Security amid Instability

Oil Markets and Attacks in the Persian Gulf

Jim Krane

Saudi Aramco's enormous oil processing plant at Abqaiq was hit September 14, 2019, in a cruise missile and drone attack credibly attributed to Iran. Simultaneous strikes 150 miles away blasted facilities at the Khurais oil field. The attacks knocked out more than six million barrels per day of Saudi oil and natural gas liquids production, the biggest outage in the modern history of oil. Oil prices jumped accordingly, from $60 to $69 per barrel.

Two weeks later, the urgency had evaporated. As repairs were getting underway, oil prices fell below pre-attack levels (fig. 1).[1] The diplomatic reaction in the United States was equally muted. President Trump suggested that responsibility for dealing with the attacks rested not with Washington, but with the aggrieved party. "That was an attack on Saudi Arabia, and that wasn't an attack on us," Trump said on September 16, 2019. "But we would certainly help them."[2]

The lackluster reactions to the attacks on Saudi Arabia appear symptomatic of a broader decoupling of global oil prices from political risk in the Persian Gulf. Geopolitical risks in the Gulf and wider Middle East have not dissipated. If anything, threats to oil in the region have multiplied as Iran has begun reacting to the Trump administration's pullout of the Iran nuclear deal. Reimposed US sanctions have all but halted oil exports from Iran, the world's seventh-largest oil producer,[3] and Tehran has turned to threatening supply from Saudi Arabia, the world's number one exporter.

However alarming the September attacks were to the Saudis and some of their trading partners—China and Japan, for instance—they failed to raise a hue and cry where it matters, in oil markets or in the White House. Previously, such an assault might have set into motion the Carter Doctrine, which states that US military force might be used to protect American interests in the Gulf. In Saudi Arabia, the unwillingness of its allies to respond set off alarm bells. "An absence of international resolve to take concrete action may embolden the attackers and indeed put the world's energy security at greater risk," warned Saudi Aramco CEO Amin Nasser.[4]

Why the complacency? Some is due to the oversupply of oil in global markets. Increasing oil self-sufficiency in the United States is another part of the equation. But other factors matter too. Global oil production has become increasingly diverse and consumption more efficient. Climate change is dampening oil demand growth and leading consumers to seek substitutes for oil-powered internal combustion engines. Oil replacement technologies—electric vehicles and biofuels—are moving into the mainstream. As of April 2019, the coronavirus pandemic had triggered widespread restrictions on travel causing an unprecedented oil demand shock, and it remains to be seen whether or not travel will return to pre-virus levels.

In aggregate, these changes suggest a long-term decline in the strategic importance of

Jim Krane, PhD, is the Wallace S. Wilson Fellow for Energy Studies at Rice University's Baker Institute, where he researches and teaches on energy and geopolitics. He is the author of two books, *Energy Kingdoms: Oil and Political Survival in the Persian Gulf* (Columbia, 2019) and *City of Gold: Dubai and the Dream of Capitalism* (St. Martin's/Picador, 2009/10).

