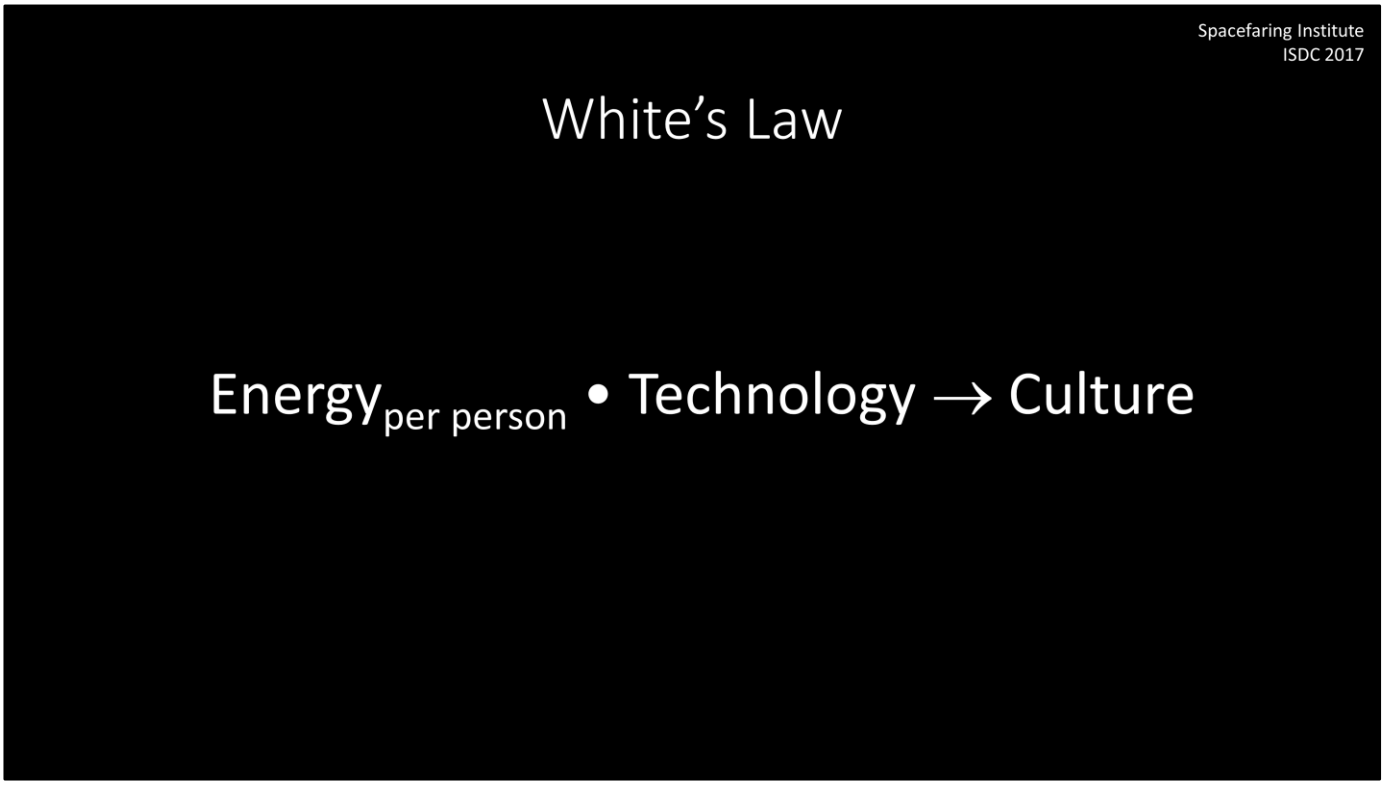
Speaker's comments

Good afternoon.

Speaker's comments

By studying ancient civilizations, anthropologist Leslie White defined a key relationship on which our modern civilization has been built.



Speaker's comments

Known as White's Law, the interaction of the available energy per person and the technology using this energy define our standard of living—what White called culture.

