



# **The Boom: How Fracking Ignited the American Energy Revolution and Changed the World**

*Russell Gold*

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**The Boom: How Fracking Ignited the American Energy Revolution and Changed the World** Russell Gold

An award-winning journalist and Pulitzer Prize finalist offers an insightful, no-holds-barred exploration of today's most controversial yet promising new energy technology: fracking.

Russell Gold, a brilliant and dogged investigative reporter at *The Wall Street Journal*, has spent more than a decade reporting on one of the biggest stories of our time: the spectacular, world-changing rise of “fracking.” Recognized as a finalist for the Pulitzer Prize and a recipient of the Gerald Loeb Award for his work, Gold has traveled along the pipelines and into the hubs of this country's energy infrastructure; he has visited frack sites from Texas to North Dakota; and he has conducted thousands of interviews with engineers and wildcatters, CEOs and roughnecks, environmentalists and politicians. He has also sifted through reams of engineering reports, lawsuit transcripts, and financial filings. The result is an essential book—a commanding piece of journalism, an astounding study of human ingenuity, and an epic work of storytelling.

Fracking has vociferous critics and fervent defenders, but the debate between these camps has obscured the actual story: Fracking has become a fixture of the American landscape and the global economy. It has upended the business models of energy companies around the globe, and it has started to change geopolitics and global energy markets in profound ways. Gold tells the story of this once-obscure oilfield technology—a story with an incredible cast of tycoons and geologists, dreamers and drillers, speculators and skeptics, a story that answers a critical question of our time: Where will the energy come from to power our world—and what price will we have to pay for it?

## The Boom: How Fracking Ignited the American Energy Revolution and Changed the World Details

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# **From Reader Review The Boom: How Fracking Ignited the American Energy Revolution and Changed the World for online ebook**

## **Arnela says**

Page 18 - "Source rock is where plankton turned into hydrocarbons. There is no further back. This is it."

That right there is what made me want to continue reading the book [I usually give books the first 2 chapters to really pull me in]. It's not ominous, it's not written with flourish. It's just a fact.

I just want to preface anything that follows with, I love this sort of unbiased delivery of information. It's historically accurate and chronicles how hydraulic fracturing [fracking] was discovered and how countries [though our primary focus lies in America] are using it to increase their energy output. Gold doesn't just start at fracking, he puts a lot of effort into the research and accurate delivery of how the oil and gas ended up in shale rocks, the issues that pushed researchers to search for other ways of getting oil out of the ground, the process of fracking, the people behind the boom itself and all those that came after, even those that suffered from the boom.

Gold doesn't try to persuade us into being proud of this country's fracking progress, he's not trying to build America up to be some high and mighty oil tycoon, he's not sugar coating the things companies did to get their oil. Nor is he trying to actively demonize the CEO's and companies, he's not advocating for the immediate cease to fracking and for the entire country to switch over to renewable energy over night. Gold is simply stating the truth; here's how oil is made, here's how it got into shale rocks, here's who figured out how to get the oil out of it, here's how the boom started and spread, and here are the advancements that came of it as well as the consequences [because so few acts are without consequence].

I also appreciate that the writing isn't very heavy [f that makes sense], sure Gold utilizes the jargon of the trade but it's never overwhelming or difficult to read. I personally didn't think it was a dry read, but I can see how if someone isn't a big nonfiction reader, or isn't too interested in the oil and energy industry might find it difficult to get through this book, trust me it's incredibly informative, and I feel you'll definitely gain from this knowledge. And if you're worried about the length of the book, don't be, the actual information about fracking is only 310 pages long, the rest is the thank you ad acknowledgments, sources, and citations [which are also full of a ton of awesome information if you want to read more].

And while I respect it for trying to remain an unbiased work, there is something that sticks painfully to me; this is a form of fuel that not only [through use] is damaging the planet, it it is also not renewable, and thus not sustainable. To this day fracking makes up a large of the amount of fuel America consumes [not just on our own continent but on others]. If not for the sake of people's health and safety, then we should at least be more concerned with finding a better, hopefully renewable, energy source. Because one day, maybe someday soon, those money pits are gunna dry up, and then what the hell are we gunna do?

