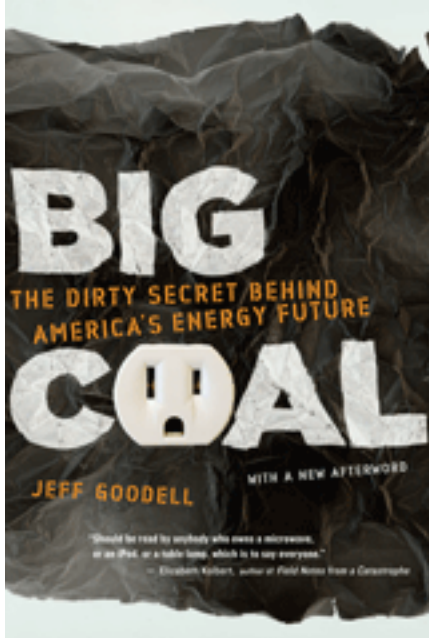


A Reader's Guide



Big Coal

by Jeff Goodell

- [About the Book](#)
- [About the Author](#)
- [Questions for Discussion](#)
- [A Conversation with Jeff Goodell](#)
- [For Further Reading](#)

"[A] compelling indictment of one of the country's biggest, most powerful, and most antiquated industries . . . well-written, timely, and powerful." — *New York Times*

"*Big Coal* should be read by anybody who owns a microwave, or an iPod, or a table lamp, which is to say everyone." — Elizabeth Kolbert, author of *Field Notes from a Catastrophe*

About the Book

For most of us, the word "coal" conjures up images of puffing smokestacks in a nineteenth-century industrial city or the dark, dank atmosphere of a coal mine. Few of us think of coal when we power up our laptop, turn on the television, or load our iPod. But we should. Few of us fully realize the role that coal plays in America and around the world.

Coal executives, government officials, and energy companies have long promoted coal's virtues as a cheap, plentiful, homegrown source of energy. But coal has a dark side in the toll it takes on our health, our environment, and our communities.

In the tradition of Rachel Carson and Eric Schlosser, acclaimed journalist Jeff Goodell travels around the United States to examine the faulty assumptions underlying coal's dominance and to shatter the myth that cheap coal is the energy source for the twenty-first century. *Big Coal* is an intelligent, frank look at how and why coal has maintained a prominent role in the energy conversation. Through hard-hitting investigative reporting, historical background, and business analysis, Goodell highlights issues all Americans should understand about coal, why we need to care, and what needs to change.

"The book's strength lies in Goodell's ability to connect our mundane daily activities, such as flipping on the living room lights and powering up our laptops, with the grimy business

that powers these things . . . *Big Coal* gives its readers a clear sense of the tradeoffs we face in our feverish quest for inexpensive energy." — *Washington Post Book World*

About the Author

Jeff Goodell is a contributing editor for *Rolling Stone* and a frequent contributor to the *New York Times Magazine*. He is the author of the *New York Times* bestseller *Our Story: 77 Hours That Tested Our Friendship and Our Faith*, based on the terrifying hours nine Quecreek miners spent trapped underground; he appeared on *Oprah* to talk with the miners about their experience. Goodell's first book, *The Cyberthief and the Samurai*, was about the hunt for the notorious computer hacker Kevin Mitnick. His memoir, *Sunnyvale: The Rise and Fall of a Silicon Valley Family*, was a *New York Times* Notable Book.

Questions for Discussion

We hope the following questions will stimulate discussion as well as provide a deeper understanding of *Big Coal* for every reader.

