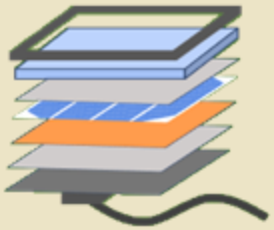
Sustainable Reuse and Recycling of Photovoltaic Materials in Solar Modules

Mass Panel Decommissioning

Loss of efficiency or **function** due to age, wear, and weather damage.

5.5-6 million tons of photovoltaic waste by the 2050s [1].

Mechanical and Thermal Separation Techniques



Isolate each layer in the solar panel for recycling.

Mechanically separate EVA.

Thermally degrade EVA at temperatures above 230 °C

Novel End of Life Solution

- **Divert** valuable materials from landfills

- **Maintain solar quality** of reclaimed materials.
- Unlike current solutions, keep silicon **intact** for **ease of remanufacture.**

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Continued Investigation

- Develop **quality assurance** protocols.
- Evaluate the **cost** of the final procedures.
- **Scale** process for use in industry.
- **Generalize** process to recycle all commercially available panels on the market.

[1] Weckend, S. and Heath G. "End of Life Management: Solar Photovoltaic Panels. *IRENA* 2016