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## **Ray says**

The Boom discusses how fracking started. The nation thought it was running out of oil within its boundaries,

but engineers started experimenting with pumping high pressure fluid into the ground mixed with other chemicals. This resulted in increasing oil and natural gas production. Major players in the natural gas boom are followed in this book. They bought up lands as quickly as they could to pump the resources out of the ground. This book touches on the politics and resistance as well as support for natural gas fracking. Natural gas supporters stated how it reduces our reliance on dirty coal. Good overview of the history of fracking and how it allowed a revolution in electricity and home heating. Recommended to anyone interested in energy.

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## **The Irregular Reader says**

Full disclosure part 1: I received this book as a First Reads Giveaway.

Full disclosure part 2: My husband works for an oil and gas company, though not one of the ones featured in this book.

I was both looking forward to and dreading reading this book. Cracking it open, I was mentally preparing myself for either a virulent anti-fracking campaign piece, or a self-aggrandizing, "drill baby drill" apologist bunk. I found neither, and I am exceedingly thankful to author Russell Gold for this book.

The first (and largest) portion of this book outlines the history of shale gas, and the industries that have risen up to exploit it. This, for me was the most enjoyable part, appealing to the historian in me. And the history of shale gas, in human terms is only about two centuries old, but encompasses some golden moments of human brilliance and creativity, as well as some moments of stunning dumbassery.

The latter part of the book focuses on the controversy surrounding natural gas, and the push and pull between industry lobbyists, environmentalists, ambitious businessmen, and scrambling politicians. The current state of natural gas is complex and shifting, and, unfortunately, becoming highly polarized between the "never" and the "without hesitation" camps.

Gold manages to tread back and forth between the far reaches of each camp, laying out the arguments on both sides, and presenting, to my mind, a fair picture of the pros and cons of our country's use of natural gas. In an era where everything seems to have some underlying political agenda, I found this book to be refreshingly objective, especially considering the subject matter is one that currently lends itself to an "I'm right, and you're wrong" mentality.

In sum, Gold's book paints a fascinating picture of the Oil and Gas Industry from historical (and prehistorical) times through to the modern era. For anyone looking for a better grasp of the current debate, I feel he excels at laying out the argument from both sides without rancor or excessive judgement.

I am especially appreciative that he uses this history, and the current status of the industry to make an all important point: Natural gas is not Satan, but nor is it our savior. We must do the best we can with what we have now, and use this time to pursue new and better fuel sources that will sustain us through the centuries ahead.

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## **Dave says**

If you'd like a relatively balanced introduction to help you better understand the science, business and politics of hydraulic fracturing (aka fracking), I don't think you could do much better than this book. In his day job, Gold reports on energy for the Wall Street Journal. In this book, he tries hard to show all sides of this complex issue. And there are many sides to it.

There are the macro views. Energy gained from fracking makes us less dependent on foreign sources of oil and gas, which gives us greater national security. It also has been a boost to the economy providing new, high paying jobs in the energy industry while lowering energy costs for virtually all businesses across the country. The opposing macro view says that it's still a non-renewable resource, and while natural gas from fracking may pump out less carbon dioxide than coal, we're still pumping out more of this greenhouse gas than we should be - and at a horrible cost to environments from Texas to North Dakota, Oklahoma to Pennsylvania.

At the local level, the two opposing sides are often neighbors glaring at each other. Some hate the noise, fumes and other inconveniences of fracking while also fearing that their only sources of fresh water will be destroyed forever by the chemicals used by oil and gas companies. Others see members of their families, jobless for years, now employed by the energy industry. And of course, those who have allowed drilling on their properties see the royalty checks coming in giving some of them financial security they couldn't even have imagined.

Gold also gives a great history of the industry and some of the key individuals. It's been around longer than you may think.

