BOOK REVIEWS

***Energy Follies: Missteps, Fiascos, and Successes of America's Energy Policy*,** by Robert Nordhaus and Sam Kalen (Cambridge University Press, 2018), 246 pages, ISBN 9781108423977.

Energy policies are the actions taken by governments that influence the demand and supply of energy. In crafting an efficient energy policy, the struggle is always how to positively respond to the needs of society rather than cause negative disruptions, bearing in mind that society changes rapidly. This book chronicles major aspects of the United States energy policy's past, and records in a factual and detailed way the struggle towards crafting an ever-changing energy policy - one that integrates and effectively responds to environmental and economic concerns.

Chapter 2 portrays the evolution of federal control over the energy space and the enactment of the Federal Water Power Act (FWPA) by Congress in 1920. The original purpose of the act was to more effectively coordinate the development of hydroelectric power projects, which by 1928 supplied roughly 40% of the energy generated by private electric utilities. The authors also highlight a major environmental drawback affecting future hydroelectric power development - as an area's recreational and scenic values would become important factors considered by the Federal Power Commission (FPC) in deciding whether to license a project or not.

One confusing aspect of this chapter, however, is the use of "FWPA" and "FPA" with the reader having to wait (until the next two chapters) to understand what the FPA would be about.

In ***chapter 3***, the authors depict the increasing need to regulate interstate transmission and sale of electricity since state public utility commissions were incapable for two reasons. First, holding companies defied effective regulation and secondly, the U.S. Constitution did not give states authority to regulate interstate wholesale sales of electric power. The FWPA, on the other hand, only regulated hydroelectric power generation. As an economist, I found this chapter the most difficult to read because of the many resulting Supreme Court Cases, which the authors outlined. For the interested reader, however, it provides a good starting point to explore other sources for more legal detail. More than a dozen of these cases with disputes between states and companies over states right to regulate interstate commerce culminated in the notable "Attleboro Case" of 1927. This court case was about a breach of agreement between Attleboro Steam and Electric Co, a Massachusetts-based utility and Narragansett, a utility in Rhode Island (under the Rhode Island Public Utility Commission's jurisdiction) for Attleboro to purchase electricity at a fixed rate for twenty years and with a transfer of ownership at the state line. Although the case settled the issue, it created a jurisdictional gap over interstate commerce which the FPC was not yet capable enough to fill, nor would Congress step in until the passage of the Federal Power Act (FPA) and the Public Utility Holding Company Act (PUHCA) in 1935. Although the authors do not criticize Congress in this context, it seems to me that Congress is not exempt from blame since it could have enacted efficient laws and statutes much sooner than it did.

With the newly enacted FPA and a better organized FPC (which later became Federal Electric Regulatory Commission - FERC), ***chapter 4*** switches gears into the future; casting major doubts on the FERC's abilities to regulate tomorrow's modern power grid - perceived to be significantly more challenging than today's. To begin with, FERC could be blamed for its poor oversight in California's new wholesale power market leading to an infamous black out in 2001, and subsequently resulting in a patchwork of regulatory structures across states. The chapter is quite technical and prior knowledge of the U.S electricity markets will be helpful.

In ***chapter 5***, the authors describe how federal regulation following from the "Phillips Case" of 1954, which allowed the federal government to set well head prices for natural gas going into interstate commerce, would lead to severe natural gas shortages. In the Philips Case, the Su-

preme Court ruled that natural gas producers who sold to interstate pipelines were subject to FPC regulatory oversight. In regulating well head prices, the FPC established a cost-based system which relied on the cost of producing the service as opposed to the market value of the service. However, the large number of natural gas producing wells derailed efforts in making this work and in 1960, the FPC would switch from setting individual producer rates to setting regional rates. This would come with its own difficulties as different wells in a region would have largely varying production costs. Given that production from thousands of wells was relatively competitive, and setting all these prices was a nightmare, this case disrupted a "healthy" natural gas market resulting in natural gas shortages by the 1970s. It would take Congress up to 1989 to enact the Natural Gas Wellhead Decontrol Act barring all these ill-advised well head price controls. The authors also do well in comparing both natural gas and electric regulatory structures: their similarities and differences. The use of visual representations of data in the form of graphs make it a relatively easy chapter to read.

