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The Four-Decade Quest for an "Energy Independence" Policy: Chasing a Trope Through Time

Abstract: Since the presidency of Richard Nixon, policymakers have sought "energy independence" as the goal of energy policy. But that goal, unclear to begin with, has grown more opaque over time. "Energy independence" has meant different things at different times with no clear definition. Nevertheless, the goal is evocative, with symbolism that draws on key narratives from American history. This article argues that the idea of "energy independence" has become a trope and as such a major component of the energy-policy discourse. It describes the shifting (often only apparent) definitions of the trope both in energy-policy rhetoric and in energy legislation, and also explains how the discourse has shifted in recent years due to resource development and the realities of climate change.

Keywords: Energy-independence definitions, rhetorical path dependence, energy-policy legislation

In October 1973, the Organization of Arab Petroleum Exporting Countries (OAPEC), a branch of the larger Organization of Petroleum Exporting Countries (OPEC), imposed an embargo on shipments of oil to the United States. Because America depended on oil imports for roughly a third of the oil it consumed, much of that from the Mideast, the embargo was seen as a "weapon" used to punish the United States for support of Israel in the Arab-Israeli "Yom Kippur War" earlier that month. Ultimately, OAPEC's goal appeared to be to change American foreign policy to be more amenable to the Arab cause. In the United States, however, the embargo was regarded as a

JOURNAL OF POLICY HISTORY, Vol. 33, No. 1, 2021.

doi:10.1017/S0898030620000251

direct threat to American sovereignty as well as to the American economy. Soon, as spot shortages developed, there were lines at gasoline stations of people fearful that the pumps nationwide would soon be empty.

But on November 7, President Richard Nixon answered the embargoing nations. The United States, he proclaimed, would launch "Project Independence." He said, "Let us pledge that by 1980, under Project Independence, we shall be able to meet America's energy needs from America's own energy resources."[1]

Energy independence became an explicit goal of American energy policy thereafter, not just during Nixon's remaining time in office but for all his successors into the 2010s. There have been several important histories of US energy policies.[2] But while a few of these studies note the rhetorical construction, "energy independence," none makes a study of the origin and quickly-developing ubiquity of energy independence as the purported *goal* of those policies.[3]

In fact, over the years since the end of the embargo, more than eight hundred pieces of new legislation, or amendments to old, containing the words "energy independence" have been introduced in the US Congress. Most have been offered when there was turmoil in energy markets, but the rhetoric in Congress never ceased. Since 1973, more than ten thousand references to "energy independence" appear in the *Congressional Record,*[4] with over three thousand more references in committee hearings and the Federal Register. Not only have presidents and legislators touted energy independence, but even today an overwhelming percentage of Americans are also said to favor energy independence.[5]

But after four decades of proposals, near unanimity notwithstanding, "energy independence" has remained a remarkably confusing, ambiguous, indeed often-incoherent policy concept. It is seldom clear what policymakers, pundits, or citizens mean when they say "energy independence." Most often there is the presumption that independence has to do with eliminating or drastically reducing US dependence on oil imports and gaining energy (or just oil) self-sufficiency. Then again, at times energy independence is cited as the way to overcome oil price volatility, or to achieve energy "security," itself an ambiguous idea.[6] But beyond a presumption that we should be importing less oil or none at all, the exact meaning and threshold of energy independence are never clear.[7]

Overall, "energy independence" appears to be one of those ideas one cannot define but Americans are supposed to know what it means (even though they do not) and what exactly it would take to achieve it (which they

https://doi.org/10.1017/S0898030620000251 Published online by Cambridge University Press

cannot). Nevertheless, there have been repeated attempts by policymakers to turn this ill-defined notion into policy. Nearly half a century after it was first enunciated, the rhetoric remains, but the metric of success remains opaque. Still, the rhetorical embrace of "energy independence" has been ubiquitous. It transcends party affiliation or preferred energy system. It is now a trope—a metaphor and symbol rather than a goal that real policy can actually achieve.

The next section looks at theoretical considerations with respect the use of tropes in policy discourse, and why "energy independence" has been successful as a rhetorical constant in United States energy policy history. The third section recounts the blurry (often only apparent) definitions of "energy independence" used in policy discourse and how these have changed over time. In the fourth section, this article examines how the trope has been embodied in legislation. I will conclude with a discussion of how the discourse of energy independence has been changing due to dramatic increases in domestic oil and gas production as well as by the facts of climate change.

THEORETICAL CONSIDERATIONS: "ENERGY INDEPENDENCE" AND HIGHER-ORDER SYMBOLS

Energy independence has always entailed two important concepts: achievement of a technological feat and a struggle against hostile forces. It has required the former because from the 1970s to the 2010s there was an apparent (and apparently permanent) domestic resource shortage; America did not have enough oil and natural gas to sustain its level of consumption. This problem suggested the need for a technological undertaking that many likened to the moon landing.[8] Energy independence would also necessitate a battle against resource owners, particularly OPEC nations, who were regarded as greedy and ruthless. The call to independence placed the energy issue on a level with the struggle for the independence of the United States itself.[9] In fact, there have been many calls by members of Congress for an explicit Declaration of Energy Independence.[10] The demand for "energy independence," thus, drew its power from a class of symbols, termed "higher-order symbols . . . symbols that apply to the entire community . . . symbols that derive from the core of a nation's identity,"[11] turning the expression itself into a symbol. That is, a trope.