The only thing that kept my rating to 4 stars rather than 5 is that the author never addresses the question of whether fracking might be causing the earthquakes some areas have experienced. There may be no connection, but the press has tried to make the connection, so it's something I think he should have touched on. All in all, though, I felt much more educated about the whole issue after finishing this book.

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## **Socraticgadfly says**

Gold seemingly set out to write a "centrist" book on fracking. And he did, with the problems that ensue.

First, one main good point. That is noting that many of the problems many people associate with fracking are most likely instead due to bad well casing.

But, while Gold shows us it would likely be relatively easy, and relatively inexpensive, for natural gas drillers to test their wellhead cement for integrity, he never directly asks a major, or minor, gas driller why they don't. In fact, while he interviews environmentalists, family landowners, etc., other than George Mitchell, his interviews with "players" in the gas or oil worlds are pretty slim.

Second, a couple of other errors.

And, given that Gold is at the Wall Street Journal, I'm taking them to be ideological ones.

The first is to hint strongly, although he will never directly say so, that "Peak Oil" prognosticator King Hubbert got it wrong.

The second is to hint strongly, although again without saying so, that the reason WHY Hubbert got it wrong is that he failed to account for unconventional drilling like fracking. (Why Gold doesn't attempt to bolster his case further by bringing in Alberta's tar sands and other unconventional oils, I don't know; the fact that he doesn't, though, even further weakens him.)

Reality? There's nothing in the new oil production world to indicate that we will overtop the 1970 US oil peak. And, the fact that worldwide production of "conventional" oil seems to have peaked in 2005 only reinforces that.

Beyond that, Hubbert did factor unconventional drilling processes, and unconventional oils, both into his calculations.

Gold wouldn't be senior energy reporter at the WSJ if he didn't have some knowledge of Hubbert's work. I am not sure whether he's still inadequately informed, or either out of naivete or hopelessness believes less charitable interpretations of Hubbert, or from working at the WSJ, if he's maybe deliberately being mendacious to some degree.

I had started at 3 stars, moved to 2, and finally dropped to 1.

Because, even though Gold does give a hat tip to environmentalism, and renewable energy, this is just too much.

And, per his most recent work in the WSJ, continuing to attack the idea of Peak Oil, Gold shows he well deserves this rating.

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### **Justin Quinn says**

This book was a very comprehensive review of fracking. I have always read that fracking was either our energy salvation or environmental doom. I am still not sure which it is, but now I have a framework for thinking about the technology.

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### **Eric\_W says**

Russell Gold is a Wall Street Journal reporter whose family had purchased a small Pennsylvania farm as a retreat from Philadelphia. His parents were approached by an oil company offering them \$400,000 plus royalties for the right to drill under their land. Being old time sixties environmentalists they were reluctant but it's a lot of money and since almost all their neighbors had bought in they figured they might as well. He returns to their story periodically throughout the book to highlight the personal conflicts people have.

Gold provides a riveting account of the development of fracking from its extraordinary technological success to its environmental impacts. It's truly astonishing that this intricate technology has resulted in the United States becoming a net energy exporter barely a decade after "peak oil" had been proclaimed. The book mixes technical details with profiles of the major players, often focusing on the financial details, which can't be easily separated from the evolution of oil drilling.

It's perhaps ironic, that most of the anti-fracking environmental antagonism comes from geographical areas not affected by the drilling. Larger cities that depend on natural gas and heating, for example, have become hotbeds of anti-fracking activity, yet those people are little affected by the economic and environmental pluses and minuses of the activity except for lower prices for energy.

Some of the allegiances formed to promote fracking are interesting. The Sierra Club worked with Chesapeake Energy to fight the development of coal plants in Texas and elsewhere, arguing that global warming was a far greater threat.\* That Chesapeake was giving them substantial amounts of money didn't hurt either, but the environmental group has become split among those favoring just conservation opposed to some realists arguing that it's better to focus on energy that reduces the carbon footprint like natural gas and nuclear power. Ironically, the shift to natural gas means the U.S., which hasn't ratified the Kyoto protocols, will come closer to meeting the reduction in carbon emissions than any of the signatories.

