My Inquiry on Concentrated Solar Power!

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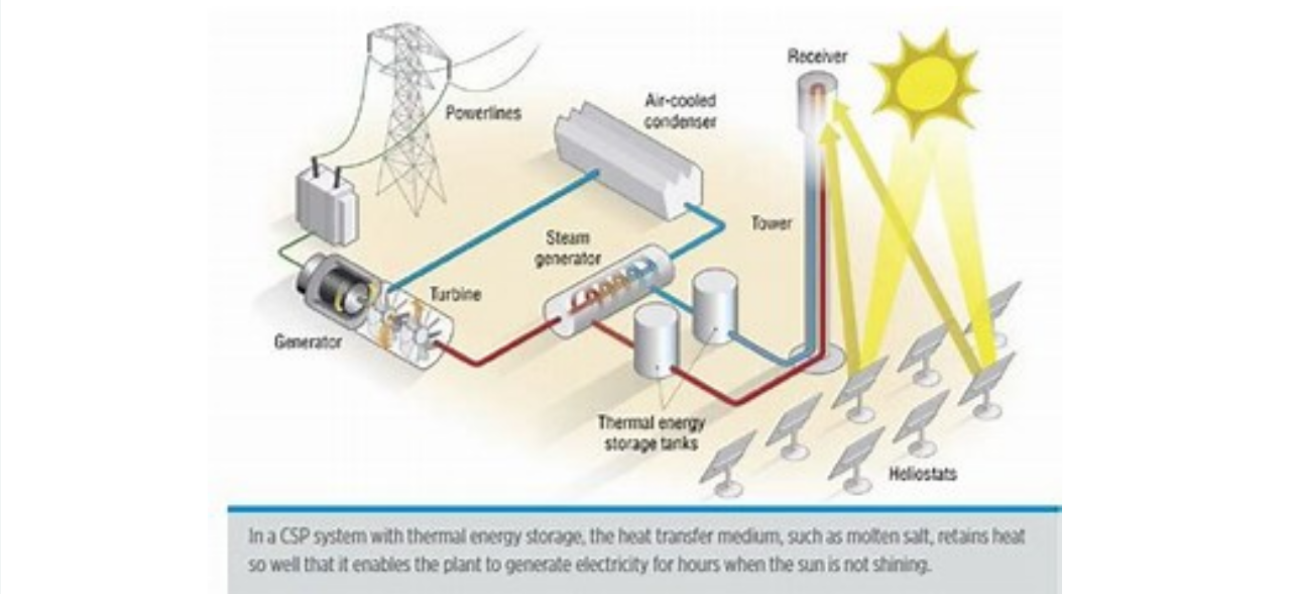
What is concentrated solar power, and how does it work?

Concentrated solar power is a type of reusable energy that involves mirrors. How it works is, first mirrors focus on the suns rays. Then it reflects the suns rays into a receiver tower, which then converts the suns rays into a really hot oil (600 degrees Celsius) which then goes through the receiver tower, and then into a steam generator, that has water in it so when the hot oil goes into the steam generator, the water will turn to steam. The steam powered generator creates energy which then gets transmitted to a turbine via wires, which then drives the turbine and starts to create electricity. After the electricity is made the electricity gets transported to power lines, then onto the grid.