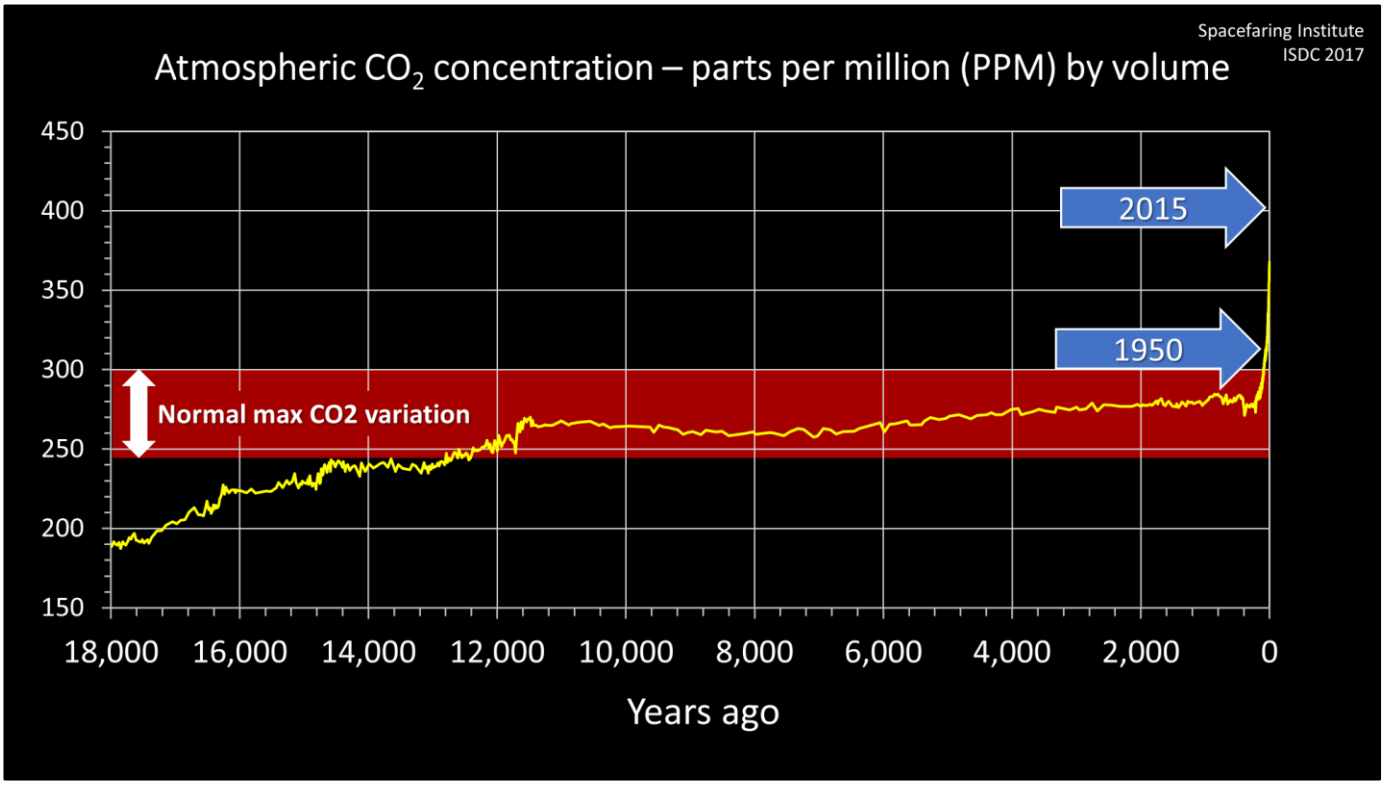
Speaker's comments

Today, roughly 80 percent of our energy comes from non-sustainable fossil fuels.

Fossil fuels provide the illusion of energy security and, hence, cultural security.

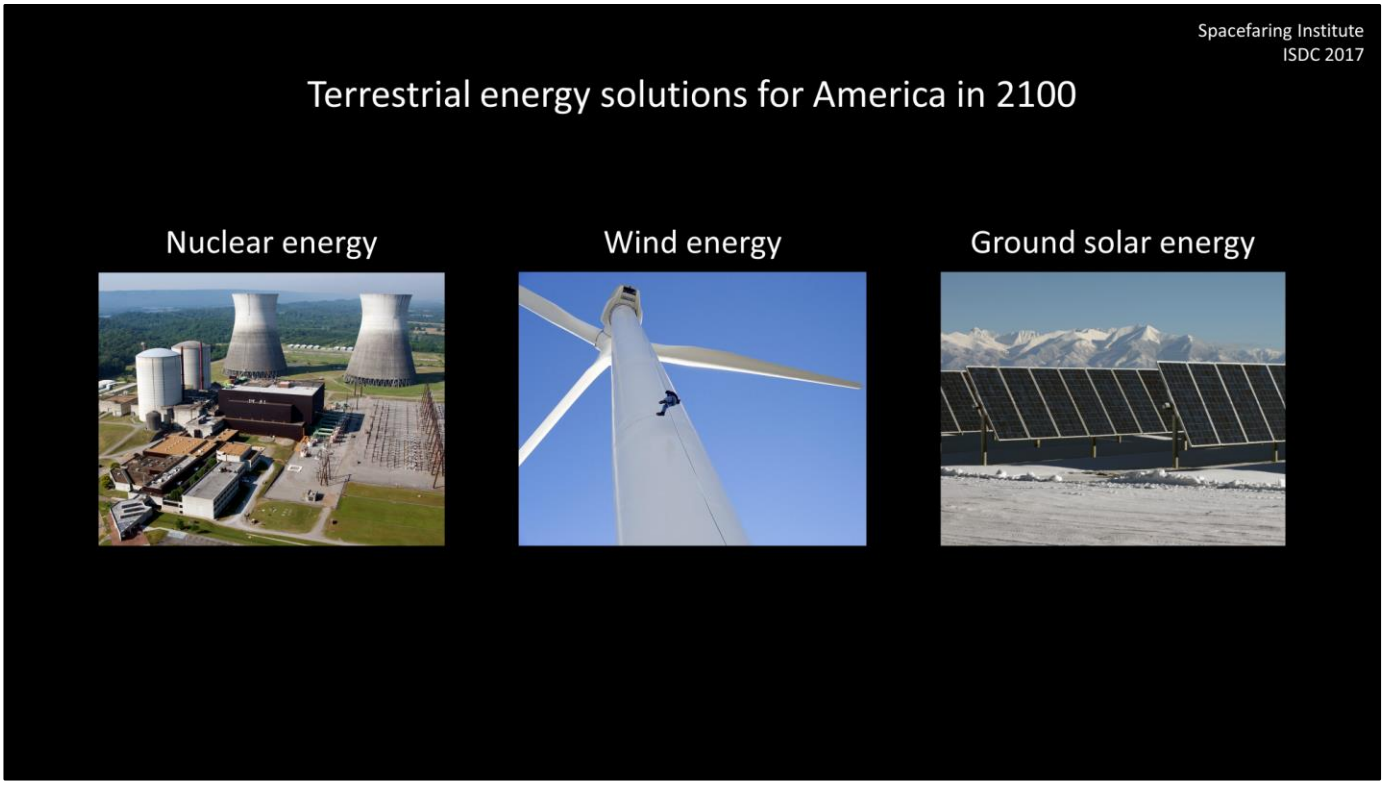
Speaker's comments

But, we know this only an illusion.



