

Satellite proposed to send solar power to Earth

April 11 2012, by Bob Yirka



Image credit: John Mankins

(Phys.org) -- Artemis Innovation Management Solutions has been given some seed money by NASA to look deeper into a project the company first proposed last summer; namely, building a satellite that could collect energy from the sun and beam it back down to Earth to add to the electrical grid. Building such a satellite has been bantered about for



several decades by various groups and scientists, but until now, no one had come up with a design that would work given all the constraints of the time. But now, an idea proposed by longtime NASA engineer John Mankins, now with Artemis, has clearly created enough interest within NASA that some money to investigate the idea is being offered.

Mankins idea is a bio-mimetic approach, meaning it's based on the way something in nature goes about handling a similar situation. In this case, it appears that something is the common flower, which uses its petals to collect solar energy. Mankins idea is to build petals out of an array of many small mirrors that would direct sunlight to <u>solar cells</u>. The energy created by the solar cells would then be converted to microwaves which would be broadcast or beamed back to a receiving station on Earth, where electricity (perhaps as much as tens of thousands of megawatts) would be generated from the energy in the microwaves. To make the project feasible, the mirrors and solar cells would be small and lightweight so that they could be easily transported into space using conventional transport vehicles. And because it would be component based, construction costs would be much lower than other proposed ideas.





The project called Solar Power <u>Satellite</u> via Arbitrarily Large PHased Array (SPS-ALPHA) would make use of thin filmed mirrors to reduce weight which would be curved to take maximum advantage of the sunlight it receives. Also, the satellite would sit far enough away from planet Earth so that it would never be in the dark, allowing for a constant stream of microwaves.

The initial seed money is to carry out a feasibility and proof of concept study. If <u>NASA</u> likes what it sees, the next step would likely be the construction of a pared down, cheaper version of the project working from a near Earth orbit. If that works out as planned, than the full scale satellite would be built and sent up, perhaps becoming the game changing solution to energy production that so many researchers the world over have been looking for.



More information: <u>www.nasa.gov/offices/oct/early</u> <u>nkins sps alpha.html</u>

© 2012 Phys.Org

Citation: Satellite proposed to send solar power to Earth (2012, April 11) retrieved 2 May 2024 from <u>https://phys.org/news/2012-04-satellite-solar-power-earth.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.