**LUNAR SOLAR POWER SYSTEM**

**PARTI**

**• Read the text given below. Try to imagine what is described here.**

Approximately 6 kWt/person or, eventually, 2 kWe/person can en­able energy prosperity. Note that “t” refers to thermal energy and “e” to electric energy. For a population of 10 billion people, anticipated by 2050, this implies 60,000 GWt or 20,000 GWe. For purposes of dis­cussion, assume that power usage continues to be high to 2070. From 2000 to 2070 the world would consume approximately 3,000,000 GWt-Y or 1,000,000 GWe-Y of energy. It is highly unlikely that conventional fossil, nuclear, and terrestrial renewable power systems can provide the power needed by 2050 and the total energy consumed by 2070. They are restricted by limited supplies of fuels, pollution and wastes, irregu­lar supplies of renewable energy, costs of creating and operating the global systems, and other factors.

It is technically and economically feasible to provide at least 100,000 GWe of solar electric energy from facilities on the Moon. The Lunar Solar Power (LSP) System can supply to Earth power that is independent of the biosphere and does not introduce C02, ash, or other material wastes into the biosphere. Inexhaustible new net elec­trical energy provided by the LSP System enables the creation of new net material wealth on Earth that is decoupled from the biosphere. Given adequate clean electric power, humanity’s material needs can be acquired from common resources and recycled without the use of depletable fuels. LSP power increases the ability of tomorrow’s gener­ations to meet tomorrow’s needs, and enables humanity to move be­yond simply attempting to sustain itself within the biosphere to nur­turing the biosphere.

The LSP System uses bases on opposing limbs of the Moon. Each base transmits multiple microwave power beams directly to Earth rec-tennas when the rectennas can view the Moon. Each base is augment­ed by fields of photoconverters just across the limb of the Moon. Thus, one of the two bases in the pair can beam power toward Earth over the entire cycle of the lunar day and night. This version of LSP sup­plies extra energy to a recterma on Earth while the rectenna can view f the Moon. The extra energy is stored and then released when the Moon is not in view

The LSP System is an unconventional approach to supplying com­mercial power to Earth. Power beams are considered esoteric and a I technology of the distant future. However; Earth-to-Moon power *\* beams of near-commercial intensity are an operational reality

Load-following electrical power, without expensive storage, is highly desirable. Earth orbiting satellites can redirect beams to rectennas that cannot view the Moon and thus enable load-following power to rec­tennas located anywhere on Earth. Rectennas on Earth and the lunar transmitters can be sized to permit the use of Earth orbiting redirec­tors that are 200 m to 1,000 m in diameter. Redirected satellites can be reflectors or retransmitters. The technology is much more mature than realized by the technical community at large.

1. **Translate the following sentences with the Participle II and pay attention to its dif­ferent functions and different ways of translation.**
2. It is highly unlikely that conventional fossil, nuclear, and terres­trial renewable power systems can provide the power needed by 2050 and the total energy consumed by 2070.
3. They are restricted by limited supplies of fuels, pollution and wastes, irregular supplies of renewable energy, and other factors.
4. Given adequate clean electric power, humanity’s material needs can be acquired from common resources and recycled without the use of depletable fuels.
5. Redirected satellites can be reflectors or retransmitters.