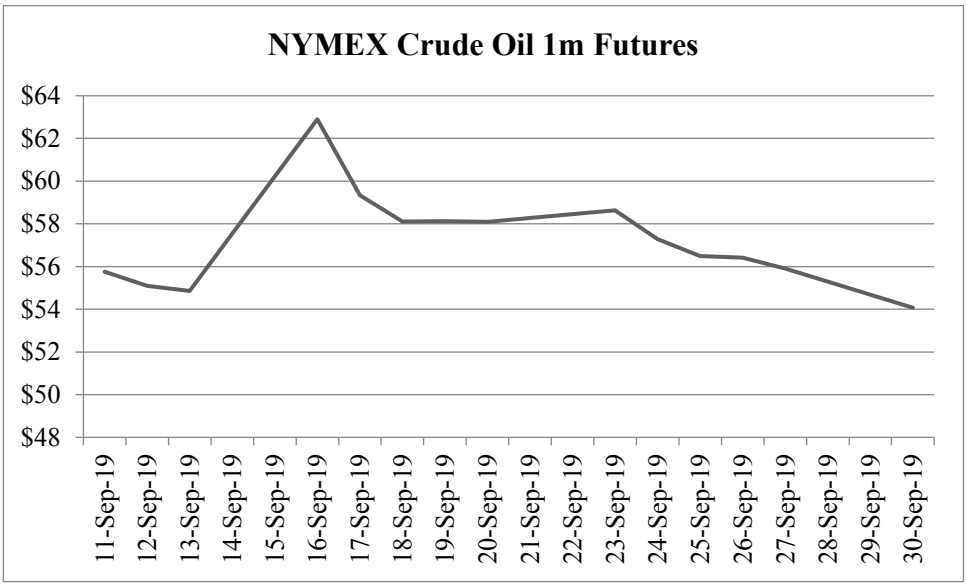

Figure 1. The Short-Lived Oil Price Spike after the Sept. 14, 2019, Abqaiq Attack. Data Source: Bloomberg

petrostates like Saudi Arabia and a drifting apart of the United States and its partner regimes in the Gulf. For producer countries, new tactics and strategies will be needed to recapture strategic interest of global powers, and to cope with the transition away from fossil fuels.

Drivers of Gulf Instability

To learn how these states might respond, it bears looking at the structural factors that have made the Persian Gulf a volatile region in the past, or are contributing to current and future instability. Four themes are highlighted here.

Weak States, Weak Institutions

The lands surrounding the Gulf remain a collection of weak, mostly small states. Most are governed by autocratic regimes using various combinations of coercion and patronage. The Gulf and wider Middle East lack a dominant anchoring power that provides regional stability. This vacuum leaves room for outside powers, particularly the United States, to intervene in the region. Meanwhile, the low-capacity governance institutions that prevail in the Gulf serve to constrain political and economic development. Institutional weakness is one reason Gulf regimes depend on external powers for security and diplomatic support. Another is the history of protection imposed over the centuries by major powers such as the Ottomans, British, and Americans.

Oil Effects

Oil exacerbates these weaknesses in two ways. First, oil attracts further outside powers to intervene or invest in the region, based on their own energy security criteria. As a result, the Gulf undergoes nearly constant proxy competition and conflict. Outsiders with major economic and/or military roles in the Gulf include the United States, China, Japan, India, and Russia, with smaller roles for France, Britain, Turkey, South Korea, and Israel.

Second, oil rents provide exporters with cash to spend on military and security technology. Political scientist Michael Ross has long argued that oil-funded militarization leads to conflict and exacerbates ethnic division.[5] Furthermore, since 2010 new leaders in the Gulf have upended once-restrained foreign policies and converted these states into regional military and intelligence actors. Gulf state intervention has exacerbated civil wars in the Middle East and North Africa and is driving divisions within the Gulf Cooperation Council, or GCC, the bloc of six allied monarchies.

US Shale Oil

The onset of US shale is also perturbing political economies in the Gulf in three further ways: first, by providing a new supply of oil that has undercut prices, profits, and OPEC's effectiveness in managing the market; second, by prompting doubts in Washington about the necessity of spending money and attention on the Gulf;[6] third, by unfettering US foreign policy in ways that make Washington less deferential to oil supply countries.

Shale has altered the American relationship with oil in fundamental ways not seen for more than half a century. Since the United States was the world's largest oil producer at the time of writing, US oil companies and some US states no longer view producer countries as suppliers but as competitors. Amid the coronavirus crash in April, President Trump took the unusual step of inserting the United States into OPEC deliberations, seeking coordinated production cuts and higher oil prices to assist American producers. Meanwhile, the old oil-for-security ties between the United States and the GCC are decaying. The formerly co-dependent relationship is now more of a one-way Gulf dependence on the United States.

Oil production has also given the United States a diplomatic *conflict of interest* that suggests ulterior motives for US intervention in oil markets, particularly the opportunistic actions undertaken by the Trump administration. The conflict arises when Washington imposes sanctions on competing oil producers, such as Russia, Venezuela, and Iran, and on projects such as the Nordstream 2 and TurkStream pipelines that would bring Russian gas into competition with US exports.[7] As discussed below, these extraterritorial sanctions serve diplomatic ends at the same time that they tilt markets toward American producers.

