



BOOK REVIEWS

Energy in the 21st Century, by JOHN R. FANCHI. (Singapore: World Scientific Publishing Co. Pte. Ltd, 2005). 243 pages, paperback, price \$26, ISBN 981-256-195-1.

All of us use energy in our everyday lives. Mankind has been dependent on energy since the very beginning of time, and the methods for harnessing energy have evolved throughout the ages. From basic human labor, to using animals, to extracting energy from fossil fuels, renewables and other sources. In fact, it is difficult to imagine how modern society would survive without all the different types of energy that exist today. In order to be an informed consumer and make sound decisions, one must be familiar with the different types energy that exist today, and the book, *Energy in the 21st Century*, by John Fanchi clearly addresses this issue. The purpose of this book is to “give the concerned citizen enough information about energy to make informed decisions.” Unlike many other energy texts, this book is written for a non-technical audience and therefore it is very comprehensible and easy to read. This book also “exposes the reader to a broad range of energy types,” detailing the various sources and extraction practices in use today and possibilities for the future.

The book starts with a brief history of energy consumption and then transitions into different energy sources such as fossil fuels, nuclear energy and renewables. Dr. Fanchi dedicates each chapter to one energy source, providing the reader with a detailed description and supporting it with pictures, tables and diagrams. After discussing different forms of energy, the author dedicates a chapter to the generation and distribution of electricity, “a most versatile form for widespread distribution.” This chapter is followed by how energy affects the economy and environment, and here the reader is introduced to the basic indicators of economic performance and is shown how energy affects people’s lives from an economic standpoint. Dr. Fanchi points out the effects that energy generation processes and consumption have on the environment while emphasizing by-products such as greenhouse gases, nuclear waste and the Three Mile Island and Chernobyl disasters. Lastly, he discusses options for future energy development by exposing the reader to the different types of energy forecasts and various ideas regarding future energy sources.

Throughout the chapters, Dr. Fanchi includes small sections titled “Point to Ponder,” where he asks some interesting questions about energy types and uses such as, “why aren’t solar power plants more popular in sunny, deserted areas?” or “can wind provide all of our energy needs?” These small sections are very useful as a way of making the reader reflect on the information given in the

chapter, while at the same time presenting interesting energy facts and ideas. For example, in the “Point to Ponder” section, “is hydrogen the perfect fuel for the future?” the author briefly discusses the pros and cons of this energy source and how it can be converted for use as a fuel.

Dr. Fanchi maintains an objective view throughout the book by providing both the positive and negative sides of a particular energy type; thus allowing the reader to decide which energy source is more acceptable. The author’s conclusion is that no energy source is ideal, but each has its own advantage.

Overall, the book is an easy and enjoyable read because the author goes to great lengths to decipher the more technical aspects for the lay person. The book raises awareness and encourages readers to examine their views on current and future energy usage and the sustainability of energy resources. This book is an excellent resource for those who want to learn more about different energy types and make informed decisions regarding energy consumption.

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Energy & Security: Toward a New Foreign Policy Strategy, by JAN H. KALICKI AND DAVID L. GOLDWYN, EDS. Woodrow Wilson Center Press, 2005), 604 pages + xxviii. ISBN 0-8018-8278-8.

The nomination of Harriet Miers to the Supreme Court prompted *New York Times* columnist David Brooks (2005) to comment that “I don’t know if by mere quotation I can fully convey the relentless march of vapid abstractions that mark Miers’s prose.” My reaction to the opening discussions in *Energy & Security* is similar.

It explores how foreign policy can best advance U.S. energy interests, and how energy can be used to advance broader U.S. foreign policy interests (xiv).

For too long, energy policy has not been sufficiently connected to foreign policy, either conceptually or institutionally (xv).

Just as war is too important to be left just to the generals, energy is too important to be left just to the engineers and geologists (xxii).

The policy choices open to the United States and other countries are broad and challenging, and the results these choices will produce are not certain (48).

Far too few intelligent people appreciate the huge gulf between those who talk like this for a living in Washington and those with economic training who study energy markets.

ARE ENERGY MARKETS DIFFERENT?

The central premise of the viewpoint expressed in the forewords and introduction to this book is that energy markets are more fragile than other markets. This fragility, in turn, requires the attention of well-paid elites in and out of government who use prodigious amounts of jet fuel (the main ingredient of modern diplomacy) to make sure everything works out.

