



Aerospace Technology Working Group



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ATWG Recommended Action For Space Based Solar Power

Present Situation: Space Based Solar Power (SBSP) for terrestrial use has been the subject of many studies since the concept was introduced in the 1970's. Over this time, the assessment has been remarkably consistent: SBSP is technically feasible but it is too expensive and presents enormous engineering challenges. The technology is, however, improving, and cost trades are moving in the right direction. Although SBSP is a cleaner source of power, its cost currently remains above that of other power sources. During this entire era the framework for developing SBSP has been considered as primarily a U.S. Government program and remains that way today. Due to recent concerns about U.S. energy independence and environmental stewardship, SBSP is again getting attention. As might be expected, various segments of the community are advocating different approaches and development projects.

Consequences of this Situation: The passionate statements and proposals by proponents and opponents should not overwhelm the reasonable thinking that is going on within the aerospace, defense, and energy communities. The government stands in danger of overreacting positively or negatively to these factions and thereby not grasping the best path to the future. Absence of a clear thinking, coordinated cross-discipline, and cross-agency programmatic effort could lead to inaction or precipitous action, confusion, and conflict over allocation of resources.

Possible Solutions: The ATWG suggests that the context within which the U.S. government, industry, and the public view the future of SBSP be dramatically recast. We judge this is not a NASA-centric aerospace technological issue. It is a national security issue, an energy security issue, an environmental solution, and an economic security issue, and, thus, needs to be addressed within a framework that includes all these dimensions, perspectives, and players, including considerable participation by private energy enterprise. The role of government should be to mature a limited number of components and processes to prove their economic and technical viability; then, step back, while continuing to support a strategy that addresses all elements of the problem. The government should lend support to this potential new industry, as done before for other fuel sources. While completing the maturing phase, the government program should work with industry to collaborate so that the private sector can pick up the costs and implement the SBSP system, if practical. This can be done in a sequence of steps with each step creating an increasing level of energy production to meet legitimate market demand profitably step by step, ultimately scaling to the level of provision of significant base load power in the U.S. This level may take decades to achieve.

Recommendations:

- (1) The new administration, working with Congress and industry, should recast the context of SBSP as mentioned above, so as to engage all appropriate governmental and private interests in a coordinated manner.
- (2) Fund studies that clearly identify an appropriate strategy for governmental development of key technologies and processes, including risk reductions, and characterize their hand off to industry.
- (3) Create collaborative structures for joint funding of the projects with transition to total industrial funding.