines from the international community.

To prevent that, power plants that use natural geothermal energy, hydropower, and wind power must be built, but it is believed that the energy capacity of the electricity system must be increased by at least 12.000 GWh/year and even up to 24.000 GWh/year, but the second number means more than doubling the energy capacity of the current electricity system.

The key to the proposed energy exchange is new hydroelectric power plants, but unfortunately there are few options available, mainly due to the restrictions that the policy of nature conservation has been driven with in recent years and decades.

Harnessing the waterpower of Fjalla Glacial River

For a long time there has been talk about harnessing the waterpower of The Fjalla Glacial River (Jökulsá á Fjöllum) down to The Flow Valley (Fljótsdalur). This is the ideal option for a hydroelectric power station, given that The Fjalla Glacial River is one of the largest watercourses in the country and the difference in height from there to Fljótsdal is unusually large, at around 548 meters.

With this hydropower advantage, we believe that it will be possible to increase the production capacity of the electricity system by 4.000 GWh/year and even significantly more by creating conditions for joint operation with new wind turbines on a large scale, as we have assumed ample installed power in the new plant. In this respect, we are therefore talking about a new option that is different from the previous options and has not yet received any discussion.

In the attached report, we will discuss this new idea for power generation, which we have called Fjalla Power Project, but the associated inlet reservoir is called The Fjalla Reservoir.

Dettifoss waterfall is the main attraction of The Fjalla Glacial River and will also be discussed in more detail about the waterfall in the article.

The version of The Fjalla Power Project that we present here is the only significant hydroelectric power plant that is viable now and could be considered realistic.

The conservation

On August 10, 2019, the then Minister of Environment and Natural Resources signed the protection of the The Fjalla Glacial River watershed, which, according to him, was in accordance with the law on the protection and energy utilization of the Framework Program (Rammaáætlun). This was the first protection of an area in the protection category of the Framework Plan. The signing took place in a mountain hut in Asbyrgi canyon and was considered part of the government's efforts in conservation.

With this protection, The Fjalla Glacial River was protected from electricity generation, but proposals were then underway for two alternatives, Arnardalsvirkjun and Helmingsvirkjun. The protection extended to both of these advantages, and they were mentioned in the protection.

The Fjalla Glacial River will not be affected by Fjalla Power Project other than the fact that the flow decreases, including about Dettifoss waterfall, but not so much that its troll face in summer will be noticeable. The appearance of the waterfall can be controlled with valves in The Fjalla Reservoir, which would be controlled remotely from the Dettifoss waterfall. It takes about 12 hours for the flow to flow from there to Dettifoss, but the flow could be planned by remote control from the waterfall even according to the special wishes of the management.

Final comments

We would like to encourage the Minister and the Ministry of Energy to support and strive to increase understanding of this power generation option and to strive to remove the restrictions of nature conservation from this natural practice through the use of government measures, including in the Icelandic Parliament. After that, it would be possible to start building and then operating The Fjalla Power Project.

With the exception from the minister, we need a research permit to be able to start designing the hydropower plant with the help of engineering firms in Reykjavik and later a power plant permit. The most important aspects are the technical implementation of the long tunnels and the determination of the size of The Fjalla Reservoir.

We are of course ready to discuss this hydropower option at any time.

With kindness and respect

Friðrik R Jónsson
Skúli Jóhannsson