Climate Change and Rent Dependence

Climate change is exacerbating destabilizing trends by creating what forecasters describe as "radical uncertainty" around oil's future. Oil exporters, typically more autocratic than importing countries,[8] view the possibility of a decline in oil demand as an existential threat. Any reduction in oil rents reduces regime wherewithal to distribute the patronage required to buy public support. Forecasts for a future peak in oil demand already appear to be provoking competition among producers to lock in shares of a market poised to decline. Market capture competition is manifesting itself in the proliferation of new refining and petrochemicals plants in developing Asia, configured for crudes from the Gulf.

Climate change is simultaneously creating at least three forms of pressure on these states: first, incentivizing them to produce more oil and avoid stranded reserves; second, to diversify oil-dependent economies; and third, to prepare for physical climate damage in the form of intolerable temperatures and weather patterns.[9] The climate debacle ultimately forces petrostates to find

new ways of generating revenues to fund generous social welfare packages as well as to shrink those outlays by privatizing, diversifying, rationalizing, and economizing in ways that might run counter to society's expectations.[10]

US Sanctions on Iran and the JCPOA

The structural factors above are being exacerbated by a political decision in Washington, the Trump administration's May 2018 breaching of the six-nation Joint Comprehensive Plan of Action (JCPOA) and subsequent reimposition of debilitating sanctions on Iran. As US sanctions were extended to the entirety of Iran's crude oil exports, a series of attacks hit targets linked to the US and oil interests in the Gulf. These strikes have been credibly attributed to Iran.

The drone and cruise missile attacks of September 14, 2019, on Abqaiq and the Khurais oilfield were two examples. Other targets include oil tankers in the region, pumping stations on Saudi Arabia's East-West oil export pipeline, and the downing of a US surveillance drone. In December, attacks on a US base in Iraq—apparently by Iran-linked militia—were followed by US airstrikes that killed dozens of members of the militia in Iraq and Syria. That attack, in turn, prompted Iranian allies in Iraq to besiege the US embassy in Baghdad.

By January, the escalating crisis brought the United States and Iran to the brink of war. A January 3 US drone strike killed Iranian general Qassim Soleimani along with Iraqi paramilitary leader Abu Mahdi al-Muhandis and nearly a dozen others in Baghdad. Then, on January 8, Iran pummeled two US bases in Iraq with cruise missiles, which injured more than one hundred US soldiers. Iran's strategy appears to be to create regular disruptions that are large enough to generate media attention without attracting a US military strike on the Iranian homeland or precluding talks with a more moderate US administration in the future.

Meanwhile, the Trump administration's sanctions on Iran, which threaten to create a legacy of regional insecurity, conflict with the administration's stated wish to draw down the US military presence in the Gulf. America's drawdown leaves a vacuum for Iran in the Gulf, while US sanctions bolster Iran's hard-liners and their rationale for obtaining a nuclear weapon. Iran's withdrawal from the nuclear nonproliferation treaty and an official policy of strategic ambiguity—like that of Israel—is a stronger likelihood.[11]

Remarkable Stability of Oil Markets

All of these signs point to a long-term deterioration of security and stability in the Gulf region. But despite the factors described above—and despite implications of hostilities involving two or three of the world's largest oil suppliers—the oil trade has managed to avoid the infection. What factors were responsible for the improbable "stability amid instability" oil price dynamic? Again, short-run market factors like oversupply, exacerbated by the demand-weakening coronavirus outbreak in late 2019 and in 2020, had much to do with increasing the security of oil supply. But more structural factors also provided steadying influence.

Diversity in Oil Production

Even as US sanctions choked off oil exports from Iran and Venezuela, oil markets have steadily grown more diversified with a far greater number of suppliers and a broader geographic dispersal of oil production. Expanded diversification of oil supply portends

a gradual diminution of the strategic importance of large exporters.

