

SPACE POWER SYMPOSIUM (C3)

Space-Based Solar Power Architectures – New Governmental and Commercial Concepts and Ventures (1)

Author: Dr. Leopold Summerer

European Space Agency (ESA), The Netherlands, leopold.summerer@esa.int

Dr. Thijs Versloot

European Space Agency (ESA), The Netherlands, Thijs.Versloot@esa.int

Dr. Arnaud Lecuyot

European Space Agency (ESA), The Netherlands, Arnaud.Lecuyot@esa.int

Mrs. Isabelle Duvaux-Bechon

European Space Agency (ESA), France, Isabelle.Duvaux-Bechon@esa.int

Ms. Carla Signorini

European Space Agency (ESA), The Netherlands, Carla.Signorini@esa.int

SPACE AND ENERGY – AT THE SERVICE OF ENERGY ON EARTH

Abstract

Following preparatory activities, ESA has proposed in 2012 a dedicated and structured approach for its activities in the field of space and energy. Space contributions to transforming the current terrestrial energy system into a more sustainable, ultimately carbon-neutral system are considered as much an imperative for a responsible public organisation with the capacity to do so as an attractive opportunity to widen the scope of the space sector and thus allow space industry to benefit from new markets for space technology and space-based applications and services.

Those contributions cover the whole range of energy, from identification of where renewable energy can be harvested best, to production, transport, distribution, efficiency, safety of operations, access. They cover technology (as well spin out as co-development) as well as applications and services. Some of these contributions from the space sector are already taking place naturally. These however show merely the much larger potential of a dedicated initiative towards this goal.

The present paper presents the updated activities, main milestones and mid-term planning for these activities, with a special focus on synergetic technology developments for space and terrestrial applications and on the identification of future needs not yet covered by the existing space systems.