



1

00:00:00,500 --> 00:00:03,780

The Sun pumps out energy in all directions 24/7,

2

00:00:03,800 --> 00:00:06,810

and Earth soaks in it every day.

3

00:00:06,830 --> 00:00:08,080

Some of that energy gets absorbed--

4

00:00:08,100 --> 00:00:10,080

by the oceans, the land, the atmosphere--

5

00:00:10,100 --> 00:00:13,980

and some gets reflected back out into space.

6

00:00:14,000 --> 00:00:18,980

How much stays and how much goes is a function of Earth's Energy Budget.

7

00:00:19,000 --> 00:00:21,880

Almost all of Earth's energy comes from the Sun.

8

00:00:21,900 --> 00:00:25,750

As sunlight heats the planet, the planet changes.

9

00:00:25,770 --> 00:00:29,880

The most obvious transformations are with water.

10

00:00:29,900 --> 00:00:31,150

Oceans soak up heat, warming the planet.

11

00:00:31,170 --> 00:00:35,950

But warming water evaporates, which forms clouds.

12

00:00:35,970 --> 00:00:40,580

Those clouds, in turn, reflect sunlight back into space, which cools the planet.

13

00:00:40,600 --> 00:00:45,010

When the clouds dissipate, sunlight once again warms the water below....

14

00:00:45,030 --> 00:00:47,250

...and the cycle continues.

15

00:00:47,270 --> 00:00:49,980

Other areas of the world have similar cycles.

16

00:00:50,000 --> 00:00:52,050

Polar ice caps, for example, reflect sunlight....

17

00:00:52,070 --> 00:00:56,080

...while dark land surfaces soak it up.

18

00:00:56,100 --> 00:01:00,150

Overall, the amount of energy leaving the planet is equal to the amount coming in,

19

00:01:00,170 --> 00:01:04,280

and Earth's energy budget stays roughly in balance....

20

00:01:04,300 --> 00:01:06,380

...and it's a delicate balance.

21

00:01:06,400 --> 00:01:12,080

That's why NASA has missions designed to keep track of how much energy The Sun is putting out,

22

00:01:12,100 --> 00:01:15,110

as well as missions designed to keep track of forces on Earth

23

00:01:15,130 --> 00:01:18,550

that might alter how much heat the planet traps.

24

00:01:18,570 --> 00:01:22,000

That energy balance isn't simply a scientific measurement,