In 1973, OPEC produced more than half of the world's oil, versus about 42 percent today (although OPEC continues to dominate supply of globally traded oil). In the 1970s, there were thirty-eight oil producers of note in the BP Statistical Review. Of those, only sixteen produced more than 500,000 barrels per day (b/d), and the top ten producers supplied about 82 percent of the global oil market.[12]

By contrast, today there are forty-nine producers, with twenty-nine supplying more than 500,000 b/d, and the top ten are responsible for 70 percent of the total. Increasing the diversity of oil producers improves the market's overall security of supply by reducing the risk posed by the outage of any single producer.[13] And, as mentioned above, the rise of US shale outside OPEC's influence has also undercut the market power of big producers in the Gulf.

Increasing Energy Efficiency and Oil Substitutes

More security-enhancing factors flow from the increasing efficiency of oil consumption and the adoption of substitute fuels and technologies. While climate change and the imperative of reducing carbon emissions is a major factor behind this trend, the increasing efficiency has ironically wound up *enhancing* the security of oil supply. The more people adopt alternate vehicle technologies and fuels, the less they worry about disruptions to oil supply. Also moderating growth in oil consumption is the slowdown in world population and GDP growth, two primary drivers of oil demand.[14]

Some countries are using policy to hasten the energy transition through phased bans on internal combustion engines or by subsidizing electric vehicles and renewable technologies. East Asian countries like Japan and China are among the most exposed to Gulf unrest and the most embracing of alternate transportation fuels and technologies such as biofuels, electric vehicles, and hydrogen. Availability of substitutes also reduces pressure on oil demand and price.

Regardless of whether or when oil demand peaks, it is clear that growth is shifting toward the developing world and away from the OECD economies.[15] That bodes ill for the security requirements of Gulf exporters, since the OECD countries are those with the military wherewithal to protect them. The change is subtle but important. When powerful countries feel secure about their energy supply, they spend less to defend faraway producing regions. Emerging market countries might make up for the shortfall in OECD oil demand, but their imports are not matched with the same security commitment or capability.

Producer States: What Can They Do?

"Lower for longer" and "lower forever" oil price scenarios appear to be gaining credence among analysts who argue technology is unlocking far more oil reserves than can ever be burned, just as climate change is dampening demand for those reserves. Some firms are preparing for peaking demand amid prices that never regain prior highs near $100/barrel.[16] (At the time of writing, the coronavirus shock pushed oil prices near $20/barrel, far below the average marginal cost of production, suggesting that an increase was likely.)

The implications of long-term "cheap oil" are altering the political-economic calculations of producer states and the strategic calculations of the United States and other consuming powers. Post-Abqaiq US re-

straint suggested that a recalibration of strategic triggers—the Carter Doctrine—was already underway.

Producers might seek alternate means to retain strategic support. Appealing to concerns about nuclear proliferation in a destabilizing Gulf might be one of these.[17] Abu Dhabi appears to be leveraging its civil nuclear program to increase America's stake in protecting the country and its ruling al-Nahyan family, given the dangers of nuclear proliferation in the event of a successful overthrow.[18] The fledgling nuclear program in Saudi Arabia may be aimed at providing a similar strategic benefit.

Ironically, successful Iranian development of nuclear weapons could accomplish the same thing for the GCC, if the United States were to respond by extending its nuclear umbrella over the six monarchies in an attempt to dissuade them from seeking nuclear weapons of their own.

Gulf regimes also appear to be exploring the diversification of their security partnerships beyond the United States, to include France, Britain, Russia, China, and others.[19] France and Britain already have bases in the region.[20] Iranian leaders urge another path, the pursuit of collective security without external help.

Duplicate Infrastructure

Given the inevitability of further violence in the Gulf, oil exporters can also prepare by reducing their physical vulnerability. Exposure can be alleviated through regional negotiations like the so-called back-channel talks between Iran, Saudi Arabia, and the United Arab Emirates (UAE) in late 2019 and early 2020.

Export states can also insulate themselves by investing in physical infrastructure such as storage and strategic reserves as well as duplicate transport, processing, and export facilities. Saudi Arabia's spare oil production capacity, mainly in heavy oil, was a major factor in its quick recovery after the Abqaiq attack, as was its large inventory of stored oil. Two export pipelines bypass the Strait of Hormuz—one in Saudi Arabia and one in the UAE—bringing crude exports to ports that could remain open in the event of a closure of the strait.[21]

Outside the region, Saudi Aramco and the UAE's Abu Dhabi National Oil Company (ADNOC) have begun storing oil in strategic reserves in Japan and India. Japan's arrangements allow foreign companies to use the storage for trading as long as supplying Japan gets priority during an emergency.[22] Japan is particularly exposed to disruption of the Strait of Hormuz, through which 87 percent of its oil passed in 2019 (fig. 2). China and South Korea have also built strategic petroleum reserves.