Those with economic training see things differently. Short-run energy supply and demand are very inelastic. Thus, shocks (both gluts as well as disruptions) to energy markets transfer large amounts of income because small changes in demand or supply have large effects on price rather than on consumption or production behavior. When those short-term shocks occur, either firms or consumers find this unpleasant depending on whether the shock is a glut or a disruption. But if low prices most of the time and high prices some of the time are a “problem” isn’t there a market solution?

Long-term oil futures contracts, for example, are available for the sophisticated investor. The fact that marketers have not tried to offer long-term stable prices to consumers and firms by arbitraging between the futures and retail markets suggests that most consumers actually benefit on net from low prices most of the time and unpleasantly high prices some of the time. Said differently, we are “dependent” on oil exported from unstable countries rather than domestic oil or alternative sources of energy because it is cheaper in present value terms to do so. Similarly, the reason we don’t have large amounts of excess refining capacity in case a hurricane damages refineries (once every 30 years, for example) is because the costs would be greater than the benefits.

Notice that the “solutions” to instability are higher prices most of the time in return for lower prices some of the time. There is nothing wrong with such “solutions” if they are achieved through contract. 30-year fixed rate mortgages, for example, allow consumers to shift to others the risk of varying daily spot rates for borrowing (whose mean is lower but accompanied by higher variance) in return for higher mean and no variance (fixed) prices.

But as I already have stated, we don’t observe a robust market in petroleum in which entrepreneurs use sophisticated hedging tools to link ordinary retail customers with long-term futures contracts. Instead what we see are proposals for European-style taxes on gasoline consumption or mandates or subsidies to use alternative energy sources or to have excess production capacity.

Unlike contractual solutions, governmental solutions have the dubious distinction of being more expensive not just most of the time but all of the time. That is the “alternatives” to fossil fuels are more expensive than conventional fossil fuels even when the latter prices are at peak, which is, of course, why such solutions do not arise without the use of coercion by the government. For example, Jerry Taylor and I (2005) have recently calculated that the SPR has cost the taxpayer between \$64.64-79.58 per barrel (2004 dollars) to fill, which is more than the spot price of oil has ever been except during 1981 and August and September 2005.

THE ELECTRICITY EXAMPLE

One energy industry in which governmental regulation precludes peak prices but keeps prices higher than necessary much of the rest of the time is electricity (Van Doren and Taylor 2004). Traditional electricity regulation socializes the cost of excess capacity rather than imposing its costs on peak users and using scarcity rents as a means of inducing new investment to handle peak demand efficiently. But restructured electricity markets also have continued such policies in the form of installed capacity (ICAP) requirements, which administratively determine excess capacity and socialize its costs.

States that have restructured have adopted ICAP requirements because of the events that occurred in San Diego during the California electricity crisis. Retail electricity prices in San Diego were free of all controls from July 1999 through August 2000 (Bushnell and Mansur 2001, p. 4). But the doubling of rates that occurred during 2000 triggered a consumer rebellion and the reenactment of price controls by the California legislature.

The regulation of electricity certainly illustrates how to eliminate energy shocks, but I doubt that most energy economists would argue it was a model system worthy of imitation in other energy markets.

IS REGIME STABILITY A PUBLIC GOOD?

Another characteristic of energy markets viewed differently by economists and most foreign policy scholars is regime instability. Leon Fuerth writes in chapter 17, "The most serious foreseeable threat to national security related to oil and gas is not the physical availability of these resources but the political stability of the regions of the world where they are located" (413). The editors write in the introduction, "The danger of an oil disruption is high and increasing, as the world grows more dependent on unstable states both inside and outside OPEC for the security of its energy supply" (4). "Energy security is a public good, and the U.S. government has failed to adopt regulations or incentives to create adequate capacity, backup, or standby infrastructure. Without compensation and requirements for action, private industry has little incentive to fill the void" (4). "To assure its national defense, let alone to power its multi-trillion-dollar economy, America needs to promote the stability of oil and gas producers around the world and that requires a policy of global engagement" (11).

A different and more economically informed perspective comes from J. Robinson West in chapter 8, "Today, oil exporters have much more reason to worry about the security of their markets than importers have reason to worry about the security of their supplies" (205). Those with the most to lose from disruptions regardless of their cause are the state-owned oil companies because their revenue sources are not diversified (to borrow a term from finance).

This understanding undermines the claim that regime stability is a public good. The Saudi-Arabian government has tremendous incentive to eliminate

natural and man-made disruptions to its oil output because it has no other source of revenue. Saudi Arabia and no one else gets the revenues from its production. Until the point of diminishing returns, its efforts to increase the security of its supply are an efficiently supplied private good.