Speaker's comments

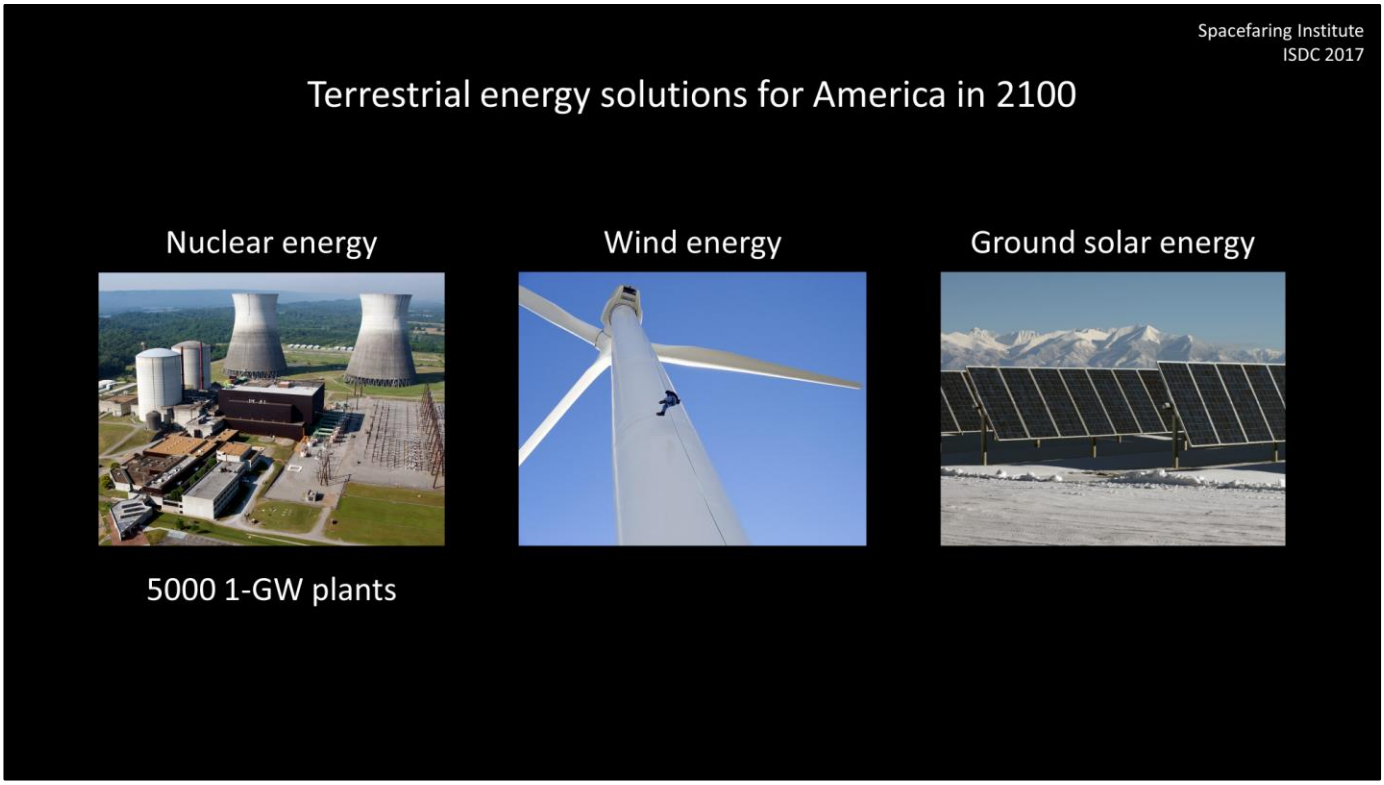
And we know we must address, in an orderly manner, the issue of CO2 emissions from fossil fuels.