Because the trope of "energy independence" embodied two fundamental American narratives (technological accomplishment and the American Revolution), any policy proposal would appear to have had a greater chance of success when such a trope could be attached to it. This is especially true where "meaning is not well specified [so that] individuals exhibit reactive

https://doi.org/10.1017/S0898030620000251 Published online by Cambridge University Press

attachment . . . [that is,] a symbol will evoke a strong emotional response from individuals for reasons they do not really understand."[12] Moreover, energy independence has a distinctly positive ring, and on some level is simple to comprehend. The trope spells out a problem and answers it. What is the problem? It is dependence on hostile nations (as well as greedy international oil companies) for our economic well-being. What is the answer to dependence? Independence of course. It seems an obvious, straightforward answer to a nettlesome societywide fear—a "perfect" but essentially empty answer because actual solutions (even if possible) to America's energy dependence would have been extremely costly and complex. Nevertheless, after Nixon, no one had a better (or at least more saleable) way of addressing America's disturbing energy problems. That no one knew precisely what the answer entailed, actually helped preserve and strengthen the trope over time because people could infer what they wished.

The success of "energy independence" also suggests the importance of political legacies. As Richard Rose points out, every office holder begins to shape policy in the context of existing policy—a legacy that must in some way be acknowledged even if ultimately contested.[13] When Gerald Ford replaced Nixon in 1974, there were said to be hundreds of people in government working on energy independence. Within a few years there were thousands. James Mahoney argues that there are "self-reinforcing sequences," and "reactive sequences" whereby whatever people are expected to work on becomes the objective.[14] In this instance, selling a realistic energy policy in place of the trope would have meant starting the policy process over and likely emerging with ideas much less evocative than energy independence. Consequently, the political cost of deviating from it was perceived to be high.

In subsequent years the trope if anything grew more cloudy but more necessary. Policy concepts that are unclear and ambiguous (as Nixon's own formulation was) do not necessarily gain clarity over time even as more information is accumulated.[15] Indeed, ambiguity as to the nature of problems and of the possible outcomes of policy is common. A leading theory of the policy process, Multiple Streams, argues that facts do not necessarily clear up ambiguity; indeed, they may heighten it.[16] Nevertheless, policymakers may feel compelled by constituent demands to go ahead with decisions seemingly aimed at achieving the idealized, specified end, i.e., energy independence. Thus, as described below, facts and analyses showing various versions of energy independence to be impossible, impractical, or incoherent[17] have had little or no effect on the *rhetorical requirements* of energy policy. Energy legislation had to nod toward the ultimate achievement of (undefined) "energy independence."

The Many (Implied and Explicit) Definitions of "Energy Independence"

Policymakers at all levels have latched onto "energy independence," although it has been especially salient among those who hold elective office. Few elected officials have ever challenged the notion of "energy independence."

But what have officials meant by "energy independence?" Often, the trope has suggested self-sufficiency, and self-sufficiency has been used interchangeably with independence in some energy policy discourse.[18] But self-sufficiency is in fact a limited view of "independence." Self-sufficiency implies that a nation has access to enough resources to keep its economy producing in the face of a supply shock. In other words, it is a supply-side concept. A country can seek to minimize effects of supply shocks, such as embargoes, by having, for example, some mechanism to store supplies or to substitute one resource for another. Independence, however, has implications for the demand side as well. A natural consequence of a supply shock tends to be soaring or wildly fluctuating prices—effects experienced by American consumers at various times in the 1970s and since. "Energy independence," especially as it emerged in the 1970s, often implied the hope for a solution on both demand and supply sides and therefore may be thought of as distinct from self-sufficiency.[19]

The idea of energy independence, however, originated with Nixon's announcement of Project Independence, and he appeared to be using self-sufficiency as his definition of independence.[20] But It was not clear from Nixon's original formulation whether he was advocating the extreme, and likely counterproductive, step of total energy autarky.[21] Or whether he meant (as he indicated the next January) that the goal of Project Independence would mean the United States would be *capable* of energy self-sufficiency in a crisis. Then in the spring of 1974, Nixon appeared to clarify his position. He was if anything more emphatic on the goal of autarky: "[B]y the year 1980," he declared, "the United States will be *completely independent of any foreign source for our energy*"[22] (italics added).

This assertion appeared to flummox members of his own administration. Various aides came forward and (to paraphrase one) said that independence did not mean autarky and did not even mean "self-sufficiency." But then what did it mean? Said she, ". . . there is no need [for us] to define self-sufficiency."[23] In other words, Nixon had enunciated a positive symbol-laden goal of "energy independence," but from the outset no one could (or would) quite explain what the goal actually entailed.

Nixon's successor, Gerald Ford, backed Project Independence and the idea of "energy independence," but during his brief administration just what

https://doi.org/10.1017/S0898030620000251 Published online by Cambridge University Press

independence meant in practice depended on who was speaking. Ford, for his part, said that independence meant the United States would be "invulnerable" to another embargo. Ford appeared to suggest that energy security—that the American economy would not lose access to energy resources in an emergency—was his metric of energy independence. But what constituted invulnerability was never thoroughly defined. Did Ford mean that there should be *no* impact on the United States if prices of oil on world markets rose fourfold as they had during the 1973–74 embargo? Perhaps he just meant that the states would not have disruptions with widespread shortages and angry motorists sitting in gas lines, but this was never specified.

