From Fueling Victory to Running on Empty: Lessons from American Energy Policy in War and Peace

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EXECUTIVE SUMMARY

The purpose of this study is to draw important lessons from how the United States has handled its national energy policy in the past in order to guide policymakers and industry leaders in the future.

In the end, this is a study in contrasts. In the case of World War II, the federal government successfully used America’s energy independence and abundance to help Great Britain survive the Nazi onslaught and then to win a two-front world war, the greatest victory in history.

In the case of the 1970s, the United States became dependent on others, specifically the Middle East, for its energy prosperity. As a result, America lost control over not only its ability to conduct foreign policy but also its economy.

Construction of the Big Inch oil pipelines, the most extensive government energy project ever created, epitomized America’s successful national energy strategy in World War II. This project enabled the United States to literally fuel victory over the Axis.

The Arab oil embargo of 1973 and the dramatic rise in the price of oil imposed by the Organization of the Petroleum Exporting Countries (OPEC) severely damaged the US economy, set back global growth for nearly a generation, and symbolized the failure of America’s energy strategy in that decade.

The end of this study will summarize the key lessons from these two contrasting approaches to a national energy strategy. However, two stand out:

- Energy independence—and having access to cheap, abundant energy—is an essential prerequisite for American national and economic security.
- A national energy strategy that relies on the expertise of leading energy executives and engineers in the private sector will tend to be successful; one that ignores their advice and assistance will tend to fail.

Whether America will enjoy energy security as it faces the challenges of the twenty-first century will depend on many factors. But drawing the right lessons from these two contrasting historical eras can prepare the way for a new era of energy abundance and national power.
“Without oil, American civilization as we know it could not exist.”
—Interior Secretary Harold J. Ickes, 1933

“This is a war of engines and octanes. I drink to the American auto industry and oil industry.”
—Joseph Stalin, 1942

**Introduction**

Historians of World War II have long recognized that access to oil and energy supplies largely determined the course of that conflict. For example, America’s oil embargo against Japan helped trigger not only the attack on Pearl Harbor but also Japan’s expansion of its Asian empire into oil-rich Burma and Indonesia. Adolf Hitler’s invasion of the Soviet Union took a decisive and final turn when he diverted his panzer forces away from Moscow.
toward the oil-rich Caucuses and the approaches to Stalingrad. Lack of adequate fuel ground Hitler’s 1944 Ardennes offensive to a halt, and the Allied bombing campaign against Germany’s synthetic fuel facilities in 1944–45 likewise helped trigger the collapse of the entire Nazi war machine.¹

At the same time, America’s ability to unleash its domestic oil production and guarantee the delivery of oil for its armed forces and its allies, including the Soviet Union, was a key determinant of victory. Like the wartime production “miracle” as a whole, the US oil supply was in fact no miracle at all. It was instead the result of a strategy that ultimately guaranteed Allied success in both Europe and the Pacific—one that combined private sector means (the American petroleum industry) with government-directed ends (the provision of the oil needed to sustain a war on two fronts).

That success came even as the larger global energy map was changing, with the rising importance of Middle Eastern oil and the diminishing role of Great Britain, which had been the major geopolitical partner of the United States in controlling overseas sources of petroleum.

Indeed, the World War II energy strategy forged by the Roosevelt administration was a clear demonstration of the same principles that enabled the mobilization of industry for war materiel: the combination of technological innovation and public-private sector coordination, guided by a clear sense of what had to be achieved and when.² The success of that strategy offers powerful lessons for energy policy today.

The US Energy Sector before the War
The energy strategy’s success is all the more remarkable given that a decade earlier, in the summer of 1931, the oil market in the United States was in a state of extended chaos.

New discoveries and production from oil fields in East Texas had disrupted the American oil industry’s precarious balance between demand and supply, achieved in the 1920s, when California was the number-one oil-producing state followed by Texas and Oklahoma. But the flood of crude oil from the vast East Texas reservoir quickly pushed oil prices down from roughly one dollar a barrel in 1930 to 15 cents a barrel a year later. In some places the price was as low as 6 cents a barrel.

The Texas Railroad Commission, tasked by state law to prevent “physical waste” in production, undertook the challenge of trying to restore some stability to the market as a whole. The solution was prorationing (i.e., cutting back everyone’s production so that supply could come back down to meet demand).

The federal courts blocked the commission’s efforts, however, and the situation grew steadily worse. By August 1931, prices had fallen to just 13 cents a barrel, far below production costs. In Europe, importing Texas crude was even cheaper than buying oil from nearby Russia. Some oil workers threatened physical sabotage to shut off the unwelcome gusher of excess oil flowing out of the East Texas fields that could have forced independent producers into bankruptcy.

To the rescue came the new administration of Franklin D. Roosevelt, specifically Interior Secretary Harold Ickes.

The Oil Code, under the National Industrial Recovery Act (NIRA), set monthly quotas for each oil-producing state, and not only for Texas. It was left up to the states to decide how to meet their quota; they could choose the fields where production would be tapered off—and the companies that would increase production. But as interior secretary, Ickes had the authority to ensure that the producers followed the Oil Code according to the dictates of NIRA.

Ickes was very much a figure on the Progressive Left and an ardent New Dealer. But as a Progressive, he also understood how vital a strong and stable supply was to the US economy. “There is no doubt about our absolute and complete depen-
dependence upon oil. We have passed from the stone age, to bronze, to iron, to the industrial age, and now to an age of oil. Without oil, American civilization as we know it could not exist.3

Even after the Supreme Court ruled that the NIRA was unconstitutional, the prorationing system survived and even thrived. States and producers realized that it was in their interest to have stability in the market, with a goal of holding the price at one dollar a barrel. As for excess production in the oil fields, the federal government could leverage it into the equivalent of a strategic reserve when necessary—which by 1940–41 turned out to be vital for US strategic plans.

In short, the federal government’s Oil Code, which from a doctrinaire perspective represented direct interference in the free market in oil, became a cornerstone of secure oil supplies when the war came. Indeed, without the prorationing system, which survived the dismantling of NIRA by the Supreme Court, America could not have sustained its effort in World War II.

Prelude to War: Helping Britain Fight Hitler
A little less than a year after war broke out in Europe in 1939, the Roosevelt administration policy decided in the summer of 1940 that the best way to keep America out of the war was to keep Britain in the war as the bastion of Western democracy fighting its mortal enemy, Nazi Germany. This policy meant that US industry would supply Britain not only with planes, tanks, and other war materiel but also with oil. American oil, in fact, soon became crucial for keeping what Roosevelt deemed the “arsenal of democracy” afloat at home, as well.

Great Britain depended on oil shipped by sea and felt the energy pinch almost from the war’s beginning due to German U-boats sinking merchant ships. The government’s immediate response was to nationalize its domestic producers, including British Petroleum. But since Britain had virtually no domestic sources of supply, and since the war seriously hampered its access to its usual overseas supplies from Asia and the Middle East, nationalization and rationing were never going to be an adequate solution. Britain had to turn to the US for help.

