Thank you for your comment, Christopher Davey.

The comment tracking number that has been assigned to your comment is SolarS50030.

Comment Date: June 23, 2008 13:17:59PM
Solar Energy Development PEIS
Comment ID: SolarS50030

First Name: Christopher
Middle Initial: J
Last Name: Davey
Organization: SolarMission technologies, Inc
Address: 5110 N. 44th ST
Address 2:
Address 3:
City: Phoenix
State: AZ
Zip: 85018
Country: USA
Email: cdavey@enviromission.com.au
Privacy Preference: Don't withhold name or address from public record
Attachment: Technology2.pdf

Comment Submitted:

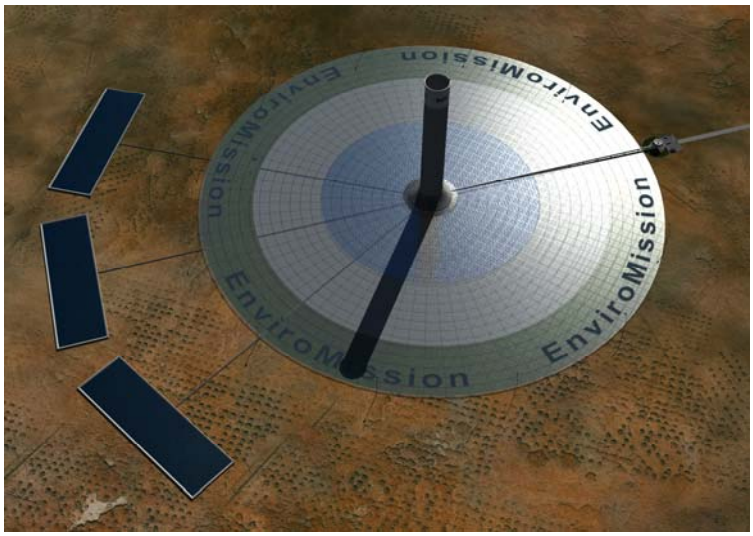
I have attached a brief summary of the Solar Tower technology and the proof-of-concept facility already builty, operated and tested that I am proposing is included as one of the technology types being considered for development on Federal BLM lands. The Solar Tower technology has extremely high capacity factors, low operating costs, uses ZERO fresh water and emits ZERO pollution. The Solar Tower is a large scale (200MW) competitively priced green electricity generator. A number of sites throughout the southwest have been identified with development already underway. Video footage from various documentaries discussing the technology can be found at our website (www.enviromission.com.au). I am available to discuss the Solar Tower whenever convenient at (602) 343.8190 See Attachment.

Solar Tower Technology

Solar Tower technology is a highly-differentiated solar energy option that combines established principals of physics, thermal and fluid dynamics with engineering and design innovation to produce large volume dispatchable, emission-free electricity.

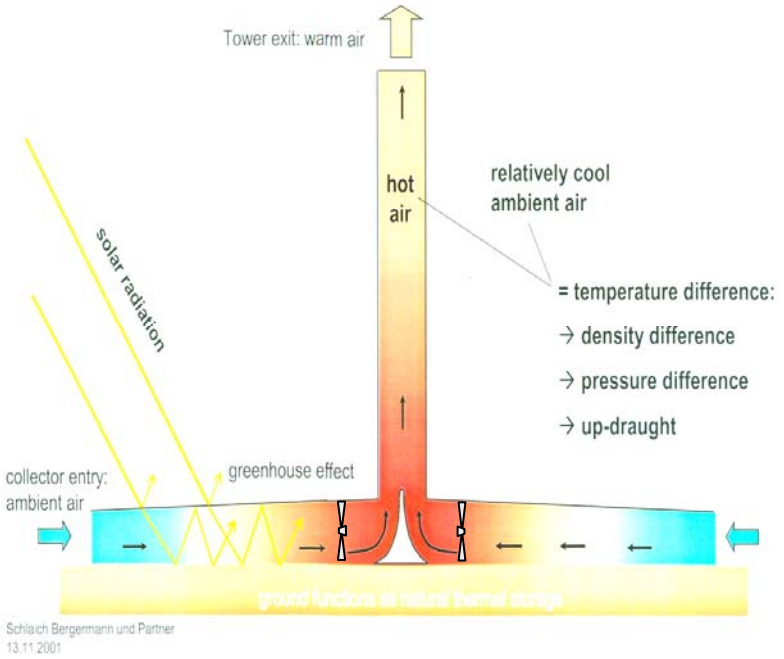
The Solar Tower is not only capable of producing 'green' power with extraordinarily high capacity factors; it does this while consuming no fresh/drinking water.

Solar Towers have high capacity large-scale output that can be tailored to meet base or peak power demand into embedded or distributed grid networks. The ability to generate electricity 24-hours-per-day is dependent on the utilization of heat storage.



Current modeling based on data collected from the extensive tests completed on the demonstration unit and further engineering analysis indicates a 200MW Solar Tower power plant, dependent on the amount of heat storage utilized, can operate with a capacity factor of between 50 and 75 percent. A facility operating at a 75% efficiency equates to annual saving of close to 2,000,000 tons of greenhouse gases (GHG) from entering the environment. This savings is equivalent to taking 500,000 cars off the road annually.

Solar Towers are designed to cause a constant flow of solar heated air to drive turbines to generate electricity based on solar thermal updraft principals. Air beneath a low circular translucent roof (collector) open at the periphery is heated by solar radiation (greenhouse effect) and naturally rises to the highest point – the base of the tower located at the center of the collector (the collector has a gradual slope toward the center).



Turbines are positioned at the base of the tower and the movement of the heated air through the turbines drives the generation of electricity. Providing there is a temperature differential between the base of the tower and the cooler ambient air outside and at the top of the tower, the Solar Tower will continue to generate electricity. Unlike the majority of other power producers, the Solar Tower requires no fresh water in its production of electricity, operates in cloudy or sunny periods day and night, and has very low maintenance costs due to few moving parts with low stress loads predicted for all major components.

Demonstration Unit

The technology has been tested, evaluated and proven through the successful operation of a demonstration plant constructed in Manzanares, Spain, by Schlaich Bergermann in conjunction with the German and Spanish Governments.

The demonstration unit operated for eight years between 1982 and 1989, with a 50 kW capacity. The tower was 650 feet high and 33 feet wide and was constructed with corrugated sheets forming the cylinder and used stay cables for support. The collector was 800-1000 feet wide and built from over 450,000 feet^2 of plastic, PVF and glass. The collector was built on steel supports. The vertically mounted turbine had a 4-bladed design.

Data was extrapolated over a three-year period. The large database provided a clear pattern of performance over numerous climatic and operating conditions.

The performance modeling and the collection of 14 billion measurements provided an independent confirmation of thermodynamics that validated the existing physical model. There were also numerous sensitivities conducted, enabling the study and fine-tuning of optical and aerodynamic performances and the testing of various heat and energy storage methods. Overall, a great deal of confidence has been gained from the exhaustive research that supports the scale-up and design of a 200 MW facility.