Technical Assistance Request

Epiphany Solar Water Systems' Concentrated Solar Power (CSP) Trans-critical water desalination system is a sophisticated integration of the Epiphany designed concentrated solar power subsystem and a new trans-critical water desalination system that will be designed and built as part of this Department of Energy American-Made Solar Prize.

As a result of the unique nature of this system design, with high temperature and pressure, Epiphany will require:

- Accurate delivery systems for heat and pressure
- Accurate measurement systems that can withstand the heat and pressure
- Realtime data logging systems
- 24x7 runtime and logging capabilities

We are very confident in our engineering expertise but understand that it is always good to have a 3rd party engineer review the design information. As such, we will need an independent and confidential review of our design calculations for mass energy balance and P&ID.

Epiphany has many years of field experience as well as materials, component and vendor selection. Due to the unique nature of some of these materials and components, we will be looking for assistance with these processes and vendor selection options.

Because the fundamental effluent of our Epiphany water desalination system is drinking water, Epiphany will need a certified water and solids test lab with the capability of testing to United States drinking water quality standards and test procedures, to test both the influent and effluent streams water quality.

Our past experiences with NREL have provided us with a high degree of confidence that the NREL scientists, engineers and labs will be able to provide Epiphany with assistance in all of our required support areas.

NREL is home to multiple laboratory research spaces that can be utilized by Epiphany. In particular, the Thermal Storage Materials Laboratory (https://www.nrel.gov/esif/labs-thermal-storage-materials.html) and the Thermal Storage Process and Components Laboratory (https://www.nrel.gov/esif/labs-thermal-storage-process-components.html) in the Energy Systems Integration Facility (ESIF) can be utilized for maintaining heat transfer fluids at high temperature and pressure for the purposes of this demonstration and research. The ESIF also has the requisite infrastructure necessary for contained desalination technology processes, as evidenced by recent research conducted by NREL and the Colorado School of Mines on a solar-driven desalination test at the ESIF.

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