By the winter of 1940, British supplies had begun to run out. But the crucial break for Britain came in March 1941 with the US Lend-Lease Act, which guaranteed US oil supplies for the beleaguered island. The act shifted a total of 50 US oil tankers from their normal activities of delivering oil to America’s East Coast to transatlantic duty. In the summer of 1941, the US extended that same Lend-Lease program to the Soviet Union, which included 2.7 million tons of oil products.4

Foundations for a New Energy Strategy
Shortly after the signing of the Lend-Lease agreement, Washington took a decisive step toward mobilizing its own national oil policy for wartime conditions by creating the Office of Petroleum Coordinator for National Defense (OPC) at the end of May 1941.

America was still officially a neutral party and not yet committed to war. But the White House established OPC to address the US need for a steady and reliable domestic supply of oil in the face of what would be a steep increase in demand from Great Britain. The office was also supposed to keep prices from ballooning, both for civilians and the military, in response to the demand pressure.

At this point, the administration’s overall oil strategy with regard to the war in Europe had two immediate goals. The first and most urgent goal was keeping Britain in the war by supplying the island nation with the oil it desperately needed. The second was building oil tankers faster than the Germans could sink them. Therefore, part of the OPC’s responsibility was spurring America’s principal shipyards to accelerate tanker construction.

According to the office’s official history, the OPC and its successor, the Petroleum Administration for War (PAW), operated under three guiding principles:
1. All government activities and responsibilities relating to oil for war would be brought together and centralized in one effective agency.

2. The agency would be organized along functional lines paralleling functions of the petroleum industry itself, [and] would be staffed by men possessing practical experience in oil.

3. Industry committee organization[s] would be created to advise and assist Government and the full resources of the industry would thus be enlisted on a cooperative basis; at the same time, orders and regulations would be kept at a minimum, and the greatest possible reliance placed upon voluntary compliance and support. [Emphasis is mine].5

In short, the government decided that the best way to achieve its national energy strategy was not only to enlist the support of the private energy industry and recruit its most experienced leaders and executives, but also to mimic as much as possible the structure and functions of the industry itself.

The coming of war to America would show this to be a highly successful approach.

Creation of Petroleum Administration for War

After Japan dropped bombs on Pearl Harbor on December 7, 1941, and Hitler declared war against the US days later, there was no longer any ambiguity about America’s status as a combatant allied with Great Britain. There was also no doubt that America’s economy, including its energy sector, now had to be on a full-time war footing.

The US now had to devise its own wartime emergency strategy—one that would ensure sufficient quantities of oil in the face of inevitable rising prices and fast-dwindling supply, and that would not only support its military priorities but also keep the civilian economy going.

Hence, the federal government created the Petroleum Administration for War on December 2, 1942, after suspending the OPC and its work with the War Production Board. The OPC possessed no power to issue orders based on statutory war powers. The PAW was now given that authority while it continued to focus on three types of orders—designated M, L, and P—regarding the national energy supply.

The M, or conservation orders, aimed at controlling the use of materials deemed to be in short supply, including materials for the construction of new plants or, later, pipelines. L orders affected the distribution and consumption of petroleum products. P orders gave certain operators preference with regard to allocated or prioritized materials.6

Still, the overall strategy was to make sure that all policies regarding oil and energy production and consumption were consistent with US war aims. This included making certain that the Allies could access US domestic sources of supply in order to prosecute the war.

The man who would head the PAW as its chief administrator was the same man who saved the American petroleum industry before the war: former Interior Secretary Harold Ickes. By this time, Ickes had thrown aside all his New Deal assumptions. Under the pressure of war, he knew that his role was to develop a close and cooperative relationship with what today we would call Big Oil. That relationship would allow the pursuit of two goals: increasing US supplies of oil and facilitating the flow of that oil where it was crucially needed—above all to the US armed forces fighting across two oceans.

The Logistics of Oil Supply

The biggest logistical problem was getting the oil where it was needed. The major sources of American domestic production and refining of oil were in the middle of the country or on the West Coast in California. But the oil needed to be shipped to ports on the East Coast in order to move it into the war zone (i.e., Europe).
In addition, the German U-boat menace meant that relying on sea-based routes for moving oil supplies around the country, as during peacetime, no longer worked as a primary solution to the logistic problem. The other traditional means of moving supply (i.e., on rail cars) posed two difficulties. First, increasing the stock of tanker cars would place heavy demands on America’s existing transportation network. Second, oil shipments would have to share the rail network with other war materiel being shipped by the same means.

Later, a third strategy for moving oil supplies took shape in the spring of 1942 (see below). Overall, however, the PAW’s responsibility—and biggest achievement—was to create a nationwide network for moving oil supplies where they were most needed.

The Wartime Logistical System
For this operation to succeed, the federal government had to merge the programming of oil supplies to meet the demand for oil products under wartime conditions, including gasoline, with the mobilization of the entire oil industry. The PAW’s official history described the organization’s primary responsibility as programming “to supply the proper quantities of petroleum products in the proper locations at the proper time, and to do this by utilizing all facilities and personnel with maximum efficiency so as to minimize the requirements for materials and manpower,” especially when other industries, including the US armed services, were laying significant claims to both.7

None of this would have been possible without close collaboration with the oil industry—or without the rail, shipbuilding, or construction industries—not to mention the armed forces and other allies, particularly Great Britain.

Over the course of the next year, the Supply Division of PAW built and maintained a logistical system that relied on a triad of transportation and distribution networks that included sea routes, rail lines, and underground pipelines.

By 1943, the PAW had created a free-flowing logistical system that moved crude oil from Southwest producers to refiners, and then by ship, rail, and eventually pipeline to the Northeast, where oil tankers moving in convoy carried the refined product across the Atlantic. Coordination with the US Maritime Commission, the federal agency in charge of all freighter construction, was a crucial part of this effort because of its role in the production of the T-2 tanker, the so-called national defense tanker. Between 1940 and 1945, 533 were built—forming an indispensable energy shuttle service for British and American forces operating abroad.8

Then vital supplies of oil were dispersed to the UK and US forces, as well as to Russian tank cars in Murmansk and Archangel, from convoys reaching up toward the Arctic Circle.9

This entire system depended on ever-growing domestic production, much of it made possible by the earlier prorationing system. The numbers were staggering: US domestic production rose from 3.7 million barrels per day in 1940 to 4.7 million barrels per day in 1945.10

Overall, the Allies used an estimated 7 billion barrels of oil from December 1941 to August 1945. Six billion barrels of that supply came from the US.

In the European theater, the UK took on the responsibility of supplying both US forces and its own forces. In the Pacific, the US took on the primary responsibility of keeping Allied forces supplied with fuel. This was necessary because the Japanese controlled all the legacy sources of oil in the region, including Burma and Indonesia. The United States took on the burden of moving a substantial portion of its own domestic production across the Pacific to Australia and other bases in the theater.11 In fact, it is estimated that fully one-half of all the supplies shipped to maintain the fighting man both in the Pacific and the Atlantic consisted of petroleum products.12

As early as 1941, however, it became clear that the key to substantially increasing the flow of oil from upstream sources to
downstream refining and production was moving to pipeline technology.

