

Space solar power - activities and progress

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Following the formulation of the conceptual idea a few decades earlier, Peter Glaser proposed the first engineering concept of a fundamentally new approach to global energy. Based on advances in photovoltaic power generation and wireless power he proposed an orbiting satellite that would benefit from permanent and high solar irradiation to generate in space electricity that would be wirelessly transmitted to receiving stations on Earth, overcoming the terrestrial intermittency of solar energy generation, as well as weather and seasonal variations. While the essence of the basic concept has not changed, both the enabling technology and the conceptual approaches have advanced substantially since 1968.

The concept has attracted varying attention from space fairing nations, initially dominated by governmental efforts (intense but short-lived in the US, steady and focussed on R&D in Japan and more recently substantial activities in China and India) and following the trend of both the space and the energy sector, increasingly by the private sector. This talk will provide an overview of the current state of research on space solar power and attempt an outlook of the impact of recent advances on space solar power concepts.