In Congress there was also focus on the embargo and what was seen as an attempt to induce America into changing its foreign policy through an oil cutoff. That is, "energy independence" meant ending US dependence on Middle East oil, especially *Arab* Middle East oil, as Iran had remained a supplier to the United States during the embargo.[24] There was in fact widespread agreement in the United States that the so-called oil weapon "should never be allowed to determine American foreign policy. The nation needed a secure supply of energy, particularly oil, and nothing was more secure than our own resources. US resources were at that time inadequate to meet the energy requirements of the US economy, but presumably Iranian or, better still, Canadian or Venezuelan oil was acceptable.[25]

Ford's Treasury Secretary, William Simon, had a different definition of "energy independence." He believed that it would be achieved by diversifying America's sources of supply so that an OAPEC embargo would not lead to shortages.[26] By that definition, "independence" has been achieved for many years because the United States has many sources of supply. Of course, Simon did not deny that turmoil in world energy markets would lead to havoc with respect to world oil prices.

It was apparently Secretary of State Henry Kissinger who saw "energy independence" most specifically as (supply-side) self-sufficiency.[27] But others in the administration thought self-sufficiency was not possible. In the fall of 1974, John C. Sawhill, who became the head of the new Federal Energy Administration (FEA), admitted that such self-sufficiency was unattainable—notwithstanding the fact the Ford administration was asking Congress to pass something called the Energy Independence Act of 1975. For his candor, Sawhill was asked to resign, which he did.[28]

In the meantime, Sawhill's subordinate, the FEA's chief data analyst Eric Zausner, told Congress that actual oil self-sufficiency might be possible if there was drilling on the eastern continental shelf—assuming there was a lot of oil,

as some geologists believed.[29] Soon after, the US Geological Survey cut its estimate for oil on the continental shelf.

The FEA, as it evolved in its first year of existence, came to a very limited understanding of energy independence. According to its new chief, Frank Zarb, independence meant that a future embargo would have a "substantially minimal effect" on the US economy and industrial capacity. Exactly what was being measured went unstated and at what point the minimal threshold would be surpassed was never defined.[30]

Later in the 1970s, Jimmy Carter, as president, declared that striving for energy independence was "the moral equivalent of war," which was if anything more ambiguous than "invulnerable" or "substantially minimal effect." But where Ford had envisioned boosting supply with many more oil wells, Carter believed US reserves of oil and natural gas would soon be exhausted. Independence would have to include massive conservation efforts and new, presumably nonoil, sources of supply. He was particularly supportive of solar energy and later in his administration he endorsed mass production of coal-derived synthetic oil and natural gas (synfuels).[31] The synfuels program was likened to the Apollo program by many, was even called an "energy moonshot." But the analogy was inapt as Apollo was a short-term program to prove something could be done, whereas the synfuels program was intended to produce commercial products.[32]

Carter was not alone in advocating for the production of synfuels; many members of Congress endorsed it as well. It appeared from congressional debates that the prevailing view among legislators was that synfuels development would lead to American "energy independence," which was being defined as a complete break from OPEC. As Representative William D. Ford (D-MO) put it, the United States needed to "declare our independence from OPEC's economic throttlehold."[33] Similar comments were made by many others of both parties.[34]

During the 1980s, Ronald Reagan was criticized for having terminated many of Carter's energy programs. But some sort of idea of "energy independence" remained an ostensible policy goal for his administration as well as for most members of Congress. It was also an apparent goal of Reagan's successor, George H. W. Bush, and after Iraq invaded Kuwait in 1990 the restated goal of many members from both parties of the 101st and 102nd Congresses. But how independence was defined was becoming increasingly murky. In the wake of the first Gulf War, energy independence was now equated mainly with the ability to step away militarily from the sometimes tumultuous Middle East. To some, this led to defining independence as

something like energy autarky. As Representative Owen Pickett (R-VA) put it, "It is time for this Nation to adopt a declaration of energy independence from the rest of the world." [35]

Representative Robin Tallon (D-SC), by contrast, pursued a new and different definition of American energy independence, by including all of the Americas: North, South, and Central along with the West Indies. Tallon introduced a resolution for a unified "Western Hemisphere" energy policy, so that the United States would import oil if not exclusively then mainly from Venezuela, Mexico, Canada, and any other producers in the hemisphere. [36]

In the 2000s the rhetoric of energy independence was if anything more intense than it had been in Nixon's time. Record high prices for oil and natural gas (having risen from 2001 to 2008) encouraged new policy proposals and led to an increasing number of references to energy independence in congressional debates. But in the 2000s the trope "energy independence" had little specificity. Speakers used the trope as if it was supposed to be included as a kind of accent in every energy-related remark. While it was still spoken in the context of oil dependence, the trope was also being used as a rationale for a favorite new energy technology. Representative Marcy Kaptur (D-OH), for example, attached energy independence to biofuel development, but at times with such modest goals the amount of "independence" achieved, however defined, would have been trivial.[37] Rep. Bob Filner (D-CA) sought to make electric cars the center of energy policy with a bill subtitled "Accelerating the Energy Independence of America Act." But none of these legislative importunings had much to do with overall energy self-sufficiency, pricing or security.[38]

