

# Recent Strategic Directions in Space Solar Power Activities of Japan

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Japan Aerospace Exploration Agency (JAXA) has been conducting studies on Space Solar Power Systems (SSPS) for years. In this study, SSPS using microwave and high efficiency hydrogen generating systems using laser beams have been examined since FY1998 organizing a special committee and working groups.

JAXA is proposing a roadmap that includes the stepwise approach to realize commercial SSPS in 20-30 years. The microwave based SSPS are huge solar power systems that generate GW power by solar cells. The electric power is transmitted via microwave from the SSPS to the ground. In the laser based SSPS, a solar condenser equipped with lenses or mirrors and laser-generator would be put into orbit. A laser beam would be sent to Earth-based hydrogen generating device.

We are also proposing a roadmap to realize SSPS in space use. In space, SSPS supply energy to lunar exploration rovers or operational satellites without solar array paddles.

This paper presents current status and prospects of study on SSPS.