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18 months of operation of a 1 MWth demonstration loop in SEGS II  
A 8m width and 150m length will be the optimum trough by 2014

SkyFuel has published three new Technical Papers with data and results about its concentrated solar thermal power products, SkyTrough Solar Concentrator and ReflecTech Mirror Film.

The "Long Term Performance of SkyTrough Solar Concentrator" paper, shows the results after 18 months of operation of a 1 MWth demonstration loop in SEGS II, where the thermal output has been continuously measured and the results have been compared against model predictions based on NREL efficiency measurements.

Wind speed effect on performance has also been tested with the result of no measurable impact on thermal output at operating wind speeds of 11 m/s (25 mph). After more than 3500 cumulative hours of operation, the average ratio of measured to predicted output has been greater than 96%.

The reflectance of its ReflecTech Mirror Film has been tested with a result of 93.4% of average reflectance, including an intentionally exposure of the troughs to a rainstorm by manually rotating the collectors to the zenith position.

The paper concludes "The continuous operation of the SkyTrough at the SEGS II power plant facility has demonstrated that the thermal performance is both predictable and sustained at high levels. There is no measurable impact on thermal output at operating wind speeds of 11 m/s (25 mph). Reflectance measurements of ReflecTech mirror film have shown no degradation after more than two years of operation in a commercial environment" and adds "SkyFuel now provides warranted thermal output based on Direct Normal Insolation for several years, and guarantees the reflectance of ReflecTech mirror film for twenty years as a direct result of the performance of the SEGS II commercial demonstration loop".

A second paper entitled "Service Life Prediction for ReflecTech Mirror Film" is based on the results of accelerated exposure tests carried out in a test matrix developed and implemented jointly with NREL. This paper describes testing associated with 5 points along a series of prototypes which have been improved in subsequent stages, from the first RT-1 to the current commercial version RT-5 which includes an increased UV protection against its predecessors and a new protective abrasion resistant hardcoat.

The paper uses a service lifetime prediction methodology in combination with detailed analysis of accelerated and real time testing. The results are outdoor lifetimes of ReflecTech above 35 years where concentrated solar thermal plants are suitable to be located.

The last paper released focuses on the development of a parabolic trough to reduce LCOE to less than \$0.09 per kWh in a 200 - 250 MW baseload power plant with a capacity factor of 75% and a limit of 15% fossil fuel fraction.

To achieve this, SkyFuel increased the trough aperture and the operation temperature above the current state-of-the-art parabolic troughs. The result is the "SkyTrough for Dispatchable Solar Power" (SkyTroughDSP).

The basic configuration will be a parabolic trough with 8m of aperture width, 150m length and an operating temperature of 500°C. SkyFuel intends to offer the SkyTroughDSP into 2014 markets.

The papers are available at [www.skyfuel.com](http://www.skyfuel.com)

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