Going Underground: Big Inch and Little Big Inch

From the moment the first German U-boats entered the Atlantic and made their way westward to cut off British supplies from America, it was understood that relying on seaborne routes to maintain America's domestic as well as foreign oil supplies was conceding a major strategic vulnerability. In fact, before the war, 95 percent of all oil and gasoline supplied to the East Coast came by tanker.13 The building of two major pipelines—covering more than 2,400 miles with dozens of pumping stations—to bring supplies eastward where they could fill tankers for overseas shipment, became one of the primary achievements of the PAW and of the entire wartime energy strategy.14 Nicknamed Big Inch and Little Big Inch, the two lines were the biggest construction project in the history of the petroleum industry—and

Map 1. Big Inch and Little Big Inch

one of the most prodigious of the entire Second World War. In fact, they were only the largest components of a massive wartime pipeline construction effort of 35 separate projects, which added more than 11,000 miles of new trunk and gathering lines to already existing systems, as well as reversing or redirecting another 6,000 miles of pipelines. The result was 17,684 miles of new and redirected oil pipelines at a staggering cost of $330 million. The government financed $154 million, and the oil industry paid for the rest—the majority of the overall cost.

Yet the entire network, even the government-financed lines, was fully built, operated, and maintained by the oil industry.\(^{15}\)

Nevertheless, the stars of the pipeline story were Big Inch and Little Big Inch.

They were the twin brainchildren of Harold Ickes himself. As early as 1940, he saw that German submarines would make shipping oil to the Northeastern US by tanker ships impossible when, not if, war came to America. In 1941, at Ickes’s urging, oil industry executives began planning two new major pipelines. The biggest, some 24 inches in diameter, which earned it the nickname Big Inch, would transport crude oil. The second, 20 inches in diameter and dubbed Little Big Inch, would move refined products from refiners in the Southeast to the Northeast—including products that would be shipped to Great Britain.

Initial plans were laid in May 1941, and industry executives drew up a preliminary design in September. The final route was not decided until March 1942, when war had already broken out and the U-boat attacks on oil tankers were reaching a crescendo. The so-called Tulsa Plan, after the city where more than 100 leading pipeline engineers met to hammer out a final proposal, became the backbone of the entire pipeline project, from choosing the final route to planning the construction of the line and pumping stations—35 in all. The lines would pass through 10 states and connect Baytown, Texas, on the Gulf of Mexico, with Linden, New Jersey—the network’s last terminal.

The Tulsa Plan received final approval in May, and in June 1942 the War Production Board authorized the release of steel necessary for building the new lines.\(^{16}\)

The company created to build and operate Big Inch and Little Big Inch, the War Emergency Pipelines Company, consisted of the biggest names in the domestic oil industry—including Atlantic Pipe Line, Cities Service Company, Gulf, Shell, Sinclair, Socony-Vacuum, Standard Oil of New Jersey, and Texaco.\(^{17}\)

The official history of PAW notes this project’s importance and difficulty:

The building of Big Inch and Little Big Inch should go down in the history of World War II as a saga of industrial achievement unexcelled by any other of the remarkable wartime accomplishments of American industry. . . . Swamps, rivers, floods, mountains, rocks, snow, shortage of manpower, the agonizing delays in obtaining valves and pumping and power equipment—all these and scores of other difficulties were surmounted in stride.\(^{18}\)

The formal construction agreement came together on June 26, 1942, and was ratified by the PAW on July 14. The first pipe was laid on August 3. By the end of the year, oil started flowing into Big Inch.

By early February 1943—just as American forces finally secured the island of Guadalcanal in the Pacific—the first leg of Big Inch was finished, extending from Longview, Texas, to Norris City, Illinois.\(^{19}\) In August 1943—the same month the US Ninth Air Force conducted its massive raid on German oil fields in Ploesti, Romania—the first oil reached Philadelphia; less than a week later, the first supply reached Linden, New Jersey. In October, Big Inch was complete and operating at full capacity; that December the final welds for Little Big Inch were completed. In March 1944, the oil stream began flowing regularly to Linden.\(^{20}\)
Three hundred and fifty days after the first length of the pipeline was laid, Big Inch, including extension lines, was finished and operational.

Overall, Big Inch alone wound up having to cross some 33 rivers, 200 creeks and lakes, 289 sets of railroad tracks, and 626 highway intersections. At its height, the pipeline was moving 300,000 barrels of crude oil every day across the continental United States.

Of course, keeping the flow at maximum capacity also required cooperation with drillers, refiners, and oil transportation and production companies to make sure supplies were able to reach the strategic points within the pipeline system safely and reliably. Through the entire project, however, Ickes and his deputy administrator, Ralph Davies, adhered to the principle that had animated PAW at its inception: a “determination to interfere in no unnecessary way with the normal relationships in the industry, and so to administer the oil program that the war’s end would find each competitive unit as strong relatively as it was before the war.”

In short, the goal was to make sure that the war effort solidified and extended America’s leadership in the oil and energy business both during and after the war.

**Technological Innovation: Aviation Fuel**

If pipeline construction represented the national energy strategy’s major achievement in infrastructure, then the production of aviation fuel represented the same in technological innovation.

From the start of the war, producing sufficient quantities of fuel for military aviation became a top priority—not merely for the PAW but for the entire wartime energy effort. The fuel of choice was 100-octane gasoline, which had markedly improved the performance of aircraft compared to lesser octane versions. Planes using 100-octane fuel (first developed in the early and mid-1930s by Shell Oil Company) flew faster, climbed faster and higher, and enjoyed a longer range and better maneuverability than planes flying on traditional 75- or 87-octane fuel. In fact, some argued that it was 100-octane gasoline that enabled Britain’s Spitfire fighters to outperform and outfight German Me 109s running on 87-octane fuel.

The ramp-up for war readiness, including the effort to supply both Britain’s Royal Air Force and the US Army Air Corps with the best possible fuels, vastly increased the demand for 100-octane fuel. This meant the United States had to step into the breach. At the first meeting with industry representatives in June 1941, PAW brought up the 100-octane issue. The problem was twofold. First, there was almost no prewar civilian demand for the high-performance fuel, which meant that production facilities would have to be created almost from scratch. Second, there was the risk that once dozens of these multimillion-dollar plants were built across the country, demand for their output after the war would dwindle. Oil refiners could find themselves stuck with refineries ready to make a grade of gasoline no one wanted to buy any longer.

The key turned out to be technological innovation—specifically catalytic cracking, which allowed cheaper and faster production of aviation fuel. This process, developed by Sun Oil in the 1930s, was now the mainstay of efforts to produce aviation gasoline. While scores of cracking plants were built across America, the entire complex of aviation fuel plants was brought together as a single industrial combine, which was also constantly introducing new innovations (such as tetraethyl lead to reduce engine knock) as production surged.

The result was that by 1944, American aviation fuel production was able to meet 90 percent of total Allied needs. Yet demand continued to soar: by 1945, demand was seven times higher than had been projected at the start of the war. Production increased to more than half a million barrels a day, enough to supply a freight train of oil tanker cars 31 miles long. Not only had quantity increased thirteenfold from the start of the war, but the
quality had improved as well. It is unlikely that the US and Great Britain could have sustained their massive strategic bombing campaigns in 1944–45, both in Europe and Japan, without the crash campaign to produce 100-octane aviation fuel.

