

SPACE POWER SYMPOSIUM (C3)
Architectures, concepts and systems for space power (3)

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SPACE POWER SYSTEM INITIATIVES: ESTABLISHING WORLD VISION AND CAPACITY

Abstract

The world's population growth is exhausting the world's limited supply of non-renewable energy sources, and along with it, introducing significant anthropogenic environment and climate change. Although the economic and business inertia tend to cling to the lure of non-renewable energy resources, it is imperative that in the foreseeable future extensive renewable or green energy sources should be progressively utilized to replace the non-renewable ones and to sustain reasonable living standard for the entire world's population. The world's dream of non-existence of the world's socio-economic and technological gap is still far from being a reality, and many of the pioneering technology breakthrough for the benefits of humanities, to some extent, contribute to their widening gap. Then it will be timely and appropriate that a new vision for world's "green" energy be shared by and contributable to a fair distribution of world's population, presently still grouped into countries with unbalanced capacity distribution. In particular, judging from the large population distribution and growth in developing countries compared to the developed ones, the need and growth for energy resources will also be more or less similar. It is well known that "The Sun is a giant fusion reactor, conveniently located some 150 million km from the Earth, radiating 2.3 billion times more energy than what strikes the disk of the Earth, which itself is more energy in a hour than all human civilization directly uses in a year, and it will continue to produce free energy for billions of years." "Our Sun is the largest known energy resource in the solar system. In the vicinity of Earth, every square meter of space receives 1.366 kilowatts of solar radiation, but by the time it reaches the ground, it has been reduced by atmospheric absorption and scattering; weather; and summer, winter, and day/night cycles to less than an average of 250 watts per square meter. Space Based Solar Power offers a way to break the tyranny of these day/ night, summer/ winter and weather cycles, and provide continuous and predictable power to any location on Earth". Therefore the following aspects are relevant: 1. Significance of Space Power System Imperative to the developing world, including a. Space power system imperatives: global and multifaceted vision; space, energy and environment b. Economic development considerations as viewed from developing country c. Human capital development considerations as viewed from developing country 2. How could Space Power System Imperative reduce the Technological and Economic Gaps, and in turn unify world communities for common concern and interest. 3. Stimulating Positive Attitude in Developing Countries: The Microsatellite Tool? 4. Universal SPS Program Initiatives – arms reaching but novel paradigm – establish productive and resourceful partners-in-arms by expanding opportunities at creative circles 5. Space power system: comparative analysis of several architecture and technologies; simulation by microsatellite-concept 6. Technological options considerations in view of overall strength and weakness / gains and losses These aspects will be elaborated and discussed.