Gold says that's a very good thing and supports fracking (the reason why it's now spelled that way as opposed to the more technically popular "fracing" is interesting) but notes the industry and regulators need to work on better sealing of the wells which is where most of the problems arise. Surprisingly, there was no mention of fracking-generated earthquakes, although perhaps being published in 2014, the concern had yet to be raised.

No energy generating process is unopposed. Dams drown villages; mines are dirty and dangerous; transporting fuel in pipelines, ships, and trains risks spills and fires; drilling is obnoxious, wind generators destroy the landscape and kill birds; and nuclear, in many ways the least harmful, suffers from ignorance of new technology and problems of early technology.

A very interesting read.

\*Stewart Brand of Whole Earth Catalog fame has embraced GMOs, nuclear energy, and other technologies, arguing that global warming is the greatest threat. An interesting article detailing his evolution in thinking is <http://e360.yale.edu/features/stewart...>

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## **Steven Peterson says**

Want to get an accessible introduction to "fracking" (short for hydraulic fracturing)? This should do nicely. This is not a technical tome--far from it. It is a well written book aimed at a general audience. If you want a solid scientific analysis, this is not the book for you. But, if you wish to get a sense of what is at stake, this would be quite useful.

The author had family land in Pennsylvania in the Marcellus Shale region (a large pool of underground natural gas). This is a personal story of his effort to learn about fracking--its history, its positive economic effects, its effects on the environment, its effects on the land. One aspect of this work struck me as positive: it is a balanced work. Russell Gold, the author, does not take sides in an overt manner. By the end of this book, I felt that I had learned quite a bit about fracking as a technique and its effects (positive and negative).



In the process, one also gets a sense of the major figures in the development of the technique, such as Aubrey McClendon. There were quite a few swashbucklers, like McClendon, who tried to develop their companies as rapidly as possible. Others were more cautious. The examination of a series of key figures humanizes the book, giving us a sense of the personal side of this issue.

The final chapter tries to provide an even handed analysis of fracking and its effects. Whether the author succeeds will be up to the readers to decide.

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### **Sus says**

A good, relatively evenhanded look at the natural gas industry and history of the development of fracking. I'm a little disappointed it doesn't go more into the environmental impacts, methane doesn't get mentioned as a greenhouse gas until page 308. Overall, it's an accessible history to how fracking developed.

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### **Robert Davidson says**

A very interesting book giving the reader an understanding of how Fracking works and the people involved. The Drilling process, if done properly is benign although many people disagree and there are several Lawsuits pending here in Alberta and the Province of Quebec has banned Fracking completely. Readers may be interested in watching two documentaries, Gasland and Frack nation and try to find out which is playing with the truth. Great read.

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### **Monnie says**

For those interested in buying this book, I'll lay out two key points to consider: First, this has to be one of the most definitive books on the history, development and processes involved in hydraulic fracturing of gas and oil wells ever written (while it's easily understandable by those of us not that familiar with the practice or the industry, though, don't expect to skim through it). Second, close to 40% of the book's 385 pages consists of comprehensive source material and an alphabetic index.

Personally, I commend the author - an investigative reporter at *The Wall Street Journal* who has covered the industry for many years - for including this information; as a journalist myself, I would have expected no less. I simply want potential buyers to know what they're getting. This is neither an expose nor an attempt to sway the vote in either direction; rather, it's a very thorough report on how the whole thing got started, where it's at now and, insofar as anyone can tell at this point, where it may go in the future.

