

## European space company wants solar power plant in space

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(PhysOrg.com) -- EADS Astrium, Europe's biggest space company, plans to put a solar power satellite in orbit to demonstrate the collection of solar power in space and its transmission via infrared laser to provide electricity on Earth.

Chief executive officer of Astrium, François Auque, said the system is at the testing stage, but that a viable system collecting and transmitting power from space could be within reach soon. Auque said space solar power is an attractive idea because it is an inexhaustible and clean form of energy. Unlike solar plants on Earth, orbital solar collectors can work around the clock, and there is no interference from clouds or atmospheric dusts or gases, which means the energy hitting photovoltaic cells in orbit is much greater than it would be for the same panels on the ground.



Earlier concepts of beaming power to Earth from space were criticized because they relied on microwaves to transmit the power to the ground, which has safety concerns, so Astrium plans to use infrared lasers instead, which means that even if they were misdirected people and objects hit by the laser beams could not be scorched.

The transmission of power via <u>infrared laser</u> has been tested in Astrium's laboratories, and they are now concentrating on improving the system's efficiency. Work on developing converters to convert received infrared energy to electricity is proceeding rapidly, and Astrium is collaborating in this work with scientists at the University of Surrey, in the UK. The company is hoping to achieve 80% efficiency in the conversion.

According to Astrium's chief technology officer, Robert Laine, at present the power handled by the system is limited by the size of the laser that can be built. A demonstration mission would also be necessary to prove the system works, and this should be possible within the present decade.

The concept of harvesting solar power in space has been discussed for at least the last three decades, but the problems of power loss during transmission and the expense and difficulty of assembling large arrays of <u>solar collectors</u> in space have seemed almost insurmountable. However, Astrium is not the only company close to bringing the idea to fruition. Last September Japan announced it is planning to put a small demonstration solar collecting satellite in orbit by 2015. This system will transmit the power to Earth using microwaves.

EADS Astrium is seeking investors and partners such as the EU, national governments, space agencies, or power companies, to fund and contribute in other ways to the development of its operational orbital solar collection and transmission system.



## **More information:** EADS Astrium -- <u>www.astrium.eads.net/</u>

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