1. In *Big Coal*, Jeff Goodell discusses the economic, health, and environmental implications of coal use. Many are invisible to the end user: we don't typically think about how much raw fuel it takes to supply electricity to run our computers or microwaves, or how many pollutants enter the atmosphere as a result, or how many cases of asthma the pollutants may trigger, for instance. Did you find Goodell's measure of coal's hidden costs alarming? Why or why not?
2. In the face of the global oil crisis, coal power has gained prominence as a supposedly cleaner, more plentiful alternative fuel. But the often-cited estimate that the United States has 250 years' worth of cheap, accessible coal available has been revealed to be a gross exaggeration. How was this misinformation introduced into the energy dialogue, and what factors have perpetuated it? What other inaccuracies have been uncovered? If this most basic assumption about our energy reserves is wrong, how must we revise our plans for energy use in the future?
3. Goodell cites some staggering statistics: coal-fired power plants in the United States are responsible for more than one-third of the emissions of carbon dioxide, the main greenhouse gas, into the atmosphere each year; in just the past twenty years, air pollution from coal plants has shortened the lives of more than half a million Americans. Yet coal presently supplies more than half the electricity consumed in the United States. Given the detrimental effects of burning coal, why is this substance in such widespread use? What are some of the alternatives to coal energy, and how do these sources compare to coal?
4. *Big Coal* lays bare the toll that coal mining exacts on individuals and communities. It documents the unsafe conditions and practices that persist in the coal-mining industry even today and that have led to horrific tragedies. Were you surprised to learn about these modern risks? Is it fair to argue that the human cost is outweighed by the gain to

society?

- 5.** Coal mining takes a harsh toll on the land as well. For example, mountaintop-removal mining has permanently destroyed 1,200 miles of streams, polluted groundwater and rivers, and demolished some 400,000 acres of forest in Appalachia alone. What effect will this destruction of the land have on our general quality of life?
- 6.** What kind of statement is made by the struggle against big business undertaken by an individual like Maria Gunnoe? Would you do the same thing if you were in her shoes? Why or why not?
- 7.** In America today, the coal power industry operates for the most part in the same antiquated configuration envisioned by Samuel Insull at the dawn of the electric age: a state-regulated utility system whereby enormous centralized generating plants supply cheap energy for vast numbers of consumers. What were the benefits of this plan initially, and what are its drawbacks today? Should the infrastructure be reorganized? How? What are some of the obstacles to such a change?
- 8.** Goodell writes, "The fact that most Americans no longer fear that pollution from a coal-fired plant will kill them is both a sign of progress and a dangerous illusion." Discuss this seeming contradiction.
- 9.** How has our history of coal use contributed to global warming?
- 10.** One way to lessen the environmental impact of the coal industry is to reduce carbon emissions, either through greater efficiency in production or through carbon capture and storage, so that less carbon enters the atmosphere. What would be the short-term and long-term economic effects of such efforts?
- 11.** Coal-fired power plants are the largest emitters of mercury in the United States. How does the debate over mercury toxicity exemplify the larger problems inherent in drafting acceptable energy policy? How do the demands of American industry influence energy policy in this country? What effect does U.S. energy policy have on the rest of the world?
- 12.** What solutions do regulatory measures such as the Kyoto Protocol and the Environmental Protection Agency's Clear Skies initiative offer? What obstacles do they face?
- 13.** As Goodell points out, China has seen dramatic increases in its energy consumption in recent years. As the single largest user of coal energy, China's coal consumption is astounding. What cultural factors have contributed to this rise in energy demand? How will China's coal use affect greenhouse gas emissions in the future?
- 14.** In his afterword to the paperback edition, Goodell discusses shifts in the political and economic landscape that may lead to new energy solutions. How might these new efforts compel the industry to change?
- 15.** America seems to be in denial about the far-reaching effects of our energy use, when in fact, as Goodell puts it, "we risk stirring up more Hurricane Katrinas just so we can crank up the AC." How does one person's energy use contribute to the problem?

Alternately, how can one person's energy conservation help alleviate the negative effects?

16. Do you think Americans need to change our energy consumption habits? Is it even possible to do so after decades of energy greed? Have you altered your own habits since reading the book? Do you feel a need to address energy inefficiencies in your own life by installing energy-saving appliances in your home, for instance, or by offsetting your own carbon use?

