

***This US DOE - NREL Challenge – American Water Prize Proposal -
Clouds and Rain: Optimum Solar Thermal Desalination
with Enhanced HDH Technologies, is:***

- ***Novel*** –
- 1) Both water and air are used as heat transfer fluids, mixing for localized heating and ***direct contact evaporation (DCE)***. Less boiling.
- 2) Microbubbles generated by ***Fluidic Oscillation*** of hot air at air/water interface greatly enhance evaporation.
- 3) Enhanced condensation surfaces match enhanced evaporation.

- ***Technically Feasible*** – Using existing commercially available technology
A larger scale ***Solar Spindletop*** prototype will be built. Material costs are lower. ***A collaborative agreement is now in place with Winston Cone Optics.***

- ***Impactful*** – Very large unmet market for portable, modular, and simple solar thermal desalination technology. More fresh water supplies are needed to “...expand the utilization of non-traditional sources of water, ensure water security in the U.S., and improve the resilience of infrastructure...” (DOE/NREL Solar Desalination Water Prize)

***Frontier
Research
Group (FRG)***

Teaming