Speaker's comments

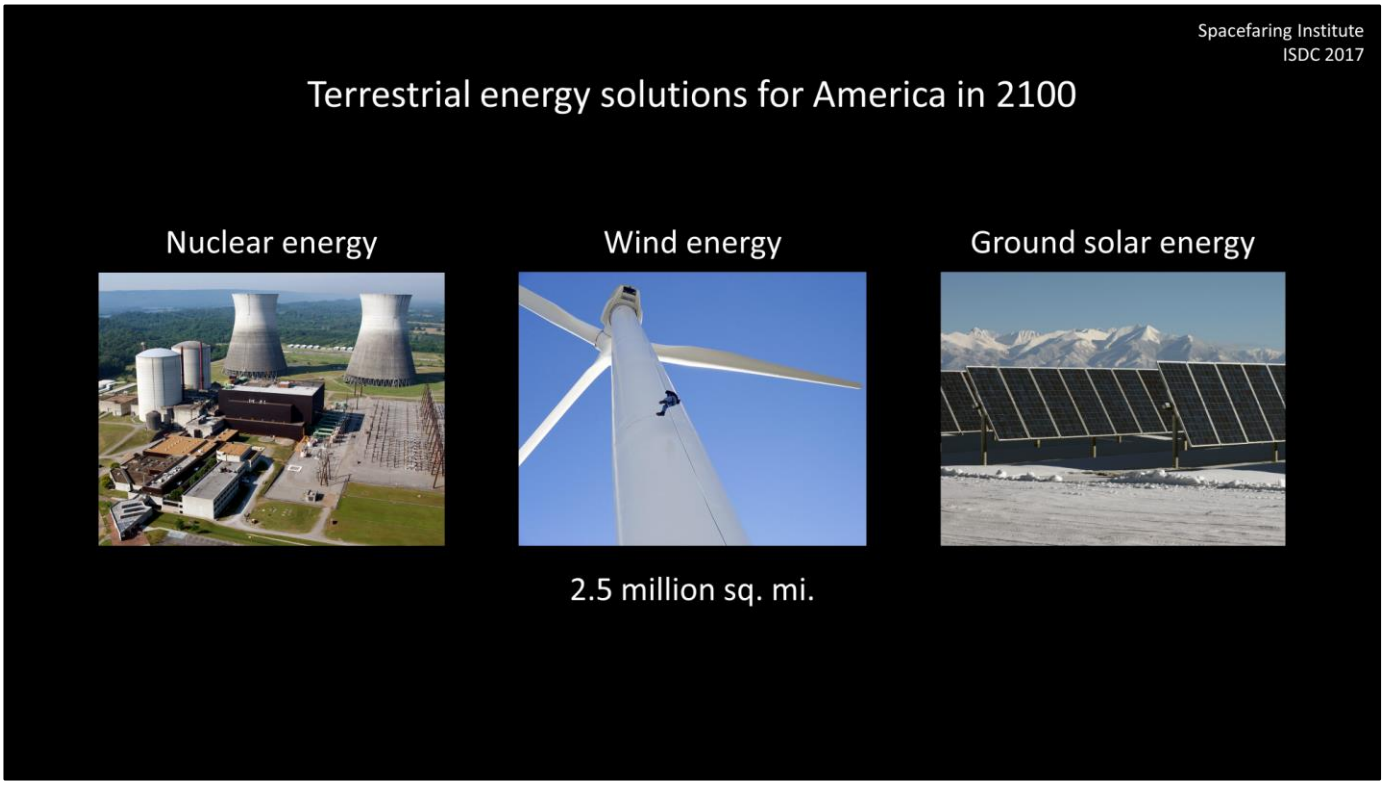
For the United States, there are only three possible terrestrial sustainable energy options to replace fossil fuels.

These are nuclear energy, wind energy, and ground solar energy.