A Conversation with Jeff Goodell

Why did you decide to write a book about coal?

In the spring of 2001, the *New York Times Magazine* sent me to West Virginia to write about the comeback of the coal industry. Coal had played an important role in the election of George W. Bush in 2000 — West Virginia, an important coal state that hadn't voted Republican in many years, was widely credited with giving Bush his margin of victory — and it was clear that coal would play an increasingly important role in America's energy future. But visiting West Virginia was an eye-opening experience for me, in part because, like many Americans, I'd naively assumed that coal had gone out with top hats and corsets. I was astonished to learn that the United States burns more than a billion tons of coal a year, mostly to generate electricity. More than half our electric power comes from coal-fired power plants. In West Virginia I got a close look at the high cost of our dependence on coal — not just the hundreds of square miles of mountains that have been decapitated by strip mines in the southern part of the state, but also the poverty and hardship that I witnessed in many coal-mining towns. I began to ask some obvious questions: Why is the richest, most powerful nation on earth still burning black rocks for power? Why is it that we've figured out how to unravel DNA, clone sheep, and build a global communications network that allows me to send a photo of my dog to a friend in China in a few seconds, but we can't figure out a way to generate electricity that doesn't wreck the planet?

How much coal does America have?

A lot. The coal industry likes to call America "the Saudi Arabia of coal." The U.S. Department of Energy's official estimate of recoverable coal is about 270 billion tons. At the rate we're going, that's enough for about 250 years. The question is, what will it take in economic, environmental, and human terms to get that coal out of the ground? We've been mining coal in America for more than 150 years now — all the easy-to-get stuff is gone. Much of the coal that's left is of poorer quality or it's in thinner, more deeply buried seams. Getting it out is not only more environmentally destructive, but more dangerous, too.

How safe is coal mining?

That's like asking how safe is it to be a police officer. If you're patrolling a shopping mall in Beverly Hills, you probably don't have much to worry about. If you're working on an undercover drug sting in the Bronx, you had better be ready for anything. Similarly, driving a haul truck in a big strip mine in Wyoming's Powder River Basin is no more

dangerous than any other job involving heavy machinery. But if you're cutting coal in a small underground mine in Appalachia — miners call them "dogholes" — the odds that you'll be hurt or killed increase dramatically. In fact, according to the U.S. Department of Labor, mining is still one of the most dangerous jobs in America, and working in a small underground mine is one of the few jobs that is nearly as dangerous as commercial fishing in Alaska. In addition, hundreds of miners still die each year from black lung — a devastating disease that should have been eradicated long ago.

What is "clean coal"?

It's a promotional slogan designed to help spiff up coal's image from a relic of the nineteenth century to a viable fuel source for the twenty-first century. But all you have to do is spend a few hours in southern West Virginia, where coal mining has blasted away the mountains and old men sit alone in diners gasping for air with coal-blackened lungs, to understand that "clean coal" is not just an oxymoron but an insult to the very real suffering that our dependence on coal causes.

That said, it's indisputably true that the coal-fired power plants being built today are much cleaner than the coal plants that were built thirty years ago. And the electric power industry is rightly proud of the progress that has been made in many parts of the country when it comes to cleaning up the air. Despite these improvements, however, the American Lung Association estimates that 27,000 people a year still die prematurely as a result of pollution from coal-fired power plants. Coal-fired power plants are also the largest emitters of mercury in the United States, releasing forty-eight tons of this potent neurotoxin each year. Combustion wastes from coal plants — fly ash, scrubber sludge — are also a significant environmental and public health concern.

But the biggest problem with touting "clean coal" is that it ignores the elephant in the room: carbon dioxide, the main greenhouse gas responsible for global warming.

How large a role does coal play in global warming?

