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Don Flournoy

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Why Not Space Solar Power?

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By **Don Flournoy**

The 2010 U.S. National Space Policy, which supports a robust and competitive commercial space sector, is good news for those of us working to design and launch the new types of satellites that will collect solar energy in space and deliver it to Earth as a nonpolluting source of electrical power.

Among the goals of President Barack Obama's National Space Policy is expansion of international cooperation on mutually beneficial space activities to "broaden and extend the benefits of space" and "further the peaceful use of space."

As members of the National Space Society, the Society of Satellite Professionals International and the Space Energy Group, we believe space, as a shared resource, can best be explored and developed by a partnership of nations and businesses working together.

Since acquiring clean and abundant energy is a common requirement for economic growth and an eventual necessity for the health of all societies, harvesting space solar power is a logical human endeavor when the high frontier is precisely where energy is most plentiful. But achieving success doing large-scale commercial innovation in outer space requires long-range planning, pooling of financial resources, sharing of knowledge and expertise, and the careful framing of a way forward that will earn and sustain the public trust.

In naming the CEOs who will serve on his new advisory board on trade issues, Obama noted in July that the U.S. is on track to double exports in the next five years, and he pointed to some of the ways the American economy is being repositioned to better compete abroad. When adding that announcement to the outcomes of the June summit of the Group of 20 major industrial countries in Canada and recent federal policy statements intimating that (certain) export controls will be relaxed and cooperation in space will be encouraged, it would appear that the U.S. could be entering a new era of openness for international business.

To this end, we would like to see some greater leadership and support given to space solar power development by NASA and the U.S. departments of Energy and Commerce. A helpful first step would be a U.S.-led space solar power feasibility study to which all interested nations are invited to contribute.

In the context of the U.S. National Space Policy, such a feasibility study could lead the way in assessing and promoting “appropriate cost and risk sharing among participating nations in international partnerships.” It would demonstrate U.S. “tangible leadership in space,” leveraging the capabilities of allies while assuring continuing adherence to the U.N. Treaty on Exploration and Use of Outer Space — now signed by 125 states, including China and India — that dictates “nuclear weapons and other weapons of mass destruction” shall not be placed in outer space.

At the International Space Development Conference held in Chicago in May, multiple nations participated in a National Space Society-initiated Solar Power Symposium to examine in depth opportunities and challenges for energy generation in near space. Former Indian President A.P.J. Abdul Kalam, scientist, aeronautical engineer and proponent of space solar power, addressing the symposium via videoconference, spoke to the need for international cooperation in space. He proposed a multilateral global initiative that could map out for us what needs to be done to bring space solar power to operational reality.

From our perspective, space solar power is a meaningful science, engineering and commercial challenge that deserves our attention and investment. In the wake of the Gulf of Mexico oil disaster, we think it is time for the U.S. to put space solar power on our national energy agenda. At the same time, we must seek opportunities to learn from and participate with Canada, China, India, Japan, the European Union and others taking their first tentative steps to bring space solar energy to Earth.

In a June Times of India commentary on strategic international diplomacy, U.S. Sen. John Kerry expressed support for a partnership with India that would include “the quest for new technologies and fresh ideas for economically viable ways to speed the shift to renewable energy sources.”

We believe that within the mainstream of global science, engineering and environmental management there are game-changing ideas and technologies that await testing. It is time to see some space solar power demonstration projects. Of all the possible alternative energy sources on the near horizon, we believe space solar power is our best chance for addressing the worldwide challenges of climate change, renewable energy and continued economic growth.

Don Flournoy is a professor and editor of the Online Journal of Space Communication (www.spacejournal.org) at Ohio University. This article also reflects the opinions of Robert Bell of the Society of Satellite Professionals International, Mark Hopkins of the National Space Society, Stephan Tennsel of Space Energy AG, and Feng Hsu of the Space Energy Group.