

Energy Security

Energy security is ubiquitous in the United States impacting families, businesses, and communities involving utilization of oil, gas, electricity, nuclear power, and alternative and renewable sources of energy; the disruption in energy and its consumption causes upheavals in energy demand and supply with relative price elasticities. The entire economy depends on the automaticity and reliability that energy supply will maintain constant demand. National policy discussions and foreign political economies play a pivotal role in the global energy market as an opportunity exists to strengthen global alliances and not resort to past practices that occurred during the Arab Oil Embargo in 1973 where the United States was held hostage with escalating prices as a response to increased demand (Energy Security PPTX, 2017). Even during the Industrial Revolution, “the energy system has been a target in warfare, whereby in World War II, both the Allies and the Axis powers tried to disrupt the other’s petroleum supplies” (Kalicki & Goldwyn, 2013, p. 80). These energy security risks are not limited to the United States, but include developing and emerging and markets in China, India, and others, as well as western countries like the “United Kingdom, which had a joint program with Iran” (Energy Security PPTX, 2017). Terrorist attacks like 9/11, regional and daily blackouts in California, and natural disasters, like hurricanes, super-storms, earthquakes and tsunamis have disrupted energy supplies causing residential, industrial, and corporate hardships. “Energy security needs a systematic approach with the three core institutions, Organization of the Petroleum Exporting Countries (OPEC), the International Energy Agency (IEA), and the International Energy Forum (IEF) to create international dialogue to address energy challenges” to reduce the United States vulnerability to disruptions in energy supply (Kalicki & Goldwyn, 2013, p. 141). National energy security policy must be comprehensive as it transforms: foreign policy, technology,

existing, renewable and alternate energy sources, climate change, employment, energy poverty, and environmental safety. The IEA, believes, “One way of defining energy security is by delineating different types of risks, often including longer-term aspects. A commonly cited approach is the four a

s of energy security: availability (geological), accessibility (geopolitical), affordability (economic) and acceptability (environmental and social) — which includes concerns related to long-term depletion of fossil-fuel reserves and environmental aspects of energy security” (MOSES, 2011). The United States domestic energy security strategies scope should provide for the government’s potential to politically “leverage asymmetric interdependence” backed with scientific evidence and energy technology development to monitor marketplace shifts to define and deploy policy to serve United States interests, while engaging with international allies to reasonably manage energy production, increasing access at affordable price, and “minimize threats to disruption of supply”. (Energy Security PPTX, 2017).

Prior to 1950, before World War II most oil came from the United States domestic production in Pennsylvania and Texas (Energy Security PPTX, 2017). “Between 1950 and 1973 United States imports had grown from near zero to about 32 percent of United States oil consumption” (American Energy Independence, 2013). In the 1960s with the emergence of the OPEC, and in response to the 1959 imposition of import quotas on crude oil and refined products by the United States, it was created to coordinate fair and stable prices for Persian and Middle East members to provide an efficient, economic, and regular supply to consuming nations (Organization of the Petroleum Exporting Countries, 2017). The OPEC caused a among major shift in the 1960s and 70s cutting off supplies with unprecedented oil increases. Prior to the 1973 oil crisis, the Seven Sisters controlled around 85 percent of the world’s petroleum

reserves”, giving them almost free rein of pricing (Energy Security PPTX, 2017). In the 1970s, the Middle East hegemony of oil made the United States dependent on the Gulf as consumption surged and United States oil production was below capacity causing United States energy insecurity (Yergin, 1990, p. 566). There was no longer a “security margin” or surplus to rely upon. “In April 1973 President Richard Nixon delivered his first ever Presidential address on energy, labeling it Project Independence, ... abolishing the quota system ... meant to manage and limit supplies in a world of surplus, to one where supplies were available in a world of shortage ... to develop the potential to meet our own energy needs without depending on any foreign energy source” (p. 590, 617, 642). Simultaneously, James Akins, one of the State Department’s chief oil experts claimed, “the United States should act to reduce the growth rate of consumption, raise domestic production, and strive to import from ““secure sources””... and invest in research and development to go beyond hydrocarbons” (p. 591). In February 1974, the United States called for the Washington Energy Conference, which established the IEA to create common policies on international energy matters and to manage the energy policies of Western countries” (p. 629). Moving forward, on March 18, the Arab oil ministers agreed to end The Arab Oil Embargo. This reset the geopolitics of the Middle East and the entire world, but future threats of energy security were still viable. Progress was made with “The Nixon, Ford, and Carter Administrations as they consistently opposed higher oil prices because of the further damage that such increases might do to the world economy” (p. 642). “On June 30, 1980 President Carter announced the new Energy Security Act of 1980 to help: energy conservation, increase the domestic crude oil production, reduce oil imports, and reduce the dependence on fossil fuels, by providing \$1 billion to research options to produce biomass energy. This act promised to make the 1980s a time of national resolve with the greatest outpouring of capital