There's little doubt "fracking" is here to stay, and I freely admit I haven't been all that happy about it since the volume has been turned up in and around my little part of northeastern Ohio and western Pennsylvania with exploration (some would insist the definitive word is "exploitation") of the vast area that contains Marcellus Shale. But I also admit to knowing little about how fracking really works, so I tried hard to keep an open mind as I read. Now that I've finished, I can't say my overall opinion has changed, but my perspective certainly has. In fact, my biggest worry - that too much fracking (cracking solid rock miles below the earth's surface with drills and highly pressurized water mixed with other chemicals) - will blow our home planet apart from the inside out has pretty much gone by the boards. But that view been replaced by other

concerns that continuing this "boom" at the rate it's going now may not be what's best for generations to come.

There's no way to condense all the facts and figures here (nor would I presume to try). But here are a few tidbits I picked up along the way:

\*The gas and oil industry certainly isn't new; the first petroleum engineering degrees were conferred by the University of Pittsburgh in 1915 on four students - one from New Castle, Pa., which is within what I consider my local area.

\*Nearly every well drilled in the United States today is a fracked well. That's about 100 wells a day, maybe more, that are being drilled year-round. "Whether you fear fracking or celebrate it, that's a lot of holes in the ground," the author writes.

\*Fracking is so common that some have dubbed the new United States "Frackistan."

\*By 2030, the United States is poised to become an oil exporter.

\*In 2012, Chesapeake Energy, one of the industry giants and a big player in the Ohio-Pennsylvania market, earned \$20 billion; the company drills more than 1,000 wells each year, all of them fracked. From 2004 to 2011, Chesapeake drilled more wells than any other company in the world - an average of four every single day.

One point that stood out in my mind is that the energy industry spends about \$105 billion annually on hydraulic fracturing; about \$5 billion of that is spent on "cementing," or securing the pipes to ensure that gas or salty water stays in the rock and doesn't flow into another one. But it appears there's precious little evaluation to make sure the cement itself is leak proof; if it isn't, gas can seep into shallow aquifers and then contaminate residential water (no doubt you've heard stories from folks who live near fracked wells about being able to set the water that comes from their kitchen faucets on fire). No, the very few times that happens may not be a huge concern (although those who experience it will say once is too often, and their point is well taken). But in my mind, at least, the issue of whether or not we're doing enough to prevent it from happening at all *is*.

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## **Janalee says**

I am SO GLAD that I read this book. The natural gas "revolution" has caught me totally off-guard. It seems like yesterday, the presidential candidates were debating ways to make the U.S. energy independent. Now it seems like a foregone conclusion that we ARE independent, thanks to fracking. I can now say that I understand the process better and I'm not as terrified of it as I was... but still not thrilled by it all. But now I'm educated about it. I'm not basing my opinions on myths and scare tactics of either side.

The book was a FUN read, too. Lots of great characters. I highly recommend it!

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## **Meepspeeps says**

I was vacationing in West Texas and unexpectedly drove into a fracking boom northwest of Pecos. After seeing what seemed like a thousand new drill pads, thousands of water, cement, and pickup trucks, and an unbelievable level of dirty and smelly activity, including scarring swaths of new pipelines, I decided to read more about it. Keep in mind I consumed hundreds of miles of gasoline on this vacation. This book exactly explained what I experienced without getting too technical. It also features mini-biographies of some of the lead characters of the fracking movement. Peeps will find additional information about protests, fracking's relationship to coal plant reduction, and to climate change. I recommend it for anyone who wants to know more about USA's quest for energy independence through fracking.

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## **Son Tung says**

Informative timeline of hydraulic fracking, the industry, market forces and debate for future energy.

- Natural gas is considered cheaper, releases significantly less carbon into the atmosphere. Gas plant can be turned on and off, can be run at lower capacity than wind.
  - The author lays out several options regarding energy turn-around: Keep going the same way with coal and available sources or going full renewable or mixture of gas and renewable while minimize coal. The last option is argued the best comprise for the economy and climate.
  - Safety issue is also highlighted. Tests are expensive, regulations needed to be made and enforced properly (there are instances of safety violations, gas leak into water system, offshore fracking explosion.. )
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## **Erica says**

It took me nearly a year to read this book both because it's a little bit dry and also because it's a little bit depressing as well as because library books that had other people waiting for them kept coming in so I had to read those first. There was no one on hold for this the entire time I had it checked out. You're probably not surprised.