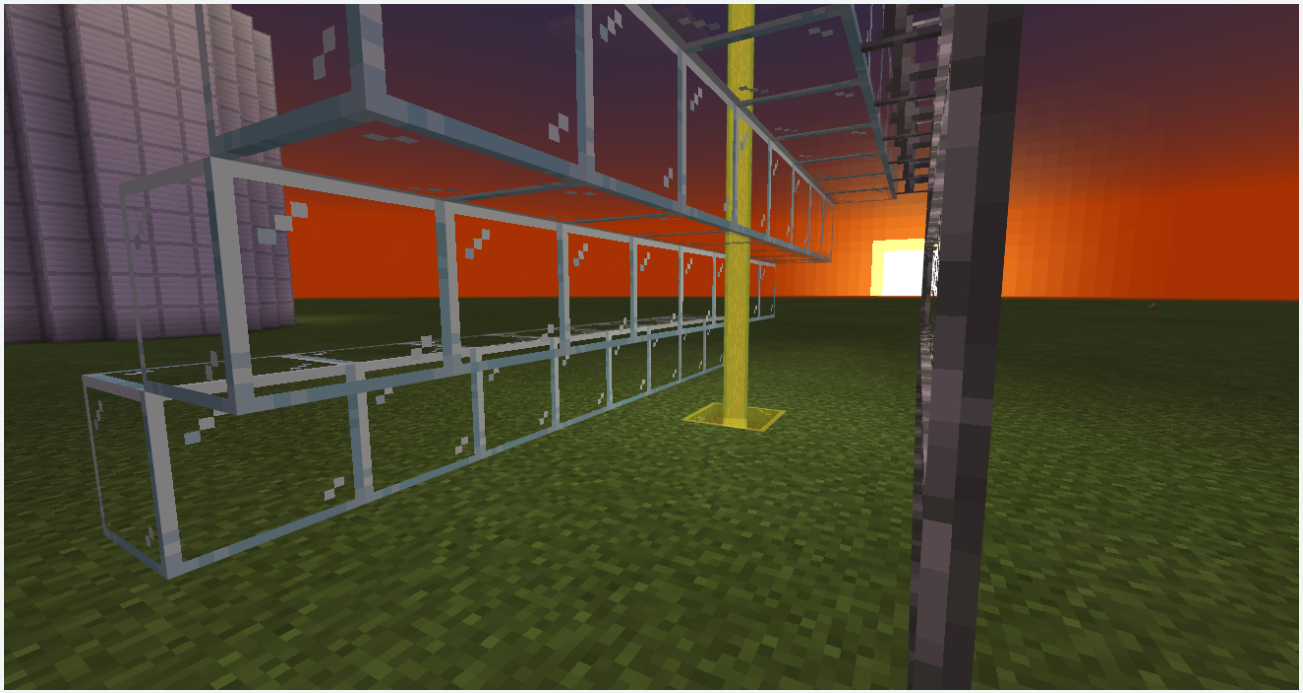


This is an annotated diagram on how concentrated solar power farms work.

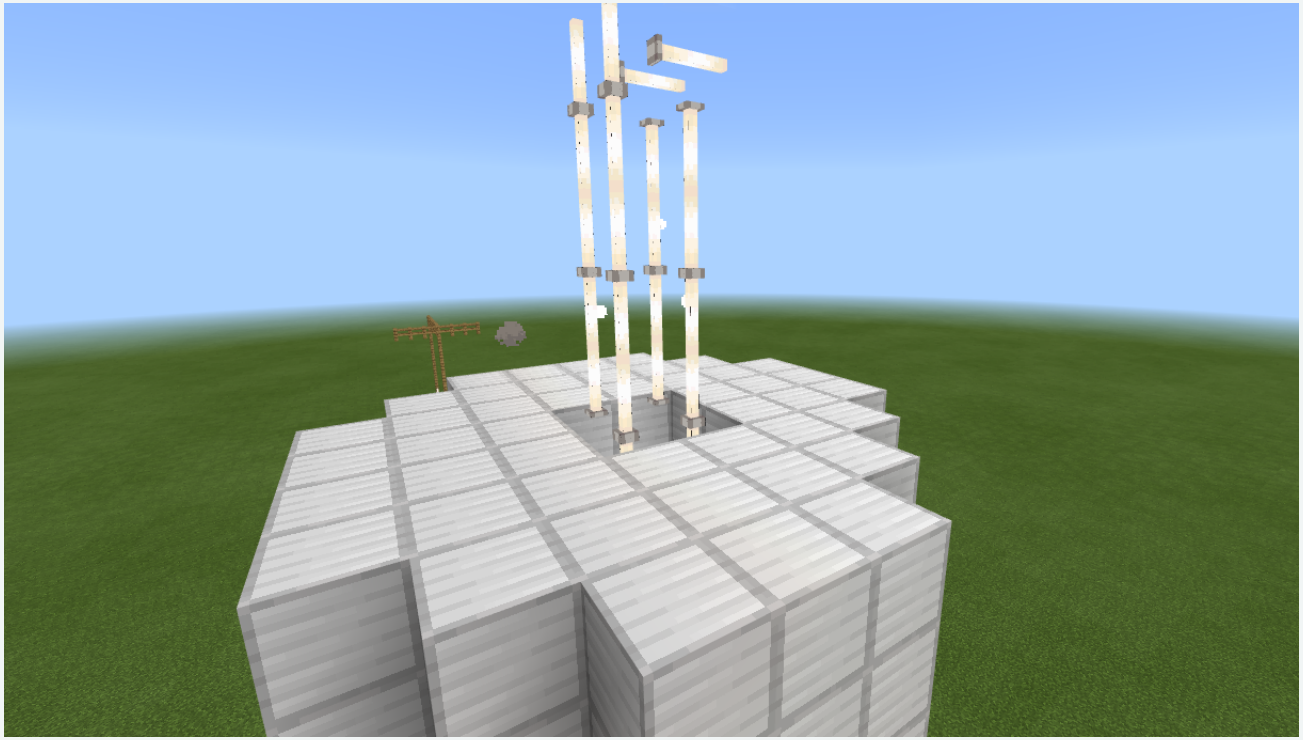
Who invented concentrated solar power?

