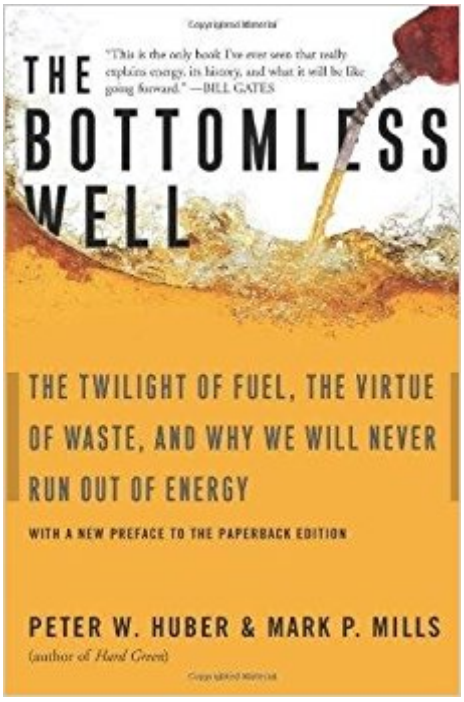
The Bottomless Well: The Twilight Of Fuel, The Virtue Of Waste, And Why We Will Never Run Out Of Energy



Synopsis

The sheer volume of talk about energy, energy prices, and energy policy on both sides of the political aisle suggests that we must know something about these subjects. But according to Peter W. Huber and Mark P. Mills, the things we think we know are mostly myths. A better understanding of energy will radically change our views and policies on a number of very controversial issues. In The Bottomless Well, Huber and Mills show why energy is not scarce, why the price of energy doesn’t matter very much, and why "waste" of energy is both necessary and desirable. Across the board, energy isn’t the problem; energy is the solution.

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Customer Reviews

Contrary to "Lethargist" Chicken Littles who champion gas taxes and mileage standards, this freeÃ¢â ¬â œmarketÃ¢â ¬â œoriented, techno-optimist manifesto insists that "[h]umanity is destined to find and consume more energy, and still more, forever." Huber, a fellow at the conservative Manhattan Institute (Hard Green; Galileo’s Revenge; etc.), and venture capitalist and former Reagan administration staffer Mills contend that, in conjunction with our ever-increasing scientific know-how, consuming energy yields good things, including the ability to find and harness more energy. The authors develop intriguing contrarian challenges to the conventional wisdom (improved energy efficiency, they argue cogently, boosts energy demand instead of curbing it) and their discussions of new technologiesÃ¢â ¬â •electric drive trains, awesome lasers, "dexterous robots"Ã¢â ¬â •that may profoundly reshape energy usage is illuminating. But their treatment of

energy-consumption pitfalls like global warming is cursory and unconvincing, and they devote too little space to explaining exactly where new energy supplies will come from, and too much to assurances that "[f]uels recede, demand grows... but logic ascends, and with the rise of logic we attain the impossibleÃ¢â ¬â •infinite energy, perpetual motion and the triumph of power." Long on Nietzschean bombast but short on some crucial specifics, theirs is an intriguing but incomplete vision of energy policy and prospects.

The authors point out that America consumes 25 percent of the world’s natural gas, 23 percent of its hard coal, 25 percent of its crude petroleum, 43 percent of its motor gasoline, and 26 percent of its electricity. They reveal that our main use of energy isn’t lighting, locomotion, or cooling; what we use energy for, mainly, is to extract, refine, process, and purify energy itself. Huber and Mills list what they call the seven energy heresies: the cost of energy as we use it has less and less to do with the cost of fuel; "waste" is virtuous; the more efficient our technology, the more energy we consume; the competitive advantage in manufacturing is now swinging decisively back toward the U.S.; human demand for energy is insatiable; the raw fuels are not running out; and America’s relentless pursuit of high-grade energy does not add chaos to the global environment but rather restores its order. Readers with prior knowledge of this complicated subject will appreciate their conclusions the most. George Cohen

Very thought provoking and objective. The book provides a well-developed perspective that is not prevalent in the current energy discourse. Particularly interesting is the discussion on the tradeoffs to reduce atmospheric CO2. The authors contend that going back to an agrarian society (carbohydrate fuel with draft animals vs continued wide-spread use of fossil fuels) will clearly make matters worse as will significant development of some renewables (particularly solar). The North American carbon sink discussion is also very intriguing and he points to a 1998 Fan et al paper in Science that describes a very large North American carbon sink. The paper does not enjoy universal support as research on carbon sinks currently appears to be at a very preliminary stage. However, it is important to note that Climate models that are the basis for all the hysteria over anthropogenic global warming must make some basic assumptions about the carbon cycle (and sinks) and, given that basic research is still in its early stages, how accurate can these

ÃƒÂ¢Ã â ¬Ã Å“assumptionsÃƒÂ¢Ã â ¬Ã Â• really be. Could this be part of the reason that models have been so inaccurate on predicting the global temperature rise the last 18 years? Huber and Mills are clearly not ÃƒÂ¢Ã â ¬Ã Å“deniersÃƒÂ¢Ã â ¬Ã Â• but they suggest that the issues regarding control of greenhouse gasses is much more complex than the prevailing narrative from the far left and far right. The book covers a lot of other topics regarding the future of energy - the discussion of climate change was of particular interest to me.