Hydraulic fracturing = Fracking. It's where you poke a hole in the earth (a well) and then jam all this water and chemical crap down it in order to split the rock at the end of the well open. Then you suck the water and chemicals back out and oil and gas follow.

I had to stop listening to Pandora radio for over a year because there were all these "Yay, frack the hell out of Colorado" ads running (that's not at all what the ads were saying, but they were pro-fracking) I'm not comfortable with that at all.

I first ever heard about fracking when I was in college. My BFF's dad, an engineer, told us all about it at dinner one night. While he's not a geo-engineer, he understood enough to explain it in basic terms and I was horrified because I like to equate the earth with my body. No, they're not the same at all but that doesn't stop me from making those correlations. Zits are volcanoes, cracked skin = fissures, other ailments are linked to other natural disasters, etc. So the thought of injecting water and chemicals under my skin in order to get stuff out seemed scary and unnecessary and like one of those crazy fads in which you get rid of toxins via self-abuse. I didn't like it.

But fracking hadn't been on the nation's general radar until much more recently. I have an automatic anger reaction when I hear about it but is that necessary? Am I making stuff up because of something I heard/made

myself believe when I was 21? Now that I'm all grown-up (age-wise), I figured I should probably learn a little more about this mining process. But where to go to find out? There aren't a lot of unbiased sources on this subject, especially not now that it's such a hot topic.

This author comes close-ish, though. He's a reporter and has been covering energy news for a long time. He wasn't hesitant to show both sides of the story.

In essence, the crux of the problem is thus:

*Fracking has unleashed more oil and natural gas than anyone thought possible. It is providing an abundance of domestic energy, helping to drive a rebirth of manufacturing, and easing dependence on overseas energy peddlers. Accessing this energy requires tens of thousands of new wells, each fracked with enough water to fill several thousands of Olympic swimming pools and hundreds of gallons of chemicals. It also requires turning whole counties into industrial zones, complete with fleets of trucks, air quality concerns, a disruption of nature, and fear that water aquifers will be poisoned.* (p. 5)

And the question that needs to be answered: *We are tearing down the old energy order and building a new one, but are we doing it responsibly?*

And no, the author doesn't answer that question. He just shows different facets of fracking that lead the reader toward more research so that the reader can answer the question for him or herself.

I did learn a lot about the oil and gas industry, about wells and Texas and Oklahoma, about corrupt practices and leasing land, about our crazy dependence on energy, and about how we're not making strides in renewable energy fast enough for it to contend with dead creatures under the earth's surface energy.

This book suffers from being written by a journalist. That sounds mean but we've all heard the old complaint that journalists should stick to articles. That gripe holds up in this case. By chapter six, the story is meandering, there's some repetition going on, and the writing is falling apart as the cohesiveness crumbles. So while the conversational writing keeps this from sounding overly academic and boring, it also becomes unfocused and disjointed. By the end, I felt I'd read a series of articles put together in one volume, joined together by unnecessary filler. It was offputting that the author would be giving history on people, places, and rocks and then would suddenly insert himself into the narrative before jumping back out to continue with the report. Overall, it's easy-to-read, easy-to-understand, but choppily written.

Of course, now that there have been more reports on fracking in the past year or two, this volume has already become somewhat dated. The history of fracking is interesting but the current politics surrounding fracking is no longer adequately represented in this book.

My takeaway is that oil and gas is an asshole. I guess I knew that already. I'm not sure if the tradeoff for cheap energy is worth the waste (so much water that can't be cleaned afterward) and poisoning (not just water, but air poisoning, noise pollution, and the industrialization of small communities) entire counties across the States. It seems like a bad business based more on money than on creating jobs and helping people be able to afford their heating and cooling bills. It's one of those short-term vs. long-term scenarios in which I'm betting long-term is going to wonder just what in hell we were thinking.

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