Annotation

Can space technology help overcome the energy crisis? This question can be put more specifically: is the idea of capturing the "inexhaustible" energy of solar radiation in space and transmitting it to Earth feasible?

Space-based solar power plants (CSPs) should be placed in the equatorial plane in a near-Earth circular orbit with an altitude of about 35,880 km (geostationary orbit). In this arrangement, they move at the same angular velocity as the Earth, and to an observer on the Ground, they will appear to hover motionless in the sky, like the global communications satellites already in use.

To build one such station, you will need to put about 100,000 tons of cargo into orbit. It is believed that one of the possible ways is to remove structural elements in the form of rolls of metal tape, from which panels with an area of several square kilometers are assembled in space. With the current payload capacity of launch vehicles, it will take about five thousand launches to solve the problem. Creating launch vehicles capable of delivering about 200 tons of payload to orbit as a first step is a difficult but solvable problem. Creation of a demonstration solar space power plant based on existing rocket and space technology with the level of transmitted power for today.