

Solar Inverters Recycling (SIR) Process Programs

Cost-effective and Eco-Friendly recycling programs for E-Wastes

Problem

Our approach SIR and plan

Impact

- Solar Inverters are set to reach end-of-life → Landfill or recycled?
- Heavy metals presence in solar Inverters, power-electronics → E-Wastes are managed poorly → another recycling crisis
- Current no standard recycling → E-Wastes including ash, heavy metals, precious metals, Tin, Al, Lead, Zinc, mercury, lithium, lead, barium, beryllium, arsenic, antimony, cadmium, flame retardants and other toxins → Landfill
- 4.2GWdc solar assets/year → waste in 2020 alone jumping to 36GWdc in 2025 or about \$17.6 B USD

- Efficient de-assemble and sorting,
- Eco-friendly Cost-effective extracting precious metals with Reverse Electrical-Chemical Plating and low energy consumption Bioleaching or Biohydrometallurgy using microbes processes for recycling solar inverters and others power-electronics =
- Recycling E-Wastes with little/nothing go to landfill
- Additional services – Diagnostic/inspection, repair and replace with online application and database.
- Additional services - battery energy storage system (BESS) addition
- Demonstrated high efficiency, throughput and reliable SIR process programs; time to scale!

- SIR provides jobs for veterans and immigrants
- SIR factory locates in an underserved community East of Austin, TX.
- Eco-friendly cost-effective recycling process programs for solar Inverters and power electronics.
- Provides additional valuable services to asset owners and O&M companies.
- No vaporization of heavy metals and little/nothing goes to landfill.
- SIR provides a more positive incentive for solar renewable energy.

Ready	▪ Set up evaluation/validation and test team SIR
Set	▪ Manufacturing test run, improvements and efficiency test SIR
Go	▪ Completed SIR and well into commercialization



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