

Request for Technical Assistance

Yotta Solar Inc. (Yotta) would like to request technical assistance from the National Renewable Energy Laboratory (NREL) to expand the ongoing testing and validation of the SolarLEAF, which is the World's First Panel Level Energy Storage Device. We aim to measure the overall installed cost, balance of system requirements and power efficiency of our DC-coupled, modular, non-invasive solar energy storage solution against commercially available energy storage technologies.

Specifically, technical assistance is being sought in connection with NREL's ongoing DOE benchmark study at their Golden, CO campus's Outdoor Test Facility (OTF). They have expressed interest in adding SolarLEAF to their roster of storage technologies being benchmarked on round trip efficiency, capacity fade and other grid-centric services. The objective of this DOE funded benchmark project is to compare commercially available storage options alongside TRL7+ technologies such as Yotta's SolarLEAF and the American Made Solar Prize would help us pay for.



Figure 1: SolarLEAF at NREL's Thermal chamber

The goal will be to produce a comprehensive report of the performance gains from having a DC-coupled panel level micro-storage, efficiency under different operating conditions over six months, ability to respond to different grid service requests like demand charge reduction, fast response, duck curve mitigation potential, etc. We will also invite regulatory personal from certifying agencies like UL, IEC, NFPA to ensure the rather new storage format is built to address current and future codes.



Figure 2: NREL's Outdoor Battery Test Facility in Golden, CO

The site is equipped with monitoring and control equipment which allows the NREL research personnel to run realistic load scenarios on a variety of competitive equipment. NREL is already running a validation of Yotta's patented battery thermal regulation at their Thermal Technologies Facility (TTF). This will segue into the proposed next phase at the NREL's OTF that can be funded in-part by the American-Made Solar Prize money we receive.

The purpose of these tests with NREL is to validate our technology and gather data to support the economic and technical case for why the SolarLEAF should be the preferred solution for use on commercial buildings, compared to existing expensive, centralized storage systems.

Mr. Vikram Iyengar - Chief Technology Officer at Yotta, is available to answer any questions in relation to this request. He would welcome the opportunity of developing with your staff the details of a suitable program of technical assistance in the identified areas, and coordinating as appropriate with other international organizations and donor countries involved in assisting us meet our goals in this respect.

We look forward to hearing from you and working with your staff.

Sincerely yours,

Vikram Iyengar

CTO & President - Yotta Solar Inc.