The authors in ***chapter 6*** describe how unexpected occurrences (particularly the 1973 oil embargo) would give some recognition to the need for an "integrated" energy policy and the need for enhanced coordination - leading to the establishment of the Department of Energy (DOE) in 1977. Prior to this time, federal policymakers showed little appreciation of the interrelated nature of energy regulation. The authors also describe how the enactment of the Energy Policy and Conservation Act (EPCA) by Congress in 1975 would form the basis for much of the country's energy policy for the next forty-four years. The EPCA had four major objectives: Ensure physical security of crude oil supply; reduce the demand for energy - especially oil; eliminate price controls; and increase domestic oil and gas production. In ensuring physical security of oil supply and following the 1973 Arab oil embargo, the authors describe how a first step would be to build a strategic petroleum reserve (SPR) that would store crude oil in Gulf Coast salt domes, enough to enable the U.S ride through any unplanned future interruptions in oil supply. Although the SPR enjoyed wide support at the time and has only been tapped a few times, President Trump, according to the authors, has since suggested that it should be eliminated.

However, notwithstanding the groundbreaking progress with the EPCA in the years to come, it is noteworthy that the authors aptly blame Congress for doing nothing "practical" at the time in reducing the dependence on foreign energy.

Following from the energy crises described in the previous chapter together with rising oil imports, non-increasing (flat) hydroelectric power generation, safety concerns of nuclear power and an exponentially increasing U.S consumption, the authors in ***chapter 7*** explain why three successive presidents (Nixon, Ford and Carter) would emphasize the need for the nation to switch back to coal—with Carter literally crowning coal as King. Unfortunately, by 1970 coal combustion had contributed to a series of public health crises and the newly formed Environmental Protection Agency (EPA) would make sure to curb the growing menace, causing even more problems for the coal industry.

The authors, however, brilliantly make mention of the limitation of research in analyzing the environmental effects of coal. They maintain that while there could be correlations between air pollutants and premature deaths, there is still the difficulty in linking particular pollutants, from particular sources, to premature deaths—while also citing a number of published works.

In ***chapter 8***, the authors discuss how the nations hunger for energy resources would become much more important and noticeable than environmental protection, even with growing awareness of environmental pollution (as the year 1970 turned out to be a watershed for environmental protection). The subtle conclusion from the chapter remains that while President Carter championed his push towards coal, the EPA relaxed its standards. For instance, the EPA focused on new coal-fired generation and "grandfathered" existing plants leading to both environmental problems as well as disincentivizing technological innovation in the coal industry.

In ***chapter 9***, the authors expound on one of the key elements of the EPCA Act of 1975, which is about constraining the demand for energy (especially oil) through the Corporate Aver-

age Fuel Economy (CAFE) program. The authors also explain how CAFE standards successfully decreased oil demand and was effective in its first few years but achieved little after 1985 as the standards remained unchanged for the next twenty-two years. However, the authors recount that in 2012 following the passage of the 2007 Energy Independence and Security Act and the compromise between the Environmental Protection Agency (EPA), National Highway Traffic Safety Administration (NHTSA) and the California State Government, the White House would then make an announcement of groundbreaking fuel economy standards for passenger and light-duty vehicle for model year (MY) 2017-2025. The standards were to result in a fleet-wide average of 54.5 MPG in 2025, savings of $1.7 trillion at the pump, savings of 12 billion barrels of oil, elimination of 6 billion metric tons of carbon dioxide pollution over program life and savings of $8,200 for a family that purchases a new vehicle in 2025. However, there has been a roll back under President Trump. The NHTSA and the EPA last year announced plans to amend the Obama standards for MY 2021-2025 which would freeze the efficiency standards at 2021 levels. The Trump administration claims that freezing the standards would reduce societal costs by over $500 billion which includes savings of $253 billion in increased vehicle prices.

