



The Grycle Prototype | Photo source Grycle

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AI-HANDLED, WASTE-SORTING PROCESS

 COMPUTING & TECH

Grycle is a waste management system that works autonomously to transform waste into materials that can be used for other processes

Spotted: As an MBA student at *MIP Politecnico di Milano*, Grycle founder Daniele Pes realised that he wanted to work on projects he was passionate about. Ultimately, this meant looking at ways to solve the ever-increasing issue of waste. Together with others, he came up with the notion of using AI to help transform waste into raw materials — “a valuable mine of resources”, he told Springwise.

Grycle is a waste management system that works autonomously to transform waste into materials that can be used for other processes. The system uses AI to manage multiple materials at the same time, recognising and separating them all in one step. For example, a plastic bottle is made of different materials: the body of the bottle, the cap and the label. Each of these must be treated differently in order to be reused. The AI allows Grycle to recognise and sort each of these automatically.

Materials are first shredded and then put through an electromechanical filter to separate the different components. The small components are then analysed by a spectrometer, before being deposited into a bin containing only one type of material. Each material is then processed into a composite pellet, which can easily be reused by various industries to make new materials. The entire machine is powered by photovoltaics and is compact enough to be portable.

Pes describes Grycle as a way to not only reduce waste but to transform industry and consumption, saying: “Grycle is special because in recent years there has been an increased awareness of the need for a radical change in the human relationship with the environment on a global scale. However, where everyone was talking about the problem, Grycle has been perceived as a sustainable solution,

enabling a change in dramatically reducing human impact. The difference between talking about something and actually doing something is too wide, and we realised that, and did something about it.”

More than 2.1 billion tons of unsorted waste is produced globally every year, and by 2050 it is estimated there will be a 70 per cent increase in this global waste mountain. Even worse is the fact that treating solid waste produces 1.6 billion tons of CO2 each year – one-fifth of global emissions. At Springwise, we have seen a number of innovations aimed at tackling this vast problem. These have included plans to turn plastic rubbish into [bricks](#) and a biodegradable replacement for [polystyrene](#).

Written By: Lisa Magloff

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Website: grycle.com

Contact: grycle.com/contact

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Takeaway:

Grycle eliminates the need to manually separate waste and reduces the volume of waste by over 90 per cent, allowing it to be easily transported and transformed into secondary raw materials. All of this means that the system could greatly help in creating a circular economy for many products and raw materials. The project is currently in the prototype stage, and is looking for investors to help scale up and enter the mainstream market. If successful, Pes says that projects like Grycle could be “fundamental in creating a cleaner, safer planet for all.”