There were still other new ways to conceptualize energy independence. In 2012, with the largest supplier of oil now America's neighbor to the north, (Canada) and the fourth largest, America's southern neighbor (Mexico), Republican presidential candidate Mitt Romney argued for NAFTA-centered energy independence, meaning the United States would import oil only from Canada and Mexico, instead of the sixty or so countries then selling oil to the US.[39]

His opponent, President Barack Obama, talked often about how America needed to free itself "from foreign oil," and during his eight years in office US imports of oil fell, although that had more to do with increased US production through hydraulic fracturing (or "fracking") than with Obama's specific policies. Obama termed his approach to energy policy as "all-of-the-above," but his policies were aimed more toward replacing coal and natural-gas-fired electricity production with renewables (solar and wind), and in matching

renewable electric power with electric vehicles to eventually replace gasoline-powered ones.

Yet in all the time from Nixon to Obama, no common definition of energy independence emerged. Still, the use of the trope in policy circles has never ceased, with more than two thousand references to it in the *Congressional Record* since 2015.

Energy Independence in Energy Legislation

Despite the fact that the concept of energy independence is ambiguous, there have been several pieces of legislation that purported to turn the policy goal into law. Not surprisingly, none of the attempts *could* have achieved actual or even potential self-sufficiency or guaranteed price stability even if they had been backed by staggering levels of expenditure. In some cases, pieces of energy legislation that became public law set "independence" goals, but the goals were subsequently revised downward, ignored, or abandoned altogether.[40]

Cost has often proved far greater than any estimates made at the time any legislation became law. In fact, even before passage analysts have argued that cost estimates were unrealistic. Although Nixon's plans for Project Independence were never given a legislative test, the cost of achieving them were estimated by the National Academy of Engineering in the spring of 1974. The group said Project Independence would have cost somewhere between $490 billion and $610 billion ($2.45 trillion to $3 trillion, in 2018 dollars), a number that dismayed many observers—and probably still would not have achieved Nixon's goal if it was complete autarky from foreign energy sources.[41]

Nevertheless, Nixon's successor, Gerald Ford, announced a legislative initiative that was to operationalize Project Independence. The Energy Independence Act of 1975 amended Nixon's timetable; it would have purportedly led to energy independence not in seven years but in ten, or by 1985. What was at work in US policy circles was a clear example of "policy inheritance" (discussed in Section 2), the legacy of choices made in the past.[42] This legacy was arguably stronger in the case of Ford, because he had never been elected president. As argued elsewhere, when Ford took office on the resignation of President Nixon, the idea of "energy independence" had more popularity and credibility than Ford did himself.[43]

Though Ford's plan envisioned plausible means of inching toward a reduction in energy dependency—utilizing more US coal, for example—it also had no chance of actually achieving self-sufficiency, assuming that was the

https://doi.org/10.1017/S0898030620000251 Published online by Cambridge University Press

goal, or guaranteeing energy security if that was the goal. Despite continued rhetorical commitment to "energy independence," Ford soon acknowledged that his proposal would mean that by 1985 the United States would still be importing several million barrels per day of foreign oil. He hoped merely, as noted above, that his version of energy independence would make the United States "invulnerable" to supply disruptions. Presumably, that meant that the United States could temporarily be self-sufficient in the event of an emergency. That would mean more domestic energy production, more conservation, and a strategic oil reserve. All of these were embodied in the Energy Independence Act of 1975. The cost to the government in this case was to be relatively modest, primarily paid for by new taxes. But new taxes never became law. In fact, the Act as Ford had presented it, did not become law, although elements of it, notably the strategic petroleum reserve and efficiency standards for cars, were included in the Energy Policy and Conservation Act, which passed in late 1975.[44]

Jimmy Carter became president in 1977 with two domestic policy priorities described as "energy and everything else."[45] Early in his term, in April 1977, Carter introduced a National Energy Plan, an immense program with 113 provisions, which in summary form ran to more than one hundred pages. Yet it was intended to reduce imported oil only modestly from about 7 million barrels per day (MBD) to 6 MBD. He and James Schlesinger, the Secretary of Energy in the newly created Department of Energy, included a modest tax increase to reduce demand, but it was killed in the Senate, where there were many strong advocates for lower energy prices even though that created a disincentive to conserve. It was claimed by several congressional Democrats that higher prices through new taxes or the removal of Nixon's controls on the price of oil (imposed in 1971 and still in place in 1977) would cause inflation and not produce, as one senator claimed, a single additional barrel of domestic oil.[46] What finally passed embodied some of what Carter had sought, but it did not appear to be a means to "energy independence" however defined. Parts of the program that passed proved ineffective and were repealed. For example, one component of the Carter new energy law was the Powerplant and Industrial Fuel Use Act of 1978,[47] which included a ban on any new electric power plants fired by oil or natural gas. All new plants had to use coal or nuclear fuels. This was partially repealed in 1987, when it became apparent that there was a lot more natural gas around than previously thought.[48]

