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| Country | United States |
| Symposium | 2 SYMPOSIUM ON SPACE DEVELOPMENT |
| Theme | 2.5 Space Based Solar Power, Powering Civilian Space Development |
| Abstract Title | The Age of Astroelectricity |
| Abstract Code | SRIC3-SDE-2.5-02.016 |
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Abstract

This paper defines a progressive engineering solution to the world's need to undertake an orderly transition to abundant clean energy by 2100 to eliminate net carbon dioxide emissions into the atmosphere and provide sufficient sustainable energy per capita to enable social and economic development and eradicate poverty worldwide. This paper critically examines the United Nations Framework Convention on Climate Change treaty and its implementing Paris Agreement protocol to identify why both are now out of date and no longer suitable for guiding world policy in either eliminating the use of fossil carbon fuels or enabling sustainable economic development. In this regard, the paper uses research conducted by noted anthropologist Leslie White to explain why these two agreements are no longer suitable. The paper continues by estimating the magnitude of the sustainable energy the world will need to undertake the sustainable economic development needed to eradicate poverty by elevating the world's average standard of living, in terms of per capita energy availability, to the level of the European Union. Next, the paper examines terrestrial sources of sustainable energy to quantitatively show why a substantial reliance on the treaty and its protocol is impractical and unwise. The paper concludes by showing how space solar power-generated astroelectricity utilizing sunlight available in space, as forecast a century ago by noted Russian space philosopher Konstantin Eduardovich Tsiolkovsky, will enable the world to peacefully conclude its transition to abundant, sustainable energy.

A short bio

James Michael Snead is an aerospace Professional Engineer in the United States. He is the founder and president of the Spacefaring Institute LLC which is focused on space solar power-generated astroelectricity and the astrologistics infrastructure necessary to enable the spacefaring industrial revolution that will build space solar power energy systems. Mike Snead has been involved in space development since the mid-1980s when he supported the U.S. Air Force Transatmospheric Vehicle (TAV) studies, the National Aerospace Plane program, and the Delta Clipper Experimental (DC-X) project. In 2007, after retiring from civilian employment with the Air Force, he began to study the need for (and politics associated with) undertaking space solar power. He has published numerous papers and articles on various aspects of manned spaceflight and energy beginning in the late 1980s.