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## Design and feasibility analysis of an orbital solar power station

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According to the U.S. Energy Information Administration, worldwide energy consumption is projected grow about 48% between 2012 and 2040. With the increase in energy demand, there has been concern for energy security and fossil fuel emissions. Renewable energies have been increasing exponentially, but they have major flaws with unreliability, such as the wind not always blowing for wind power and the sun not always shining for solar power. In an effort to counteract these problems, a new design for solar energy and space exploration can be used as an alternative. This design is an orbital solar power station. The orbital solar power station is structure that circles the globe long the equator of the earth. This design consists of photovoltaic panels that would be mounted on a ring around the world which is connected to a series of cables made from carbon nanotubes. The electricity from these panels would be beamed down at specified junction points to a receiver on the earth and then distributed to the electrical grid for energy consumption. This paper covers the design specifications required for this structure around the world and the realistic feasibility of a global project of this size to solve future energy problems. This design would provide the necessary power needed, but there are environmental, budgetary, technological concerns that need to be addressed.

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