In ancient Greek, a man by the name of Archimedes made concentrated solar power by telling his worriers whenever enemy ships came to use their bronze shield to reflect the suns rays and make the enemy ships catch on fire.

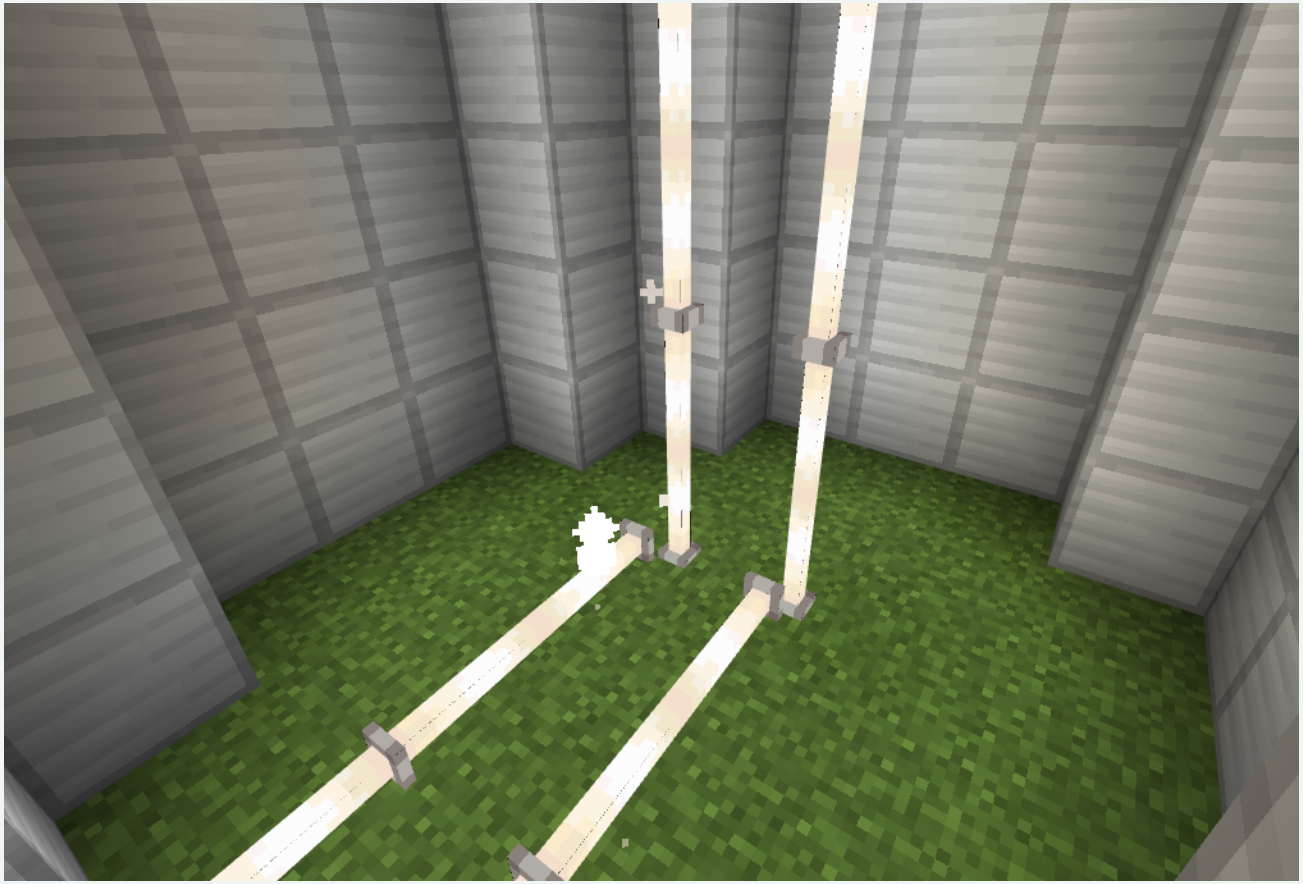
Here is my Minecraft models!



