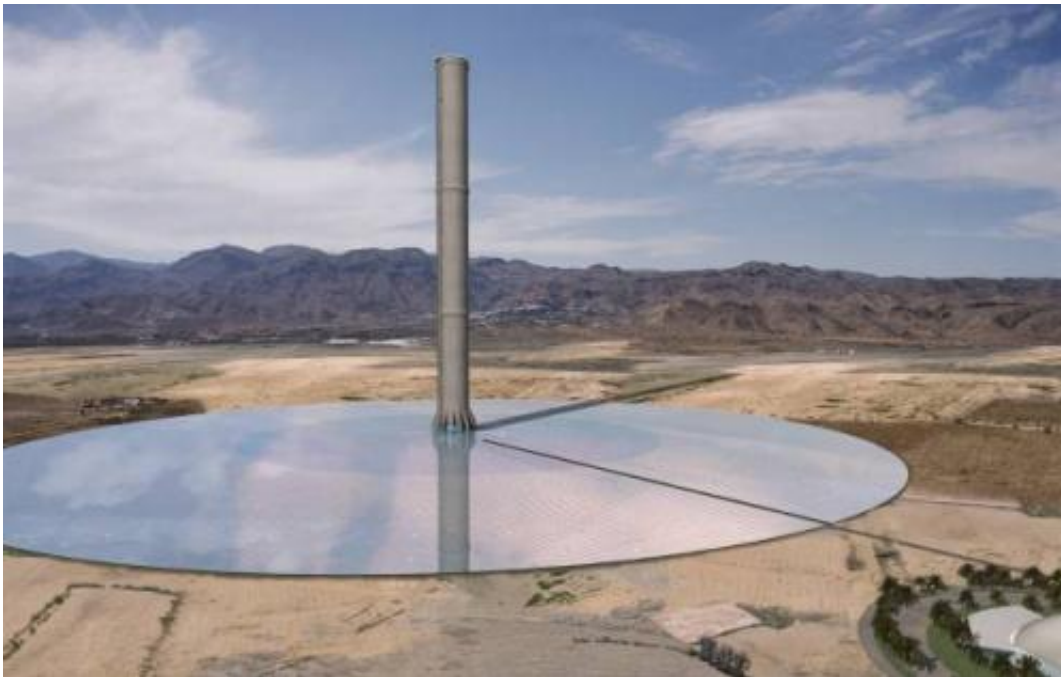


Famed balloonist proposing huge inflatable solar updraft tower for observatory

November 21 2013, by Bob Yirka



Solar tower. Credit: drroyspencer

(Phys.org) —Famed balloonist Per Lindstrand (he crossed the Pacific Ocean in one with Richard Branson back in 1991) has told *The Engineer* that he is proposing a 1km high inflatable solar updraft tower to power the ALMA Observatory in Chile's Atacama Desert.

Solar towers aren't new of course, the idea has been bandied about for over a century. The idea is to draw heat from the sun at the base up

inside the [tower](#) where the air current becomes strong enough to turn turbines. A group in Spain built a prototype in the 1980's but it was decommissioned after just 8 years due to wear and tear and rust.

Lindstrand is claiming that the way to go is to forego metal or cement, and construct the tower out of inflatable material—something he knows a lot about of course due to his ballooning background. Building a tower is something on a different order though, it would need to last a lot longer than a balloon to make it cost effective. Lindstrand envisions a coating that would make the flexible skin impervious to weather and UV radiation. He believes such a tower would not only last longer, but would be far cheaper to construct. He says he and his colleagues back at University College in London have calculated that it would cost approximately \$750 million to construct a 1km tall solar tower out of cement—but one made of inflatable materials could be constructed for as little as \$20 million. A tower like that, he says, would be able to generate 281GWh power annually. It'd be big too, with a base approximately 7km wide.

Lindstrand and his team are currently working on a small proof of concept prototype that will be just 3.5m tall. If that proves successful, they expect to construct one that will be closer to 10 meters tall. Even if the second prototype is successful, however, it's still not clear if the people who would make such a decision for ALMA Observatory would be willing to take such a gamble. Lindstrand notes that the desert environment would be an ideal location for such a tower due to the fine sand in the area that causes problems for traditional solar cell maintenance.

More information: via [The Engineer](#)

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