During a second energy crisis in 1979, Carter was under relentless pressure from Congress as well as the general public to "do something" about energy. As of August 1979, a Gallup poll reported over 80 percent of the American

public deemed the "energy situation" as very or at least fairly serious.[49] By the summer of 1979, most of the legislators had become convinced that the United States truly needed to become independent, but specifically independent of OPEC. As noted, "OPEC independence" seemed to be what many legislators were using as their definition of "energy independence." The solution, to create synthetic fuels (gasoline and natural gas equivalents) from coal, which the United States had (and still has) in great abundance, was neither technically nor commercially viable. Nevertheless, Carter sought $88 billion to make it happen. Asked later why $88 billion, James Schlesinger admitted that it "came from nowhere,"[50] certainly not from any clear analysis. Indeed, the short-term goal of two-plus MBD of oil-equivalent synfuels was deemed unachievable by five different agencies of government.[51]

Synfuels might have reduced imports *if* the technology had worked, and it also could have reduced oil price volatility *if* the output could have been produced cheaply enough. In 1979, it was expected to be cheap enough but mainly because the price of oil was expected to continue to soar; the price had more than doubled in a year and was projected (wrongly, it turned out) to more than double again by 1990. More reduction in imported oil was to come from conservation. Democrats favored this approach and passed various measures toward that end, but they fought against price decontrol, continuing a contradictory policy position where people were told it was important to conserve but were at the same time given little incentive to do so.

By May 1980, Carter had achieved most of his legislative aims and had created what his administration called "a virtually complete framework of national energy policy."[52] But the need for it was predicated on ending OPEC's control of the oil market. (Carter often referred to the "energy war.") Within a few years, however, OPEC lost control of the market and not from US energy policy. Through market forces, the price collapsed and OPEC came close to dissolution. The entity created to develop synfuels was soon after disbanded.

Nevertheless, the rhetoric of energy independence remained intact. Carter himself never let go of the basic message. As recently as 2009, Carter told members of the Senate Foreign Relations Committee that reaching the goal of energy independence was crucial to ending the country's "vulnerability to possible pressures and blackmail"[53]—lack of evidence of attempted blackmail of the United States since 1973–74 notwithstanding.

Ronald Reagan ended oil price controls and terminated or cut many of Carter's "framework" programs, against a great deal of criticism from congressional Democrats.[54] But Reagan maintained the illusion that he, too, was working toward "energy independence." He believed that price decontrol

would provide incentives for oil and gas companies to expand their efforts enormously at finding new supplies. He even claimed once (inaccurately) that there was more oil in Alaska than in Saudi Arabia,[55] so that price decontrol alone would come close to freeing the United States from Middle East oil.

In any case, the Reagan administration soon admitted that "energy independence" (apparently defined as self-sufficiency) was not going to happen anytime soon. The Department of Energy was required by its enabling law to file biennial reports, and in the 1983 edition the DOE lamented that the United States would have to rely on Middle East oil for at least twenty more years.

Congress, however, did not stop trying to legislate energy independence —whatever it was supposed to mean. Energy Independence was attached to various bills and resolutions, including ones to amend the tax code as well as those in support of one or another energy proposal. There were no major energy bills passed during Reagan's two terms. However, the rhetoric of energy independence remained. There were more than a thousand references to energy independence in congressional debates in the 1980s.

His successor, George H. W. Bush, made it clear in his speech accepting the Republican nomination for president that he was for energy, or at least oil, independence, declaring that US security depended on independence from foreign oil. In the event, fears were being stoked of a renewal of embargoes and gas lines. An op-ed in the *New York Times* just after Bush's inauguration was titled "Get Ready for Longer Gas Lines," even though there had not been any such lines since the 1970s.[56]

Still, elected officials were terrified at the prospect—fears that came to the surface in 1990 when Iraq invaded Kuwait and threatened Saudi Arabia. Congress as well as President Bush faced the need to respond, to at least say something, with regard to the impact of events on voters, whose wrath worried elected officials. As Representative Jerry Lewis (R-CA) lamented, gas lines would "create a revolution in each of our districts in terms of citizen attitudes."[57] In fact, there were no gas lines, and the price of gasoline, which had spiked, came down after Iraqi forces were quickly defeated in the first Gulf War. Nevertheless, during the Iraqi invasion and in the few months of preparation to expel Iraqi forces from Kuwait, in the United States there were predictably (a) claims of an energy crisis, and (b) demands for energy independence. In fact, soon after the war ended, Senator Conrad Burns (R-MT) introduced the "American Energy Independence Act of 1991."[58] With the urgency of the war over by the summer of 1991, the bill did not get past committee hearings. But during and even well after the war, "energy

independence" was a persistent rhetorical theme, with numerous references to it in Congress between 1990 and 1992.[59] It continued to be described as the ultimate goal of US energy policy.

The issue of energy dependence and its solution, energy independence, came to the fore again in the early 2000s, when the price of oil (as well as of natural gas) began to rise to record levels. In 2007, congressional Democrats along with President George W. Bush joined to support the Energy Independence and Security Act of 2007.[60] Like the synthetic fuels legislation, this bill sought to replace much imported oil toward achieving both greater self-sufficiency and lower energy prices. Again, like synfuels, reaching those goals depended on the rapid development of a new technology—production of ethanol from cellulosic feedstocks. However, despite tax incentives and direct grants of around $10 billion, cellulosic ethanol still is nowhere near commercialization and certainly has not provided a step to energy independence—however independence is to be defined.[61]

CONCLUSION

In recent years two significant developments have impacted the thinking about energy policy. First, US officials are no longer afraid of running out of oil and gas. Significant energy resources have been obtained through the use of fracking, which has cut US oil imports and made the United States a net exporter of natural gas. Consequently, by the end of the Obama administration, some observers argued that the United States in fact was about to become "energy independent," defined as the energy value of the resources that were exported (coal as well as natural gas in liquified form and refined oil-based products) nearly equaling the energy value of resources imported. By 2019, according to the US Energy Information Administration, the United States was said in that sense to be nearly "independent."[62] Then again, the United States was still importing on net about three million barrels of foreign crude oil every day.