THE PROBLEM OF “RENTS TO BAD GUYS”

Geo-strategic thinking about oil markets is not entirely without merit. The owners of natural-resource rents can become rich, and if the nation-state owners more resemble characters from *Goodfellas* than traditional nation states, they can certainly cause trouble for their neighbors. Everything else being equal we would rather that the nation-state sellers of oil resemble Norway. Iraq, of course, is not like Norway. But when it tried to rearrange the ownership of natural resources through force (invading Kuwait), Iraq's neighbors paid the U.S. to restore the status quo in Gulf War I.¹

But oil rents are neither necessary nor sufficient for Middle East violence. Wars happened before the increase in oil prices (1973-1982) and Saddam's aggression in Kuwait occurred well after the collapse of prices in 1985. Was he aggressive toward his neighbors because of insufficient rather than excess revenue?

RENTS TO GOOD GUYS CAUSE STRUGGLE TOO

Even if the role of oil rents in creating violence is overemphasized, the distribution and appropriate uses of oil rents certainly create political struggle. Much elite jockeying occurs over the ownership of natural resources or transportation pipelines that generate rents because if one can obtain ownership of either of them politically rather than having to pay market prices, then one can get rich and those riches can be used to alter political competition. For example, the struggle between Russian President Putin and Yukos CEO Mikhail Khodorkovsky is, in part, a struggle over the ownership of natural resource and pipeline rents, but, more importantly, a struggle over whether those rents could be used to create political rivalry, with Putin's answer being a definitive no.

While many may think that such struggles are limited to the developing world, our own petroleum history has analogous struggles. For example, The Governor of Texas used the National Guard to enforce orders of the Texas Railroad Commission over proper production levels during the early days (1931-33) of the East-Texas oilfield.

The net effect of the political struggle over rents on the timing of oil production is unclear. The Russian and Texas cases certainly suggest that it reduces production, but M. A. Adelman (1995, p. 33) famously argues that the net effect

1. Saudi Arabia and Kuwait paid approximately \$33 billion (55 percent) toward the total cost of Desert Storm and Desert Shield, which was \$60 billion. The U.S. share was only \$6 billion (10 percent). Defense Department Press release 125-M May 5, 1992.

of state ownership is to reduce time horizons relative to private owners and thus increase production rates.

MANY CHAPTERS REFLECT ECONOMICS

Many of the chapters in the book are more neutral in tone, have an economic rather than political mode of analysis, and provide much factual information to the reader. I discuss three examples. Chapter 1, "World Energy Futures," by Adam E. Sieminiski provides a useful EIA-Energy-Outlook-like survey of likely future aggregate fuel use trends.

Chapter 3, "OPEC in Confrontation with Globalization," by Edward L. Morse and Amy Myers Jaffe remind the reader about the origins of OPEC. In 1959, the U.S. imposed mandatory restrictions on imports. The restrictions reduced the demand for OPEC oil, which, in turn, lowered its price and the royalty income of the producing countries. They responded by forming OPEC. If the U.S. had not restricted trade unwisely against the low-cost imports petroleum, political economic history might have been different. Morse and Myers also point out that OPEC is a counterexample to the general trends in the world economy of less state involvement in the economy.

Chapter 22, "Can a 'Global' Natural Gas Market Be Achieved?," by Donald A. Juckett and Michelle Michot Foss describes the contradiction in U.S. policy between the drastically increased use of natural gas in electricity production and the constraints on U.S. production outside the Gulf of Mexico and LNG imports. Section 311 of The Energy Policy Act of 2005 gives FERC siting and permit-approval authority for LNG terminals and reduces the ability of local governments to resist their construction and expansion. As long as court suits do not challenge the FERC approval process, LNG imports will increase rapidly, and the current discrepancy between the U.S. and world natural gas prices will narrow.

CONCLUSION

Energy & Security consists of two entirely different books. The first is unfortunately representative of an entire foreign-policy cottage industry that obsesses about the need for nations and their diplomats to worry about and attempt to manage petroleum markets. Economists play little role in this scholarship, and it shows. The second, consisting of many of the substantive chapters within the book, is informed by economics and contains information and arguments that undermine the premises of the other parts of the book. If economists played a larger role in informing foreign policy discussion, there would be less obsession with and better operation of energy markets, many foreign-policy analysts out of work, and much less jet fuel used.

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