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TOPIC: Carbfix

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**PROJECT: Comparison of energy potencial of Iceland and the
Czech Republic**

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What is Carbfix?

- Carbfix is a company that was established as a subsidiary of Reykjavik Energy (OR) at the end of 2019 and started as a separate entity on January 1, 2020. The company's mission is to become key tools in solving the climate crisis by reaching one billion tons as quickly as possible permanently stored CO₂.

How Carbfix store CO₂?

- Carbfix captures and dissolves CO₂ in water and then injects it into the ground, where it turns to stone in less than two years.
- Trees and vegetation are not the only way for capturing carbon from the atmosphere. Huge amounts of carbon are naturally stored in the rocks. Carbfix mimics and accelerates these natural processes.

How does it works ?

- Carbon dioxide is captured from the air, which is dissolved in the water, which thus becomes acid, the more carbon dioxide in the water, the more acidic the water. This water is then injected underground, which releases the necessary cations, such as calcium, magnesium and iron. Over time, these elements combine with dissolved CO₂ to form carbonates, which fill the voids (pores) in the rocks.
- For Carbfix technology to work, three requirements must be met: a favorable subsoil such as basalt, water and a source of carbon dioxide.

Why basalt?

- Basalt rocks are highly reactive and contain elements necessary for the permanent immobilization of CO₂ through the formation of carbonate minerals. They often have a lot of pores; they contain storage space for mineralized CO₂. In addition, basalt is the most common type of rock on Earth's surface, covering about 5% of the continents and most of the ocean floor. 50 - 100 kg can be stored in 1 m³ of basalt

So we can use Carbfix technology in other countries?

- Carbfix technology can be used in areas with volcanic rocks such as basalt and others.
- That is, mainly at the points of collision of the continental plates.

How much CO₂ can we store with Carbfix technology?

- It is estimated that Europe could theoretically store at least 4,000 billion tonnes of carbon dioxide in the rocks, and the United States even 7,500 billion tonnes of carbon dioxide.

Can salt water be used for Carbfix technology?

- Carbfix has developed a scientific basis for using seawater to dissolve CO₂ instead of fresh water, which would significantly expand the applicability of the technology. Demonstration of CO₂ injection using seawater on site is planned for 2022.

Benefits

- Due to the prevalence of basalt, there is plenty of space on our planet to store carbon dioxide using Carbfix technology.
- In the future, seawater can also be used for this technology.

Disadvantages

- Water problem in landlocked countries that do not have enough water.

How Carbfix sees the future?

- Carbfix thinks that in the future, carbon dioxide will be transported by pipeline or ship from places where carbon dioxide is captured to places where it can be injected into the correct volcanic rock such as basalt or peridotite.

Resources

- www.carbfix.com

Conclusion

- Thanks for your attention