Space solar power generation literature

Once considered a book-only sci-fi fantasy, space-based solar power, or SBSP, is now gaining popularity as a potential sustainable energy source for the future.

Space solar power (SSP) proposes to launch a device into space that collects solar power and beams it down to Earth at radio frequencies. It was proposed decades ago as an alternative power source to ...

We present one composed of an array of modules hosting flexible photovoltaic panels and phased arrays, which are coiled, launched, and deployed in orbit. At scale, the system could deliver power at ...

We performed a first order lifecycle study of two representative SBSP designs for 2 GW utility-scale power generation that, for the purposes of the study, are presumed to begin in 2050.

With the maturation of core technologies and increasing financial activity, space solar power development is poised for rapid growth. This step change in growth is parallel to a transition...

NASA is developing ISAM, autonomy for distributed systems, and power beaming. Continuing to invest in these capabilities will make SBSP systems more technically feasible in the future.

To introduce the state-of-the-art information, the properties of the system and modern SBSP models along with application and spillover effects with regard to different sectors was examined. The ...

Purpose of the Study This study evaluates the potential benefits, challenges, and options for NASA to engage with growing global interest in space-based solar power (SBSP).

This book highlights a comprehensive introduction to space solar power, covering the history, latest developments, system composition, and key technology.

We propose a scalable and economically efficient system for SSP enabled by high-efficiency, radiation-hard solar cells; high-efficiency integrated circuits; flexible phased arrays; and ...

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