Versatility software

Corporate Mission

The development of low-cost, renewable, environmentally friendly, and flexibly distributed power is a critical goal for new sources of energy. To meet this ambitious goal, Versatility strives to develop and commercialize R&D concepts to advance the state of the art of 21st Century energy options (both terrestrial and space based). Versatility is focused on alternative energy technologies where wireless power transmission systems (using microwave, laser, or hybrid power and data transmission techniques) and space based solar power will play key roles.

Background

There are many significant issues that adversely affect the ability to generate, manage and distribute energy on a global scale: a lack of sufficient renewable energy source options; pending depletion of fossil fuels now powering the economy; harmful health and environmental effects of global CO2 emissions; limited electricity generation capabilities for a third of the world's population; and an inability to provide flexible distribution of power to many geographical areas.

Space Solar Power (SSP) can resolve many of these issues. SSP can provide clean renewable energy to developing and developed countries using satellites to collect solar energy in orbit, almost 24 hours a day, rain or shine, and flexibly transmitting the energy to locations around the globe. SSP also has the potential to serve as the basis for the development of a new set of major industries and to act as a driver for economic growth on a global scale. It can also play a key role in the delivery of power and clean water for developing nations. Versatility has a powerful combination of in-house expertise and connected domain experts assembled as a team to tackle the challenges of developing a commercially viable SSP system.

Corporate Strategy

Versatility is focused on specialized applications of space based solar power. Niche markets include peak power for developed nations, combined power and data delivery, and providing power to developing nations. Potential customers include energy providers such as utilities and direct end-users such as governments and corporations. The company's current strategy is to focus on government and industrial R&D grants and contracts and to build up the company in a profitable manner. The long-term plan is to become the worlds leading provider of space based solar power through winning market leadership in a succession of niche markets.

The development of long-range wireless power transmission (WPT) is a fundamental element of SSP. Versatility is currently pursuing two, inter-related, parallel paths to achieve the goal of commercializing WPT. The first path pursues the research and design of a "proof-of-concept" near-term, long distance WPT demonstration system, which will evolve into a cost-effective initial pilot system. The demonstrations will involve the design of a set of power beaming experiments in order to develop, refine and validate enhanced WPT technology, using earth to earth, earth-to-orbit (utilizing current ground radars and satellite systems), and orbit-to-earth experiments (exploiting innovative methods to "snap-on" and retrofit WPT capability to planned orbital platforms).

The second path advocates an innovative approach for commercialization by integrating power and communication wireless transmission systems. Integration of power and communications

allows for a single infrastructure to deliver multiple revenue streams and concurrently reduce costs by sharing infrastructure costs. Specific techniques to integrate power and data have been developed by the Versatility team, which will be extended towards commercial realms.

The significance of this multi-phased approach is the use of novel mechanisms to exploit existing power and communications platforms with minimal modifications, modest resources, and incremental cost to provide near-term long-range demonstration systems for WPT. The WPT demonstration systems can be used as prototypes for a wide range of commercial products. Also, commercial development of SSP can be accelerated if it can be shown WPT is feasible with enhanced technology and current transmission theory is accurate based on current knowledge.

Potential Commercial Applications

There are a large number of potential commercial applications for WPT and SSP. The applications include both integrated wireless power and data and pure wireless power delivery systems. Specialized applications include:

1) Terrestrial earth to earth configurations, that provide power to remote areas or for applications where the cost of traditional power transmission methods are prohibitive
2) Providing nighttime power as a complement to terrestrial solar energy systems
3) Earth to orbit applications that provide power to satellites or orbital vehicles
4) Space to space applications that provide power for satellites or between orbital vehicles
5) Providing power to produce terrestrial hydrogen and providing a “filling station” for fuel cells

These specialized applications will be complemented by mainstream, large-scale market applications such as providing peak and baseload space solar power to domestic and international energy markets including both developed and developing nations.

Versatility Energy Team

The team assembled represents a unique cross-disciplinary group with an extensive scientific research background, significant real-world engineering capabilities, and experience in raising capital and establishing new businesses. The team has product development experience in areas such as aerospace systems engineering, system analysis, network communication architecture development and software systems design. The team (Dr. Martin I. Hoffert, Professor, New York University; Eric M. Hoffert, CEO, Versatility; Paul A. Soukup, VP Energy Services, Versatility) has worked, studied or consulted at NASA, MIT, AT&T, Bell Laboratories, Apple Computer, Lawrence Livermore Labs, Exxon, NYU, and AlliedSignal (Honeywell).

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