Using Sanctions and Unrest to Constrain Rival Suppliers

Another way to cope with declining demand is to push rival producers out of business. This can be accomplished with sanctions or, perhaps, by fomenting unrest that thwarts oil exports.

US sanctions on Iran, Venezuela, and Russia are predicated on using economic pressure to achieve diplomatic goals: reverse Russia's occupation of Ukrainian territory, halt Iranian support for foreign militias, and resurrect rule of law in Venezuela. But these sanctions also aim to reduce oil production and exports from these countries. In so doing, the sanctions not only punish the targeted countries, but also provide indirect benefits in the form of higher prices and larger market share for nonsanctioned countries and firms. In this way, US sanctions perform nearly the same function as OPEC's production constraints.[23]

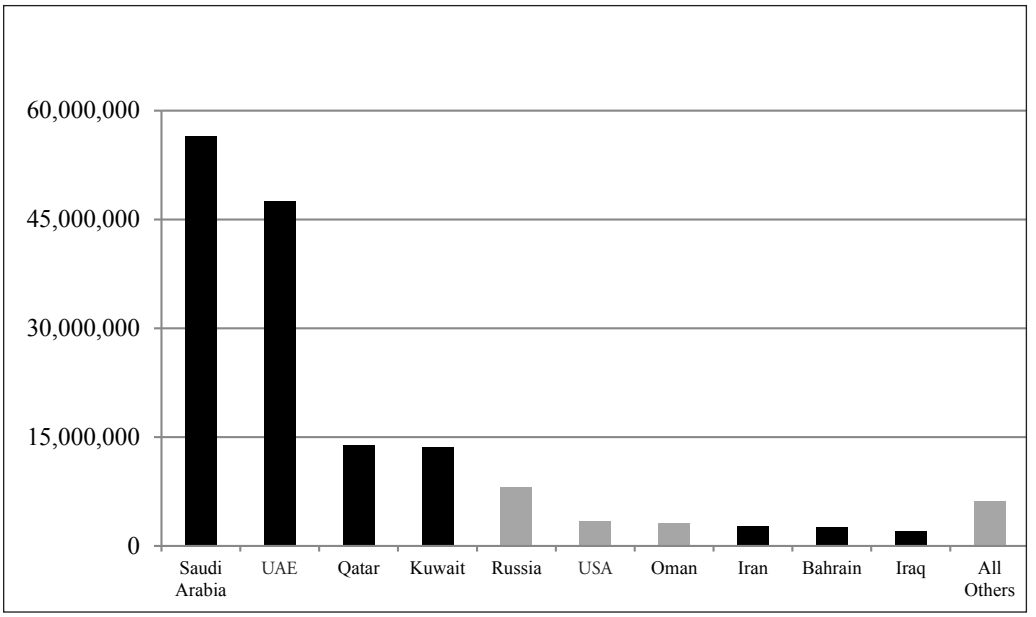

Figure 2. Japan's Crude Oil Imports (Kiloliters) by Country, January–November 2019. Japan's crude oil imports are dominated by cargoes that pass through the Strait of Hormuz, roughly 87 percent of the total. Hormuz-transiting imports are shown below in black. Data Source: METI, 2020

More pernicious strategies are possible. Verbruggen and Van de Graaf envision producer states going so far as to foment social unrest in rival states, with the aim of shutting in oil production.[24] Such a strategy might manifest itself in similar fashion to current-day Libya, where Saudi Arabia, the UAE, and Qatar are backing rival sides in a civil war that is undermining Libyan oil exports while benefiting their own.

A New Paradigm Shift

Oil may well be moving into a new phase, marked by reduced political risk, lower vulnerability of supply, and increasing competition from substitute fuels and technologies. The strategic importance of big oil producers may come under challenge, and doctrines requiring expensive military deployments and threats of war to protect oil supplies may lose favor.