It is interesting to note that fracking was developed with government support—though not directly. In 1980, part of the Carter energy policy framework was the Crude Oil Windfall Profit Tax Act (repealed a few years later). This legislation was created to extract some of what were deemed excessive profits of the oil companies—companies that some people thought had caused the oil shortages or at least had made too much money as a result of them.[63] But one part of the bill gave tax incentives for any company looking to find ways to recover unconventional resources such as oil and gas locked in

shale deposits. George P. Mitchell in particular took advantage of the benefit and the United States, thought in the 1970s to have nearly exhausted its natural gas deposits, became instead an exporter.

The second significant factor is climate change. All fossil fuels, when burnt, emit carbon dioxide, a greenhouse gas. Climate change mitigation policies would require reducing the use of fossil fuel, even as fracking has made it less costly to acquire domestic supplies. It has been argued that energy policy, which for so many years focused on fossil-based energy-resource independence, may be difficult to change to an energy policy based on decarbonization and renewable resources.[64] Then again, although a largely renewable electric sector, with millions of electric vehicles, could in theory lead to "energy independence" in the sense of self-sufficiency, such technological change faces very large technical and financial hurdles to be realized.[65]

Nevertheless, there seems little likelihood that the trope will disappear from the rhetoric of US energy policy. Some will avow that the United States can get there by expanded drilling for oil and gas; others by putting aside oil and gas altogether. But the idea is too compelling, uplifting in its reference to the American independence and know-how. As long as listeners (voters in particular) are pleased with the term, it is pointless to urge policymakers to either drop it or carefully define it. The trope of energy independence is—a pleasant thought—a popular metaphor that has the political virtue of meaning pretty much what a speaker and a listener want it to mean.

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NOTES

1. President Richard Nixon, "The Energy Emergency: The President's Address to the Nation Outlining Steps to Deal With the Emergency," 7 November 1973, retrieved from: https://www.cvce.eu/content/publication/2003/7/3/1158015d-8cf9-4fae-8128-0f1ee8a8d292/publishable_en.pdf.

2. Notably, Richard H. K. Vietor, *Energy Policy in America Since 1945: A Study of Business-Government Relations* (Cambridge, 1984); Craufurd D. Goodwin, ed., *Energy Policy in Perspective: Today's Problems, Yesterday's Solutions* (Washington, DC, 1981); Peter Z. Grossman, *U.S. Energy Policy and the Pursuit of Failure* (Cambridge, 2013), and Meg Jacobs, *Panic at the Pump: The Energy Crisis and the Transformation of American Politics in the 1970s* (New York, 2016).

3. There are a few works that treat some aspects of "energy independence," notably Robert Bryce, *Gusher of Lies: The Dangerous Delusion of "Energy Independence"* (New York, 2008). But this and other examinations of energy independence do not assess the many

meanings of the term, why it has persisted in energy-policy discourse, or why it developed into a trope.

4. Found at the Government Publishing Office, online at: https://www.govinfo.gov/app/search/%7B%22facets%22%3A%7B%7D%2C%22filterOrder%22%3A%5B%5D%2C%22facetToExpand%22%3A%22publishdatehier%22%2C%22offset%22%3A0%2C%22pageSize%22%3A%2210%22%2C%22sortBy%22%3A%220%22%2C%22query%22%3A%22%5C%22energy%20independence%5C%22%22%2C%22historical%22%3Afalse%7D.

5. Frank Luntz, "Our Divided Nation Is United on Energy Independence," RealClearPolitics, https://www.realclearpolitics.com/articles/2018/09/06/our_divided_nation_is_united_on_ energy_independence_137992.html, 8 September 2018.

6. See Scott R. Littlefield, "Security, Independence, and Sustainability: Imprecise Language and the Manipulation of Energy Policy in the United States." *Energy Policy* 52:779–88 (2013).

7. Although energy independence proponents have made clear references to oil, in some policy rhetoric, policymakers have also linked natural gas to energy independence, especially liquified natural gas (LNG). America was thought to be running out of natural gas in the 1970s and then again early in the 2000s. Given the extensive usage of that energy resource in the United States, LNG *imports* were projected to increase tenfold from 2003 to 2025. Major sources of LNG were OPEC members. As the Senate Committee on Commerce, Science, and Transportation was told at a natural gas hearing on 6 October 2004, "Increasing reliance on LNG will result in the US becoming more dependent on OPEC."

8. Beginning with Nixon, many, many public officials have made the analogy to the Apollo program when talking about the effort required for energy independence. See Grossman *US Energy Policy*, chap. 6.

