

IAA says 'Yes We Can' to power plants in orbit

November 15 2011, by Nancy Owano

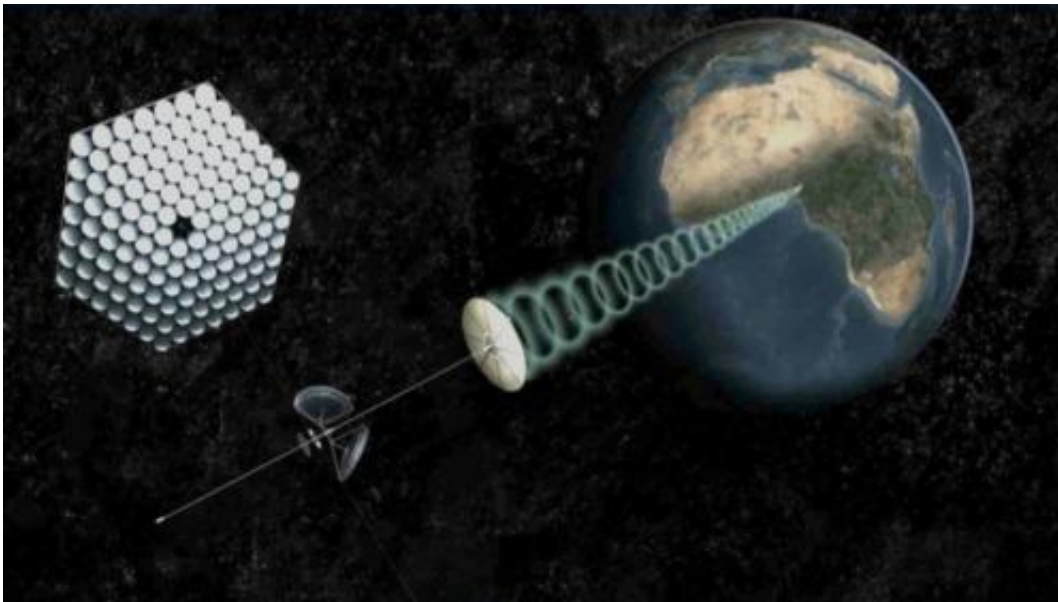


Image credit: SpaceWorks Engineering, Inc.

(PhysOrg.com) -- Scientists from around the world have completed a study that says harvesting the sun's energy in space can turn out to be a cost effective way of delivering the world's needs for power in as little as 30 years. As important, the report says that orbiting power plants capable of collecting energy from the sun and beaming it to earth are technically feasible within a decade or so based on technologies now in the laboratory.

These are findings in a report from the International Academy of Astronautics, headquartered in Paris.

What their time references refer to are that the very technology needed to satisfy global energy requirements may be available in only 10 to 20 years, and the project can show cost-effectiveness in about 30 years.

The IAA's three-year, ten-nation study, as the first broadly based international assessment of collecting solar energy in space, is considered significant. The study was conducted from 2008 to 2010 and was under peer review. John Mankins, the former head of concepts at NASA, led the study.

The concept centers on placing one, then several, then many, solar-powered satellites in orbit over the equator. Each would be several miles wide. The satellites would collect sunlight up to 24 hours a day

The power would be converted to electricity in space, then sent to where it was needed on earth by a microwave-transmitting antenna or by lasers, and then fed into a power grid.

Who would bear the cost of such an effort? The report recommends that both governments and the private sector should fund the research needed to further determine viability.

A pilot project to demonstrate the technology could proceed using low-cost expendable launch vehicles being developed for other space markets, said Mankins, according to Reuters. A moderate-scale demonstration would cost tens of billions of dollars less than previously projected as a result of not needing costly, reusable launch vehicles early on.

According to reports, reactions to the study strike a hopeful note that

such a project will proceed.

Jeff Peacock, who heads Boeing's ground-based solar cell product line, said in theory it could double the amount of [solar power](#) collected, compared with the earth-bound technology equivalent. Col. Michael Smith, director of the Center for Strategy and Technology at Maxwell Air Force Base in Alabama, was quoted as saying that the idea has the potential to send safe, clean electrical energy worldwide "if we can make it work."

Advantages to space solar power compared to ground solar power are that it can occur without worry about adverse weather conditions and the costs of energy storage. Another thumbs-up reason given is that solar collection does not bring carbon pollution, addressing key concerns about a continuing reliance on fossil fuels that contribute to global pollution.

Nevertheless, the Reuters report says skeptics point out hurdles such as space debris, a lack of focused market studies and development costs.

More information: iaaweb.org/

via [The Globe and Mail](#)

© 2011 PhysOrg.com

Citation: IAA says 'Yes We Can' to power plants in orbit (2011, November 15) retrieved 19 April 2024 from <https://phys.org/news/2011-11-iaa-power-orbit.html>

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.
