

Poseidon

ELEMENTAL DYNAMICS

Project Summary

The aim of this project is to develop a high efficiency focused concentrated solar thermal steam generator providing steam for multiple purposes from electrical energy to water dealination. A simplistic approach has achieved promising results, focusing a 1/10 size series of linear Fresnel lenses on a flattened copper tube, with water flowing through it, has produced 68% of the required steam pressure needed for the turbine/generator power output. This pressure was achieve with off-the-shelf lenses, within 45 minutes, in Ohio, results will be significantly better in more solar friendly areas. Our current focus is on a custom, patented, tubular lens design which will allow for easier focusing and self cleaning. First extrusions proved inadequate, funding is required for design modifications, 3D printing, material, molds and production time.

Key Personnel/Organizations

David Allen, Founder, Engineer Austin Sluder, Sales
 Patrick Wyse, Controls and Automation
 Scott Szewcyk, Manufacturing
 James Peoples, Design Engineering

Budget and Timeline

Investment funds: Cost-share: Total:

Key Milestones & Deliverables

Year 1:	Complete assembly and testing of 6 Element prototype. Achieve pressure output = 10Kva power generation.
Year 2:	Design for manufacturing/market acceptance. Build size, 6 cell array, 60Kva, a practical size for hotels.

Project Impact

The Elemental Dynamics Focused Concentrated Solar Power system can meet the needs of industry as well as communities, it is compact, cost effective, and multifunctional, generating electrical power, performing water desalination and atmospheric water extraction. Deployable on any flat roof or ground surface, uses a recirculating water system, and is most efficient during peak power consumption hours, making it highly desirable for the hotel industry, factories, hospital, universities, etc. any facility that wants to put the surface area of their roof to work for them. This system is currently under development as a land based water desalination system with plans to create a system capable of floating just off shore.

