

If we build a solar power generation base

Is space based solar power a good idea?

Space-based solar power doesn't suffer from the main drawback plaguing most main renewable energy generation technologies. In space, the sun always shines. No clouds ever block the sun's rays from reaching photovoltaic arrays. And if you choose the orbit wisely, you can even avoid the night.

When will space-based solar power be in orbit?

The initiative believes such a demonstrator could be in orbit by the mid-2030s. Space-based solar power doesn't suffer from the main drawback plaguing most main renewable energy generation technologies. In space, the sun always shines. No clouds ever block the sun's rays from reaching photovoltaic arrays.

Can space-based solar power be used for terrestrial energy needs?

ESA commissioned in early 2022, two independent cost benefit studies of Space Based Solar Power for terrestrial energy needs from Frazer-Nash in the UK and Roland Berger in Germany. The studies concluded that:

Could space-based solar power deliver cost-competitive electricity generation?

While requiring substantial development, space-based solar power (SBSP) could deliver cost-competitive electricity generation, de-risking the path by providing a future source of clean, base-load energy by 2040 or earlier.

How much would it cost to build a space-based solar power station?

The study concluded that the total cost to develop and deploy the first 2GW space-based solar power station would be roughly £16bn-- substantially less than the latest £33bn estimate for Britain's newest nuclear power station at Hinkley Point, which is set to produce 3.2GW.

Could space based solar power be a viable alternative to nuclear power?

" The thing with space based solar power is that very high levels of power can be delivered, similar to nuclear power plants, " Wilson said. " Most other renewable energy options can't provide such quantities at once. Without space-based solar power, we would probably be looking to build many more nuclear power stations, for sure. "



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