



MUSHROOM-BASED INSULATION

→ Rigid board insulation is a superior insulator, but is often made from petrochemicals. Building materials made from agricultural byproducts and mycelium offer an oil-free alternative.



ECONOMIC
Ecovative's products use plant material with limited or no economic value, opening up a potential new revenue stream for local farmers.



ENVIRONMENTAL
Ecovative building materials contain low or no VOCs and don't require toxic adhesives that contain formaldehyde.

THE SOLUTION

! Ecovative Design, based in New York State, says it doesn't manufacture its products; it grows them. It starts with agricultural byproducts such as unwanted plant stalks and seed husks, which it inoculates with mycelium, a fungal network of threadlike cells. For about a week, the mycelium grows indoors, without need for light, water, or petrochemical inputs, to fill the shape of a mold. The end results are building materials such as insulation, structural insulating panels (SIPs), and acoustic tiles.

In Ecovative's SIPs, its insulation is wedged between wood panels; the mycelium bonds itself to the wood without need of toxic adhesives. In most SIPs, the foam insulation board is made from more energy- and carbon-intensive petrochemical feed stocks. At the end of its life, Ecovative's biodegradable building materials can be composted.

WHY A SUSTAINIA100 SOLUTION?

? Ecovative's mushroom-based insulation and SIPs will offer builders an alternative to petroleum-based synthetic foam panels. Its products are 100% renewable, using locally available agricultural byproducts as a feed stock.



www.ecovatedesign.com



RECYCLING BATTERIES

→ Many of today's necessities require batteries, which means that demand for battery recycling is soaring. Recycling technology is getting increasingly more sophisticated in expectation of a near future electric vehicle boom.



ECONOMIC
According to the U.S. EPA, more than 3 billion dry-cell batteries are bought in the United States every year.



ENVIRONMENTAL
The objective is to match the positive environmental impact of recycling with its economical and strategic benefits.

THE SOLUTION

! Increased use of portable communication devices makes battery recycling ever more important. Tossed in the trash, batteries harm the environment, while valuable and scarce metals such as lithium are wasted. It is estimated that just 20% of the batteries available for recycling in the United States are actually recycled. As demands for EVs rise, it is expected that lithium will gain value, making large-scale battery recycling more profitable and commonplace.¹

French recycler Recupyl uses modern separation techniques to protect product constituents and allows the recycling of sophisticated chemical compounds with high recycling efficiency. Mechanical and hydrometallurgical processes make possible the extraction and transformation of strategic metals.

WHY A SUSTAINIA100 SOLUTION?

? If transportation is to be made sustainable, deployment of cleaner transportation options, such as a substantially larger EV fleet, is pivotal. Recupyl's recycling provides a solution that is but one puzzle piece in the difficult effort to electrify transportation, while also protecting scarce and finite resources.



www.recupyl.com

1. Thomas Goonan (2012): Lithium use in batteries - U.S. Geological Survey.

