

**CORRECTION TO THIS ARTICLE**

Earlier versions of this article misstated the amount of mercury emitted annually from a typical coal plant. This version has been corrected.

## What It Costs Us

By Jeff Goodell

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Underground coal miners work in the darkness, invisible to most of us, and when they die -- also in the darkness, from methane explosions or rock falls or any of the hundreds of other hazards they face every day -- their deaths usually merit just a few paragraphs in the local newspaper.

The attempted rescue of trapped coal miners, on the other hand, is often headline news. Networks love the real-time drama of the rescue efforts -- it's reality TV from the heartland, complete with anguished family members, heroic workers and dodgy mine owners. Sometimes, these stories have happy endings. In 2002, nine miners who were trapped in a coal mine in Quecreek, Pa., for 77 hours emerged as celebrities, feted by [Oprah](#) and photographed for [Vanity Fair magazine](#).

But not every mine rescue turns out so well, as the [Crandall Canyon](#) mine disaster near [Huntington, Utah](#), has reminded us over the past three weeks. When three rescuers were killed trying to dig out the six miners who've been trapped since Aug. 6, the story turned, as Gov. [Jon Huntsman Jr.](#) put it, "from a tragedy into a catastrophe."

In the coming months, tough questions will be asked about exactly what happened in the Crandall Canyon mine: Did federal mine safety officials do everything they could to protect the miners? Did [Robert Murray](#), the co-owner of the mine, value profits over human life? And why, at the beginning of the 21st century, when we can download real-time images from Mars onto our laptop computers, has no one figured out a way to track or communicate with coal miners underground?

"This is a defining moment for the history of mining," Huntsman said. "We all expect to come out of this better and smarter and safer."

But if history is any guide, straightforward answers to what happened in Utah will be as rare as oxygen in the collapsed mine. We can expect a hue and cry about mine safety on [Capitol Hill](#), a lot of blame-shifting and finger-pointing and, most likely, some modest mine safety improvements. But you can bet that you won't hear much about the real issue, which is the high cost of the United States' dependence on coal, and whether it's worth the price we pay.

Many Americans think that coal went out with top hats and corsets. In fact, we burn more than a billion tons of coal each year in the United States -- about 20 pounds a day for every man, woman and child. We don't burn it in coal stoves, of course, but in big power plants that generate about half the electric power in the country.

Politically, the war in [Iraq](#) has been a boon for coal, allowing coal-friendly politicians to tout America's 250-year supply as a substitute for our addiction to Middle Eastern oil -- even though, in the real world, there is no overlap between coal (used to generate electricity) and oil (used for transportation fuels, among other things). This is not to say that the coal industry would not dearly love to get into America's gas tank. In recent

months, it has pushed hard for subsidies and tax breaks that would accelerate the construction of coal-to-liquid plants, a technology developed by the Nazis during the 1930s that can transform coal into liquid fuels such as diesel (for technical reasons, it's very difficult to make gasoline from coal).

Coal boosters argue that today's industry is nothing like the industry of yore, and that many of the problems with the fuel -- like the fact that air pollution from power plants kills people -- have been solved by new technology. Coal is cheap, plentiful and clean, they say. What's not to like?

Mine disasters such as the one in Utah, however, don't exactly fit this script. It's tough to argue that you've left the 19th century behind when you have Murray -- one of the most prominent coal barons in the United States, well known for his political connections and influence -- insisting that the collapse was caused by an earthquake, directly contradicting seismologists who say that their instruments clearly show that the seismic activity was the result of the collapse in the mine. It may not surprise you that Murray also believes global warming is a hoax.

Claims about a 250-year supply of coal won't stand up to scrutiny for long, either. Yes, the United States has more coal than any other nation. But we've been mining coal in this country for 150 years -- all the simple, high-quality, easy-to-get stuff is gone. What's left is buried beneath towns and national parks, or places that are difficult, expensive and dangerous to mine. The blunt truth is, if we're going to become more dependent on coal, more miners will die. How many mining tragedies will we accept in the name of "cheap" electricity?

Digging up hard-to-get coal will also devastate Appalachia, where huge mountaintop-removal mines have already buried 700 miles of streams and 400,000 acres of forests. (Mountaintop-removal is a particularly destructive form of mining in which entire mountains are blasted apart to expose the coal seams inside; the rubble is typically dumped in nearby valleys.) Instead of strengthening oversight of this type of mining, the Bush administration proposed last week to loosen regulations and allow it to expand. One recent study estimated that if this practice continues, within 40 years the region disemboweled by mining will be approximately the size of [Rhode Island](#).

As for "clean coal," it's a nice advertising slogan, but it's not a statement of fact. According to Americans for Balanced Energy Choices, a nonprofit group funded by coal companies and coal-burning electric utilities, emissions of conventional pollutants from coal plants have fallen by one-third between 1970 and 2000, even as the use of coal to generate electricity has tripled. What they don't tell you is that a) the industry fought the laws that mandated many of those reductions; and b) the amount of pollution spewed out by a coal plant is still enormous.

According to the [Union of Concerned Scientists](#), a scientific advocacy group, annual emissions from a typical coal plant include 10,000 tons of sulfur dioxide, the major cause of acid rain; 10,200 tons of nitrogen oxide, a major contributor to smog; 500 tons of small particles, which cause lung damage and other respiratory problems; 225 pounds of arsenic; 114 pounds of lead; and many other toxic heavy metals, including 170 pounds of mercury, which can cause birth defects, brain damage and other ailments.

But the big issue is global warming. Burning coal accounts for more than one-third of U.S. emissions of carbon dioxide, the main greenhouse gas. In a single year, a big coal plant emits as much carbon dioxide as 1 million SUVs. Coal plants that are built today emit just as much CO<sub>2</sub> as those that were built 50 years ago (there have been some marginal gains in efficiency, but not many). In the future, carbon dioxide might be captured from coal plants and pumped underground into abandoned oil wells or deep saline aquifers, but at the moment, these solutions are unproven and expensive.

The coal industry is soaking up billions of dollars in tax breaks and subsidies to develop technology and study the problem. But according to climate scientists such as [NASA's James Hansen](#), if we hope to have a chance of avoiding dangerous changes to Earth's climate, we don't have time to wait. That's why Hansen, along with

former vice president [Al Gore](#) and others, has called for a moratorium on new coal plants that do not capture and store carbon dioxide pollution. And that's why [Silicon Valley](#) entrepreneurs are investing hundreds of millions of dollars into clean-energy technology -- because they know that confronting the problem of global warming is not just the biggest challenge that civilization has ever faced, but also the mother of all economic opportunities.

It may seem like a long way from the melting Arctic to the mine disaster in Utah, but it's not. The lesson from Crandall Canyon is not just that we need stronger mine safety laws and better federal oversight of dangerous mines, but that as Americans, we need to be more conscious of the costs and consequences of what goes on behind the light switch. Otherwise, instead of coming out of this disaster smarter, stronger and safer, we're likely to find ourselves repeating this story again and again.

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