

**Title:** Coal and The Illinois Economy

**Level:** Secondary

**Day/Time:**

**KERA Goals:** 1.2, 5.4, 6.1

**Objective:** Students will read information and answer questions related to the effects of the coal industry on the economy in Illinois.

**Background Information:**

Altogether, Illinois coal mines produce 60 million tons of coal each year. This coal is mainly used to generate electricity at power plants in Illinois and throughout the Midwestern and southeastern United States; however, coal is also used to produce many other goods and services. Total coal sales bring more than \$1.5 billion into the Illinois economy each year. The coal industry is essential to the livelihood and economic health of many communities in Illinois.

Many communities rely on the coal industry as a primary source of employment and income. In addition to jobs that are directly created at a coal mine, it is estimated that about five additional non-mine jobs are created for each miner employed in Illinois. That is because many other commodities and services are needed to support the mining operation and the miners' families. In a few areas in Illinois, direct mining jobs and their spin-off jobs can account for as much as 50 percent of the total county employment.

In 1990, Congress amended the federal Clean Air Act to address concerns that pollution is damaging our environment and our health. The Clean Air Act Amendments require a wide range of industries to reduce their emissions of pollutants and produce cleaner air. In Title IV of the Amendments, Congress required that electric utilities cut sulfur dioxide emissions - which contribute to acid deposition - in half by the year 2000. These mandates will be especially detrimental to the Illinois coal industry since this coal is generally high in sulfur.

Electric utilities have developed a number of strategies to comply with the requirements of the new laws. While clean coal technologies have been developed that would allow electric utilities to continue burning Illinois' high-sulfur coal, some traditional consumers of Illinois coal are switching to low-sulfur coal from western states. The cost of switching to western coal is less than the cost of construction and operating the equipment for sulfur removal. Many of our coal consumers, however, are using clean coal technologies to allow them to continue to burn Illinois coal.

As a result of the Clean Air Act Amendments of 1990, the Illinois coal industry faces a difficult challenge in the years ahead. If electric utilities decide to switch to western sources for coal, Illinois will be hard-pressed to make up the loss in coal sales since 90 percent of Illinois coal is purchased by the utility industry. Illinois coal consumption by utilities could decline by 23 million by the year 2000. This represents nearly half of Illinois coal consumed by utilities and more than one-third of statewide coal production. Such a dramatic decline in coal production is certain to have profound effects on the local coal mining communities.

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The loss of these coal markets would eliminate 3,400 mine jobs and 17,000 non-mine jobs by the year 2000. The resulting decline in personal income to these communities could be as much as \$800 million. In addition, the state of Illinois will face lost tax revenues and increased outlays for unemployment benefits.

Although the effect of the Clean Air Act on the coal industry is important, the coal industry also has other obstacles to overcome, such as mine reclamation, a shortage of people studying mining engineering, and aging workforce and other environmental issues. With all of these obstacles, what does the future hold for the Illinois coal industry?

Coal is still an abundant and reliable fuel. With the use of new technologies or scrubbers, Illinois coal can be burned and still be in compliance with the laws. Illinois coal can be used in an environmentally sound manner. If the coal industry can work together with utilities, they can promote the continued use to Illinois coal and clean coal technologies. As a result, Illinois coal will have a bright future.

### Introduction

Economy is the careful management of resources such as income, materials or labor. Things that contribute to a healthy economy include employment, commerce, transportation and natural resources including energy. The mining and distribution of coal is an integral part of local and regional economies of Illinois.

### Coal and the Illinois Economy

Of 60 million tons of coal mined each year in Illinois, 90 percent is purchased by the electric utility industry. This coal is shipped by truck, barge and railroad to numerous electric generating stations in the Midwestern and southeastern United States. Some Illinois coal (about two percent) is exported to Canada and Europe. The remaining eight percent is used by industry to produce heat and electricity or to manufacture various consumer products.

As a result of the success of the coal industry, a number of related industries flourish. Equipment manufacturers design and build machinery used in the mines. Local businesses provide craftsmen and services to the mine. Extensive transportation networks have been developed to move coal from mine to consumer. Bankers, lawyers, printers, retailers, etc., all conduct daily business with the mine. When you consider all of these businesses and people that are involved in the operation of a mine, you can see that mining contributes greatly to the Illinois economy.