Coal is the most carbon-intensive of all fossil fuels, and it is not an overstatement to say that 200 years of coal burning by industrialized nations is largely responsible for the fact that carbon dioxide levels in the earth's atmosphere are higher now than they've been in the past 650,000 years. Today more than one-third of the U.S. emissions of carbon dioxide comes from burning coal. To put that in perspective, one big coal-burning power plant I visited in Georgia emits about four times as much carbon dioxide as all the cars and trucks built by the Ford Motor Company in a single year. More important, if the new generation of combustion coal plants that are being planned right now — not just in the United States, but also around the world — actually get built, we can pretty much kiss the chances for a stable climate goodbye.

Fortunately, there are better ways to extract energy from coal. One emerging technology, which gasifies coal rather than simply burning it, might someday allow carbon dioxide to be captured and sequestered in underground reservoirs. But of the 150 or so new coal plants that are currently being planned in the United States, only a handful use this technology.

Can coal help us reduce our dependence on oil from the Middle East?

To some degree, perhaps. Right now, most coal consumed in America is used for electricity generation — which really has nothing to do with oil from the Middle East. But there is a growing interest in so-called coal refineries that can transform coal into synthetic diesel fuel. (For chemical reasons, coal can't easily be transformed into synthetic gasoline.) The technology is well established; it was pioneered, in fact, by the Nazis during World War II. But there are major drawbacks. Even a small refinery costs billions of dollars to construct. In addition, depending on the type of technology used, coal refineries can result in even higher greenhouse gas emissions than diesel fuel brewed in a traditional refinery. Investment in coal refineries also takes money and interest away from more sustainable and creative solutions to dependence on oil from the Middle East, such as plug-in hybrid cars and biofuels. This does not mean that coal refineries are necessarily a bad idea. It just means that they're not a cheap or easy solution to America's energy problems.

In the epilogue of your book, you call the coal industry "an empire of denial." What does that mean?

The main reason we're still burning over a billion tons of coal in America today is that the coal industry has been tremendously successful at keeping us ignorant about what goes on behind the light switch. It has worked hard to preserve the illusion that electricity flows down from a golden bowl in the sky and that there is no link between America's appetite for power and the millions of children in America who suffer from asthma or the devastated mountains of West Virginia or the fact that global warming threatens the stability of the earth's atmosphere. In this sense, the comeback of coal is a political story. It's about keeping America in the dark about what it takes to keep the lights on. I think that's one reason why the recent deaths of fourteen coal miners in West Virginia was so disturbing to many people. Coal miners labor underground, often in extremely dangerous and difficult conditions, so that the rest of us can crank up our heaters and air conditioners.

The truth is, the world faces two enormous challenges in the coming years: the end of cheap oil and the arrival of global warming. Both are profound threats to our comfortable notions of civilized life. We should be grateful for the vast reserves of coal we have left and use them wisely, but it's important to recognize that our bounty of coal is not going to save us from anything. At best, exploiting our coal reserves will buy us a decade or two of time and come at enormous expense, both in terms of the environment and public health and in terms of the billions of dollars that will be invested in a fuel source that is, at best, a short-term solution. In many ways, the world's coal reserves only make our energy problems worse, because they give us a false sense of security: If we run out of gas and oil, we can just switch over to coal; if we can figure out a way to "clean" coal, we can have a cheap, plentiful source of energy. In reality, however, facing the twin challenges of the end of oil and the coming of global warming is going to require reinventing the infrastructure of modern life. The most dangerous aspect of our continued dependence on coal is not what it does to our lungs, our mountains, or even our climate, but what it does to our minds: it preserves the illusion that we don't have to change our thinking.

For Further Reading

The following books may also be of interest to readers of *Big Coal*.

[The End of Oil](#) by [Paul Roberts](#)

[Fast Food Nation](#) by [Eric Schlosser](#)

[Silent Spring](#) by [Rachel Carson](#)

[Water](#) by [Marq de Villiers](#)