



## Raw material recovery from solar panels

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### TRL scale



### What's needed for?

Over the next decade, the number of unserviceable photovoltaic solar panels will increase dramatically, reasonably tens of millions only in Italy. How can we dispose of the dismissed solar panels and recover their most precious raw materials? This patent has developed a method and plant to effectively separate glass, silicon, aluminium, silver and copper from discarded photovoltaic solar panels. The recovery of raw materials from photovoltaic solar panels is difficult because they are composed of different layers of materials, tightly sandwiched together in order to resist to external weather conditions. The method and plant described in this patent are an effective means of separating the materials present in the panels, such as glass, copper, silver, aluminium and silicon. The panels go through a sequence of treatments that use easy to find and convenient reagents. It does not require sophisticated machinery. The use of such a process will make material recovery convenient and will avoid the disposal of the panels in landfills, where hazardous materials may be dispersed in the environment.

### Advantages

- Easy to construct the plant
- Low cost process
- Recovery of valuable material such as silver, aluminium, silicon and copper
- Avoid the disposal of the panels in landfills

### Applications

- Industrial photovoltaic panel recycling plants
- Glass/photovoltaic cell separation systems