

**CRADA Final Report**

May 2016

**Date 3/21/18****PI** Michael Tucker**CRADA No.** CRADA008852TO004**LBNL Report Number** \_\_\_\_\_**OSTI Number** \_\_\_\_\_

1. Parties: California Clean Energy Fund (Prime: Halotechnics, Inc.)  
(Identify Parties to the CRADA)
2. Title of the Project: Thermal Storage Glass Development
3. Summary of the specific research and project accomplishments:  
Halotechnics used LBNL equipment including TGA and SEM to characterize thermal storage materials.
4. Deliverables:

Deliverable Achieved	Party (LBNL, Participant, Both)	Delivered to Other Party?
TGA data for selected glasses	BOTH	YES

5. Identify publications or presentations at conferences directly related to the CRADA?  
NONE

6. List of Subject Inventions and software developed under the CRADA:  
NONE

7. A final abstract suitable for public release:

Halotechnics, Inc. develops novel high temperature fluids and phase change materials, and designs modular salt storage tanks, as well as full thermal systems, for waste heat capture, grid-scale electricity storage, concentrated solar power, and other energy and efficiency applications. Using combinatorial chemistry techniques, Halotechnics has developed a variety of salts and other oxide compositions. Halotechnics's molten fluids product line offers salt and oxide glass products that can be used in temperature ranges spanning from 50°C to 1200°C. The properties of these various materials are appropriate for both sensible heat and latent heat thermal energy storage applications. The thermal energy stored in the materials can be converted to electricity by various methods, including direct conversion using thermoelectric generation, or indirectly,

by heating steam and running a turbine. LBL has materials characterization equipment that is useful for Halotechnics to achieve its materials development goals. Through the CalCharge agreement with LBL, Halotechnics worked with an LBL principal investigator to access this equipment, and to jointly design experimental procedures for unusual measurements.

8. Benefits to DOE, LBNL, Participant and/or the U.S. economy.

Thermal glass storage materials were developed that may be used to capture valuable heat resources and store for future use, thus improving energy efficiency of the U.S. economy. LBNL increased its knowledge of such materials.

9. Financial Contributions to the CRADA:

DOE Funding to LBNL	\$0.00
Participant Funding to LBNL	\$37,945.00
Participant In-Kind Contribution Value	\$0.00
Total of all Contributions	\$37,945.00