

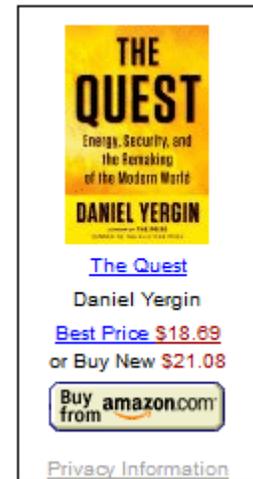
The Energy Expert You Shouldn't Trust

By Richard Vodra

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Energy – where we get it, how we use it, what we do with the after-effects, and how much we have – is one of the most important policy considerations for our nation and the rest of the world. In many respects energy is a mystery. Electricity comes out of two slots in the wall, gasoline flows from hoses with funny handles on them, and as long as all that works, we rarely ask the questions we sense are necessary. Thus, when a big book from a supposed expert covering a broad range of these issues appears, it tends to make a splash.

Daniel Yergin, a self-described “leading energy expert,” is one of the most widely quoted consultants in the energy field. He gets appointed to presidential panels and speaks at Davos. His firm, IHS CERA, serves the energy industry. Now he has written *The Quest: Energy, Security, and the Remaking of the Modern World*, designed to provide information that policy-makers can rely upon in shaping energy policy for the decades ahead.



This could be a dangerous reliance, for Yergin is an advocate for the fossil fuel community, not an honest broker of information. Nearly all the data cited in the book is from his company and is proprietary and non-public, so it can't be verified or challenged. He doesn't appear to take seriously the views of people he doesn't agree with, and they are not included in his extensive bibliography or interviewee list. When he makes (or quotes himself making) forecasts, it is almost always at the high end of “as much as,” putting the best possible picture on things. He treats overall supplies and continued growth as assured. He is skeptical only when it comes to the concept that new sources of energy could upset the status quo.

One thing Yergin never asks, though, is what if he's wrong?

In other words, if you like the way things are going and want to be assured that there's no need to worry, Yergin's your man. As you might suspect, this reviewer is not persuaded.

Yergin has perhaps most famously planted his flag on his denial of “peak oil,” the concept that the world's production of affordable oil will soon reach a maximum rate (if it hasn't already), and will begin to decline in the relatively near future. Yergin contends instead that “the world has decades of further production growth before flattening out into a plateau – perhaps sometime around midcentury – at which time a more gradual decline will begin.” He says there are 1.5 trillion barrels of proved oil reserves (or, on the same page, 1.4 trillion of proved plus probable reserves), but his projected growth requires 1.6 trillion to



reach his “plateau.” By contrast, world oil production has barely grown since 2005 and the rate that new projects are coming on line is less than the decline rate for existing fields. Prices for Brent crude remain over \$100 a barrel, well above the levels Yergin has forecast and certainly more consistent with tightness in supply than decades of continued growth. Among others, the US military’s Joint Operating Environment report last year predicted a shortfall of supply in 2015 of 10 million barrels per day – one of many sources not acknowledged by Yergin.

Further, there are a couple of key concepts in energy work that he overlooks. One is “net energy,” or how much of the energy in the oil produced was used up merely to get the oil, which is a real problem as we move from inexpensive and relatively efficient on-shore wells to tar sands and deepwater production requiring billion-dollar platforms. The other concept is “net exports,” because as Saudi Arabia and other countries use more of their oil in their own economies, the amount they sell to the US, China, and other importers goes down. As all advisors know, the bottom line is where we should focus our attention, not on gross production. (Even Yergin acknowledges that ethanol barely breaks even from a net energy viewpoint, but he still encourages its development.)

If we are close to the maximum of net available oil production, then the business models and stock prices of Yergin’s clients would have to change. Instead of making an honest evaluation of current research on this subject, he chooses instead to attack the character of M. King Hubbert, the originator of the concept of peak oil, who died in 1989. He also mocks predictions of looming shortages made from 1885 to 1975, as though those errors prove all future predictions will also be wrong. It’s not “Is the world running out of oil?” the title of Yergin’s chapter on this topic, but “is the world running short of oil it can afford to use?” Here the answer is much less clear, but is probably in the affirmative.

