Founded in 2007 in La Crosse, WI with two current locations:

- Onalaska, WI [HQ] 380,000 ft.
- Nashville, TN 50,000 ft.

208,319,733 LBS. OF MATERIAL HANDLED

12 YEARS OF INDUSTRY EXPERIENCE

7 SAFETY & COMPLIANCE CERTIFICATIONS

0 PROCESSED MATERIALS PLACED IN LANDFILLS
OUR STANDARDS

CERTIFIED, QUALIFIED, TRANSPARENT

• R2 and e-Stewards certified
• ISO 9001 and ISO 14001 certified
• OHSAS 18001 certified
• ITAR compliant
• NAID AAA certified

• No Landfill policy
• NIST SP 800-88, 5220.22 M
• Thorough downstream management
• $10M cyber risk and $10M pollution liability insurance
• Customized risk management services
WHERE ARE SOLAR PANELS COMING FROM?

Manufacturers

• Modules damaged during the manufacturing and distribution process

Waste Management Organizations

• Modules brought in for disposal from both residential and corporate generators

Solar Installers

• Modules being replaced by newer models

Why are WMOs and Installers seeing these?

• Modules no longer efficient and getting upgraded
• Weather-related damage
• Problems with the module itself (i.e. hot spots, delamination, etc.)
RESOURCE RECOVERY PROCESS

SOLAR PANELS → SHREDDER → EDDY CURRENT SEPARATOR → METAL SORTER → OPTICAL SORTER

- Non-ferrous fines
- Steel
- Glass
- Plastic
- Copper & other
- Aluminum
CONTENTS OF A SOLAR PANEL

- Frame
- Glass
- Encapsulant
- Solar Cells
- Encapsulant
- Backsheet
- Junction Box

Relative material value of a c-Si Panel:

- 47% Silicon
- 26% Aluminium
- 11% Copper
- 8% Glass
- 8% Silver
REFURBISHMENT & REUSE

Tips:

• Visually inspected for integrity
  - No sunspots, cracked glass or back sheeting (small chips in glass OK), minimal denting to frames, etc.

• Identifying qualified modules on the front end allows recycler to offer greater value

Markets:

• Most Manufacturers do not offer warranties on resold units
• Many charitable projects available
• Strong secondary markets in China, Middle East and Africa
• Peripherals can be resold (i.e. Inverters) but typically scrapped if sent through recycling stream at end of life
SCRAP MARKET: WHAT ISSUES ARE WE FACING AND WHAT DO WE SEE FOR THE FUTURE?

Plastic

• Chinese National Sword policy essentially eliminated plastics from entering the country
• Domestic companies are acquiring equipment to sort and separate different types of plastic
• Future forecast: likely to see more material processed and recycled domestically

Aluminum

• Still an oversupply vs. demand
• Uncertainty whether price of aluminum has bottomed out or if the downtrend will continue

Glass

• Traditionally difficult to manage as it needs to be a clean, pure product
• Requires a pure liberation of all commodities