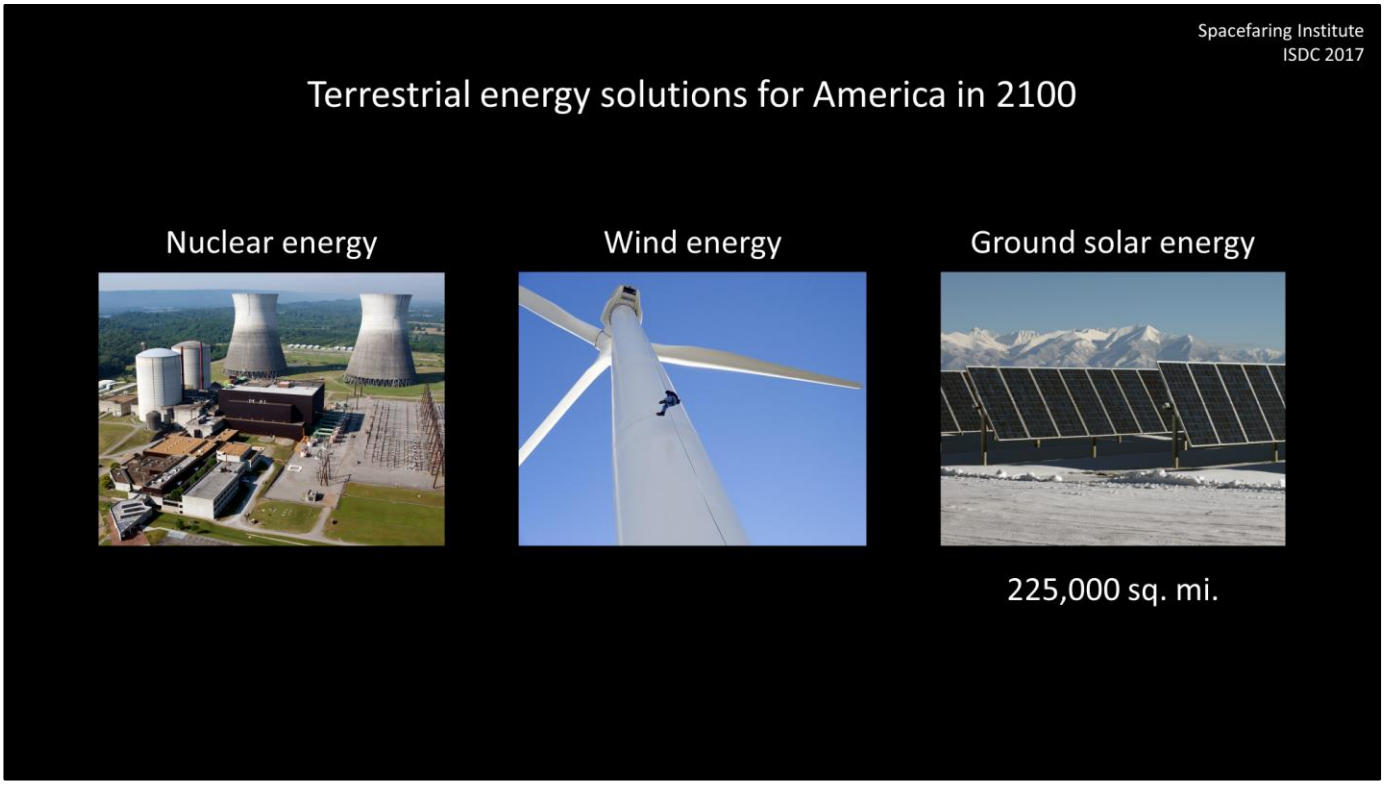
Speaker's comments

A nuclear solution would require building up to 5,000 nuclear plants.



Speaker's comments

A wind solution would require 2.5 million square miles of wind farms with 10 million 500-foot tall wind turbines.



Speaker's comments

A ground solar energy solution would require 225,000 square miles of solar farms.

Spacefaring Institute
ISDC 2017

Terrestrial energy solutions for America in 2100

Nuclear energy	Wind energy	Ground solar energy
		
5000 1-GW plants	2.5 million sq. mi.	225,000 sq. mi.

Speaker's comments

At least for the United States, none of these provides a practical solution.

Spacefaring Institute
ISDC 2017

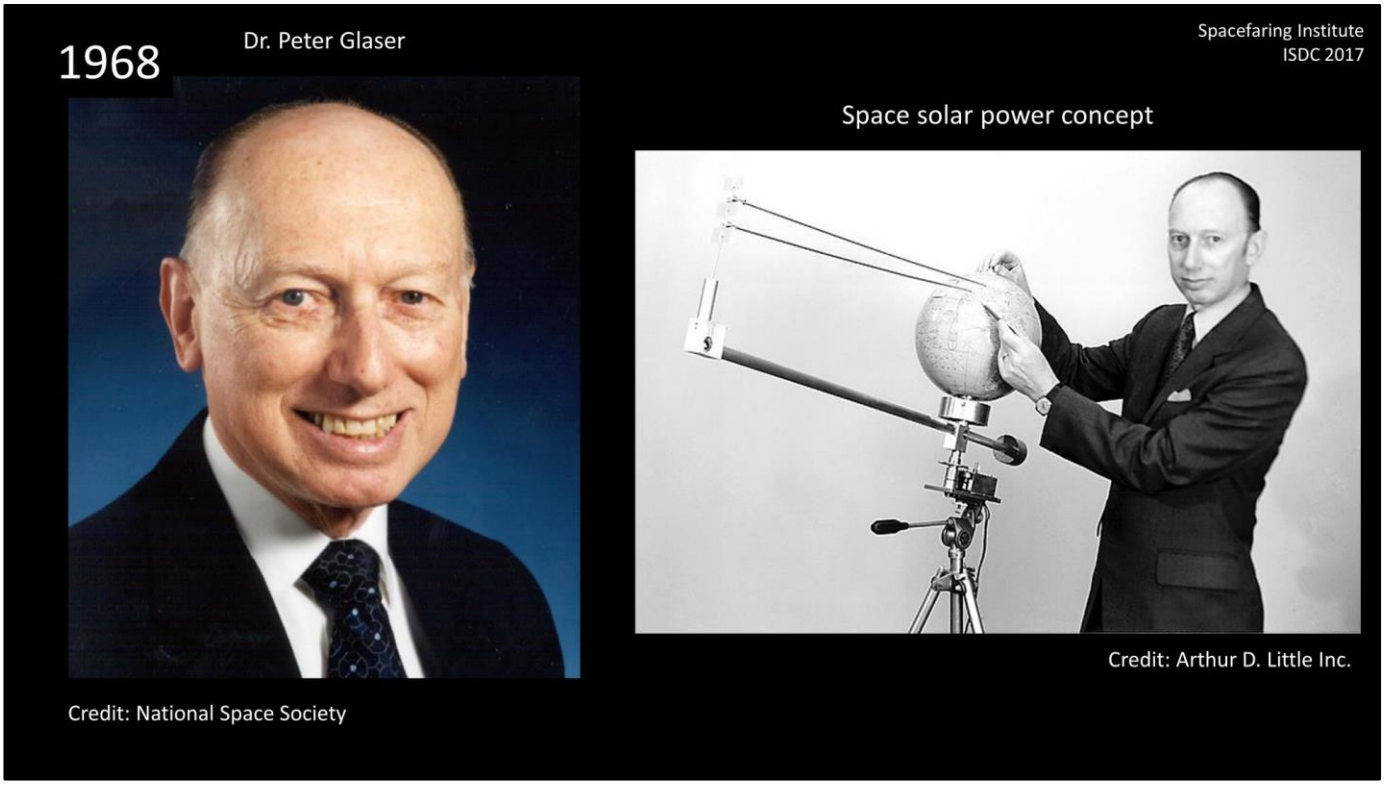
Terrestrial energy solutions for America in 2100

Nuclear energy	Wind energy	Ground solar energy
		
5000 1-GW plants	2.5 million sq. mi.	225,000 sq. mi.