The authors also talk about renewable fuel standards and the 2005 Renewable Fuels Program established by Congress which was intended to replace petroleum-based transportation fuels by phasing in greater amounts of renewable fuels over time - mainly biomass-based diesel fuel, advanced biofuel and cellulosic biofuel. They end the chapter by highlighting the possibility of having an integrated vehicle-to-grid technology in the future and what it would all be like. I find this chapter the most interesting of the book. I could relate to it better than the others and it had personal impacts on my decisions about buying a car.

In ***chapter 10***, the authors summarize the lessons learnt from tinkering with energy resource markets and industries. They emphasize the need for an evolving energy policy as the energy challenges we confront today clearly are different from those of 100 years ago and will also be different from challenges of tomorrow as our society and technologies change rapidly. They end with two salient points: First, "energy policy" ought to be treated as a misnomer. This means that how society achieves its goal of ensuring that an economy functions effectively and efficiently should be governed by other choices not by an illusion of some 'master' energy policy. Secondly, today's choice must address the need to decarbonize our economy, including the energy sector, as quickly as possible.

As someone new in energy policy, I found the book extremely rich in content and a result of thorough and exhaustive research. It is a good place to start for anyone interested in energy policy. While I was reading, I came across many new concepts and being curious, I spent extra time learning things outside of the book - which I also found well worth my time.

The book will be of benefit to readers with a general background. However, with an economic background the reader tends to benefit even more. That said, some of the chapters stand alone and could be useful as supplementary reading for energy economics or energy policy related classes. There are also instances where prior knowledge may be helpful. But even so, it is a good place to start!

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Crude Oil, Crude Money: Aristotle Onassis, Saudi Arabia, and the CIA, by Thomas W. Lippman (Praeger, 2019) 228 pages, ISBN 978-14408-6394-3 (hardcopy). ISBN 978-14408-6395-0 (ebook).

One of the fun things about studying the energy industry is the colorful cast of characters. There have been many through history (and plenty at work today). But *Crude Oil, Crude Money* is exceptional, and brings the quotidian color of the energy industry into direct contact with a still more glamorous world typically reserved for James Bond and the pages of *Vogue.* The central character is none other than Aristotle Socrates Onassis, a Greek born in Turkey, who as an Argentine citizen lived in France, and brought a cosmopolitan air to his core oceanic shipping business. While the particular episode related in this volume—an oil shipping contract between Onassis and Saudi Arabia—is not well-known, its long-term import to the international oil industry and geopolitical relations is underrated. Lippman delivers a detailed account of the prelude to the contract and the dramatic three years during which Onassis tried to breathe life into a scheme to stake out a dominant position in the international oil shipping market.

Lippman is a long-time scholar of the Middle East, with a particular expertise in U.S. foreign policy in the region. He delivers a well-written, well-referenced, and well-rounded account of Onassis' scheme. While the book tells a story that economists and oil economists in particular should find interesting, the meticulous background and rich array of sources are valuable assets to researchers. Because the plotline of the contract itself is a bit convoluted, Lippman helps the reader understand the state of the world from the perspective of each of the three main groups of actors, which is critical both to following the twists and turns that follow and to considering the long-term effect of the events.

The first cast was a fleet of Greek shipowners motivated by commercial interests. Onassis owned a global fleet of commercial ships, including but not limited to a substantial and growing fleet of oil tankers. Like other Greeks, Onassis traded around the world, including with North Korea and other Communist satellites, which raised the hackles of the American government. Even though he was not a U.S. citizen, Onassis had expanded his tanker fleet after the conclusion of World War II by purchasing surplus ships from the United States. This led to an October 1953 indictment for violating the amended Merchant Ship Sales Act. Onassis ultimately paid a fine to settle these charges, and joked that he had to buy the ships twice. Onassis was one of several prominent Greek shipowners at the time, including his arch-nemesis and brother-in-law Stavros Niarchos. Niarchos was also indicted for purchasing surplus ships while not a U.S. citizen, but an inscrutable rivalry with Onassis was his central preoccupation. The orbit of Greek shipowners included minor but important players Spyridon Catapodis and Spyros Skouras (who was, in fact, president of 20th Century Fox at the time).

