

Your State's Electrical Generation

Objective:

Students will research the local power plant, determining energy source, utility company and the type of utility, then generate a map of the area that is served by that utility.

Materials and Curriculum
Correlations ▼

► Introduction

Despite its great importance in daily life, few people stop to think what life would be like without electricity. Like air and water, people tend to take electricity for granted. But people use electricity to do many jobs every day, from lighting, heating and cooling homes to powering televisions and computers.

Where is the nearest power plant to your location? Who owns and operates this power plant? What are its fuel source(s)? What type of utility business is it? (utility cooperative, municipal or investor owned)

A **utility cooperative** delivers a public utility such as electricity, water or telecommunications to its members. Profits are either reinvested for infrastructure or distributed to members in the form of “patronage” or capital credits, which are dividends paid on a member’s investment in the cooperative. Each customer is a member and owner of the business with an equal say as every other member of the cooperative, unlike investor owned utilities where the amount of say is governed by the number of shares held. Many such cooperatives exist in the United States. They often bring electric power to rural areas. Many electric cooperatives band together to form their own wholesale power cooperatives, often called G&Ts, for generation and transmission.

A **municipal utility** is a special purpose district that provides public utilities (such as electricity, natural gas, sewage treatment, waste collection/management, wholesale telecommunications and/or water) to residents. Local residents may vote to establish a municipal utility district, which is represented by a board of directors elected by constituents. As governmental bodies, they are usually nonprofit.

An **investor owned utility** is a business providing a product or service regarded as a utility (often termed a public utility regardless of ownership) and managed as a private enterprise.

Procedure

1. Have students define the different utilities types (cooperatives, municipals, investor owned).
2. Either in groups or individually, have students research local power plants, determining the energy source(s), the utility company and the type of utility.
3. What is the generating power of the local power plant?
4. Research the past history of the power plant and what changes may have been made in the last five years, 10 years and 20 years (if applicable). Has the fuel type changed? Has the power plant been retrofitted with new emission controls?

5. Have students use markers or colored pencils and a local or regional map to show the local boundaries of the utilities' service area. If the service area covers a large part of the state, show this area on a state map.
6. Research the number and types of power plants for your state and their major fuel source. (eia.gov/state)
7. Determine the rank of your state in electricity production and consumption. (eia.gov/state/rankings/?sid=US)

To Know and Do More

1. Go to the local utilities' website and research the features, services and products offered by the utility.
2. Write down at least three features and why they are of interest to a customer (how to lower your bill, understanding your energy usage, how to read your bill, emergency numbers, programs and rebates, payment information, FAQs, etc.).

Materials Needed:

- Internet
- Colored pencils
- Local area, city and state maps

Curriculum Correlations

4-ESS3 - 1	MS-ESS3.A	HS-ESS3 - 5
4-ESS3 - 2	HS-LS2 - 7	HS-ESS3.A
4-PS3.B	HS-LS2.A	HS-ESS3.C
5-ESS3 - 1	HS-ESS3 - 1	HS-ETS1-1
MS-LS2 - 1	HS-ESS3 - 2	HS-ETS1.A
MS-ESS3 - 3	HS-ESS3 - 3	
MS-ESS3 - 4	HS-ESS3 - 4	