Uses of Coal: Coal is primarily used to fuel the electric utility industry; however, it is also used as a raw material in various manufacturing processes. The types of products manufactured from coal include: fuel, soda water, acetylene, synthetic rubber, briquettes, artificial silk, sugar substitute, linoleum, T.N.T. explosive, electrical insulation, street lighting, sulfuric acid, sulfur, paint pigments, smelling salts, fertilizers, laughing gas, ammonia, baking powder, rubber cement, fire proofing, carbolic acid, food preservatives, electric plugs, billiard balls, medicines, perfumes, mothballs, paint thinner, fungicides, insecticides, storage

batteries, wood preservative, disinfectant, varnish, roofing and paving.

**Employment and Income:** Thirty-two mines in Illinois employ more than 6,700 miners and create roughly 33,000 spin-off jobs. Spin-off jobs are non-mining jobs that result from the activities and incomes generated by the mining operation. For example, the Caterpillar salesperson who sells mining equipment or the carpenter building houses in a mining community rely on the mine and the miners for their livelihood. If the mine closes they would probably lose their jobs.

Mine jobs are especially important in bringing personal income into a community. In those counties where mining occurs, miners' salaries are typically two to three times greater than the average salary in the county. That income helps to pay for the schools, roads and services that the community needs.

An entire economy centered around mining, marketing and transporting coal often exists in more remote areas of the state. There are several areas in southern Illinois where miners account for as much as 16 percent of employment in the county and 23 percent of total personal income. If the local mine closed, these communities would be in economic distress.

### The Clean Air Act

In 1990, Congress passed amendments to the Clean Air Act that would curb three major threats to the nation's environment and the health of Americans: acid rain, urban air pollution and toxic air emissions. Title IV of the Amendments addresses the issue of acid rain by placing strict limits on electric utility emissions of sulfur dioxide and nitrogen oxide - thought to be the two leading causes of acid rain.

Phase I requires 110 power plants to make significant reductions in sulfur dioxide emissions by 1995. These plants include the largest emitters of sulfur dioxide in the country. In Phase II, all power plants across the nation are required to reduce sulfur dioxide emissions by the year 2000. Utilities in the United States presently emit 20 million tons of sulfur dioxide each year. These emissions will be reduced to 8.9 million tons annually after the year 2000.

These provisions are expected to have profound implications for Illinois' coal industry. Illinois coal generally has higher sulfur content compared to coal from western states and will emit greater amounts of sulfur dioxide when burned. Consequently, many utility companies will choose to switch to low-sulfur western coal in order to reduce their sulfur dioxide emissions. While clean coal technologies would allow utilities to continue burning Illinois coal, they are not always the most economical choice.

### Economic Impacts of the Clean Air Act on Illinois

**Reduced Coal Sales:** Recent studies have shown that as much as 23 million tons - or one-third - of Illinois' annual coal production could be lost by the year 2000 as a result of fuel switching by electric utilities. Approximately \$500 million in annual coal sales in Illinois

are at risk. In many cases entire mines will close, devastating the local communities in the short run and regional economics in the long run.

Job Losses: As a result of fuel switching by utilities, many mining and spin-off jobs were lost. By 2000, the losses could grow to 3,500 mining and 17,000 spin-off jobs compared to 1990 levels. If that were to happen, fewer than 5,400 miners' jobs would be left in Illinois.

The Future of Illinois Coal: The Illinois coal industry has many obstacles to overcome in the years ahead. Existing markets for Illinois coal must be preserved through implementation of clean coal technologies and other measures that will allow high-sulfur coal to be burned in an environmentally safe way. In addition, new markets must be developed to replace those lost as a result of fuel switching by utilities. The coal industry and the electric utility industry must work together to ensure the continued use of one of Illinois' most abundant resources - COAL.

Discussion:

1. What is the definition of economy?
2. List some components of a healthy economy:
  - a.
  - b.
  - c.
  - d.
3. List two ways that coal helps the state economy:
  - a.
  - b.
4. Explain two uses of Illinois coal:
  - a.
  - b.
5. What is the Clean Air Act?
6. Why is the Clean Air Act important to Illinois coal miners?
7. What do you think is the future of Illinois coal?