Producer governments are already seeking alternate means to preserve their interests, whether for their defense from regional hegemons, or to preserve their share of stagnating oil markets. Some of the competition around oil will be virtuous—based around environmental or governance criteria—while some may be less so, like the abuse of sanctions or fomenting unrest on the basis of enhanced profit.

The Gulf is central to this shift. Gulf producers are seeing global energy developments undermining the importance of large oil reserves. Those developments include diversification of oil production to new regions, as well as the development of new transportation technologies, and efficiency gains that reduce oil's importance to an economy. These changes, in turn, are leading to the reconsideration of security architecture in the Gulf, including larger regional roles for Iran, China, and perhaps Russia.

Gulf policymakers cognizant of these trends have acted to adapt their unique political economies to cope with the effects. As shown above, these states can harden or duplicate their infrastructure and find ways to lock in market share in parts of the world where oil demand continues to grow. Over the longer term, more promising initiatives range from privatization and economic diversification measures to taxation, fiscal reforms and price rationalizations that enhance the sustainability of economies, security architecture, and governance.

Notes

1. The day prior to the attack, September 13, 2019, the Brent one-month futures price closed at $60.22. On September 14, the attacks pushed the closing price to $69.02. By October 1, the price closed below the pre-attack price, reaching $58.89.
2. Steve Holland and Rania El Gamal, "Trump Says He Does Not Want War after Attack on Saudi Oil Facilities," Reuters, September 16, 2019, https://www.reuters.com/article/us-saudi-aramco/trump-says-he-does-not-want-war-after-attack-on-saudi-oil-facilities-idUSKBN1W10X8.
3. "The World's Top Oil-Producing Countries," Market Realist, April 30, 2019, https://marketrealist.com/2019/04/the-worlds-top-oil-producing-countries/.
4. "Saudi Aramco Hits Out at Lack of Resolve over Attacks," Agence France-Presse, October 9, 2019, https://news.yahoo.com/saudi-aramco-hits-lack-resolve-over-attacks-164200162.html.
5. Michael L Ross, *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations* (Princeton, NJ: Princeton University Press, 2012).
6. Charles L. Glaser and Rosemary A. Kelanic, "Getting Out of the Gulf: Oil and US Military Strategy," *Foreign Affairs* 96, no. 1 (February 2017): 122–31; Caitlin Talmadge, "The Future of US Force Posture in the Gulf: The Case for a Residual Forward Presence," in *Crude Strategy: Rethinking the US Military Commitment to Defend Persian Gulf Oil*, ed. Charles L. Glaser and Rosemary A. Kelanic (Washington, DC: Georgetown University Press, 2016), 251–79; Joshua Rovner, "After America: The Flow of Persian Gulf Oil in the Absence of US Military Force," in *Crude Strategy: Rethinking the US Military Commitment to Defend Persian Gulf Oil*, ed. Charles L. Glaser and Rosemary A. Kelanic (Washington, DC: Georgetown University Press, 2016), 141–65.
7. Olesya Astakhova, Can Sezer, "Turkey, Russia Launch TurkStream Pipeline Carrying Gas to Europe," Reuters, January 8, 2020, https://www.reuters.com/article/us-turkey-russia-pipeline/turkey-russia-launch-turkstream-pipeline-carrying-gas-to-europe-idUSKBN1Z71WP.
8. Ross, *Oil Curse*, 63–80.
9. Jim Krane, "Climate Strategy for Producer Countries: The Case of Saudi Arabia," Working Paper (Houston: Baker Institute for Public Policy, Rice University, 2018), https://scholarship.rice.edu/bitstream/handle/1911/102798/ces-krane-climate-strategy-082818.pdf; Jim Krane, "Climate Action versus Inaction: Balancing the Costs for Gulf Energy Exporters," *British Journal of Middle Eastern Studies*, 2020, 1–19.
10. Tokhir N Mirzoev et al., "The Future of Oil and Fiscal Sustainability in the GCC Region," Economic research paper (Washington, DC: International Monetary Fund, 2020), https://www.imf.org/~/media/Files/Publications/DP/2020/English/FOFSGCCEA.ashx.
11. Based on a presentation at the Institute for Energy Economics of Japan, Tokyo, January 29, 2020.
12. BP Statistical Review of World Energy 2019.
13. Kenneth B. Medlock III, "Could Trade Help Achieve Energy Security?," Commentary (Davos: World Economic Forum, March 3, 2016), https://www.weforum.org/agenda/2016/03/could-trade-help-achieve-energy-security?
14. Mirzoev et al., "Future of Oil and Fiscal Sustainability in the GCC Region."
15. The Organization for Economic Co-operation and Development (OECD) is an intergovernmental economic organization with thirty-six member countries, founded in 1961 to stim-

