

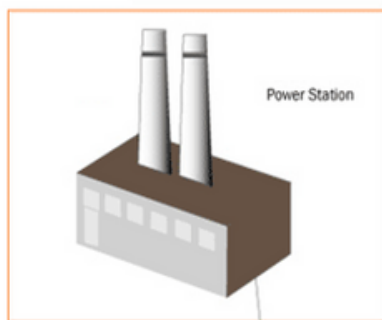
Knowing Energy: The Electricity Grid

Energy Revealed
Learner Worksheet
Level 1-2: Grades 3-8
Level 3-4: Grades 9-12

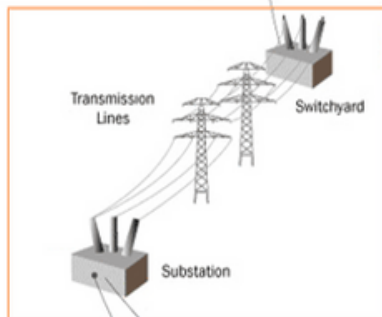


Level 1 Questions/Activities:

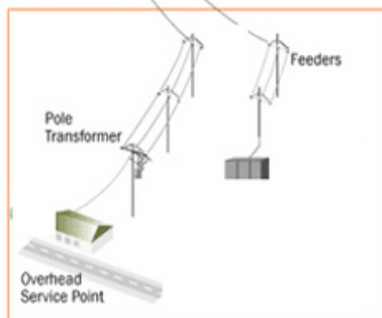
1. Based on what you have learned in the videos, label the diagram provided with the various parts of the electrical grid.



Label:



Label:



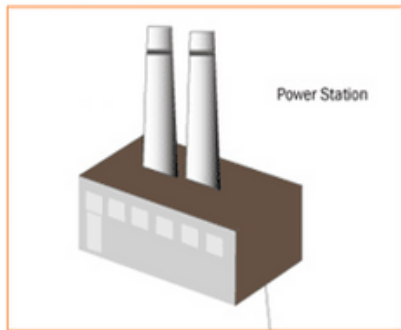
Label:

2. Find three ways to reduce the waste in your house so that the generators do not need to provide as much power to you.

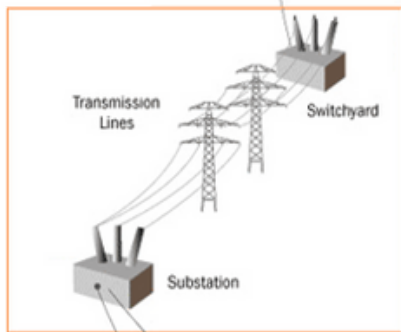
Level 2 Questions/Activities:

- **Note:** Complete level 1 questions/activities first if you haven't already done so.

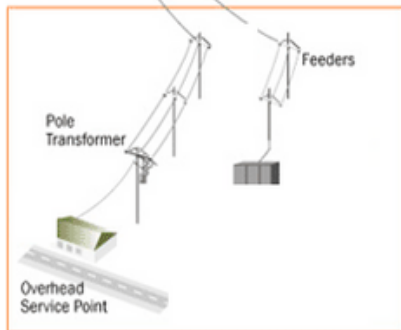
1. Identify the three areas in the system in the diagram where energy is lost, rank them 1, 2, or 3, with 3 being the largest losses.



Ranking:



Ranking:



Ranking:

2. Find three ways to increase the efficiency of things in your house to also reduce the power and losses in the grid.

Level 3 Questions/Activities:

- **Note:** Complete levels 1-2 questions/activities first if you haven't already done so.

1. From your electricity bill in the previous exercise find where the transmission loss factor is on your bill, what is that value?

2. How much do these losses cost you in dollars, using the average price of electricity?

3. On the day you complete this assignment, research what the electrical grid mix is for your geographic location (grid mix is the different sources of fuel used to generate electricity like hydropower and natural gas, etc.).

Level 4 Questions/Activities:

- **Note:** Complete levels 1-3 questions/activities first if you haven't already done so.

1. To complete your three steps to energy efficiency, propose a project to do on your home that optimizes the supply (i.e., solar). Pretend the cost does not matter for this and have fun explaining why you chose this project.

2. If you were to save 500 kWh in a month on your electricity bill, given the grid mix in your area, find the emissions factor to see how many tonnes of CO₂ you saved.
