

IAF SPACE POWER SYMPOSIUM (C3)  
Solar Power Satellite (1)

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## A NOVEL APPROACH TO MEET FUTURE ENERGY NEEDS : SOLAR POWER SATELLITE

**Abstract**

It is widely agreed that our current energy practices will not provide for all the worlds people adequately and still leave our Earth with available environment. Hence, a major task for the new century will be to develop sustainable and environmentally friendly sources of energy.

The objective of the Solar Power Satellite (SPS) is to convert solar energy in space for use on Earth. Its most significant benefit is the potential for continuously generating large-scale electric power for distribution on a global scale. The SPS system is outlined, and the status of the SPS concept development is reviewed. Assessments of key issues are reported including economic considerations and environmental issues as well as physical resource requirements. The Solar Power Satellite (SPS) system is one such solution to deliver power to space vehicles or to elements on planetary surfaces. International SPS-related activities within the context of evolving space programs will be discussed. An approach for an evolutionary advancement of SPS to meet requirements of power supply for use on earth and in space is presented, and a growth path to achieving the potential of power from space for use on earth is outlined.

This paper will present the brief concept evolution of a satellite power system and the impact of microwave power transmission on space plasma. In near future conventional power sources cannot meet total power demand, for which SPS proves to be viable solution. This paper answers the fundamental question of why we need to develop SPS from the viewpoint of critical global issues surrounding mankind, the advantages, disadvantages and biological impacts on Earth in a comprehensible manner. The significance of advancements in technologies applicable to the development of the SPS will also be discussed.