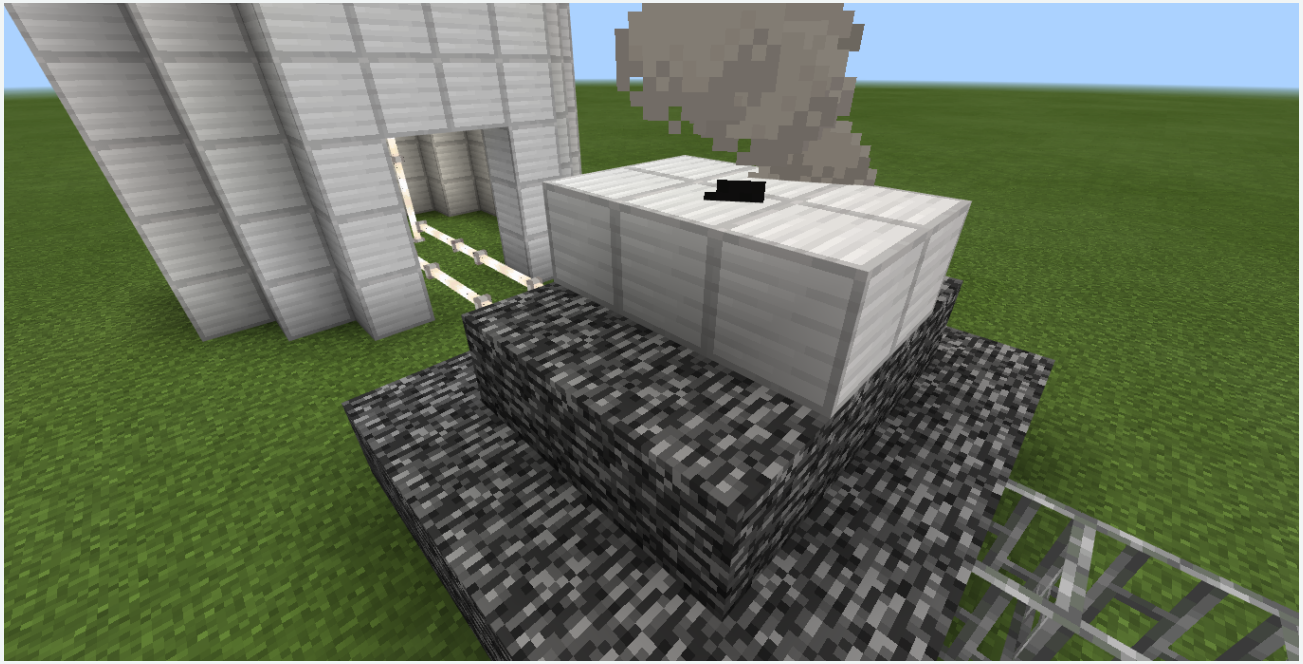
These are the mirrors. The purpose of the mirrors is to focus the suns rays and reflect the suns rays to a receiving tower. The mirrors can do this only when the sun is shining. Sometimes thought the mirrors focus the sun but the reflected rays don't go into the receiver tower. Because of this the mirrors can move themselves to always be on target with the sun.