X 10 for the world

Speaker's comments

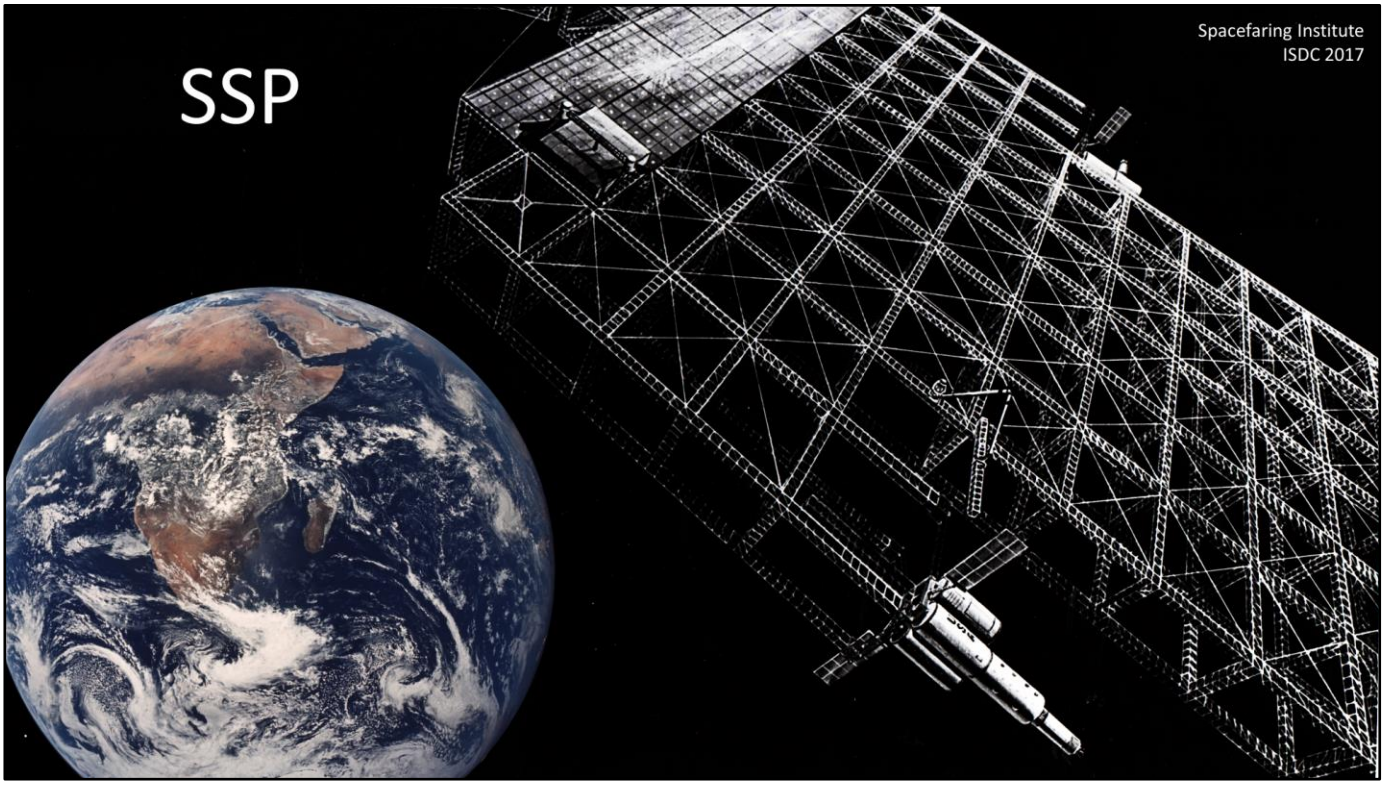
The same is true for most industrialized and developing nations.



Speaker's comments

In 1968, Dr. Peter Glaser proposed to use large space platforms to transmit solar electrical power to the Earth.

https://www.nytimes.com/2014/06/06/us/peter-glaser-who-envisioned-space-solar-power-dies-at-90.html



Speaker's comments

This was the origin of the space solar power idea.

