

Energy in Earth's Systems Overview Diagram: Transforming Earth's Energy

What factors affect the amount of solar radiation reaching different parts of Earth?

Chapter 1

- Systems have stored energy and energy of motion, but the total energy in a system doesn't change.
- Planetary systems like the solar system have objects such as stars, planets, moons, asteroids, and comets.
- Astronomers can study objects in other planetary systems.

Chapter 2

- The light energy from the Sun is transformed into different forms of energy in the Earth system.
- Several factors affect the amount of solar radiation reaching Earth's surface.
- Energy is transferred from Earth to space. (plus energy back to space)

What processes transfer thermal energy in Earth's system?

Chapter 3

- Thermal energy is transferred from the equator to Earth's poles.
- The global water cycle transfers energy as well as mass (water).
- The oceans and atmosphere exchange matter and energy.
- Energy is transferred from Earth to space.

How can humans harness the energy in Earth's system to generate electricity?

Chapter 4

- Wind and moving water in the Earth system enable humans to generate electricity.
- Technological design is a part of generating electricity.
- Society decides how to generate electricity, and you decide how much to use.
- Energy is transferred from Earth to space.

Big Ideas

- Systems have kinetic and potential energy, but the total energy in the system doesn't change.
- Energy is transformed within the Earth system, and transferred between parts of the Earth system.
- Patterns of heating for land and oceans affect your regional climate and local weather.
- Kinetic and potential energy in the Earth's system can be transformed to electric energy for use by humans.