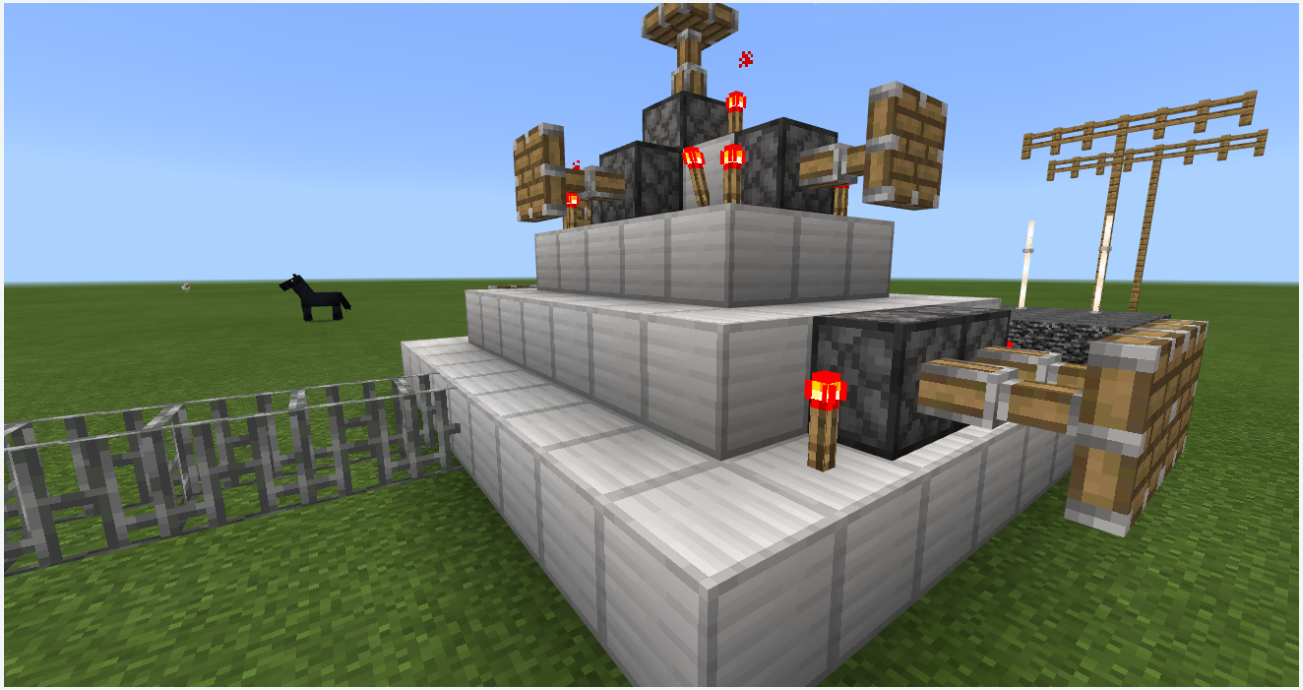
This is the receiver tower. How the receiver tower works is that, after the mirrors reflect the suns rays, the suns rays goes into the wires at the top of the receiver tower and gets converted into oil as hot as 600 degrees Celsius.