Nor did the innovation stop there. The use of petroleum for synthetic rubber plants, especially butadiene, gave rise to a major wartime industry. At first the government proposed that each plant have a 10,000 ton per year capacity. The enthusiastic oil companies geared up instead to build plants with a 50,000–100,000 ton capacity.²⁹ By the war’s end, American butadiene plants were producing a 75-pound bale of synthetic rubber every nine seconds—the equivalent of a year’s worth of collection from a rubber tree.³⁰

America’s Energy Strategy in World War II: Evaluating Success

By any measure of wartime production efforts, the national energy strategy embodied in the Petroleum Administration for War was a major success. That roughly 85 percent of the total Allied consumption of oil and gasoline was supplied from US domestic sources demonstrates the scale of that achievement. A recent article in War on the Rocks, in fact, hailed the PAW as a possible model for a contemporary national energy strategy. As such, it summarized the key features of the PAW model:

The key to the agency’s success was the deep level of participation and buy-in from domestic producers. This commitment grew out of an organizational structure built around industry committees staffed by thousands of executives and technical experts. These committees, which worked on a voluntary basis and were organized by functional area, performed the engineering and logistical work required to produce, refine, and transport petroleum products for military and domestic use. While the Petroleum Administration for War provided strategic direction and oversight, these committees not only executed plans, but also served as a valuable sounding board to shape more effective government policy. Assessing the results in 1946, Wharton professor William Newman concluded the agency provided “unusually effective” private-public cooperation in an era where joint action between industry and government was common, but not always value-adding.³¹

It is useful to add a broader perspective to this microanalysis of PAW’s success—that is, to consider how the success of the wartime energy policy reflected the same set of principles regarding public-private partnership that animated the entire World War II production effort.³²

Those principles include the following:

First, know your target and why you are doing what you are doing. Use strategic inputs to define your mission and align capability with capacity. In the case of the national energy strategy during World War II, this initially meant keeping Great Britain supplied with the oil it needed to sustain its war effort. That effort soon expanded to providing the same capacity for US military forces.

Second, set your metrics. Establish the quantity needed and determine the amount of time needed to reach the production goals, while also taking supply chain management into account. PAW addressed this principle very successfully by having clear projections of how much fuel warfighters would need and what kinds (e.g., 100-octane), while also grappling with supply chain issues (such as pipelines versus seaborne routes) from the start of the agency’s existence.

Third, seek out the best to plan and produce. Business and industry input is essential for shedding light on how to build, create, or produce products to meet the requirements of principles one and two. This is the principle that PAW was designed to execute from the start.
Fourth, stay focused on results, not process. The demands of bureaucracy, both government and corporate, need to yield to the imperatives of productivity. PAW illustrated this principle with its early “quickie” program for producing aviation fuel, regardless of the cost, before the national network of production facilities was built. Entrepreneurs, like warfighters, are focused on making things happen; bureaucrats and government on making sure things do not happen. Both should be used to their optimal advantage.

Fifth, build in room for risk and resiliency. Failure in the big things as well as the small is always a possibility, at least temporarily. PAW administrators were always aware that German U-boat activity could interrupt its plans for keeping allies and military forces supplied. Meanwhile, the PAW anticipated and dealt with serial problems with the Little Big Inch pipeline and subsequent delays.

In the case of aviation fuel and rubber, the government did not anticipate acute shortages in its original planning. But Washington responded with technological innovation and redirected resources, instead of triggering a breakdown of the system. Risk and failure can more than meet their match in innovation and reimagining the problem.

Finally, keep all noses moving in the same direction. A clear sense of mission and purpose came with the nation’s involvement in the war. As the official history puts it, “Progress in gaining acceptance of the new oil agency was not smooth or easy. . . . At first there was resistance, and even criticism, in various quarters.” That resistance stemmed from the fact that “a close working relationship between Government and industry was a relatively novel and untried procedure.”33 But once industry executives understood that government was not there to supplant their authority or substitute bureaucrats’ expertise for theirs (on the contrary, a national energy strategy in a time of crisis would have to rely on that authority and expertise), then PAW’s role became clear—its goal was not only winning the war but also shaping the future of the US as a global leader in energy production.

In the end, however, the foundation of PAW’s success in World War II was a domestic energy industry second to none in the world—an industry capable of meeting both surging demand at home and critical demand from allies in a time of war and crisis. It proved that an effective national energy policy aimed at preserving and even extending global dominance could also be the cornerstone of an effective national security policy.

Unfortunately, the US forgot that principle in the quarter century after the war. Part of the problem was complacency about where America really stood in the global oil market and the natural gas market, which grew in importance in the post-war world. Having always been the dominant player, politicians and the public—and even the industry—could easily assume that American dominance would continue indefinitely.

Furthermore, the US failed to respond quickly to the rapidly changing geopolitics of oil as the Middle East increasingly became a major production zone—even though this shift began before World War II was over. America was much less interested in Middle East politics than European powers like Britain, France, and Russia had been, so the changing economic and security environment in the 1960s caught American policymakers by surprise. Leveraging US military and economic power in the region would become more difficult as the balance of energy power shifted away from America and toward the Middle East.

Finally, policymakers failed to appreciate how energy security was a cornerstone of national security, so they did not take the necessary steps to ensure that US energy remained dominant or that the country continued to be energy independent. Instead, new environmental concerns made expanding America’s energy industry seem undesirable or dangerous. Then as now, an industry founded on the development of hydrocarbon re-
sources came to be seen as a threat to the environment. Meanwhile, the development of those same resources in other parts of the world, particularly the Middle East, was seen as only fair and just—or ignored altogether.

Taken together, the stage was set for a series of setbacks for the US national energy outlook that would be the hallmark of the 1970s, symbolized by lines of cars trying to buy gasoline—often in vain. The situation became so dire that at one point the government seriously considered using military force to seize oil fields in Saudi Arabia.

Never before had the cost of ignoring energy’s importance to national security—or the failure of government policy to anticipate a sea change in the world’s energy markets—seemed more extreme.
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“We must face up to the stark fact that we are heading toward the most acute shortages of energy since the Second World War.”

— Richard Nixon, 1973

“They will have to realize that the era of their terrific progress and even more terrific income and wealth based on cheap oil is finished.”

— Shah Mohammad Reza Pahlavi, 1974

The Rise of the Middle East as Strategic Center of Global Energy Production

The dismal energy picture America faced in the 1970s had been preceded by a buoyant global economic and energy outlook of the 1950s and 1960s. The postwar world saw a massive economic boom, led by the United States—and fueled by cheap energy. Between 1951 and 1972, the price of oil relative to the price of manufactured goods sank consistently. Between 1963 and 1969, oil prices fell in absolute terms as well. The three biggest sectors of the American and broader Western economic boom (in 1968, US industrial production made up 34 percent

Photo Caption: A sign at a gas station during the gasoline shortage and energy crisis in 1974. (Photo by Owen Franken/Corbis via Getty Images)

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HOW AMERICA LOST ITS ENERGY ADVANTAGE
of the global total) were all petro-intensive: automobiles, chemicals, and electricity.

