Paper ID: 66747
oral

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

Author: Mr. John C. Mankins
ARTEMIS Innovation Management Solutions, LLC, United States, john_c_mankins@yahoo.com

SPS-ALPHA MARK-III AND AN ACHIEVABLE ROADMAP TO SPACE SOLAR POWER

Abstract

During the past decade, dramatic advances have occurred that increase the likelihood that space solar power (SSP) will be realized during the next. First, prospects for dramatically lower cost launch to space have become more realistic due to the progress made by ground-breaking commercial space firms, particularly Space Exploration Technologies, Inc. (SpaceX) and Blue Origin. Second, a wide range of novel technologies have progressed that hold promise for the cost-effective manufacturing and deployment of exceptionally large space structures – such as SPS (solar power satellites) – feasible in the near term. Third, new market opportunities have emerged – particularly the need for sustainable and global carbon-zero energy sources – that dramatically improve the economic context for SSP. And, finally a new business model and overall roadmap for SSP have been defined, based on the SPS-ALPHA (SPS by means of Arbitrarily Large Phased Array) that promise a clear, affordable path to deploying this critically- needed new energy option.

This paper will review the critical advances that have been made in various areas, and will summarize in some detail an achievable roadmap to space solar power.