

# Israeli firm says it can turn garbage into plastic gold

March 22 2018, by Ilan Ben Zion

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In this Tuesday, March 13, 2018 photo, a worker holds bio-based thermoplastic composite made from substantially unsorted municipal solid waste material in the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

Hawks, vultures and storks circle overhead as Christopher Sveen points

at the heap of refuse rotting in the desert heat. "This is the mine of the future," he beams.

Sveen is chief operations officer at UBQ, an Israeli company that has patented a process to convert household trash from landfills into reusable plastic. After five years of development, the company is bringing its operations online, with hopes of revolutionizing waste management worldwide and making landfills obsolete. It remains to be seen, however, if the technology really works and is commercially viable.

UBQ operates a pilot plant and research facility at Kibbutz Zeelim, on the edge of southern Israel's Negev Desert, where it has developed its production line.

"We take something that is not only not useful, but that creates a lot of damage to our planet, and we're able to turn it into the things we use every day," said Albert Douer, a member of the company's board. He said the UBQ's material can be used as a substitute for conventional petrochemical plastics and wood, reducing oil consumption and deforestation.

UBQ has raised \$30 million from private investors, including Douer, who is [chief executive](#) of Ajover Darnel Group, an international plastics conglomerate.



In this Tuesday, March 13, 2018 photo, Jack Tato Bigio co-Founder and Chief Executive at UBQ, holds a recycled plastic bucket next to a pile of dried and shredded garbage at the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

Leading scientists serve on its advisory board, including Nobel Prize chemist Roger Kornberg, Hebrew University biochemist Oded Shoseyov and Connie Hedegaard, a former European Commissioner for Climate Action.

The small Zeelim plant can process one ton of municipal waste per hour, a relatively small amount that would not meet the needs of even a midsize city. But UBQ says it is planning to expand operations.

On a recent day, Chief Executive Jack Bigio stood alongside bales of

sorted trash hauled in from a local [landfill](#).

He said recyclable items like glass, metals and minerals are extracted, and the remaining garbage—"banana peels, the chicken bones and the hamburger, the dirty plastics, the dirty cartons, the dirty papers"—is dried and milled into a powder.



In this Tuesday, March 13, 2018 photo, a tractor works in a landfilled near the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

The steely gray powder then enters a reaction chamber, where it is broken down and reconstituted as a plastic-like composite material. UBQ says its closely-guarded patented process produces no [carbon](#)