Speaker's comments

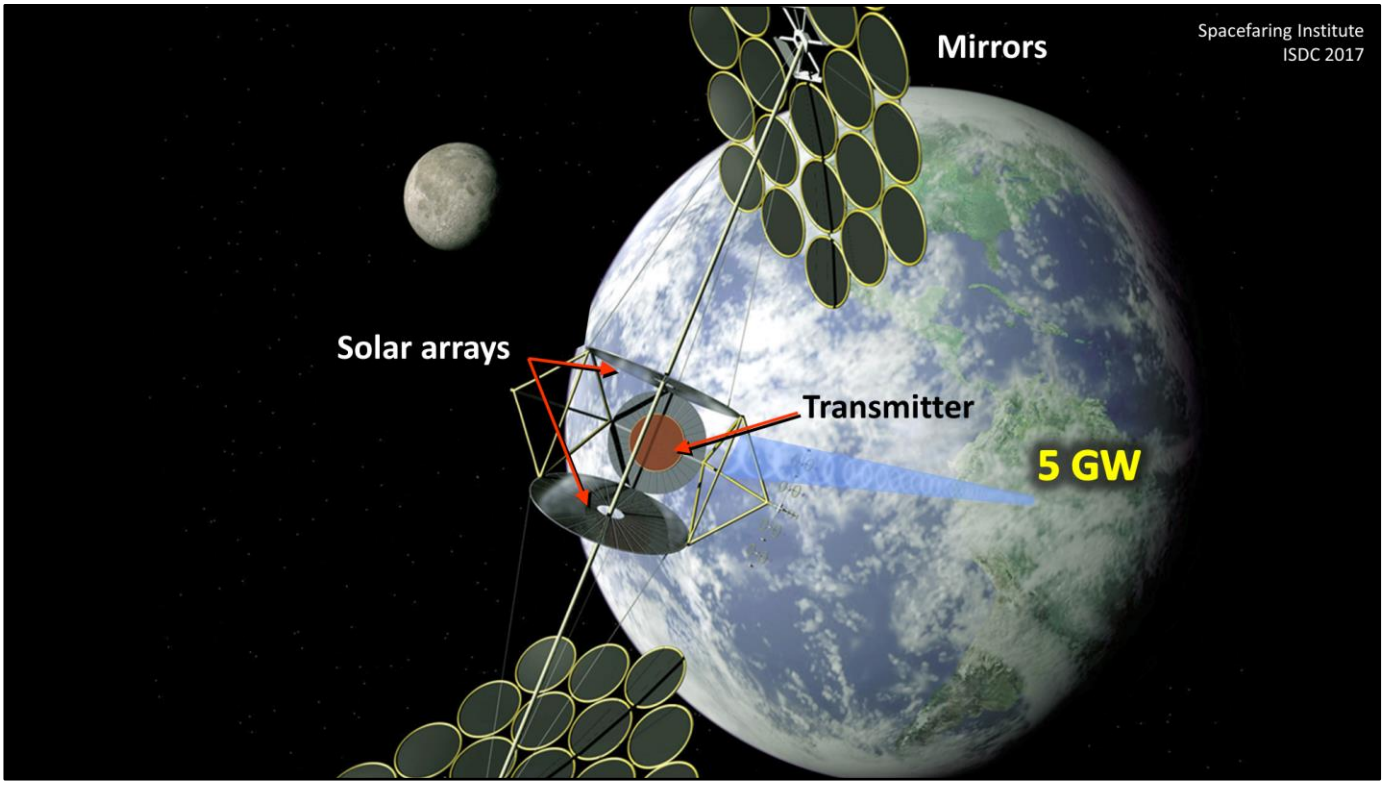
While most of us see a beautiful image of the Earth against the apparent emptiness of space,

Speaker's comments

What Dr. Glaser and other early champions of space solar power saw was the fact that solar energy floods the space surrounding the Earth—an abundance of sustainable energy that could be tapped to power our civilization.

