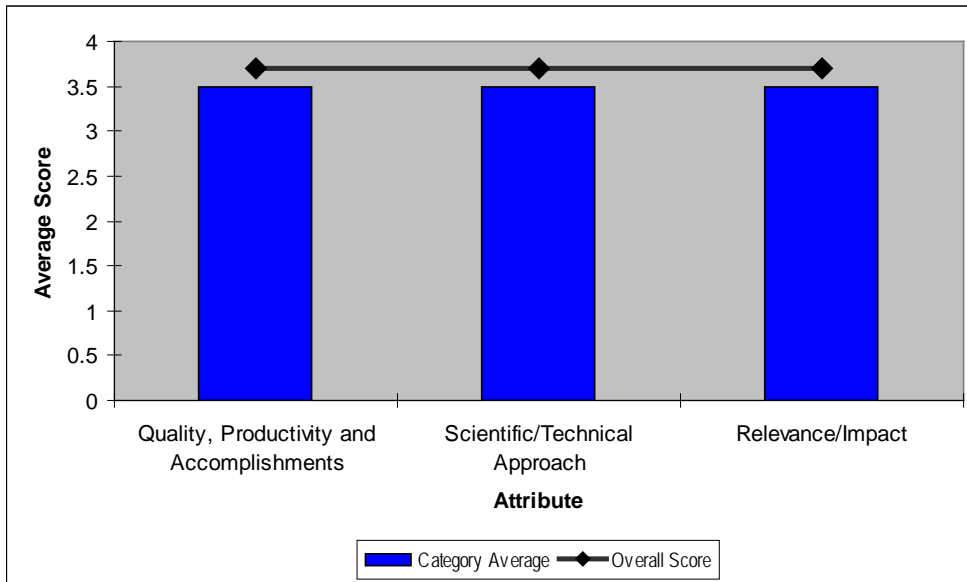


Facility Plans

Principal Investigator: *Mark Mehos, National Renewable Energy Laboratory*



Overview of investments to refurbish and expand CSP research facilities at NREL. Plans include long-term development of advanced storage and optical materials research, as well as upgrades of the facility’s high flux solar furnace and collector/receiver characterization facilities.

Quality, Productivity and Accomplishments (Average Rating 3.5)

Rating Comments

3.0 The team qualifications are outstanding. However, the project funding seems short to cover the identified needs.

4.0 [none]

3.0 An appropriate number of people, with well recognized technical credentials have been engaged in this project. The members of the team and collaborators clearly demonstrate their ability to contribute to the project. The facilities deployed on the project appear to be adequate, but limited, for the task at hand. The work under way is producing an appropriate level of accomplishment relative to the costs incurred. The project team appears to be on schedule, but the project is clearly still in progress and not yet complete.

CSP – NREL

- Refurbish existing NREL facilities that have significantly deteriorated over time
- Get requests all the time for materials testing – queue forming, need to expand certain test facilities
- Standards for component level and subsystem level tests
- Long term development – advanced storage and advanced optical materials
- 10,000 square feet of lab facilities incremental space
- Have a queue developing for trough characterization

- Working groups for test standard for revr, mirror optics, durability, acceptance testing
- FOA and industry in general – a move towards steam receivers – the problem is there is not long term method for storage compatible with steam eg brightsource
- 100kw thermal test scale

- SolarTAC – state of Colorado coupled with NREL and private industry, CSU, School of Mines, UC Boulder
- C2b2 – biofuels collaboratory in Colorado
- Sunedisoin, Abengoa, Xcel Energy
- Founding member – 1.5 million over a three year period
- IAEA Organization – internationally
- 1 Collector component
- 2 mirrors and receivers
- 3 durability
- 4 acceptance testing

- 4.0 The major objectives are to refurbish existing NREL facilities, expand near term testing of CSP components, component and system level test – need standardization,, long term development of advanced optical and storage materials, solar technology accelerator center

Scientific/Technical Approach (Average Rating 3.5)

Rating	Comments
3.0	The approach used seems fine.
4.0	[none]
3.0	Facilities upgrades and renovation are appropriate, needed, and timely. In addition to rebuilding existing capability and re-furbishing, need to also begin to look to the future. Critical that NREL and SNL collaborate more, and avoid unnecessary duplication of infrastructure.
4.0	The facility upgrade plan is on target and needed to meet technology and industry challenge and need for near term and long term testing.

Relevance/Impact (Average Rating 3.5)

Rating	Comments
3.0	The goal of the project of refurbishing the existing NREL facilities and expand them to support the CSP industry is of high importance to the industry. The actions identified are relevant and will provide much needed support to the industry.
4.0	[none]
3.0	Clearly this is a time when the nation needs to reinvest in these facilities and infra-structure.
4.0	Focusing on parabolic system coordinating solar paces internationally

Overall (Average Rating 3.7)

Rating	Comments
3.0	Refurbishing the existing NREL facilities and expand them to support the CSP industry is of high importance. Although, the project funding seems short to cover the identified needs, the team is well qualified to execute the project, and the approach used seems fine.
4.0	The following comments apply to both the NREL and SNL facility plans: <ul style="list-style-type: none"> - The Facility Plans are very appropriate and relevant to the needs for CSP development. It would help upgrade some of the depreciated facilities/equipment, add much needed capabilities to meet the immediate need of the CSP industry and consolidate the scattered facilities in more logical locations. -The focus of the facility plans seemed to be too much on immediate needs, which is

understandable and justified. However, it would be helpful to be more forward thinking and include items that are going to be needed in the medium and longer term future. The two plans need to be coordinated to avoid unnecessary duplications (some duplication are necessary and should be supported). Communication and information/knowledge sharing with the folks at the Lab in Spain would be beneficial.

-It seemed the PIs from the two labs were working closely with each other and there is a great degree of goodwill between them. SolarTAC is a great addition. Generating more support for SolarTAC would be helpful. Some level of understanding among external stakeholders as to which lab is aligned to do what in broad terms (e.g. SNL is good for dish/sterling and tower, NREL is good for parabolic trough, etc.) would be helpful for the public so that one knows where to go first for a certain kind of work.

3.0 [none]

4.0 There has been lack of funding during last few years. It is very timely that the major facilities described in the facilities plans be upgraded to support R&D related o the concentrated solar power. Facilities for NREL: NREL has more analytical facilities, and is more focused on trough technology. It is recommended that work should be a lot more coordinated between the two national Labs. Facilities plans for both Labs were focused more on what they have now, not too much future thinking. Both labs are encouraged to think toward the future facility needs, not just rebuilding. In addition, each Lab must develop well known themes. These themes are important for public to know which Lab to contact.