investment in technology, manpower, and resources since the space program” (The American Presidency Project, 1980). From the early 1970s onward, “the federal government controlled and set the price of oil. These price controls were originally imposed during the Nixon administration as an anti-inflation initiative. When Ronald Reagan took over as President in January 1981, he speeded things up and ended price controls immediately” (Yergin, 2011, Kindle p. 2845). Then, President George H. W. Bush signed the United States Energy Policy Act of 1992 with further progress, imposing a number of provisions to strengthen national energy security to reduce dependence on imported oil. Some of these included: create energy efficient codes for commercial and federal buildings, utilities, appliances, and lighting; place fewer restrictions on gas imports; increase production and use of alternate renewable fuels, financial incentives for the development of electric cars and alternative fuel vehicles; increase the reliability of electricity; reduce waste of oil and gas; seek clean coal alternatives; implement innovative and cost effective climate technology; and provide energy conservation and tax incentives for private sectors (Energy Policy Act of 1992).

Under President Bill Clinton, the “‘do something’ mentality continued with the Partnership for a New Generation of Vehicles, a program that aimed to produce a ‘super car’ that would have the same size, styling, and price as a typical family automobile, but would get 80 miles per gallon (Sound familiar?)” (Bryce, 2014). Then, once again, the Energy Policy Act of 2005 signed by President George W. Bush on August 8, 2005, was announcing more progress with an amendment to the Energy Act of 1992 legislation. Spurred by rising energy prices and growing dependence on foreign oil, the new energy law was shaped by competing concerns about energy security, environmental quality, and economic growth. Major provisions in the bill included efforts from the 1992 bill to include certifying a national reliability organization to

monitor and enforce standards; specific requirements to include a certain amount of renewable fuel included in gasoline; tax reductions to encourage domestic energy production, technology, and efficiency; strong incentives for building new nuclear power plants; and new energy efficient and renewable standards in government and private sector buildings. (Energy Policy Act of 2005). In the midst of the oil wave crisis in 2005-2008 where oil prices increased along with the stagnation of world oil production, Securing America's Future Energy (SAFE) formed the Energy Security Leadership Council (ESLC), a group of business executives and former military leaders who played a major role in the drafting and passage of the Energy Independence and Security Act of 2007 (SAFE, 2017). Under the EPA, this Energy Independence and Security Act of 2007 legislation signed by George W. Bush moved the United States towards greater energy independence and security to: raise fuel-efficiency standards; increase the production of clean renewable fuels; protect consumers; increase the efficiency of products, buildings, and vehicles; improve vehicle fuel economy; and promote research on and deploy greenhouse gas capture and storage options; and improve the energy performance of the Federal Government (Energy Independence and Security Act of 2007). This was the first significant energy policy in 32-33 years. Of course, the new fuel-efficiency standards would take years to make a sizable impact, as currently oil accounts for 92 percent of the energy powering the U.S. transportation sector. The time has come to end this near-total dependence by accelerating the transition to domestically sourced, affordable, reliable fuel alternatives (SAFE, 2017). "Automakers would have to retool, and then, in normal years, only about 8 percent of the vehicle fleet turns over annually. But when their impact was felt, it would be very large" (Yergin, 2011, Kindle p. 3109-3112).

