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**Space Solar Power to Solve the Climate Crises**

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**Abstract**

Climate change represents an existential threat to human civilization. There is a solution available to stop the climate crises, and it involves “space”. It’s humanity’s clearest path to net-zero and to a Green New Deal. That solution is “Space Solar Power” (SSP): the harvesting of solar energy in space and transmission down to earth using the sort of safe waves with which a cellphone communicates. SSP can end the use of fossil fuels for transportation and energy production -- entirely -- which means an end to most anthropogenic greenhouse gases. And, according to the late Dr. APJ Kalam, India's 11th president and one of India's two most trusted men, SSP can lift two billion people out of poverty. Space Solar Power is not science fiction; humanity has been harvesting solar power in space and transmitting it to earth since 1962, when the first commercial satellite, Telstar, went up. The SSP concept involves scaling up that technology, which comes with increased costs and some additional technological hurdles. Thanks to reduced launch costs over the past few years by private enterprise, SSP is now much closer to being economically viable. Society has yet to develop either the binding legislation or the technological innovation required to fulfill the necessary steps of (1) reducing greenhouse gas (GHG) emissions and (2) scaling up carbon capture, utilization and storage (CCUS) of current atmospheric GHGs at sufficient scale to prevent global ecological disaster and economic catastrophe. This paper aims to show how Space Solar Power can meet these requirements. SSP would harvest solar energy in orbit and transmit it wirelessly to receiving stations on Earth via microwaves, for distribution to existing utility infrastructure. SSP would offer a clean, sustainable, essentially unlimited power source, free for the taking and vastly more efficient than terrestrial solar power, providing baseload power for any desired customers worldwide. SSP offers the tantalizing prospect of replacing fossil fuel use by offering lower costs per watt, and of powering CCUS to remove GHGs without adding any additional terrestrial waste heat or pollution. Despite the SSP development efforts currently underway in China, Europe, UK, and the USA, substantial government support would accelerate development in time. Technical summaries, risks, barriers to advancement, and recommended next steps are presented to outline a path forward for policy makers, governments, businesses, and the public.