But as the US economy devoured more and more petroleum products, low prices kept its energy companies from expanding the domestic supply. Instead, it became cheaper to import, especially from the new center of gravity of cheap oil, the Middle East.

In the 1960s, America found itself at that inflection point in terms of the cost of domestic energy production versus the lower cost of importing oil from abroad. In 1960, America imported 10 percent of its oil consumption; by 1968, the peak year of the country’s industrial output, the number had grown to 28 percent. By 1973, on the eve of the crisis, total oil imports reached 34 percent (see figure 1).

Relying on imports instead of domestic production had consequences for America’s economy and geopolitical standing. By surrendering its position as an energy exporter to save money and become a net importer, the US also lost important strategic leverage—just when the strategic scene was shifting dramatically to the Middle East.

Ironically, America’s dominance of the world’s energy output during World War II set the stage for this shift. During the conflict, the United States came to recognize that Saudi Arabia would be a useful ally for supplying oil for the struggle against the Axis, and Washington extended its Lend-Lease programs to the Saudi kingdom in February 1943. Underlying these actions, however, was a growing fear that domestic sources of oil were drying up. As early as 1943, the PAW was warning that “the bonanza days of oil discovery, for the most part, belong to history”—at least in the United States.35

Saudi Arabia and its neighbor Kuwait, on the other hand, offered abundant sources of easily accessible and cheap oil that would take up the production slack, as it were, while sustai-
ing global economic growth after the war. The challenge for the United States was gaining a foothold in the region, where Great Britain was the dominant power. If the United States was going to rely on the Arabian Peninsula as a source of oil to support and complement its own domestic production, it would need a more robust presence there.

Only two American companies, Standard Oil Company of California (SoCal) and Texaco, were involved in oil production in Saudi Arabia. Ickes stepped in with an idea: Why not create a government-owned oil company to operate in Saudi Arabia, which would buy up SoCal and Texaco’s business and meld them into the American-Arabian Oil Company, an entirely new corporation? But the rest of the American oil industry blocked the deal, fearing it would give the federal government a virtual monopoly in the global energy market at the private industry’s expense.

In the end, American companies did form a partnership with government—in this case, the Saudi government. In 1944, the Arabian American Oil Company was formed; the order of names reflects the Americans’ desire to placate their foreign partner. The future flow of oil from Saudi Arabia was guaranteed, but at a significant cost: the United States government was refusing to become a direct strategic geopolitical stakeholder in what was about to become the world’s most important source of energy. And once the British left the region, there was no Western power to fill the vacuum. For better or worse, what happened to oil supplies and prices was left in the hands of the power holders in the region, not the consumers who relied upon a dependable—and consistently inexpensive—flow of energy from the region.

America’s Decline as a Great (Energy) Power
America’s decline as an energy exporter in the 1960s and its growing dependence on imports to sustain economic growth was paralleled by its relative decline as a global power in the 1970s, especially vis-à-vis the Soviet Union.

Much of this decline was due to the Vietnam War, which not only became a major drain on military and economic resources that might have been employed elsewhere, but also caused a major loss of international prestige, especially where that prestige counted most: other Western and Westernized democracies.

The war was also a source of domestic strife and political, cultural, and social turmoil that weakened political institutions and made decisive action on the world stage increasingly difficult or even controversial. In the post-Watergate years, status rather than leadership seemed the rule in Washington. As French statesman Couve de Murville explained in a speech in the French National Assembly in May 1976, “The credibility of the United States throughout the world has suffered a severe blow. Above all, the American people’s loss of confidence in their leaders . . . has lead to a sort of paralysis of power.”

This relative decline was not the direct result of America’s loss of energy independence or soaring oil prices. But the impact of high oil prices and dependence on OPEC for this essential commodity served as the backdrop against which the failure in Vietnam and the drama of Watergate played out.

At the same time, in the 1960s and 1970s the Soviet Union experienced a near tripling of its domestic oil production, from 10.25 million barrels per day (bpd) in 1960 to 27.58 million bpd in 1980. By 1979, the Soviet Union had become the world’s biggest oil producer—ironically, during the same period Moscow’s geopolitical influence in the Middle East waned, and the United States’ grew. The USSR would become one of the key beneficiaries of the massive oil price rise after 1973 (see below).

The same years saw the Soviet Union position itself as the champion of revolutionary movements across the Third World, from Southeast Asia (including Vietnam) and Africa to America’s backyard in Latin America. In the post-Vietnam era, the US seemed weaker not only economically but also geopolitically,
and the USSR seemed to loom as the decisive power shaping the world’s future.

By 1975, Soviet leaders became convinced that they enjoyed a decisive strategic advantage over the US and the free world. Officials spoke of the “correlation of forces” around the world, which seemed to have shifted in the Russians’ favor more or less permanently. Others perceived the shift, as well. As one Somali official told an American journalist in the late 1970s, “We have learned there is only one superpower,” namely the Soviet Union.37

Again, Soviet gains in geopolitical power and influence were not the direct result of its growing ascendancy in oil production or domestic energy security. (In fact, Central Intelligence Agency analysts and others later grossly overestimated the Soviet economy’s underlying strength,38 in spite of it becoming the world’s leading oil producer.) Nonetheless, Soviet leaders undoubtedly had confidence about the future at least in part because their country had achieved not just energy independence but also energy dominance in the 1970s. At the same time, the US was steadily losing that same energy security.

Limits to Growth: The Loss of Confidence in America’s Economic (and Energy) Future

The rise of the environmental movement contributed to these conditions as well. Books like Rachel Carson’s Silent Spring (1962) and Ralph Nader’s Unsafe at Any Speed (1965) made it appear that American capitalism was itself dangerous and toxic, especially the nation’s oil companies whose output was seen as contributing to environmental degradation and pollution. The attempt to build a pipeline to access newly discovered oil fields in Alaska—a project that during World War II or the 1950s would have been part of a national effort—became highly controversial and was subject to massive delays, which only made the United States still more dependent on imported products.

Another factor that weakened American resolve, and indeed that of the West as a whole, was the so-called North-South debate about the global economic balance of power. The assumption was that the industrial nations, (i.e., the North), had enriched themselves at the expense of the raw resource–rich but relatively poor South (i.e., Latin America, Africa, Southeast Asia, and the oil-rich Middle East). Policymakers in the West, including in the United States, developed a bad conscience about their supposedly ill-gained prosperity. All sorts of schemes were entertained at the United Nations, the Club of Rome, and elsewhere to find ways to redress the balance, including limiting economic growth in the name of both social justice and environmental protection.39

A leading critic, Robert W. Tucker, described the impact of the North-South debate this way:

The origins of the new political sensibility can be traced back to the middle to late 1960s. It is in this period that intellectual elites in the West became increasingly pre-occupied, in a way they had not been before, with the issue of international inequalities of income and wealth (it is in the same period that they became increasingly pre-occupied with domestic inequalities of income and wealth). And it is in this period that the conviction develops of a duty on the part of the rich nations to reduce such inequalities.40

At first, the way to reduce those inequalities was to promote rapid economic growth and development in the so-called underdeveloped world. The optimistic forecasts, however, failed to materialize—to a large extent due to the steady rise in oil prices, which reached a crescendo in 1973 and again in 1978.41 That left the option of reducing the West’s economic growth rate and redistributing the remaining wealth. These measures were the hallmark of strident calls for redressing the global economic balance through sacrifice that the US and the rest of the West would make for their unjustifiable wealth (calls that the Soviet Union encouraged without offering to make any similar sacrifice).
Limits on growth, it was understood, might be imposed by the limits of oil itself. A new term entered the vocabulary: “peak oil,” meaning the period when the world’s oil output would reach a maximum (in the United States it had in fact peaked in 1970 at 11.3 million barrels a day). The term implied that the days of relatively easy economic expansion were coming to an end. Peak oil also meant that those countries that controlled the world’s (finite) oil production would also control the world.

