



Development of an Ultra-Low-Cost Solar Water Heater

Cooperative Research and Development Final Report

CRADA Number: CRD-12-487

NREL Technical Contact: Tim Merrigan

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In accordance with Requirements set forth in Article XI, A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

Parties to the Agreement: RhoTech Solar, LLC

CRADA Number: CRD-12-487

CRADA Title: Development of an Ultra-Low-Cost Solar Water Heater

Joint Work Statement Funding Table Showing DOE Commitment:

Estimated Costs	NREL Shared Resources
Year 1	\$ 300,000.00
Year 2	\$ 300,000.00
Year 3	\$ 300,000.00
Mod 1	\$ 1,095.00
TOTALS	\$ 901,095.00

Abstract of CRADA Work:

NREL and RhoTech will collaborate to bring long-lived, ultra-low-cost, high-performance solar water heaters (SWH) to market readiness. An existing RhoTech design uses seam-welded polymer thin films to make an unglazed thermosiphon, and this design will be modified to improve durability through ultraviolet and overheat protection, and to improve performance by adding a glazing to the collector. Two generations of the new glazed systems will be tested in the field, resulting in a robust market-ready SWH design that can be installed for under \$1,000 without rebates.

Summary of Research Results:

Prototype glazed and unglazed solar water heating systems have been developed, laboratory tested for performance, and tested in the field. High-volume automated production equipment has also been designed and prototyped. The final step is to commercialize this product, which will require broader private-sector investments in developing successful low-cost SWH products.

Subject Inventions Listing:

N/A

Report Date:

11/19/15

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