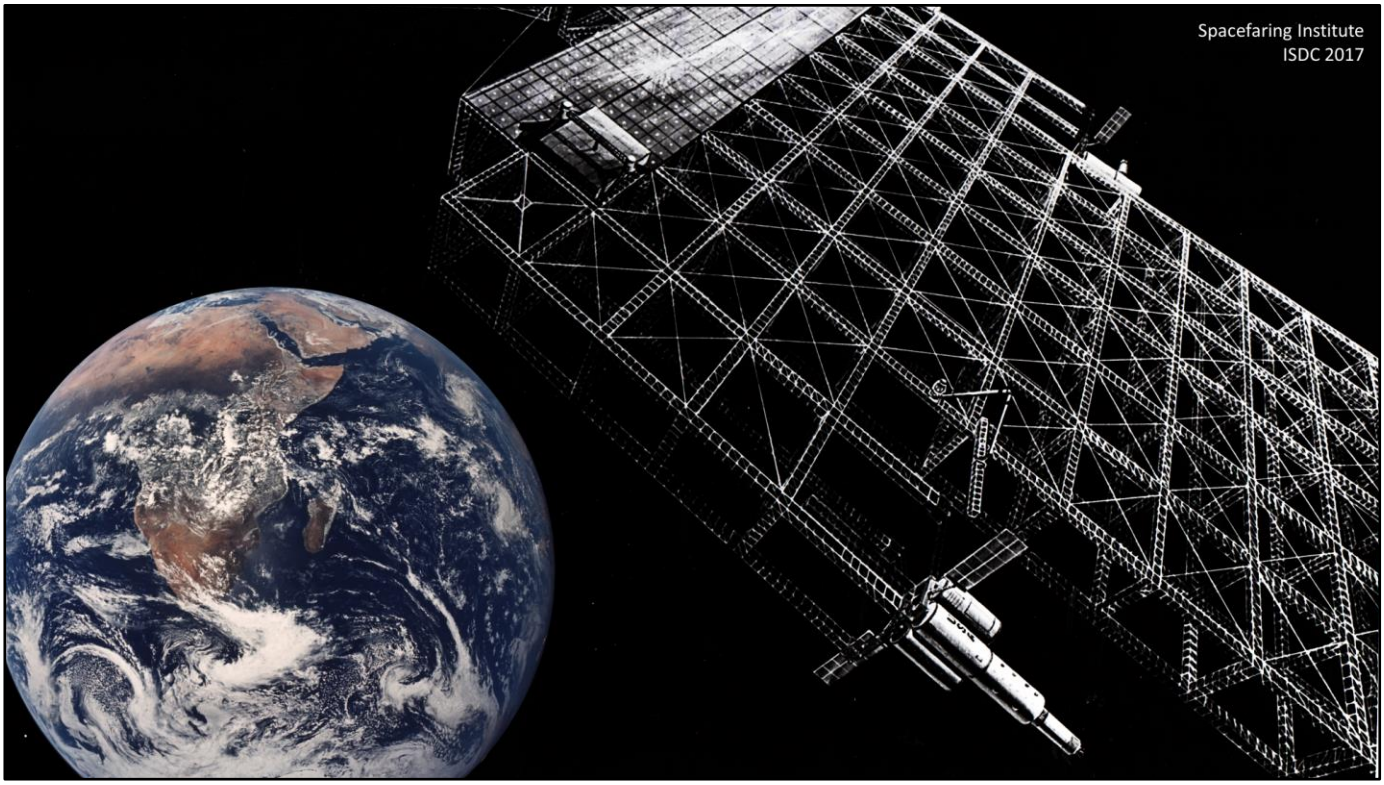
Speaker's comments

Hoover Dam generates 2 GW of sustainable power.



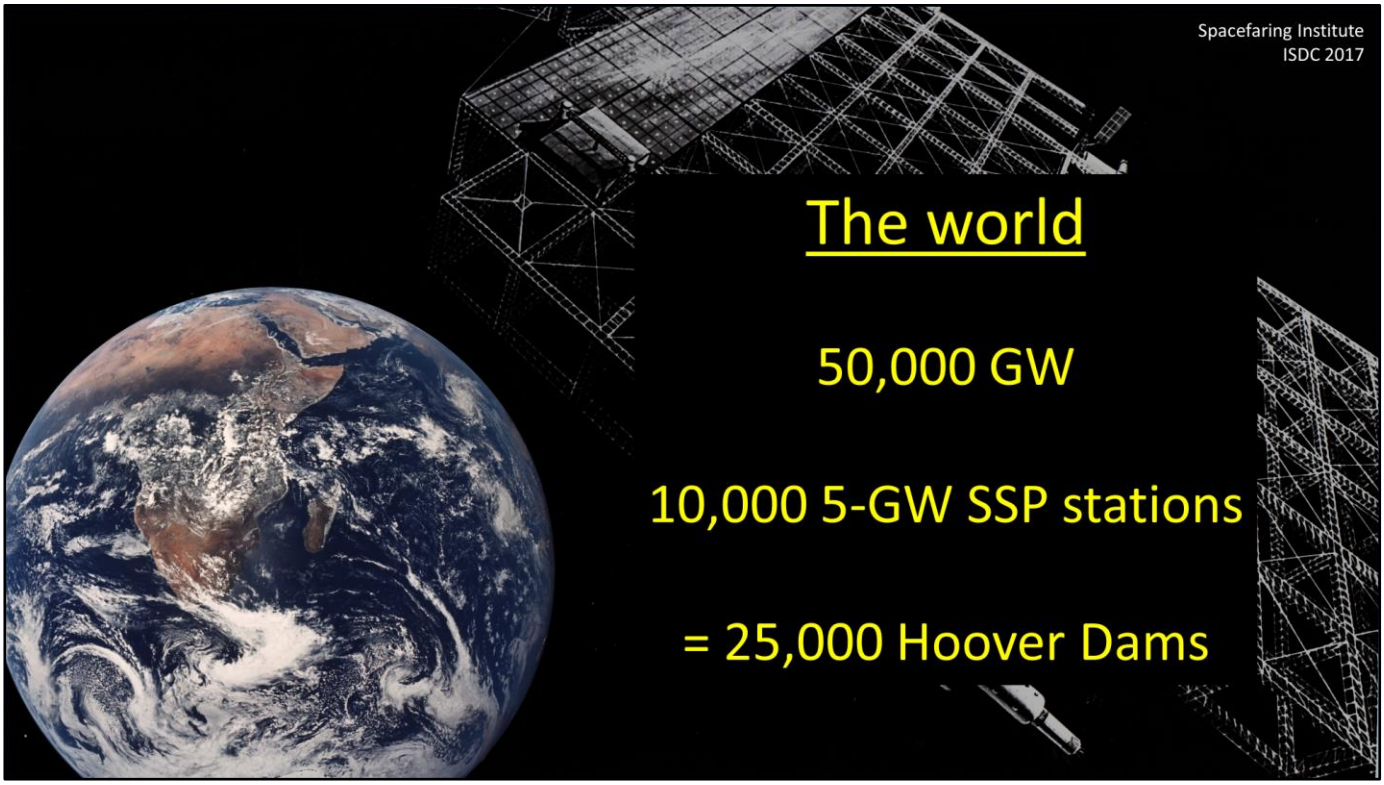
Speaker's comments

The classic space solar power concept produces 5-GW of baseload electrical power from its terrestrial receiving plant.



Speaker's comments

Thus, each space solar power system will provide the equivalent of 2.5 Hoover Dams almost anywhere on the earth.



Speaker's comments

To transition from fossil fuels to sustainable energy and to enable a modern standard of living worldwide, 10,000 SSP terrestrial receiving stations would need to be built.

That's the equivalent of 25,000 Hoover Dams being built all over the world.

Speaker's comments

Imagine, for example, what building the equivalent of 2500 Hoover Dams in Africa would mean in terms of sustainable development.

No other form of sustainable energy offers the world this opportunity for transformational sustainable development.

Speaker's comments

To see the potential of using the natural resources of space to benefit humankind here on the Earth.

Space solar power • SSP ΔT → Sustainable worldwide culture

Speaker's comments

We just need to open our mind to see what literally surrounds our Earth—abundant sustainable energy.