I'm going to talk about a TED talks recorded by Tim Krugen in April 2017 : "Can we stop climate change by removing CO2 from the air ?"

Presentation

First, Who is Tim Krugen ? Tim is the inventor of **Origen Power**, the name of the process that I'm going to explain.
He studied Natural Science at Cambridge. He is a leading expert in the field of **Green House Gas Removal**

Problems

We must rapidly reduce our CO2 emision : actually, if we just cut our gas emissions, it won't be enough to stay under a **2°C rise**. The solution could be to **use plants** to take **CO2 out**. Youngs forrests capt more CO2 than the old ones.
An other idea could be to build **large machines**, so called **artificial trees**, in oder to get carbon dioxide from the air.
It's a tradeoff because these ideas are not perfects but have the capacity to reduce carbon dioxide in the air.

His idea

Use natural gases in order to take carbon dioxide out of the air

diagram

Explanation

Natural gas is used as combustible in a **fuel cell** to make electricity (50%), CO2 and the remainder converted in **heat** at about 900°C (nine hundred).
The heat is used in a **lime kiln** (oven) to change limestone (CaCO3) into lime (CaO)

All the CO2 produced by this process is **pure** so it can be stored in the underground or use for plants.

This process is **carbon negativ**. If you generate electricity from gases, you emit about 400 grams of CO2 in the air for every kiloWatt-hour produced

But with this process, it's (minus) -600 grs of CO2 directly get form the air. There is less carbon dioxide in the air at the end of the process than there was at the beginning.

Currently, power generation is responsible of a **quarter** of all carbon dioxides emissions.
The if you switch conventional (?) power generation to this process (that both make electricity), we could eliminate CO2 emission from this power generation but also start **removing** emissions from all other industry sectors with **cutting of 60%** of all carbon emissions.

Then with the lime produced, we can use to counteract oceans acidifiation, it's a real problem ! (TEDTalk of last week)

Warnings

As Tim Kruger said : " we don't fully understand what are the environnemental effects. We must evaluate if that solution is better than the disease that it tries to cure. We nedd to conduct experiments step by step to knoww consequences of adding lime in the ocean

Conclusion

It's an interresting project, but there is some environnemental problems such as : "where come frome natural gases ?" or "Where are we going to extract limestone ?". Anyway, this project must be developped !

Thank you for your attention. Do you have any questions ?