

Will They Try to Make Us Pay for Breathable Air?

Analysis by [Tessa Lena](#)

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STORY AT-A-GLANCE

- › Recently, Australian researchers discovered an enzyme that can be used to produce electricity out of thin air
- › The enzyme, called Huc, is produced by a common soil bacterium *Mycobacterium smegmatis*
- › While the research is new, according to the scientists, there is a possibility of producing the enzyme on a massive scale allowing production electricity from air
- › The way it has often worked in the past, as soon as a widely available natural commodity became a “resource,” its wide availability came to an end
- › Our breathing may be the next commercial frontier, and clean air may become the new bottled water, if we don’t stop this trend

Making Electricity Out of Thin Air

Bad news, folks. The scientists have discovered an enzyme that can be used to produce electricity out of thin air.

This was just discovered, so we don’t know yet whether this can be scaled as easily as they hope, but it so — this may very well be very good news for the “owners” controlling the energy industry — but for us, useless breathers, this is not good news at all. After all, up until now, we’ve been breathing air. Just air. But now we are suddenly breathing a “natural resource,” and we all know how stingy the owners of everything are about those!

Hey, if you were a major investor in BlackRock or similarly minded self-appointed owner of “assets,” would this new discovery not motivate you to consider limiting the free inhaling capacity of the peasants? Those pesky peasants have been taking their breathing privilege for granted but really, should they not be a lot more considerate about their usage of a valuable resource that you turn into solid profits?

So, would you, as a dedicated BlackRock investor, not find it irksome that over nine billions freeloader breathers and carbon exhalers — whom you don’t really like! — habitually suck up your air into their useless noses, without paying you a dime for the privilege of using air? Would you not, in the face of this exciting business opportunity, seek to change “the way people think about breathing”?

And maybe, right now it is an exaggeration. Maybe I am being dramatic. But my concern is not facetious at all because this is exactly how the owners of everything think about everything — so why breathing would be an exception?

Come on, come on, the [Blue Ocean Strategy](#)! Come, new markets! Come, new income streams for the BlackRock investors! And away with irresponsible, unlimited use of air resources, formerly known as breathing!

Anyway, here’s the science. On March 7, 2023, Nature published a [paper](#) titled, “Structural basis for bacterial energy extraction from atmospheric hydrogen.” The paper is a little dense, so here is a popular rendition:

The researchers looked at a common soil bacterium, *Mycobacterium smegmatis*. This bacterium uses hydrogen from the atmosphere as an energy source, especially in nutrient-poor environments. They found that the “machinery” that allows the microbe to turn atmospheric hydrogen into energy is an enzyme called “hydrogenase,” or Huc for short. They have also found that the process produces an electrical current.

The researchers were able to isolate the enzyme by genetically modifying the bacteria. They found that even when isolated from the bacteria, Huc could consume hydrogen at concentrations far lower even than the tiny traces in the air. They also found Huc was

uninhibited by oxygen, a property not seen in other hydrogen-consuming catalysts. Here is a [press release](#) by Monash University:

*“Australian scientists have discovered an enzyme that converts air into energy. The finding, published in the top journal **Nature**, reveals that this enzyme uses the low amounts of the hydrogen in the atmosphere to create an electrical current. This finding opens the way to create devices that literally make energy from thin air.*

The research team, led by Dr Rhys Grinter, PhD student Ashleigh Kropp, and Professor Chris Greening from the Monash University Biomedicine Discovery Institute in Melbourne, Australia, produced and analysed a hydrogen-consuming enzyme from a common soil bacterium.

“We've known for some time that bacteria can use the trace hydrogen in the air as a source of energy to help them grow and survive, including in Antarctic soils, volcanic craters, and the deep ocean,” Professor Greening said. “But we didn't know how they did this, until now.”

*In this Nature paper, the researchers extracted the enzyme responsible for using atmospheric hydrogen from a bacterium called *Mycobacterium smegmatis*. They showed that this enzyme, called Huc, turns hydrogen gas into an electrical current.*

Dr Grinter notes, “Huc is extraordinarily efficient. Unlike all other known enzymes and chemical catalysts, it even consumes hydrogen below atmospheric levels – as little as 0.00005% of the air we breathe.”

Laboratory work performed by Ms Kropp shows that it is possible to store purified Huc for long periods. “It is astonishingly stable. It is possible to freeze the enzyme or heat it to 80 degrees celsius, and it retains its power to generate energy,” Ms Kropp said. “This reflects that this enzyme helps bacteria to survive in the most extreme environments.”

