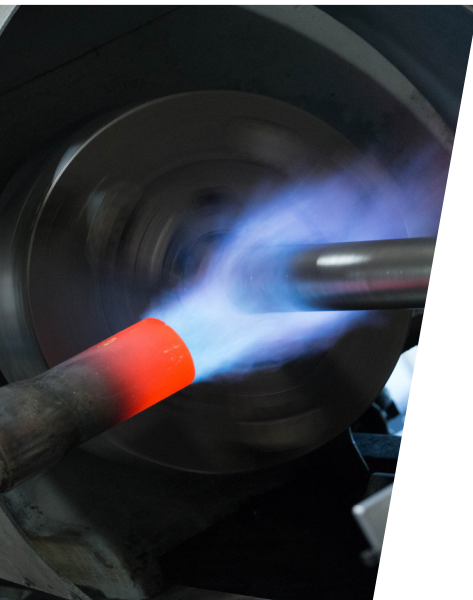


## MANUFACTURING A SUSTAINABLE FUTURE

REMADE (Reducing Embodied-energy And Decreasing Emissions Institute), a Manufacturing USA® institute, enables the early stage applied research and development of key industrial platform technologies that could dramatically reduce the embodied energy and emissions associated with industrial-scale materials production and processing.

Manufacturing USA, a public-private partnership with 14 manufacturing institutes across the nation, connects companies, academic institutes, non-profits, and local, state, and federal entities to solve industry-relevant advanced manufacturing challenges in new technology areas with the goals of enhancing industrial competitiveness and economic growth and strengthening national security.



### Technology Focus Area

U.S. manufacturing accounts for nearly 25 percent of the nation's total annual energy use. **Embodied energy is the sum of all processes required to mine, produce, process, manufacture, transport and deliver products.** The products created and manufactured embody a major portion of that energy. REMADE works to improve U.S. manufacturing competitiveness by partnering with industry to develop advanced manufacturing technologies that incorporate energy-reduction and sustainability principles. Lifecycle energy consumption for products can be greatly reduced by improving recycling and remanufacturing technologies. REMADE aims to drive down the energy and cost required to recover, reuse, remanufacture and recycle four classes of materials: metals, fibers, polymers, and electronic waste.

### Approach to Innovation and Collaboration

REMADE brings together experts from companies, universities, national labs and trade associations to explore cost effective-solutions to the technical and economic challenges facing the U.S. manufacturing landscape. This is done through:



**Technology roadmaps** and funded collaborative projects



Innovation early-stage **research** to address cross-cutting challenges focused on: System Analysis & Integration; Design for Recovery, Reuse, Remanufacturing, & Recycling (Re-X); Manufacturing Materials Optimization; Remanufacturing & End-of-Life Reuse and Recycling & Recovery



**Education and training** to prepare the U.S. workforce to deploy and manufacture REMADE-relevant technologies

LEARN MORE



CONNECT  
WITH REMADE

West Henrietta, New York

585-226-1313

[contact@remadeinstitute.org](mailto:contact@remadeinstitute.org)

[remadeinstitute.org](http://remadeinstitute.org)

# COLLABORATIVE PROJECT EXAMPLES

“The REMADE Institute’s focus on supporting U.S. manufacturing with more efficient technologies and processes for industrial reuse and recycling is very much in line with our institution’s values and commitment to our region. Monroe Community College is partnering with REMADE to integrate new and emergent technologies into our technician and engineering curricula, supplying our local manufacturing community with graduates educated in these relevant technologies and best practices around industrial-scale sustainable manufacturing.”

–Todd Oldham, Vice President, Economic Development, Workforce and Career Technical Education,  
Monroe Community College

Through the development of cost-competitive technologies that enable increased recycling, recovery, reuse, and remanufacturing of energy-intensive materials, the REMADE institute is positioning manufacturers to help the U.S. reduce its dependence on imports, compete globally, and reduce the energy required to manufacture its products.

The institute's first two projects have been awarded and are anticipated to start in the Summer of 2018. They are:

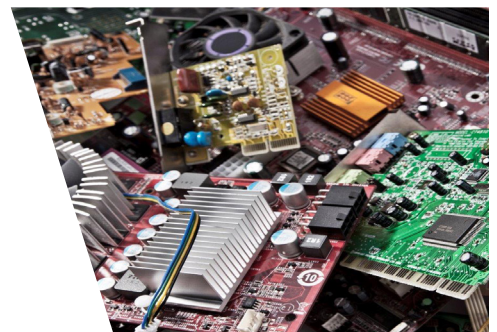


## ASSESSMENT OF THE IMPACT OF SINGLE STREAM RECYCLING ON PAPER CONTAMINATION IN RECOVERY FACILITIES AND PAPER MILLS

This project aims to evaluate the impact of single stream recycling (SSR) on paper contamination in recovery operations and explore emerging recovery processes for minimizing fiber contamination.

## RAPID SORTING OF SCRAP METALS WITH SOLID STATE DEVICE

This project focuses on the improving the separation of non-ferrous scrap metals from other non-ferrous metals using electrodynamic sorting (EDX) at high throughput and with greater purity and yield.



Additional projects are anticipated to start in Fall 2018 with proposals currently in the review process.

“REMADE's collaborative consortium and early-stage research will provide us with innovative new ways to address industry challenges and remanufacturing technologies that can extend the life of our products and improve energy efficiency in our processes.”

– John T. Disharoon, Director Market Access, Caterpillar Inc.