

Precious Plastic is giving instructions on how to build a series of simple machines that will let makers turn plastic trash into new material.



1/14 One low-cost machine that shreds plastic into flakes. [Photo: Precious Plastic]



BY ADELE PETERS

2 MINUTE READ

In a workshop in downtown Chang Mai, Thailand, designers turn plastic trash—mostly plastic bags they collect from the street—into [marble-like coasters](#) and tabletops. In a maker

space in Lviv, Ukraine, designers use DIY equipment hacked from old industrial parts and a shopping cart to [recycle plastic trash into bowls](#). In Seoul, designers use a [mobile plastic recycling cart](#) for education.

The majority of the 300 million tons of plastic produced every year isn't recycled, and recycling that does happen typically happens at an industrial scale in factories using equipment that can cost tens of thousands of dollars. But a growing number of designers are using a set of [open-source, easy-to-build tools](#) to recycle plastic and manufacture new plastic products on their own.

See how it works:



“We want to make small-scale plastic recycling accessible to everyone, as this can have an exponential effect on the amount of plastic recycled—eventually reducing the demand for new virgin plastic—and educate millions of people on plastic, plastic recycling, and how to handle it before it ends up in the environment,” says Dave Hakkens, the Dutch founder of [Precious Plastic](#), an organization that designed the machines now in use by the designers in Thailand and the Ukraine, and more than 200 others.



"We want to make small-scale plastic recycling accessible to everyone." [Photo: Precious Plastic]

One set of instructions explains how to build a low-cost machine that shreds plastic into flakes. Another modular machine extrudes plastic that can be used for 3D printing; an injection machine and a compression machine can form plastic into molds. A series of videos explain how to build the machines using basic materials and universal parts.

Designers around the world began using the machines to make recycled plastic products in 2016, and the organization is now sharing new instructions for building full recycling workshops [inside shipping containers](#). They've also created a [new map](#) to connect people in the DIY recycling community.



“This can have an exponential effect on the amount of plastic recycled—eventually reducing the demand for new virgin plastic.” [Photo: Precious Plastic]

“The map is intended to facilitate local collaboration among people to help the creation of hundreds more plastic recycling work spaces around the world as well as giving people a collaborative tool to fight plastic waste in creative ways—campaigning to pass laws, boycotting businesses, organizing protests, or any other form of action to end plastic pollution,” Hakkens says.

A new online marketplace called [Bazar](#) sells products made with the machines, in an attempt to help more people begin to make a living by recycling plastic.

While Hakkens says that the team is interested in building tools to recycle and use other materials, plastic is their priority. “Plastic is one of the most pressing issues facing the planet,” he says. “I think it will be our priority for many years to come.”

ABOUT THE AUTHOR

Adele Peters is a staff writer at Fast Company who focuses on solutions to some of the world's largest problems, from climate change to homelessness. Previously, she worked with GOOD, BioLite, and the Sustainable Products and Solutions program at UC Berkeley. [More](#)