With President Barack Obama newly in office, one of his first pieces of legislation was the "February 2009 American Recovery Act and Reinvestment Act -- aimed as an economic

stimulus, creating jobs, centering around green energy technology; this goal proved overly simplistic” and a failure as he too, began to realize that oil and gas conventional energy sources would be “with us for decades”. In his 2012 State of the Union Address, he stated “a shift towards the emergence of new fossil fuel-based resource opportunities, even as he pushed for cleaner fuels” (Kalicki & Goldwyn, 2013, p. 528). With the moral obligation to children and the future with a lens on The Brundtland Report, published in 1987, the challenge of facing the future, and of safeguarding the interests of coming generations was abundantly clear by President Obama’s Clean Action Plan in 2015 to: cut carbon pollution, prepare the United States for impacts of climate change, and partner globally, especially with China. (Clean Action Plan of 2015). “The People’s Republic of China is now the second-largest oil consumer in the world, behind only the United States. Between 2000 and 2010, its petroleum consumption more than doubled. All this reflects what happens when the economy of a nation of 1.3 billion expands at 9 or 10 or 11 percent a year— year after year after year. As China continues to grow, so will its oil demand. Sometime around 2020 it could pull ahead of the United States as the world’s largest oil consumer” (Yergin, 2011, Kindle p. 3250-3253). “As the energy trade becomes more global and crosses more borders and grows in scale on both land and water, the security of the supply chains is more urgent. Ensuring under United Nations continues to impose sanctions on individuals and entities to keep Iran’s nuclear program confined, geopolitical tensions may mount as they restrict trade and the flow of finance (p. 4942-5124). Here is one of the preeminent risks for regional security and the world’s energy security, and one that inescapably becomes part of the calculations for the energy future,” and energy disruptions (p. 5123-5124). “The past decade has seen a total reversal in the energy supply and demand outlook for the United States” (Kalicki & Goldwyn, 2013, p. 327). Hydraulic fracturing in shale oil is changing the profile of natural gas,

pushing domestic production higher. The United States has also witnessed its allies of Canada and Mexico, respectively seeking unconventional production of oil and Pemex, a private company, securing funding to revitalize production from mature fields (p. 330). After two decades of stagnation, the U. S. average vehicle efficiency CAFE (Corporate Average Fuel Economy) rules by 2035 will have 80 percent of all light duty vehicle sales not rely solely on gasoline; with the decline of natural gas imports, and the United States increase of exports of natural gas to Canada and Mexico. This new abundance if dealt with responsibly by policymakers could spur job growth if the environmental concerns and impacts are addressed (p. 341-342).

The core United States energy challenges have not substantially changed, but a set of policy options should form the basis to: create technology options to diversify sources of conventional and unconventional energy resources; recognize the long-term implications of climate change, the association of natural disasters, and social impact; and the fear of nuclear weapons proliferation of Iran, North Korea, India, and Pakistan and the simultaneous need for the United States to expand safeguard technologies from expanded research and development (Kalicki & Goldwyn, 2013, p. 169-187). Energy policies come and go. “Energy security is national security. Oil is the lifeblood of the U.S. economy, and the need to ensure its steady supply and prevent price spikes limits American foreign policy and puts our servicemen and women in harm’s way” (SAFE, 2017). United States energy laws for the most part have been reactive -- from the United States Arab Embargo, to thirty-three uninterrupted years of federal subsidies for fuel alcohols -- then the recession of the 1980s, which led to the first wave of incentives with the 1980 Energy Act (Kalicki & Goldwyn, 2013, p. 524). Hurricane Katrina and SuperStorm Sandy devastated the energy infrastructure and placed hardships on consumers,

during a time of unprecedented uncertainty in energy markets. "From the energy-independence moonshine of the corn-ethanol scam to the latest 645-page slate of regulations the EPA wants to inflict on the domestic electricity-generation sector, the supposed threats have varied. Back in the 1970s, the claim was that we were too dependent on Arab oil (a claim that we continue to hear today). There's an enduring theme in all the energy-policy fads we've endured since 1973: that just a little more governmental intervention will cure the ills of the energy marketplace. Over the decades, many journalists and academics have chronicled the myriad misadventures of U.S. energy policy, but few have done it as thoroughly or as well as Butler University economist Peter Grossman does in his essential book, *US Energy Policy and the Pursuit of Failure*" (Bryce, 2014). Furthermore, the Council on Foreign Relations (CFR) founded in 1921, includes "U. S. policymakers that talk more today about energy security than they have at any time since the energy crises of the 1970s. Yet scholarly understanding of the challenges at the intersection of energy and national security, and of the various policy tools available to address them, is surprisingly weak" (Levi & Rubenstein, 2014).