American diplomat James Placke realized that the relevant countries were in the Middle East. “Control of the flow of resources has been of strategic concern throughout history,” he warned in a State Department dispatch in November 1970. “Asserting control over a vital source of energy would permit the Middle Eastern states to regain the power position vis-à-vis the West, which this area lost long ago,” Placke wrote.

Energy economics, in other words, had come to be seen as a zero-sum game, one that the West was destined to lose. The result was a loss of self-confidence, a loss of belief in the underlying strength of the Western economies and of the West generally, and a growing pessimism about the fate of the environment and the planet under normal economic conditions. All these trends weakened America’s position as an energy producer and consumer at a time when the Middle East was about to take a sharply anti-Western, anti-American turn—and the global energy outlook would become more dismal than at any time in modern history.

One scholar, E. F. Schumacher, foresaw the day when oil, the lifeblood of the global economy, would run completely dry. (He pushed for relying on coal instead.) His approach to the economic future of the West was epitomized by the title of one of his essays: “The Party Is Over.”

For the world’s major oil producers, however, the party was just about to start.

OPEC and the Rise of Cartel Economics

Not everyone believed that the West’s economic growth was destroying the planet, but one crucial figure who did believe it—or at least professed to—was Mohammad Reza Pahlavi, the shah of Iran. He sought out his fellow Middle Eastern rulers of major oil-producing countries to convince them that the ecological damage being done by Western capitalism was due to the extraction and use of cheap energy, particularly oil. The solution was to make oil more expensive, which would also have the benefit of enriching the oil-producing nations—or at least their rulers.

Fortunately for the shah, a vehicle existed that could both persuade his oil-producing colleagues that he was right and implement a steady price rise in oil. This was OPEC, created in 1960. Its goal at the time was to protect the price of oil from further decline by controlling the exports of its members, including Iran, Iraq, Kuwait, and Saudi Arabia. But 12 years later, OPEC became the vehicle for raising prices, turning once-powerful Western oil companies into unwilling accomplices for enriching their host governments.

The trail was blazed by OPEC member Libya when dictator Moammar Gaddafi negotiated a series of price hikes with oil companies in 1970 and 1971. In 1969, when Gaddafi seized power, Libyan oil had been the cheapest in the world. Now, Gaddafi’s strategy—first bully oil companies into paying more for their share of the output, then nationalize the companies outright—heralded the approach that more and more oil-producing countries would take. Instead of being dependent on the West’s insatiable appetite for oil for wealth and power, the rulers of oil-producing nations would make the West dependent on them.

The turning point came at a February 1971 OPEC meeting, when the organization endorsed Tehran’s plan to cut the companies’ share of additional profits from 50 percent to 45 percent, and raised the price of oil by 40 cents a barrel. It also
pledged to make no further increases for five years, but no one familiar with the key members of the cartel would have trusted this promise.

As the chairman of Shell put it, "The buyer’s market in oil is over." The oil companies went along, especially the American firms who had become convinced that no rich oil reserves remained in the US (the Alaska discoveries being a rare exception) and that the US would need to import oil to meet ever-increasing demand. Besides, their own price point was protected by the Mandatory Oil Import Quota Program, initiated under President Dwight D. Eisenhower, which dictated that American oil imports could not exceed 9 percent of total consumption. The purpose of the Ike-era quotas was to boost domestic exploration and production, which they did. They also guaranteed that prices were higher in the US than elsewhere.

In an era when gas prices were steadily falling, this was good news for producers. It also did not create any particular hardship for American consumers. With the new price hikes following the Tehran agreement, however, the national outlook changed. An America that was already facing a tough economic future with rising inflation (5.84% in 1970), a falling dollar, and declining economic growth (minus 0.28% that same year), was now suddenly confronting the possibility that demand for gas would seriously outstrip supply because of limited imports.

In April 1973, after considerable debate, the Nixon administration lifted the quota system. Meanwhile, price controls imposed on gas were supposed to ensure that imports brought in fresh supplies of oil, while prices remained low. The threat of a summer of gas shortages, predicted by energy experts, faded.

In fact, far worse was to come.

**Shock: OPEC and the Arab Oil Embargo**

As the 1970s began, the stage was being set—geopolitically as well as economically—for an energy crisis of global proportions.

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**Figure 2. Price of a Barrel of Crude Oil**

Constant 2016 Dollars

<table>
<thead>
<tr>
<th>Year</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>$120</td>
</tr>
<tr>
<td>1971</td>
<td>$100</td>
</tr>
<tr>
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<td>$80</td>
</tr>
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<tr>
<td>1974</td>
<td>$40</td>
</tr>
<tr>
<td>1975</td>
<td>$20</td>
</tr>
</tbody>
</table>

Americans were about to learn how much energy security, (i.e., access to inexpensive, abundant oil and natural gas) was a matter of national security.

As Daniel Yergin writes in The Prize: “By 1973, oil had become the lifeblood of the world’s industrial economies, and it was being pumped and circulated with very little to spare. Never before in the entire postwar period had the supply-demand equation been so tight . . . It was a situation in which any additional pressure could precipitate a crisis—in this case, one of global proportions.”

Through a series of unfavorable circumstances and bad policy decisions, the United States—and indeed the industrial world as a whole—had relinquished control over that lifeblood to countries situated in the most volatile part of the world. And in October 1973, that world exploded into war.

The immediate trigger was Egyptian President Anwar Sadat’s decision to ally with Syria and launch an attack on Israel in hopes of wiping away the humiliation of defeat in the 1967 Six-Day War. Though Egypt was not an oil-producing nation, Syria was. When US military aid to Israel prevented the destruction of the Jewish State, Syria and its oil-rich Arab neighbors struck out at the US and the West with the one weapon they had at hand: the oil weapon.

On October 16, 1973, Syria and other Arab oil-producing countries cut oil production, and with the cooperation of non-Arab members of OPEC raised the price per barrel by 70 percent. On December 28, they jacked up the price again, by 128 percent. The barrel of oil that cost $1.80 in 1970 now cost $11.65. The result was, as Henry Kissinger later put it, “one of the pivotal events in the history of [the twentieth] century.”