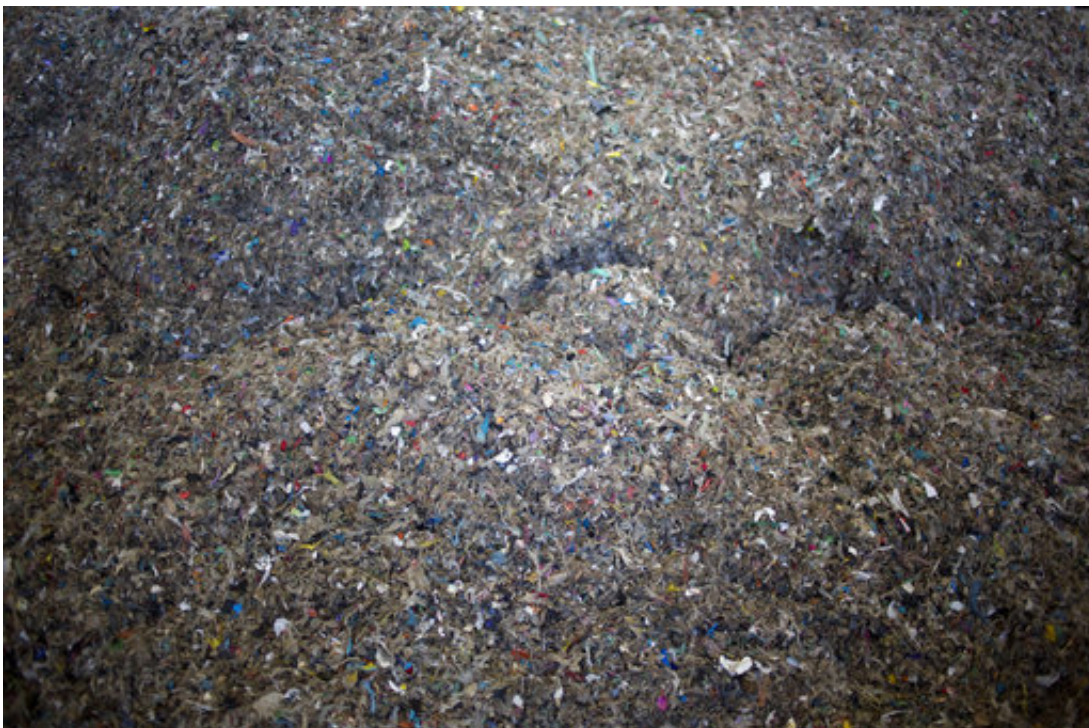


[dioxide](#) or toxic byproducts, and uses little energy and no water.

According to the United Nations Environment Program, five percent of global greenhouse gas emissions are produced by decomposing organic material in landfills. Roughly half is methane, which is 21 times as potent for global warming as carbon dioxide, according to the World Bank.

For every ton of material produced, UBQ says it prevents between three and 30 tons of CO<sub>2</sub> from being created by keeping waste out of landfills.

UBQ says its material can be used as an additive to conventional plastics. It says 10-15 percent is enough to make a plastic carbon-neutral by offsetting the generation of methane and carbon dioxide in landfills. It can be molded into bricks, beams, planters, cans, and construction materials. Unlike most plastics, UBQ says its material doesn't degrade when it's recycled.



In this Tuesday, March 13, 2018 photo, dried and shredded garbage is piled in the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

The company says converting waste into marketable products is profitable, and likely to succeed in the long run without government assistance.

"What we do is we try to position ourselves at the end of the value chain, or at the end of the waste management hierarchy," Sveen said. "So rather than that waste going to a landfill or being incinerated, that's kind of our waste feedstock."

The wonder plastic isn't without its skeptics, however. Duane Priddy, chief executive of the Plastic Expert Group, said UBQ's claims were "too good to be true" and likened it to alchemy.

"Chemists have been trying to convert lead to gold for centuries, without success," Priddy, a former principal scientist at Dow Chemical, said in an email to The Associated Press. "Likewise, chemists have been trying to convert garbage to plastic for several decades."



In this Tuesday, March 13, 2018 photo, garbage is piled in a landfill near the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

Even if its technology is ultimately successful, UBQ faces questions about its long-term viability. Building additional plants could be expensive and time-consuming. It also needs to prove there is a market for its [plastic](#) products. The company said it is negotiating deals with major customers, but declined to identify them or say when the contracts would go into effect.

The U.N. Environment Program has made solid waste disposal a central issue to combatting pollution worldwide. Landfills contaminate air, water and soil, and take up limited land and resources. A December 2017 report by the international body devoted five of its 50 anti-



pollution measures to reducing and processing solid waste.

"Every year, an estimated 11.2 billion tons of [solid waste](#) are collected worldwide," the organization says. "The solution, in the first place, is the minimization of waste. Where waste cannot be avoided, recovery of materials and energy from waste as well as remanufacturing and recycling waste into usable products should be the second option."

Israel lags behind other developed countries in waste disposal. The country of roughly 8 million people generated 5.3 million metric tons of garbage in 2016, according to the Environment Ministry. Over 80 percent of that trash ended up in increasingly crowded landfills. A third of Israel's landfill garbage is food scraps, which decompose and produce greenhouse gases like methane and carbon dioxide.



In this Tuesday, March 13, 2018 photo, plastic products made from garbage are on display at the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its



innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

To UBQ, that means a nearly limitless supply of raw material.

"The fact is that the majority of [waste](#) goes to a landfill or is looped into the natural environments because there simply aren't economically viable technologies out there," said Sveen.



In this Tuesday, March 13, 2018 photo, safety jackets hang at the UBQ factory in Kibbutz Zeelim. Israeli start-up UBQ says its innovative method to convert garbage into plastics, five years in the making, will revolutionize waste management worldwide and make landfills obsolete. (AP Photo/Ariel Schalit)

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