"Of course, not depending on a single country for imports is a wise decision in absolute terms, but other decisions are not so simple, and in fact various inconsistencies emerge from recent documents which appear not to consider the risk of aggravating climate change. The winner is always energy security, even if the "total" risk to society is higher. The reason for this can be found in differences in time impact. While reducing the disruption risk by fracking in Europe will

have the immediate effect of increasing CO₂ emissions, their impact on climate change will be certain but delayed. Society may face a reduced risk of energy disruption thanks to having another energy source, but will face consequences in environmental control" (Castellucci,

2016). As the standoff over Iran's nuclear program continues, policymakers should expect Iran to continue to threaten to use oil as a strategic weapon to hold the global economy hostage and deter the West from implementing hard-hitting sanctions, or at least limit them to individuals and entities reflecting recent moves. This tradeoff highlights a central consequence of U.S. oil dependence—its impact on foreign policy” and conflicts and constraints on the discussion of energy independence and/or interdependence (SAFE, 2017).

Energy security has different interpretations as observed by different disciplines and consumers. Some believe the United States should have dependent, independent, or interdependent energy security policies, but it appears energy security conversation is wide-ranging and cannot be discussed in isolation; it encompasses sustainability, alternate and renewable energy sources, technology, cyber vulnerability, economic shifts, climate change, and public health. The United States energy security policy pre- and post- WWII was to build stability as the “classic” objective. Forward to today, the main concern is to ensure an uninterrupted supply of energy to the world economy. “A new approach is emerging to deal with range of threats to the energy structure ... to reduce the magnitude and/or duration of disruptive events” (Kalicki & Goldwyn, 2013, p. 84). To achieve this, significant capital investments by the public and private sectors is required to design technologies to monitor and control the nation as Margaret Thatcher implores, “The unexpected happens. You had better prepare for it” (p. 85). On April 12–13, 2010, the Council on Foreign Relations (CFR) convened a group of thirty-six scholars and practitioners to assess the current state of knowledge about oil, gas, and national security, and to identify those areas where research was most needed. Participants included experts from academia, industry, government, and international institutions, and brought backgrounds in economics, political science (Levi & Rubenstein, 2014). While there are

numerous organizations, associations, and committees focusing on energy security, many of which were mentioned in this paper; “for the 21st century, much greater attention and much more concerted effort in: energy sustainability, reduction of energy poverty, and adaptations of the consequences of climate change” are required (p. 144). The Energy Information Administration’s U. S. Primary Energy Consumption by Source and Sector 2015 report, claims “the transportation sector, with 28% of energy” utilized, is a key global economic indicator; as such, policymakers should “Identify a pathway for producing 10 quads of hydrogen per year for transportation uses from renewable sources in the years 2030 to 2050 that generate from biomass, solar, wind, and geothermal” (Myers et al., 2003). Further, liquefied natural gas (LNG) United States exports are “projected to become a net exporter of total energy in the 2020s in large part because of increasing natural gas exports”, according to the Energy Information Administration, used to generate electricity and alternate transportation fuel. The good news is there is notable discussion on energy security and its potential disruptions in the global marketplace causing economic upheavals and uncertainties. While progress has been made, Acts legislated, and presidents come and go, the United States government must create a specific executable comprehensive energy security policy with allies; this should be backed with financing, a more sustainable energy future, without compromise of environmental safety, and to manage geopolitical shifts. Regardless of this agenda, the United States global energy security landscape appears to face an uphill battle with the newly formed President Trump administration and a divided Congress.

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