ulate economic progress and world trade. It includes many of the world's most advanced economies.

16. See, for example: Fereidoon Sioshansi and Jeremy Webb, "Transitioning from Conventional to Electric Vehicles: The Effect of Cost and Environmental Drivers on Peak Oil Demand," *Economic Analysis and Policy* 61 (2019): 7–15. See also Sarah Kent, "Shell Prepares for 'Lower Forever' Oil Prices," *Wall Street Journal*, July 27, 2017, https://www.wsj.com/articles/royal-dutch-shells-second-quarter-earnings-rise-sharply-1501137915.
17. Another arose amid the coronavirus demand shock, a US-proposed "oil producing alliance" between Saudi Arabia and the United States. See "U.S.-Saudi Alliance One of 'Many Ideas' Being Discussed: U.S. Energy Secretary," Reuters, March 23, 2020, https://www.reuters.com/article/us-global-oil-usa-saudi/u-s-saudi-alliance-one-of-many-ideas-being-discussed-u-s-energy-secretary-idUSKBN21A2WW.
18. Jim Krane, Amy Myers Jaffe, and Jareer Elass, "Nuclear Energy in the Middle East: Chimera or Solution?," *Bulletin of the Atomic Scientists* 72, no. 1 (2016): 44–51. Also: Jim Krane, "For UAE, the Political Perks of Nuclear Power Eclipse Economics," *Bulletin of Atomic Scientists* (online), March 2, 2020, https://thebulletin.org/2020/03/for-uae-the-political-perks-of-nuclear-power-eclipse-economics.
19. Russia and China have military sales and other ties with the Gulf states. Multinational naval task forces (Combined Task Forces 150 and 151) have included naval ships and personnel from thirty-three countries. A Saudi official interviewed by the author (Riyadh, January 23, 2020, on condition of anonymity) said that the wavering US commitment to Saudi security was forcing the kingdom to explore alternate security relations with China and Russia, perhaps building a collective arrangement with regional states.
20. France operates a naval base in Abu Dhabi and shares access (with the United States) to the UAE's Al Dhafra Airbase, while Britain operates a naval base in Bahrain and is building another in Oman. Britain's Royal Air Force also operates out of Qatar's Al Udeid Airbase.
21. However, strikes in 2019 attributed to Iran revealed vulnerabilities of both lines. The Saudi East-West Pipeline, which supplies the kingdom's Red Sea export terminal was closed by drone strikes in May 2019, while tanker attacks in the Gulf of Oman in 2019 illustrated the vulnerability of the UAE's Fujairah export terminal, despite its location outside the Strait of Hormuz.
22. Takeo Kumagai, "Japan Exploring Leasing Unutilized Spr Storage to Producers, Consumers," S&P Global Platts, June 4, 2019, https://www.spglobal.com/platts/en/market-insights/latest-news/oil/060419-japan-exploring-leasing-unutilized-spr-storage-to-producers-consumers.
23. Sanctions thus create vested interests in non-sanctioned countries, where leaders have a financial incentive to prolong sanctions on a competitor. For instance, Saudi Arabia has a vested interest in extending US sanctions on Iran. In the future, sanctions on oil exports might be deliberately driven by vested interests, with diplomatic rationales used as political cover for actions grounded in economic gain.
24. Aviel Verbruggen and Thijs Van de Graaf, "The Geopolitics of Oil in a Carbon-Constrained World," *IAEE Energy Forum* 2, no. 2 (2015): 21–24.