

# Synthetic Tree Captures Carbon 1,000 Faster Than Real Trees

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A synthetic tree could collect carbon coming from small, distributed sources, which is usually very difficult to collect. Credit: Global Research Technologies.

(PhysOrg.com) -- Scientists have designed a synthetic tree that traps carbon dioxide from the air in an attempt to combat growing emissions. The device looks less like a tree and more like a small building, but it can collect carbon about 1,000 times faster than a real tree. One synthetic tree could absorb one ton of carbon dioxide per day, an amount equivalent to that produced by about 20 cars, on average. After being trapped in a chamber, the carbon would be compressed and stored in liquid form for sequestration.

Professor Klaus Lackner of Columbia University has been working on the concept since 1998, and recently met with U.S. Energy Secretary

Steven Chu to discuss moving forward with the project. Through his company Global Research Technologies, based in Tucson, Lackner has built an early model and hopes to have a fully working prototype within three years.

As Lackner explains, the technology is similar to that used at coal plants to capture carbon from flue stacks, but can be used anywhere. Lackner notes that half of [carbon emissions](#) come from small sources, including cars and airplanes, and is usually nearly impossible to collect. But since the carbon dioxide in the air is actually very concentrated, the device required to collect it can be fairly small.

Lackner's goal is to make the synthetic tree highly efficient for its size. Compared to the amount of carbon dioxide that a large windmill can avoid generating, for example, a synthetic tree of equal size could collect several hundred times the amount of carbon dioxide that the windmill avoids.

Each synthetic tree would cost about \$30,000 to build, with most of the cost due to the technology used to release the carbon dioxide from the sorbent. In addition, since the device requires energy to operate, it also generates some carbon itself if plugged into the [power grid](#). Lackner calculated that, for every 1000 kg of [carbon dioxide](#) the synthetic tree collects, it emits 200 kg, so that 800 kg are considered true collection.

via: [CNet News](#)

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