The bottomless well is a must read for anyone who wonders how we got here and how we survive through thermodynamics. It is written in plain english and extremely well footnoted. The last chapter explains the entire outbreak of life on the planet in a way that even bible thumpers can accomodate. Whether you read it to get the inside scoop on public policy or are concerned for the environment, this book will open your eyes, and make you smile. Knowledge is power, and this book is Powerful. Dont take my word for it, read it yourself.

Energy economics, energy physics, energy geology, all tightly packed together. If you really want to understand energy and how we best use it, this book is for you.

It is an excellent review of how "POWER" evolves and how it is used and where it is going. The authors have done and excellent job is making this a very interesting read.!!

As someone who has begun an effort to become knowledgable about energy alternatives, I find the material presented in this book to be, on the whole, a useful contribution to the subject.By far the dominant theme of the book is:Development of more energy-efficient technologies lead to greater, not less, energy use, since the reduced energy use for their existing applications is outweighed by energy consumption associated with their use in new applications.A related point they make is that these expanded applications represent the successful meeting of broader set of human needs, and therefore this is something to be welcomed rather than shunned.The authors posit this as a counterargument to the contention by environmentalists that the total useage of energy by human beings should be minimized.I agree with the authors to the extent that I don’t believe that overall energy useage per se is necessarily a valid gauge of environmental damage.Where I feel the authors are not completely on solid ground on this issue, is on the way they extrapolate the industrial and technological revolution we have experienced in the last several hundred years to the future.This view particularly manifests itself in the belief of the authors that we will be able to

continue to apply human ingenuity toward extracting the raw energy we will need in order to perpetuate this progression.(In my view, the authors' beliefs represent what I consider Cornucopianism, although they seem to feel that term applies to a quite different philosophy than theirs.)This optimism is, of course, in stark contrast to that of "doomers" such as James Kuntzler, who envisions a near term devolution of human society due to lack of energy resources.Essentially, the two camps are:1). There are new energy sources (including improved processes for extracting more of existing sources) on the horizon and some combination of these will meet our (expanding) energy needs.2). Oil is running out and the proposed alternatives all suffer from fatal flaws.I believe 1 is likely to prove more accurate than 2, however I believe it is very possible that there will be a substantial disruption to the continuity of society if we are too slow to develop new sources as old ones run out.Regarding the general assertion that expanding human knowledge/technology requires increasing energy useage, I find their argument persuasive, except for the premise that there will necessarily continue to be an expansion of technology at a pace equal to or greater than it is today. The authors cite recent developments like laser medical technologies. However, will we always want to pursue such advances, simply because they are possible? Will it be worth it to spend a lot of money to develop, for example, a new medical technology that heals a disease that afflicts a miniscule number of people?I suspect that there are huge technological advancements that will occur in this century. But I don't agree that this is necessarily an ever-accelerating process forever, which would seem to be the view of the authors.Some other points:The authors made some good points in the discussion of current energy sources versus those derived from primitive agricultural methods. Their contention that the latter is not necessarily environmentally bening was pretty persuasive.Their coverage of renewable energy sources is pretty spotty, since they seem to feel that nonrenewables are the best approach for the forseeable future. Their pessimism regarding solar and biomass energy, based on the fact that those sources are very diffuse, I believe is well founded. I believe a high-efficiency biomass approach, however, such as the proposed use of algae farms to generate biodiesel, would, if proven successful, somewhat mitigate this shortcoming of such energy sources. Also, I believe wind has major potential, although they give it little discussion.They find nuclear power an attractive option, and my mind is open on that, although their discussion of it is rather brief and doesn't delve into some of the key issues- how plentiful is the fuel for conventional fission and the question of breeder reactors.If fusion proves successful, it will presumably render most all of this moot. If their assessment of the amount of deuterium in the earth's seawater is accurate, it would appear that fusion could meet mankind's energy needs through the entire rest of the time the earth is capable of supporting life.The authors give a huge

coverage of the technology of "digital power". (perhaps the author with the physics background happens to have worked directly in this area?) As I understand it, they are saying that a vast array of mechanical-driven hardware is going to be replaced with electronically-controlled electric hardware, in a wide range of factory machinery as well as consumer products such as automobiles. I was not particularly familiar with this; they have piqued my curiosity to look into this further.

Remarkable book. With clarity and eloquence, elucidates a description of a hierarchy of energy chaos to order which supports the authors' opinion that we will jot run out,of energy.

He explains that oil does not come from dinosaur bodies like we've all heard.In fact, the latest science indicates that the earth produces hydrocarbons on its own (natural gas, oil and coal) from deep inside the earth. This is because hydrogen and carbon are both abundant elements in the universe.I am not sure that I really agree with everything he says about policy or his seeming lack of concern over waste. He says that fuel efficiency leads to more waste and more overall energy use. Interesting theory, but it neglects to consider the fact that our consumer culture has us using more energy from more sources, and that would explain the greater total energy use.He shows that petroleum is THE energy source for the world, with all others paling in comparison. Plenty of facts and figures for that.A good book overall, and it will help you to relax a lot. The book is required reading for anyone seeking to understanding the big picture on the issue of energy.

GREAT!

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