The most severe impact, ironically, was not on the United States or the industrialized countries supporting Israel, but on the nations that were most remote from the Middle East conflict, especially the world’s poorest countries with per capita incomes at or below $100 a year. The high price of oil devastated economies that had experienced some slight growth in the 1960s but saw that growth slow (in part due to rapid population increases as mortality rates fell) even before the price of oil rose dramatically. The result was a descent into poverty that proved fatal. “The number of Africans and Asians who died in consequence of Arab oil policy in the decade after 1973, must be calculated in the tens of millions.” Much of this was due to the prohibitively high cost of fuel and fertilizer, which were already expensive for an ever-growing population on the brink of starvation.

For the industrialized West, high oil prices abruptly halted sustained economic growth and fueled already rampant inflation, the worst disaster to hit the industrialized world since 1945. But for the United States, there was still worse to come. As part of the oil price coup, Saudi Arabia and the other Arab states imposed an embargo of all oil shipments to the United States, as punishment for supporting Israel. No Arab oil would go to the country that had previously been one of the Arab states’ best customers—and one whose armed forces, particularly the Sixth Fleet, had provided security for those same oil shipments to the rest of the world.

It was a grim moment in American politics as well. The Watergate scandal unraveled the authority and prestige of President Richard Nixon at a time when leadership from the White House was most needed. Oil prices soared, as did prices at the pump. Oil buyers were willing to pay any price for oil. At one point, Nigerian oil sold at over $17 a barrel, 600 percent more than the pre-embargo price. Retail prices were bound to reflect the same runaway increase.

In a matter of months, American consumers were facing gas price increases of 40 percent, while spot shortages occurred across the country. One of the most iconic images of the era was the gas lines winding around filling stations, as hapless motorists were regularly greeted with signs that read, “OUT OF
The White House responded to the crisis by appointing an “energy czar,” Deputy Treasury Secretary Bill Simon; ration cards were printed in secret but never issued. The lesson was clear; ordinary political and legal processes were inadequate to deal with the threat of a loss of America’s oil supplies. Only a “czar” (a title borrowed from autocratic Russia) would do. All in all, the 1973–74 shortages were an ugly reminder of a national energy policy that had indeed run out of gas, both literally and figuratively. In the final analysis, the situation was the result of America’s deliberate relinquishing of its position as the world’s swing oil producer and dominant energy power while also ceding control of world markets to OPEC, an international cartel dominated by unsavory and untrustworthy members.

Instead, the United States could have invoked the Defense Production Act of 1950, which would have suspended ordinary antitrust regulations and given major oil companies power to supply America’s oil requirements more efficiently. This move would have incentivized those US businesses to pool their resources while more aggressively exploring for new sources of oil. The Nixon administration, however, failed to choose this expedient—in part because policymakers did not recognize energy security’s connection to national security (as embodied in the Defense Production Act as an emergency measure).

The United States did take a major step in this direction, however, when it organized a similar pooling of resources in cooperation with other Western industrialized countries. As Henry Kissinger explained to then-President Gerald R. Ford, “It is intolerable that countries of 40 million can blackmail 800 million in the industrial world.” The way to break the cartel, Kissinger argued, was to create a counter-cartel of industrialized powers that would coordinate their economic policies to deal with the energy crisis and other issues. This would be the origin of the Group of Seven, or G-7, as well as the International Energy Agency.

One writer offered an even more drastic solution. In a highly controversial article in Commentary Magazine in January 1975, Economics Professor Robert W. Tucker proposed using military force to seize the Saudi Arabian oil fields if the continued oil crisis became a direct threat to the United States’ national security—a not improbable scenario, given the growing intensity of the Cold War with a confident and aggressive Soviet Union. No such action was taken or deemed necessary, but the article and the debate it sparked were proof of how dire the oil price rise and embargo had become to the future of America and the West.

Nonetheless, the founders of the embargo seemed firmly in control of events. One of them, the shah of Iran, said of the United States and the West in January 1974 that “they will have to realize that the era of their terrific progress and even more terrific income and wealth based on cheap oil is finished.”

But the shah was wrong. In just five years it would be he, not the United States, who was finished. The Islamic revolution that swept over his country drove him into exile and put an end to his terrific wealth based on expensive oil. But the impact of the oil embargo, and the accompanying gas lines and economic chaos, would continue to resound in American society and culture, and forced shifts in American economic and foreign policy that continue today.

The 1973–74 Oil Crisis and Its Aftermath
The most immediate impact of the Arab oil embargo, and the revolutionary jump in global oil prices, was a heavy hit to the US economy. The gross national product fell by 6 percent between 1973 and 1975, while unemployment doubled to 9 percent. America experienced a rare economic phenomenon known as stagflation (i.e., high inflation combined with stagnant or poor economic growth). Its effects would linger until the end of the decade, by which time interest rates had risen to 21 percent.

The federal government, meanwhile, understood that stabilizing oil prices was a key factor for economic recovery. Pur-
suing this goal involved several policy choices, both at home and abroad.

Abroad, it meant cozying up to the Middle Eastern dictators who had triggered the oil embargo and massive price increase in the first place, particularly Saudi Arabia and Iran. An important component in this effort was the selling of arms to those same Middle Eastern countries—several of which were notable enemies of America’s ally Israel (which in turn also received American arms as protection against those same Arab states). The result was that the 1970s saw a massive growth in the international arms market, as multibillion-dollar arms deals became common in the Middle East. (The Soviet Union, meanwhile, made similar deals in lethality with the countries that did not buy American, including Libya, Syria, and Iraq.)

Eventually, America’s effort to get the Arab countries and OPEC to relent paid off. In March 1974, negotiations led to the end of the oil embargo, but not before Nixon anticipated Tucker’s 1975 article and seriously contemplated military action to seize oil fields in Saudi Arabia, Kuwait, and Abu Dhabi.57 The other OPEC members came around to the Saudi view that excessively high oil prices would be bad for everyone, the Arab world included. If the Western and American economic engines came to a halt, the result would be catastrophic. The new OPEC approach, therefore, was to maintain a price high enough to fill the coffers of rulers like Gaddafi and the Saudi king, but low enough to keep America, Japan, and Europe’s economies functioning.

Nonetheless, for the next several decades, the price of oil was dictated not by a normal supply and demand but by the whims and wishes of OPEC.

At the same time, new oil discoveries in Alaska, Mexico (large reserves were discovered in Chiapas and Campeche provinces in 1972), and the North Sea eased the pressure on oil supplies, as did a major policy change affecting America’s automobile companies: the establishment of fuel efficiency standards, passed by Congress in 1975 and imposed in 1978. While the new standards did reduce gasoline usage, they were also the last nail in the coffin of American dominance of the automotive industry, and leadership passed definitively to Japan and Germany.

Fuel efficiency standards were part of a larger push toward energy conservation, which became the hallmark of American energy policy in the 1970s. Part of this push proved advantageous in the long term—for example, deregulation of gas and national gas prices forced higher prices on consumers, which in turn encouraged conservation and a reduction in consumption. The days of the “gas-guzzling” automobile of the 1960s seemed permanently numbered. Another part was directed toward new alternative sources of energy, including wind and solar—although the effort to include nuclear power in the mix faced intense environmentalist resistance, especially after the nuclear accident at Three Mile Island in 1979.