9. For example, Representative Mike McCormack (D-WA), 26 July 1979, said on the floor of the House of Representatives, "Let us not forget that in 1776, Thirteen Colonies took a stand against tyranny and oppression and made a commitment to seeking independence. Their road to independence was not an easy one. Over 200 years later, we are being asked by the President and by the American people to make a similar and equally critical commitment to energy independence from the economic oppression and tyranny of foreign energy sources such as the OPEC cartel. *Congressional Record*, 96th Cong., 1st sess., p. 20892.

10. E.g., Republican Senator Jim Jeffords in 1991; Democratic Senator Evan Bayh in 2006, and many others.

11. Nikolaos Zahariadis, "The Multiple Streams Framework: Structure, Limitations, Prospects," in Paul A. Sabatier, ed., *Theories of the Policy Process* (Boulder, CO, 2007), 76.

12. Nikolaos Zahariadis, *Ambiguity and Choice in Public Policy: Political Decision Making in Modern Democracies* (Washington, DC, 2003), 100.

13. Richard Rose, "Inheritance before Choice in Public Policy," *Journal of Theoretical Politics* 2:263–91 (1990).

14. James Mahoney, "Path Dependence in Historical Sociology," *Theory and Society* 29:507–48 (2000).

15. Zahariadis, "Multiple Streams," 66.

16. John W. Kingdon, *Agendas, Alternatives, and Public Policies,* 2nd ed. (New York, 1995).

17. John J. Fialka, "Energy Independence: A Dry Hole? Experts Across Political Spectrum Challenge "Emotionally Compelling" Slogan," *Wall Street Journal*, 5 July 2006, A4.

18. For example, Senator Pete Domenici (R-NM) at the Hearing Before the Committee on Energy and Natural Resources United States Senate, 109th Cong., 2nd sess., Discussing the Goal of Energy Independence (6 March 2006), used "energy self-sufficient" and "energy independent" interchangeably, 1–3. But other examples can be found from the 1970s onward, e.g. Representative Don Bailey (D-PA), (Extension of Remarks), *Congressional Record*, 96th Cong., 1st sess., 20 June 1979, 15813.

19. Some experts have made this distinction with respect to energy. US Vice Admiral (ret.) Lee Gunn, for example, at a National Security Forum on 5 March 2019, said that the Uunited States had achieved energy self-sufficiency as of 2019 but was not energy independent, apparently because the United States was not immune to world energy market-price fluctuations, https://nationalsecurityforum.org/2019/03/07/march-21-energy-security-and-grid-resilience-diversifying-and-securing-energy-supplies-nationally-and-locally-with-vice-admiral-lee-gunn-usn-ret/.

20. The demand side also mattered to Nixon. In 1971, he had imposed (and throughout his administration retained) price controls to keep a lid on oil prices as well as to mitigate inflation—an action that arguably hurt consumers far more than it helped. See Jacobs, *Panic at the Pump*, esp. chaps. 1 and 2.

21. See Bryce, *Gusher of Lies.*

22. Public Papers of the President, Richard M. Nixon, "Question and Answer Session at the Annual Convention of the National Association of Broadcasters," Houston, 19 March 1974, 283–84.

23. Dixy Lee Ray, Chair of the Atomic Energy Commission, quoted in Edward Cowan, "US Energy Goals Are Still Far Off as Supplies Rise." *New York Times,* 13 May 1974, 65.

24. For example, Romano L. Mazzoli (D-KY) opined on 18 December 1973, that "the United States must not be 'blackmailed' by the economic pressures of the Arab oil embargo" and needed to pursue policies "ridding itself of the 'albatross' of Mid-East oil" (*Congressional Record*, 93rd Cong., 1st sess., 18 December 1973, p. 42323)—equating energy independence with no more Arab-OPEC oil.

25. It should be noted that the Arab effort at influencing US opinion backfired as polls of the period showed diminished approval of Arab causes. See, for example, Connie De Boer, "The Polls: Attitudes Toward the Arab-Israeli Conflict," *Public Opinion Quarterly* 47:121–31 (1983).

26. Neil de Marchi, "Energy Policy Under Nixon: Mainly Putting out Fires," chap. 6 in Goodwin, ed., *Energy Policy in Perspective*, 460–61.

27. Noted in Edward Cowan, "US Energy Goals Are Still Far Off as Supplies Rise." See note 23.

28. Neil de Marchi, " The Ford Administration: Energy as a Political Good," chapter 7 in Goodwin, ed., *Energy Policy in Perspective*, 481.

29. Edward Cowan, "Says He Will Warn Ford Against Crash Program to Develop Them: Sawhill Opposes Synthetic-Fuel Effort," *New York Times*, 12 October 1974, 39.

30. Grossman, *US Energy Policy*, 139.

31. James L. Cochrane, "Carter Energy Policy and the Ninety-fifth Congress" in Goodwin, ed., *Energy Policy in Perspective*, chap. 8. Also Grossman, *US Energy Policy*, chap. 5.

32. See Grossman, *US Energy Policy*, chap. 6.

33. *Congressional Record* (Extension of Remarks), 96th Cong., 1st sess., p. 18153, 11 July 1979.

34. There are many other examples from the *Congressional Record* of the 96th Congress. To cite two: 14 November 1979, Representative James H. Scheuer (D-NY) declared, "We must free ourselves from this pressure [OPEC] by moving on every front to achieve energy independence and self-sufficiency," p. 32353. On 3 August 1979, Senator Lowell P. Weicker Jr. (R-CT) said that it was "time for the Congress to lead this nation out of the grasp of OPEC toward . . . eventual energy independence," p. 22670.

