



Project

Energy Resource Comparison

PURPOSE

- Research and compare current U.S. electric power production technologies
- Outline and defend a power production policy, including feasible alternative technologies, for the coming century

INTRODUCTION

There are many possible approaches to electric power production in the United States. Some of the technologies have long been on line producing power, with various problems and degrees of success and efficiency. As some conventional fuels for these technologies become more scarce and expensive or geopolitically problematic, the need grows to look to the development of alternatives. At the same time the population and its residential and industrial demand for power never cease to expand, creating the need for more generating plants over time.

Fig. 23-1

This power plant generates electricity by burning fossil fuels.



The means of power production listed in the left column of **Fig. 23-2** include conventional fossil fuel-fired plants and nuclear reactors as well as alternative technologies that have the advantage of being renewable. For many of the renewable ones, there remain challenges in implementing their cost-efficient use. Some are in their second and third generation of improvements and yielding some power into the national grid. Some, as of yet, are not practical, but hold great potential for the future. And a few will prove feasible in some parts of the country but not everywhere.

Materials

- Internet access
- encyclopedias and other print sources for information on U.S. electricity generation, fuel sources, and new technologies

Procedure

Based on your texts and any further research that is necessary, fill in the chart. Then, arguing on the basis of factual support, answer the questions that follow.

Fig. 23-2

Energy Resources
Fact Sheet

Energy Source	Availability	State of Technology	Economics	Environmental and Health Considerations
Coal				
Oil				
Natural gas				
Nuclear fission				
Hydroelectric				
Solar				
Wind				
Geothermal				
Nuclear fusion				
Solid waste				
Biomass				
Gas hydrates				
Tidal				
Ocean thermal gradients				

Questions

1. Outline a National Energy Policy proposal for producing sufficient electrical power in the United States over the next 100 years. Use separate paper if more space is required.

2. Give the basic rationale for your proposal—why is the new plan imperative? If your plans involve different technologies for different regions, explain why.

3. Compare and contrast your policy to power production today. Explain why it would be in the nation's long-term best interests to alter policy starting now.

4. What would be some economic, environmental, and social benefits of changing to your plan?