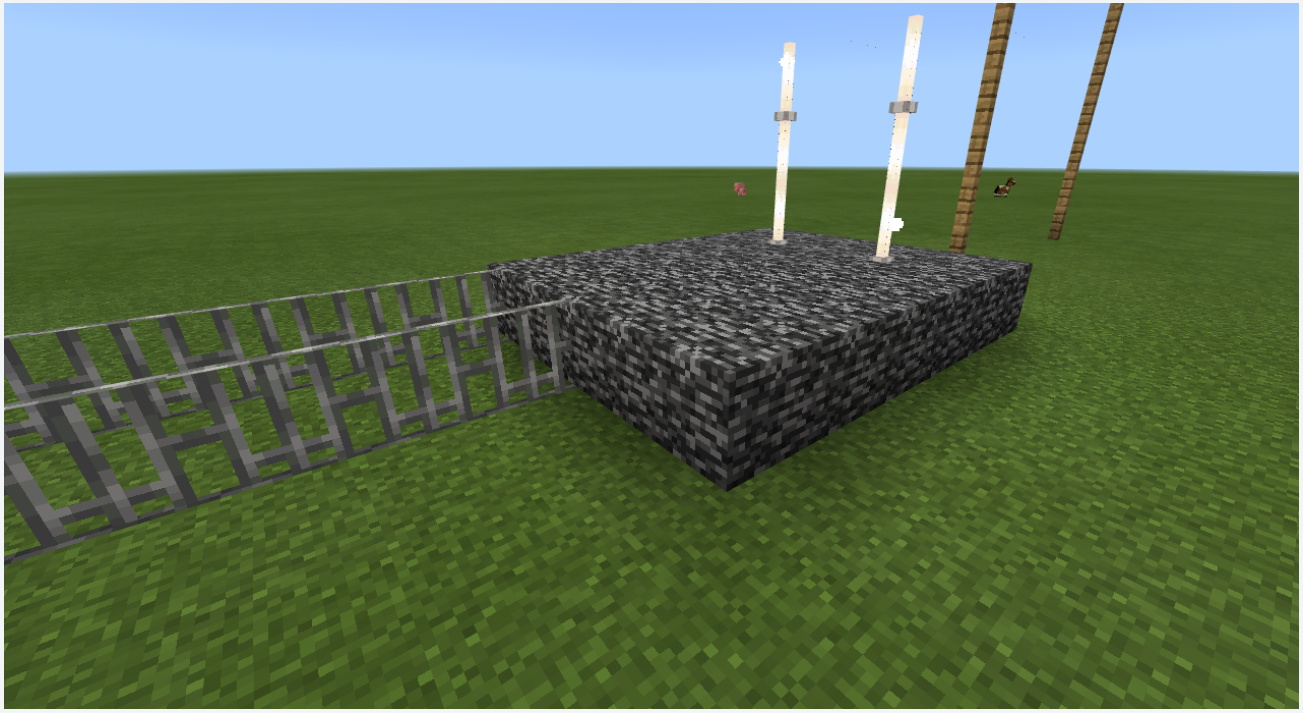
This is the inside of the receiver tower. In the inside of the receiver tower is were all the hot oil flows through. The hot oil eventually leads to a steam powered generator, powered by steam.



This is the stem powered generator that I was talking about. When the hot oil flows through the receiver it goes into some water inside of the actual generator. since the oil is so hot as soon as the oil goes into the water the water will evaporate immediately and turn into steam. (there is usually something connected to the water to replace the water.) Then then the steam starts to start up the generator (if you want you can call it a turbine.)



This is the turbine. When the steam generator/turbine starts creating energy, the energy goes into a turbine, which then starts to spin creating electricity. When the turbine spins its connected to a wire which then transmits that electricity somewhere else.