Yergin’s seven chapters on climate change, at first glance, seem better than this. Yergin likes to tell stories rather than explain things, so the first six chapters of his book romp around the world in what feels like a survey of Facebook status updates for dictators, oil barons, and corporate leaders looking for mergers – and he reviews the people and meetings that shaped climate science and politics for the last two centuries. There seems little doubt in his mind that climate change is real, people are causing it, and the science is persuasive. He concludes with the breakdown of policy at the 2009 Copenhagen climate-change conference and the failure of the US Congress to act on cap-and-trade. So far so good, but that’s where he ends.

If we are to limit CO₂ levels to 450 parts per million (which may itself be too high a number) to prevent a climate disaster, then presumably the burning of fossil fuels will have to be curtailed. (He looks at the research into Carbon Capture and Storage technology and concludes we’re at least 15 years from that becoming commercially usable.) Yet his projections for oil include continued growth in usage for decades to come. Similarly, coal and natural gas use will continue to grow, to accommodate a world economy that will double in size in 20 years and presumably keep growing.



Climate change may be “real,” but it’s not something Yergin takes seriously anywhere else in his book.

Natural gas is the current hot topic, and Yergin jumps aboard the enthusiasm train for the “shale gale,” a phrase apparently invented by IHS CERA. He says that “North America’s natural gas base, now estimated at 3,000 trillion cubic feet (by IHS CERA) could provide for current levels of consumption for over a hundred years – plus.” Of course, “base” isn’t necessarily a recoverable amount, and “could provide” doesn’t make a probability estimate, and “current levels of consumption” don’t reflect the major increases in usage that he and others advocate, and “over a hundred years – plus” doesn’t reflect the typical growth-and-decline curve of any resource. Further, as Yergin’s book was waiting for release, the US Energy Information Agency cut its estimate of resources in the Marcellus Shale by 80% (due to a new USGS study), and other experts in the energy field have raised serious questions about the economics and scale of the whole shale gas enterprise. While Yergin examines (and largely dismisses) the environmental concerns raised by the fracking process used to extract resources from shale, he never questions how much gas there is that can be produced economically. He simply makes projections of massive growth going forward.

Yergin includes discussions of electric cars and alternative and renewable sources of energy. He gives a shout-out to efficiency as a “fifth fuel,” while acknowledging that despite higher federal mileage standards for personal vehicles, use of gasoline in the United States rose by 50% between 1985 and 2003. Yergin is generally supportive of these ventures, but he includes a kind of disclaimer that is one of the most important comments in his book, when comparing energy research with the high-tech progress we are all used to:

“Energy has much longer lead times; it needs much more capital than the typical IT or software startup. ... Projects need to be proved and then proved again at every stage. ... And then the products have to be sold to industries that are often very cautious about new technologies. ... Consumers may change their computers every three years and their cell phones every two years; electric utilities will continue to operate power plants for 50 or 60 years. ... Even accelerated energy transformation will take decades.” (pp 559-560)

The final challenge comes here. What if Yergin is wrong about the amount of fossil fuels we have left (or can burn without destroying the climate, or that we choose to save for our children), but he’s right about the impossibility of rapid changes in energy systems? Then we look behind Door Number Three. Will we have enough energy to operate a growing world economy? How would that work? Can we rely on perpetual growth in a finite system? What are our choices?



Energy drives the world economy, making agriculture, transport, manufacture, air conditioning, housing, and all else possible, including the depletion of our resources and the change in our climate. Getting energy right is necessary to get everything else right, from the long-term jobs crisis to the levels of debt we can sustain. That is why this book is so disappointing. Yergin's refusal to confront alternative views, indicate ranges of possible outcomes instead of always assuming the best, or even cite numbers other than those his firm created but will not publish, makes this a major missed opportunity.

Advisors should have an articulated worldview of the environment they forecast for their clients. This requires considering multiple sources for information and analysis. In the field of energy, climate, and resources, these include Lester Brown, Richard Heinberg, Bill McKibben, Jim Hansen's current work, Robert Hirsch, reports from the US and German militaries, and others, along with Daniel Yergin and BP. Feel free to debate and dispute. Then you'll have a clearer picture of what you believe, the range of potential outcomes, and how to shape your recommendations for the future. You'll have better tools than if you simply took *The Quest* at face value.

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