Huc is a “natural battery” that produces a sustained electrical current from air or added hydrogen. While this research is at an early stage, the discovery of Huc has considerable potential to develop small air-powered devices, for example as an alternative to solar-powered devices.

The bacteria that produce enzymes like Huc are common and can be grown in large quantities, meaning we have access to a sustainable source of the enzyme. Dr Grinter says that a key objective for future work is to scale up Huc production. “Once we produce Huc in sufficient quantities, the sky is quite literally the limit for using it to produce clean energy.”

Selling Air; a Hoax or a New Business Model?

I have been pondering the topic of air as a new market for a few years. It seems to me that “scarcity of breathable air” is a new monetization frontier. For example, up until a certain point, no sane person would seriously consider paying for still bottled water, and yet today, we often do that (even though the quality of bottled water can be debated). I think that air is next.

And besides, scarcity of breathable air can work very nicely with [smart masks](#) that would also have an in-built air purification filter, monitor your air intake in the name of watching your breathing privilege, and of course, send your biometric data back to the mothership.

Not to mention the fact that the transhumanist crazies view the entire planet as their sandbox and are itching to play with things like the [planetary processes](#) and the composition of the atmosphere — and don’t get me started on the carbon removal, including with [asbestos](#)!

However, I was kind of surprised to find this 2016 story by the [CNN](#) titled, “The smell of success? \$115 bottles of British air sold to Chinese buyers.” Evidently, a few companies are now selling literal air in jars.

British entrepreneur Leo De Watts, 27, has made thousands of dollars selling bottles of British country air to Chinese buyers, but the price alone – £80 (\$115) per bottle – could knock the wind out of many customers.

De Watts says the 580 ml (about 20 oz) glass jars have been flying out the door, many headed for pollution-plagued Chinese cities such as Beijing and Shanghai.

Since launching late last year [2105], his air farming company Aethaer has sold hundreds of containers of clean breeze from windswept locations across Britain – including Dorset, Somerset, and Wales. [...]

De Watts, originally from Dorset on the southern coast of England, now lives in Hong Kong where he can be found selling his bottles of fresh air at local street markets. The businessman appears to have chosen his market wisely. In December, Beijing issued its first ever red alert because of poor air quality, closing schools and restricting traffic.

Back in Britain, De Watts' team of air farmers continue harvesting away from roads which might pollute the precious produce. Hoping to cash in on Chinese New Year festivities, the company is now promoting a 15-jar gift set for – take a deep breath – the discounted cost of £888 (\$1,200).

Funnily enough, for those dismissing the unusual business model as just a bunch of hot air, it is in fact Britain's "cool air" which gives buyers the most bang for their buck. "The colder air means we can fit more in the container," De Watts said. "When it's warmer, we can't fit quite as much in."

*Aethaer **follows in the footsteps of the Canadian company Vitality Air**, which recently started selling canisters of fresh air from the Rocky Mountains to Chinese buyers. Though at between \$14 and \$20 per canister, Canadian air seemingly costs a fraction of British breeze.*

Now, personally, I think that selling air in small glass jars has a Theranos vibe to it in many ways. However, while I am very seriously doubting the viability of a product like this, I am not doubting the notion that there will be an attempt to turn our breathing into a commercial affair. Somehow, even the canned air companies got ... wait for it, air time in the mainstream news ([BBC](#), [CNBC](#), etc.).

Plus, to be fair to the creative air merchants, the world has been not very sane for a while, and I would take canned air from the mountains (geoengineering be damned) over shady experimental therapies any time!

Smart Masks

In the meanwhile, the desire to stick smart face wearables on us is palpable. The World Economic Forum, for example, has been [excited](#) about a reusable mask that “can filter and kill off COVID-19.”

“This is a completely new mask concept in that it doesn’t primarily block the virus. It actually lets the virus go through the mask [ha, ha], but slows and inactivates it,” says Michael Strano, the Carbon P. Dubbs Professor of Chemical Engineering at MIT.

Tokenization of Nature and Transfer of Value

And, if you had any doubt about why I expressed a concern about air as an energy-making resource (as opposed to something we simply breathe), this is what we are up against.

To the crazy ones, nothing is sacred. Life is not sacred. The spirit is not sacred. Nature is not sacred. Our bodies are not sacred. To the crazy ones, the only thing that matters is their dead-eyed power. To the crazy ones, everything is a resource. They would gladly make energy for sale using GM bacteria, and they would also gladly make batteries out of [human bangs](#).

And any time they can, they hurry to “tokenize” what doesn’t belong to them and “transfer” the profits into their pockets. What we are up against is the [Midas touch](#).

About the Author

To find more of Tessa Lena's work, be sure to check out her bio, [Tessa Fights Robots](#).