This is another receiver,-an energy receiver to be exact. This is the place that receives the electricity from the drived turbine. the wiring that goes 2 meters high is the place were the powerlines and the electricity receiver meets. From there the Concentrated Solar Power factory loses control and now it's up to the power lines to do the rest of work by transmitting the produced electricity into the grid then to your homes.

A few facts before we get to my big question!

On average each concentrated solar power farm has tens or hundreds of thousands of mirrors, just to reflect the sun light!

The receiver towers are very tall and sometimes can be up to 100 meters tall!

When the sun is not shining the mirrors still work because they store thermal energy from the suns heat

Here is a button to see some more facts!

Pros and Cons:

Pros:

It is renewable

It will always work

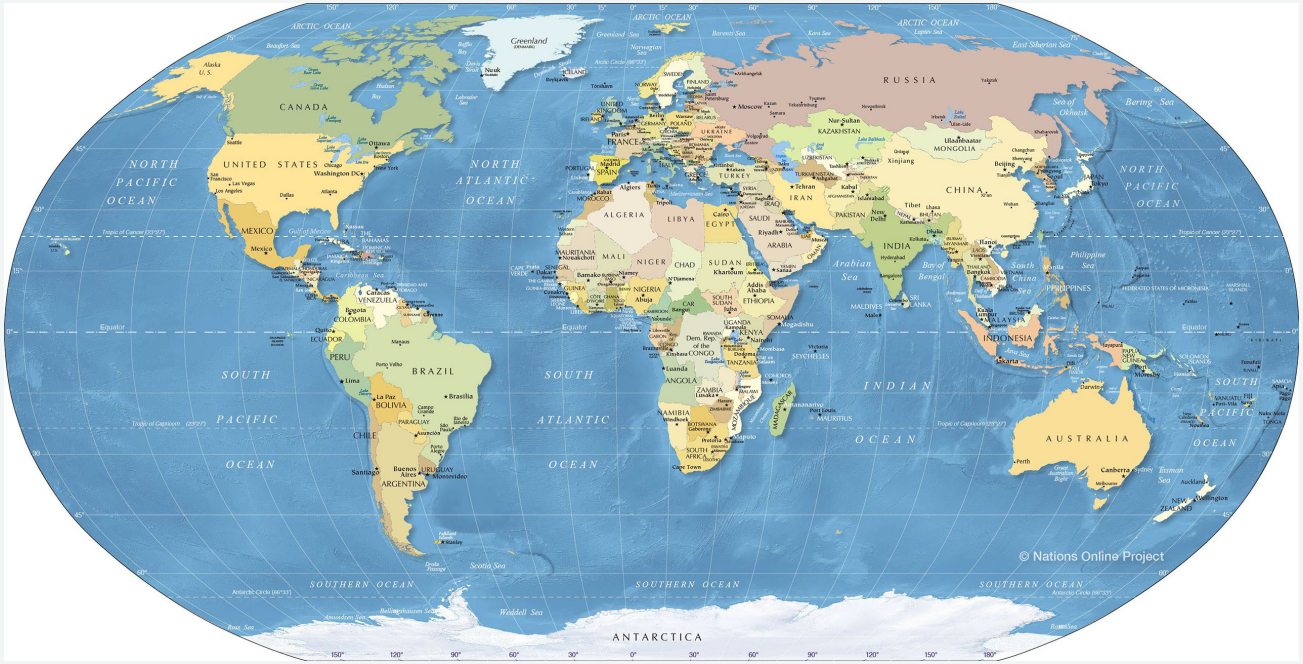
It is reliable

Cons:

It waste's space (depending on the size.)

The materials may hurt the environment (depending on the way you use them.)

My big question- "Where would you find concentrated solar power most commonly used?"



This is a map of the world.

What lead me to my answer for my big question?

The first thing that lead me to my answer was the cost. Then was how Concentrated Solar power works. Then the size of concentrated solar power

farm. After I combined those things together, (And a bit more that I don't have time to tell you.) and boom! I got my answer!

Resources:

CSP in Australia!

Graph of CSP use world wide!

Thanks for listening!