

Text Structure and Language Features: Example 2

Text Structure - Explanation

Statement of phenomenon

Explanation sequence

Background information (optional)

SUSTAINABLE AND RENEWABLE ENERGY

Most of the energy used throughout the world comes from fossil fuels which are oil, coal and natural gas. However, these fuels are not renewable, because they've been formed over millions of years, so when they've been used, they can't be replaced. Scientists are developing sustainable or renewable energy sources, which will not run out, and should cause less pollution than fossil fuels. These sources include wind, waves, tides, sunlight, flowing water and hot rocks deep underground.

Wind energy is harnessed by wind turbines on wind farms. Wind turbines capture the wind's energy with two or three propeller-like blades, which are mounted on a rotor, to generate electricity. The turbines sit high on top of towers, taking advantage of the stronger and less turbulent wind at 100 feet (30 meters) or more above ground. A blade acts much like an airplane wing. When the wind blows, a pocket of low-pressure air forms on the downwind side of the blade. The low-pressure air pocket then pulls the blade toward it, causing the rotor to turn. This is called lift. The force of the lift is actually much stronger than the wind's force against the front side of the blade, which is called drag. The combination of lift and drag causes the rotor to spin like a propeller, and the turning shaft spins a generator to make electricity.

Hydroelectric energy comes from flowing water. The water flows through pipes containing turbines, which spin round and turn generators. As the water pressure pushes against the turbine blades, the blades spin faster and more powerfully, therefore generating more electricity.

Wave and tide energy can also be converted into electricity in several ways. One way is by using a machine called a duck which bobs up and down as the waves wash past it. The rocking movement drives a generator, or pumps liquid or gas to spin a turbine that turns the generator. Tide energy is created by building a barrier or barrage like a dam across the mouth of an inlet or bay. The tidal flow spins turbines inside the barrage.

Solar energy uses the heat energy from the sun to generate electricity from solar panels. A panel is a large sheet which is covered by thousands of solar cells, which change sunlight directly into electricity. Geothermal energy is produced by harnessing the steam from under the ground in areas where the Earth's crust is thin.

It is very important for the Earth's survival that we make more and better use of renewable and sustainable energy sources.

An excellent animation of wind power (Explanation text) can be found on www.eere.energy.gov/RE/wind_basics.html There are many other sites relating to sustainable and renewable energy sources.

Language Features

Use of timeless present tense, typical of much scientific writing, e.g. include, pushes

Use of word chains to build topic information, e.g. fossil fuels, energy, renewable, harnessed, turbine, spin, generate

Use of relating verbs, e.g. These fuels are not renewable

Use of action verbs to build sequence of events, e.g. capture, blows, pulls, turns

Use of action verbs to create causal relation, e.g. bobs, rocks drives, spins, generates

Use of passive voice, e.g. can be converted, is called, is produced

Use of general nouns, e.g. sources

Use of technical language, e.g. barrage, lift, turbine

Use of classifying adjectives, e.g. wind turbines

Use of detailed noun groups, e.g. wave and tide energy, a pocket of low-pressure air

Use of time conjunctions to sequence events, e.g. as,

Use of adverbial phrases, e.g. inside the barrage, through the pipes

Use of contractions (in spoken language)

Use of compound and complex sentences