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REPORT ON THE PROJECT OF COOPERATION IN EEA GRANTS

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Project: Comparison of energy potential of Iceland and the Czech Republic

Date: 1/ 8/ 2021 – 31/ 8/ 2022

Schools: Technical College Reykjavík a Technical College Jihlava

Place: Iceland and the Czech Republic

Introduction:

The cooperation project “Comparison of the energy potential of Iceland and the Czech Republic” was carried out due to the transfer of information and experience on the energy situation, energy potential, readiness to reduce the carbon footprint and sizing the electricity grid in the Czech Republic and Iceland. The meeting of school professionals and students took place in the autumn in Jihlava and in the spring in Reykjavík.

Cooperation between vocational schools, namely the upper secondary school in Reykjavík, which is divided into 13 business schools, which together form one of the largest schools in the country, and the Secondary School of Industrial, Technical and Automotive in Jihlava was launched in Jihlava on November 7. 2021 and ended 16.11. 2021

The second part of the project took place in Reykjavík from 23.4. 2022 to 7.5. 2022. The project was subsidized by the EEA European Fund 2014-2021- Education Program.

Project progress report

Czech Republic - 7.11. 2021 - 16.11. 2021

The project participants were welcomed at the Secondary Industrial School in Jihlava. There was a presentation by Mr. Buršík from the Dukovany nuclear power plant on the topic of the energy potential of the Czech Republic.

An ecological program has been introduced at the Ledvice coal power plant, which helps to reduce combustion gases and desulphurization and is more environmentally friendly.

Mr. Milan Řehoř gave a presentation on Electromobility in Practice. Based on this presentation and the subsequent discussion, the students had the task to process the information obtained and work together summarize. Students worked in mixed groups. There was a need for mutual cooperation and understanding in English and understanding of concepts and issues.

In Dolní Vítkovice it was possible to see the history of foundry. Electric generators, blast furnaces, combustion plants for smelting iron, etc.

Gentlemen Martin Zágora and Tomáš Šedivý from the ČEZ Group presented the strategy Transition to Low-Emission Energy, the so-called “Fuels of the Future”. The task of the students was to think about and create a work on the topic of energy network readiness, transition to renewable energies. The students came up with an interesting idea that it would be more beneficial for the environment if solar panels were placed, for example, on the roofs of buildings and not on fertile land suitable for agricultural use.

The Dukovany Nuclear Power Plant was presented to the project participants as the oldest nuclear power plant built in the Czech Republic. There are four production units with pressure reactors, the first of which was put into operation in 1985.

Pi was introduced as the last expert. Ing. Dana Drábová, Ph.D. , dr. hc Many . who spoke on "Low Emission Energy". Ms. Drábová is a nuclear physicist and also the chairwoman of the statutory office for nuclear safety.

Iceland - 23.4. 2022 - 8.5. 2022

Upon arrival in Iceland, the necessary formalities and accommodation took place, we visited the visiting high school in Reykjavik. The school is very well equipped. In technical classrooms, for example, there are 3D printers of the brand Ultimaker with filaments for various types of plastics and with the added construction, which contributes to the lower environmental impact of printers.

The school's technical center provides practical training for electricians, as well as laboratories and other specialist workplaces.

In the geothermal power plant in Hellisheidarvirkjunu we were acquainted with the production of electricity using geothermal springs, ie with the help of purely natural resources. This power plant produces enough energy to heat water for the inhabitants. They also use technology here Carbfix .

Technology Carbfix it works with the fact that CO₂ is not only stored in plants, but a large amount of carbon is also naturally stored in rocks. Carbfix mimics and accelerates these natural processes, where carbon dioxide dissolves in water and interacts with reactive rock formations, such as basalts, to form stable minerals that provide a permanent and safe carbon sink. Process Carbfix captures and permanently removes CO₂ . The whole process takes about two years. Technology Carbfix thus, it needs some rock, water, and carbon dioxide to function.

Professor of Environmental and Natural Resources Studies Dr .Röstur Steinorsteinsson gave a presentation on Sustainability of Energy Sources. Geothermal springs are the main source of energy in Iceland. But also about other possible alternatives discusses such as wind farms.

Other lectures on ecology and the environment followed.

There was a visit to a technical monument called Perlanu which previously served as a hot tray water with a volume of up to 25ti million liters at a temperature of up to 85 degrees Celsius. Now there is an educational, entertaining and informative center for the public.

Another part of the stay was also educational excursions about the history and natural wealth of Iceland.

We visited museums, geothermal baths, we went on trips to interesting places in Iceland. On Westman islands, on the peninsula Reykjanes , which is located between the lithospheric plates and forms Mid - Atlantic back. There is a lake near this break Kleifarvatan , at the

bottom of which volcanic activity is still active. We visited many waterfalls and volcanic lakes and lakes where you can swim. However, some reach high life-threatening temperatures. We also visited "Fly over Iceland". Which is a 5D cinema where you can use virtual reality to see other natural wonders of Iceland.

During their stay, students were assigned to work together and prepare presentations and reflections on the topic of Digital Pollution and its Impact on the Environment and the Future of Sustainable Energy in the Morfis style. This is a professional university lecturing and debate competition in Iceland.

Conclusion

I am very glad that I was able to participate in the project. I would like to thank my colleague and coordinator of the whole project, Mrs. Ing. Radmila Hamrová for organization and support.

The project was beneficial for us and for the students. We broadened our horizons, gained new information, experience, both professional and linguistic.

Personally, I was very interested in the expansion of electromobility in Iceland. Especially the use of shared electric scooters, environmentally friendly.

The energy potential of the Czech Republic and Iceland is very different. The main source of energy in Iceland is geothermal springs, which are purely natural resources resulting from the geographical location of the whole island. In the Czech Republic, we still produce energy from non-renewable sources, but we are increasingly switching to renewable sources, in the form of wind, solar and also hydroelectric power plants. The possibility of storing carbon dioxide by the process Carbfix I see it as very favorable for the improvement of the environment not only in the Czech Republic.

I was also very surprised that the Icelandic school took us to Blue Lagoon, where we spent time swimming in blue water with natural minerals that nourish the skin, this bioactive water is the heart of the whole lagoon. This mineral-rich wonder was born deep underground in aquifers where fresh and oceanic water converge, which is why Blue Lagoon was proclaimed in 2012 as one of the world's most amazing wonders in National Geographic.

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Used sources:

www.wikipedia.cz

[We turn CO2 into stone \(carbfix.com\)](http://carbfix.com)