The Kingdom of Saudi Arabia began a seminal transition with the death of Ibn Saud in late 1953. In accordance with his wishes, he was succeeded by his son Saud, who proved to be a malleable monarch during his 11-year reign. Saud's lack of intellectual drive increased his reliance on a cadre of advisers, including finance minister Abdullah Sulaiman and commercial leader and later commerce minister Abdullah Alireza. In the early 1950s, Saudi Arabia was still adjusting to its geopolitical role as a crucial oil supplier. In 1950, Saudi Arabia negotiated a tax increase with Aramco, the American consortium that held exclusive oil production rights at the time. The new contract increased the affluence and ambition of the kingdom even as its government struggled to modernize.

The third group involved in this issue were Americans, who fell into two distinct camps: U.S. government officials and executives from Aramco. Both of these groups were cognizant of greater geopolitical forces. Government officials were wary of the deepening Cold War and the importance of the Arab world as a front in that conflict. In addition, the recent transition of the United States to a net oil importer made the uninterrupted flow of oil a key priority. Aramco officials were also wary, cognizant that their 1933 concession agreement provided a valuable position despite the

tax increase. The ability to control international sales of oil, and the prices of those sales, was a key concern for Aramco.

Under financial pressure and sensing an opportunity, in late 1953 Onassis hatched his plan with well-compensated assistance from Alireza and Catapodis. He would offer the new Saudi king an opportunity to build prestige by creating a commercial tanker fleet for Saudi Arabia to deliver oil around the world. The new enterprise, to be known as Saudi Arabian Tankers Company Ltd. (SATCO), would serve two purposes. First, in addition to the shipping royalty included in the contract, it would create a Saudi-flagged commercial tanker fleet and merchant marine. Second, thanks to a handful of specific contractual terms, Onassis stood to profit handsomely.

Three of the contract's terms stick out: first, the Saudi government would require all shippers of Saudi oil to give priority to SATCO tankers, in preference to their existing shipping arrangements; second, the rates of SATCO tankers would be pegged to U.S. Maritime Commission posted international rates, which just happened to be well above international market rates (one contemporary FBI estimate suggested Onassis would pocket a markup on the order of 83 cents per ton when prevailing rates were 3 cents); and third, SATCO would have right of first refusal to any additional or replacement tonnage needed to transport Saudi oil anywhere in the world. Translated into economics, Onassis wanted a government-sanctioned shipping monopoly for Saudi Arabia's predominant export, wanted to be ensured of an above-market price for his services, and wanted a contractual guarantee preventing entry.

Lippman lays out the gory details of how the contract was initially conceived and approved by King Saud. The reactions of the various other players—Aramco, the U.S. government, Onassis' Greek rivals—and Onassis' own efforts to further his scheme are carefully and colorfully detailed. Lippman assiduously quotes primary sources and provides ample references.

The reaction of international oil companies to the SATCO contract led to an international boycott of Onassis' ships in 1954-55, landing him in a precarious financial position. But the economic forces in the wake of the closure of the Suez Canal during the 1956 Suez Crisis, the effect on Onassis's finances, and his evolving view of the SATCO contract all receive careful attention. The maturation of the Saudi government ultimately led to Faisal's ouster of Saud in a 1964 palace coup, and set the stage for the rise of OPEC, which helped tip a geopolitical balance that required the United States and other western powers to recalibrate their relations in the region. While the episode spawned legal proceedings in at least three countries, the arbitration described in the book that ultimately settled the contractual dispute between Aramco and the Saudi government is a saga unto itself, still cited as a seminal international arbitration.

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