However, the push toward energy conservation, enshrined in the National Energy Act passed by Congress and signed by President Jimmy Carter in 1978, was largely reactive and defensive in nature. In the end it reflected a deep pessimism about America’s prospects and future in what experts were calling “the post-industrial world,” a world characterized by limits on energy consumption, economic growth, and America’s role in the world more generally.

**Project Independence**

The pessimism of the National Energy Act was a far cry from the hopeful spirit of Project Independence, announced by President Nixon in 1973. Nixon believed that American science, technology, and industry could free America from its dependence on imported oil, and that the US could once again establish national energy independence. He called for the construction of 1,000 nuclear power plants by the year 2000, and he wanted Congress to approve legislation that would authorize the construction of the Alaska pipeline, promote the use of natural gas,
set reasonable standards for mining coal, increase research and development in energy alternatives, and approve an Energy Research and Development Administration.

Nixon declared, “We must face up to the stark fact that we are heading toward the most acute shortages of energy since the Second World War.” However, his hope to work with Congress to promote a new era of American energy independence was dashed by the unfolding of the Watergate scandal. A more watered-down version of his vision was enshrined in the National Energy Act, which also reflected the prevalent, much less confident view of America’s potential to tackle its energy issues head-on.

Under other circumstances, tackling these issues would have entailed enlisting the help and advice of America’s largest and most expert oil and energy companies. But one of the baleful consequences of America’s failed energy strategy in the 1970s was that people had come to blame the rise in oil prices, and the gas lines, on Big Oil. Large firms like Exxon Mobil became the favorite targets of conspiracy theorists; they came to be seen as corrupt enemies of the environment, and their every word or action was viewed with suspicion and loathing.

The idea of a national energy strategy devised by executives and engineers from the biggest oil companies was now anathema to the American public. Yet, as we’ve seen, it was precisely such a partnership between government and industry that had enabled America to arm the world with energy during World War II.

What Went Wrong: How Energy Policy Failed America in the 1970s

The contrast between the energy policies of these two eras, that of World War II and the post-Vietnam period, could not appear starker.

During the first era, the United States used its position as the world’s dominant oil power to shape world events—the country not only kept Britain from falling to the Nazis but also fueled victory over the Axis across two oceans in the greatest war in history. Indeed, the US position during the war presupposed energy dominance around the world, as well as independence at home. Despite gas rationing and the urgent priority to use America’s oil production to supply its armed forces and allies first and domestic users second, throughout the war, the United States never suffered a severe shortage of gasoline for civilian consumers.

Instead, gas lines would be emblematic of the second era in the 1970s. Many factors outside the control of US policymakers contributed to the disastrous rise in the price of gasoline, such as OPEC’s critical decision in October 1973 to raise the price of crude oil by 40 percent and the Arab oil embargo.

Nonetheless, all these factors would have had a minor, even nugatory, impact if the United States had not put itself in the position of being dependent on foreign oil imports to sustain its economy. By surrendering energy independence, America had put itself at risk—of not only an economic decline but also a decline in its geopolitical power.

Recovering energy independence, however, would have required close cooperation between the federal government and the major oil companies. That was precisely the formula that had enabled the government to supply the free world with plentiful oil during World War II almost single-handedly.

Indeed, as we’ve seen, President Roosevelt’s own Petroleum Administration for War had been founded on that very principle: “The full resources of the industry would thus be enlisted on a cooperative basis; at the same time, orders and regulations would be kept at a minimum.” Likewise, PAW’s executives saw their job as ensuring that their agency “interfered in no unnecessary way with the normal relationships in the industry, and so to administer the oil program that the war’s end would find each competitive unit as strong relatively as it was before the war.”
President Nixon’s vision for Project Independence 30 years later would have entailed a similar close cooperation and reliance on America’s domestic energy industry for expertise and direction—including its nuclear energy industry. In the chaotic and polarized political atmosphere of the 1970s, however, no such close cooperation was possible. The media and the public had been trained to be suspicious of Big Oil and to see every move to increase oil production or build new pipelines as an invitation to another environmental catastrophe or an excuse for more “windfall profits”—as if the revenues from successful energy enterprises were somehow unearned or undeserved.

Instead, the federal government turned to answers outside the reach of its domestic oil industry, such as conservation; fuel efficiency standards for automobiles; and eventually wind and solar alternatives (solar panels were first used to power Apollo moon missions). These measures helped reduce America’s dependence on foreign oil, including from regimes that Americans found problematic or even repugnant. But none could decisively remove the millstone of energy dependence from around America’s neck or restore a sense that America’s future was once again in its own hands, rather than the hands of others.

Achieving that energy independence would require a very different mindset, as well as a range of policies, than the ones that dominated the US energy outlook in the 1970s. It would also depend on a major technological innovation within the oil industry, namely the adoption of hydraulic fracking and directional drilling.

Still, Americans did learn one valuable lesson from the traumas of the 1973 oil crisis and Arab oil embargo: energy independence cannot be taken for granted. It requires constant effort and political will, particularly in the face of those who oppose energy independence for a variety of ideological and self-interested reasons.

Energy independence also requires enlisting the experience and expertise of the domestic energy industry. The fact that Big Oil came to be seen as the problem, rather than the solution, to America’s energy crisis was due to many factors—some of them self-inflicted by the industry itself.

But surrendering energy independence inflicts a far greater cost on the nation than any so-called windfall profits that energy producers enjoyed, and not just on the United States. By 1975 the world was experiencing the worst recession since the Great Depression of the 1930s. This was due in major part to OPEC’s pricing policy, which had driven oil from $2 a barrel to $11 a barrel less than a year later.

Unlike during World War II, America was not in a position to offset disasters imposed by others with its own energy output. Today, fortunately, the United States finds itself once again in the position of being the world’s biggest oil producer, although it is unclear how long it will retain that status. The more recent rise of dependence on foreign sources of oil, including from countries like Saudi Arabia and Venezuela, is troubling.

In many ways, however, the US is poised to shape the future of the world once again, with its ability to produce and export natural gas as well as oil at record levels—and to restart the world’s use of nuclear energy on a new, safer, and more innovative basis. Whether we do so will depend on many factors—some political and cultural, others economic and technological.

Nonetheless, we can learn from the example of PAW’s approach to energy during World War II, a powerful formula for success on both the economic and national security fronts. The example of the 1970s, by contrast, illustrates what happens if we do not.


7. PAW, *History*, 70.

8. Note to T-2 tanker.


15. PAW, *History*, 100-1.


17. Oil for Victory, 113.


19. Oil For Victory, 114.


22. Oil for Victory, 114.


29. *Oil for Victory*, 220.

30. *Oil for Victory*, 220.


32. This broader perspective is taken in Herman, *Freedom’s Forge*.


42. Yergin, *The Prize*, 567.


45. Quoted in Yergin, *The Prize*, 582.


Johnson, Modern Times, 669.

Yergin, The Prize, 615.


Yergin, The Prize, 665.


As noted in Daniel P. Moynihan, A Dangerous Place, (New York: Little Brown, 1978), 119.