35. *Congressional Record*, 101st Cong., 2nd sess., 11 September 1990, p. H7291.

36. Introduced (1991, 102nd Cong.) H. Con. Res. 79, Concurrent Resolution Calling Upon the President to Work with Other Nations to Create and Implement A Western Hemisphere Energy Policy. Senator Joseph Lieberman (D-CT) introduced a similar proposal in the Senate for West Hemisphere Energy Security Promotion (S. 2058). It died in committee.

37. Her "Biofuels Energy Independence Act of 2001" (H.R. 3099) had as a primary goal replacement of 100 million gallons of oil in the Strategic Petroleum Reserve with ethanol, an amount less than 0.05% of annual oil usage.

38. Representative Bob Filner (D-CA) introduced H.R. 770, "Putting the Pedal to the Metal: Accelerating the Energy Independence of America Act," in 2003.

39. Sam Youngman, "Romney Seeks North American Energy Independence by 2020," *Reuters*, 8 August 2012.

40. For example, the Carter-era Power Plant and Industrial Fuel Act, the Crude Oil Windfall Profit Tax Act, and the Synthetic Fuels Corporation were all substantially revised or defunded or repealed.

41. In February 1974, energy "czar" William Simon received a memo from the Project Independence Working Group explicitly saying the capability for self-sufficiency by 1980 or even somewhat later was impossible. Short of a massive conservation effort, the report said, even with Project Independence the US would be importing 4.4 million barrels of oil per day (MBD); an improbably massive conservation effort in the United States would cut imports further but no lower than 1.5 MBD, and that was deemed outside the realm of real possibility. As the head of the US Geological Survey quipped, Project Independence could only succeed "if Murphy's Law is supplanted by a new law that states 'whatever can go right, will.'" Noted in Grossman, *US Energy Policy*, 39–40.

42. Rose, "Inheritance before Choice in Public Policy."

43. Grossman, *US Energy Policy*, 131.

44. Public Law 94–163.

45. Kenneth E. Morris, *Jimmy Carter: American Moralist* (Atlanta, 1996), 254.

46. Patrick Leahy (D-VT), *Congressional Record*, 29 January 1981, 1257.

47. Public Law 95–620.

48. Cochrane, in Goodwin. ed., "Carter Energy Policy," 585; Grossman, *US Energy Policy*, 262.

49. See Toby Bolsen and Fay Lomax Cook, (2008) "Trends: Public Opinion on Energy Policy: 1974–2006," *Public Opinion Quarterly* 72:364–88 (2008).

50. James D. Schlesinger, from the interview transcript, James Schlesinger, Carter History Project, Miller Center of Public Affairs, Charlottesville, 19–20 July 1984, 43.

51. Grossman, *US Energy Policy*, 208.

52. Backgrounder, White House Press Office, Spring 1980.

53. cnn.com, "Carter pushes energy reform plan to Congress," 12 May 2009, http://www.cnn.com/2009/POLITICS/05/12/carter.energy/index.html

54. At various times Democrats tried to revive Carter-era programs. Most notably, Harold Volkmer (D-MO), who proposed the "Commercialization of Alternative Energy Sources and Energy Technology Act of 1990," which was intended "to put back programs started in 1979 and 1980." (*Congressional Record*, 101st Cong., 11 September 1990.)

55. Quoted in the *Detroit Free Press*, 23 March 1980.

56. Richard J. Stegmeier, *New York Times*, 22 January 1989, F2.

57. Robin Toner, "House Grows Edgy as Elections Near," *New York Times*, 5 August 1990, 24.

58. S.661, introduced, 14 March 1991.

59. For example, during the early phase of the war (Desert Shield), on 11 September 1990, Representative Peter DeFazio (D-OR) argued, "You cannot tell me that it is beyond the capabilities of the United States of America to become energy independent if we make it a national priority." *Congressional Record*, 101st Cong., 2nd sess., H7291. After the war, on 24 July 1991, Senator Charles "Chuck" Robb (D-VA) asserted that the United States "already possesses the energy resources and technological potential . . . to achieve energy independence." *Congressional Record*, 102nd Cong., 1st sess., 19505.

60. Public Law 110–40.

61. See, for example, David Pimentel and Marcia Pimentel, "Corn and Cellulosic Ethanol Cause Major Problems." *Energies* 1:35–37 (2008).

62. "The United States is expected to export more energy than it imports by 2020," https://www.eia.gov/todayinenergy/detail.php?id=38152.

63. Each energy crisis in the 1970s entailed large price increases by OPEC. This had major effects on the bottom line for the major oil companies because they could sell oil extracted at a much lower cost than the new OPEC-dictated price. The windfall profit tax was repealed in 1987 because even by the government's reckoning there were no longer any windfall profits in oil.

64. Guri Bang, "Energy Security and Climate Change Concerns: Triggers for Energy Policy Change in the United States?" *Energy Policy* 38:1645–16.

65. Paul Balcombe, Dan Rigby, and Adisa Azapagic, "Energy Self-sufficiency, Grid Demand Variability and Consumer Costs: Integrating Solar PV, Stirling Engine CHP and Battery Storage," *Applied Energy* 155:393–408 (2015).