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There Is No Such Thing as “Clean Coal”

Coal mining can have disastrous impacts on human health and the environment

Compared to the soaring price of oil and natural gas, coal might seem cheap. But appearances are deceiving: the true costs of conventional coal extraction and use are significant. The conventional coal fuel cycle is among the most destructive activities on earth, threatening our health, fouling our air and water, harming our land, and contributing to global warming. Fortunately, there are solutions available right now: Energy efficiency and renewable resources can help us meet our energy demands without the negative impacts of coal.

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Coal Mining Can Harm People’s Health and the Environment

The way coal is currently produced and used contributes to damage to the land, water, and air, and can severely harm human health and the environment. Environmental insults begin with coal mining and transportation, continue with combustion, and leave behind a trail of waste.

Dangerous Working Conditions Can Put Miners’ Health and Safety at Risk:

Coal mining is one of the most dangerous professions in the United States. The industry is about five times as hazardous as the average private workplace; in 2006 and 2007, a total of 80 miners were killed on the job. Coal miners also suffer many nonfatal injuries and are vulnerable to serious diseases, most notably black lung disease (pneumoconiosis) which is caused by inhaling coal dust.

Mining Can Make Our Water Undrinkable:

Strip mining, particularly in the semi-arid West, can damage the underground aquifers that supply household drinking water and water for agricultural purposes. Both underground and surface mining can pollute nearby waters with sediments and chemicals. The most serious kind of chemical pollution is acid mine drainage, or AMD. AMD causes heavy metals and toxins to be carried into streams and groundwater, and can make the water undrinkable and unfit for recreational use. The most dramatic physical effect on water occurs from valley fills, the depositing of mining waste often associated with mountaintop removal (MTR) mining in the headwaters of streams. The government has estimated that that valley fills alone buried more than 700 miles of streams from 1985 to 2001. More broadly,



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between 1992 and 2002, surface coal mining in Appalachia has damaged or destroyed more than 1,200 miles of streams and deforested some 380,000 acres, with valley fills covering more than 83,000 acres and affecting the drainage of some 438,000 acres of watershed.¹ If current policies do not change, these numbers will increase dramatically over the coming decade.

Mining Adds Harmful Pollution to Our Air:

There are two main sources of air pollution during the coal production process: methane emissions from the mines, which contribute to global warming pollution, and particulate matter (PM) emissions, which can cause significant respiratory damage as well as premature death.

Abusive Mining Techniques Scar the Land and Can Damage Wildlife Habitats:

Coal mining—and particularly surface or strip mining—poses a significant threat to terrestrial habitats in the United States. Clearcuts associated with surface mining activity can fragment habitat, destroying natural areas. The Appalachian region produces more than 30 percent of our nation’s coal, and mining there commonly wipes out forested areas. This region is one of the most bio-diverse temperate regions in the world, and is home to hundreds of unique species of plants, invertebrates, salamanders, mussels, and fish. And in the arid West, surface mining activities can cause severe environmental damage as huge machines strip, rip apart, and scrape aside vegetation, soils, and wildlife habitat and as they drastically—and permanently—reshape existing land forms and the affected area’s ecology to reach the subsurface coal. Reclamation of mined land is problematic: although more than 31,000 acres have been strip-mined in Montana, reclamation has been completed on only 216 of them.

Transporting Coal Pollutes Our Air: Moving coal from where it is mined to where it will be burned produces significant quantities of air pollution and other environmental harms. Diesel-burning trucks, trains, and barges that transport coal spew dangerous chemicals into the earth’s atmosphere. The serious health risks from these toxic emissions include chronic bronchitis, heart attacks, and decreased lung function, while carbon from diesel combustion contributes to global warming.

China’s Appetite for Coal

Together, China and the U.S. are responsible for half of world coal production, with China alone producing more than 2.3 billion tons in 2006.

China’s total power generation capacity topped 600 billion watts (GW) in 2006. Given the country’s skyrocketing economic growth, this figure is expected to reach more than 800 GW by 2010, making China the fastest-growing power sector in the world.

China’s coal sector is not only the world’s largest, but also the most dangerous and most polluting. Pulmonary disease, closely related to air pollution from coal burning, is the second-largest single cause of adult deaths in China (13.9 percent of the total). China’s carbon dioxide emissions accounted for more than 18 percent of global carbon dioxide emissions in 2004. China’s rapid economic growth and increasing reliance on coal puts it on course to overtake the United States as the world’s leading carbon emitter by 2010.

Unsafe Storage of Process Wastes Threatens

Communities: Coal mining generates large quantities of waste. One significant form of waste is the sludge that is produced from washing coal. In some locations, sludge is collected in impoundments, which can pose a threat to human life and the environment if they fail.

What Is the Future for Coal?

Reducing the harms from coal requires a multipronged approach. NRDC’s first priority is to minimize dependence on coal and other fossil fuels through conservation, more efficient use of energy, and greater development of renewable energy resources. These resources have the technical capability to eliminate the need for new coal-fired power plants and to help significantly reduce our overall reliance on coal. Nonetheless, some 120 coal-fired power plants are currently on the drawing board, and many hundreds more are already in operation. Thus, every effort also must be made to minimize the environmental harm from coal production, processing, and transportation and to require that power companies use the best available technology for coal conversion to dramatically reduce emissions of particulate matter, nitrogen oxides, sulfur dioxide, mercury and other hazardous air pollutants, and carbon dioxide from coal use.

With the toll from coal so steep, America’s highest priorities must be to reduce its reliance on coal and to accelerate the transition to an energy future that maximizes energy efficiency and renewable resources.

¹ U.S. EPA, Mountaintop Mining/Valley Fill DEIS, (2003), p. III A-1 and IV C-1, www.epa.gov.



What Else Comes From Coal?

Like the coal production process, burning coal is associated with numerous environmental harms.

- 10.3 million tons of sulfur dioxide were released from U.S. power plants in 2004, 95 percent of these emissions coming from coal-fired plants.
- Nitrogen oxide emissions from power plants in the United States totaled about 3.9 million tons in 2004, with more than 90 percent of these emissions coming from coal-fired units.
- An estimated 48 tons of mercury, 56 tons of arsenic, 62 tons of lead compounds, 62 tons of chromium compounds, 23,000 tons of hydrogen fluoride, and 134,000 tons of hydrochloric acid are emitted each year by U.S. coal-burning plants.

