

Power plant needs:

Over the next 20 years, the U.S. will need 1,300 to 1,900 new power plants, which is the equivalent of 60 to 90 new power plants a year.

There are roughly 5,000 power plants in the U.S., with a total generating capacity of nearly 800,000 megawatts.

Kentucky has 113 power plants (58 coal, 15 oil, 10 gas, 30 hydro) producing 15,910 megawatts of electricity.

Over the next 10 years, demand for electric power is expected to increase by about 25%. More than 200,000 megawatts of new capacity will be required. However, existing transmission lines are inadequate. They can only handle 4% growth during this same period.

Air emissions from coal:

- Since 1970, national coal consumption has increased 100% while key air emissions (SO₂, NO_x, particulates) have declined 31%.
- 2004 EPA regulation would reduce SO₂, NO_x, and mercury by 70% over the next 14 years, giving utilities the needed time to retrofit their units.
- There is no commercially available mercury control technology. Reductions in mercury come from SO₂, NO_x, and particulate matter controls.
- 55% of all mercury emissions are naturally occurring—from oceans, volcanoes, and forest fires.
- U.S. power plants produce just 1% of global mercury emissions.

Oil facts:

1973 imported 36%
2005 imported 58%
2020 project 64%

Refinery industry is now running at capacity. Almost 50 refineries closed over last 10 years. No major refineries have been built

in the last 25 years. New England has no refineries.

Arctic National Wildlife Refuge (ANWR) is about the size of the state of South Carolina, whereas the developed area for oil drilling is estimated to be less than one-fifth the size of Washington D.C.'s Dulles International Airport.

Alternate energy is a major land user:

- If Lexington was fully powered by hydropower, it would need a reservoir covering 122 square miles.
- If Lexington were powered by wind, it would need a wind farm covering 25 square miles, although the actual “footprint” of the windmills would be much smaller.

Five points favoring coal:

- **Abundant**—250 years supply.
- **Affordable**—Kentucky has the cheapest electrical rate in the nation because of coal.
- **Reliable/Secure**—American made and not subject to unreliable weather or climate conditions, or dependence on foreign suppliers.
- **Jobs**—Employs many more workers than any other energy source, in the mining, transportation, and burning of coal.
- **Clean**—Can be burned cleanly using clean coal technology.

COAL COUNTS

Fast Facts About Kentucky's Coal Industry 2006



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Safety:

- Kentucky's coal mines continue to improve their safety record.
- 1920-29 was the deadliest decade in Kentucky coal mines. An average of 161 miners died each year in mining-related accidents. From 1990-99, Kentucky fatalities averaged 12 miners annually.
- During the period 2000-06, Kentucky averaged 8.4 mining fatalities annually. Kentucky experienced fifteen fatalities in 2006, its worst year since 1993 when 18 miners died.
- From 2003-2005, Kentucky coal industry's average annual **injury rate** (per 100 workers) was 6.1. The average injury rate for all Kentucky workers was 6.2. Manufacturing, construction, transportation, utilities, and agriculture all had higher annual injury rates higher than coal mining.

Employment:

- 17,190 miners directly employed in 2005. At least 3 additional indirect jobs are created for every one coal job. Miners earned an average \$47,000 in 2006.
- 1981 had 48,050 coal miners, compared to 17,190 in 2005.
- Productivity per miner went from 1.84 tons/miner/hour in 1982 to 3.32 tons/miner/hour in 2004.
- Less than 3% of working miners are members of the United Mine Workers.

Production:

- Mined around 124 million tons in 2005. Decrease of 55 million tons since 1990.
- 80% mined in Eastern Kentucky (57% underground, 43% surface).
- 20% mined in Western Kentucky (83% underground, 17% surface).
- Coal production peaked in 1990 at 179.4 million tons.

- In 2005, Kentucky ranked third, behind Wyoming (406 million tons) and West Virginia (151 million tons) in production.

Value of coal:

- 1,620 tons of coal per acre-foot.
- Royalties to mineral owners at \$2 per ton amount to \$3,240 per acre-foot.
- Payments to surface owners at 50 cents per ton amount to \$810 per acre-foot.

Price of coal:

- The price of coal peaked in 1982 at \$30.44 and declined for next 19 years to around \$24.
- By 2005, the average price had risen to \$39.68. For 2006 the average price is estimated to be around \$40 per ton.
- Spot market is about 20% of coal sold. The spot market price of coal fluctuates based on supply and demand.

Users of Kentucky coal:

- Electric utilities use about 68% of Kentucky's coal; 32% to industrial users, steel production.
- Coal exports 73% of our coal to 23 states and 4 foreign countries.
- 91% of Kentucky's electricity is from burning coal.

Financial impacts:

- Kentucky exports 73% of its coal, which brings into Kentucky over \$3.5 billion a year. Most stays here—wages, benefits, operating expenses, royalties, and taxes account for around 85 cents on each dollar.
- Coal paid \$230.6 million in severance taxes in 2006.
- Revenues from the sale of Kentucky coal were \$4.9 billion 2005.

What does 1 million tons of coal production mean to Kentucky?

- 139 coal mining jobs paying \$47,000 per year.
- 417 indirect jobs.
- \$1.8 million in severance taxes.
- \$29 million brought into Kentucky from sales to other states.
- \$500,000 in payments to surface owners for surface mining (wheelage).
- \$2 million in average royalty payments to mineral owners (individuals/companies).

Reclamation:

- Since 1977, Kentucky coal operators have paid over \$899 million into a federal Abandoned Mine Land Reclamation Fund. \$1.6 billion remains unallocated.
- Kentucky has received 27 national reclamation awards from OSM since 1986.

Cheap electricity:

- Average electricity costs in Kentucky were 5.50 cents per kilowatt-hour in 2006—the fourth lowest in the nation.

Fuel sources for U. S. electricity generation in 2006:

Coal	52%
Nuclear	20%
Natural gas	16%
Hydropower	7%
Oil	3%
Renewables	2%

(wind, solar, biomass and geo-thermal. 2020 projected to be 2.8%.
(Renewables—76% biomass, 17% geothermal, 6% wind, 1% solar)