The Arab Gulf States
Institute in Washington
Building bridges of understanding

Does Saudi Arabia Need OPEC?

Jim Krane

The Arab Gulf States Institute in Washington
Building bridges of understanding

Does Saudi Arabia Need OPEC?

Jim Krane

November 26, 2019

Issue Paper

#7

2019

The Arab Gulf States Institute in Washington (AGSIW), launched in 2015, is an independent, nonprofit institution dedicated to providing expert research and analysis of the social, economic, and political dimensions of the Gulf Arab states and key neighboring countries and how they affect domestic and foreign policy. AGSIW focuses on issues ranging from politics and security to economics, trade, and business; from social dynamics to civil society and culture. Through programs, publications, and scholarly exchanges the institute seeks to encourage thoughtful debate and inform the U.S. foreign-policy, business, and academic communities regarding this critical geostrategic region.

Cover Photo Credit: AP Photo/Amr Nabil

About the Author

Jim Krane is the Wallace S. Wilson Fellow for Energy Studies at Rice University's Baker Institute for Public Policy. He specializes in energy geopolitics, with a focus on oil-exporting countries and the challenges they face from energy subsidies, internal demand, and climate change. His scholarly articles have been published in Nature Energy, Energy Policy, Energy Journal, MRS Energy and Sustainability, and the Bulletin of the Atomic Scientists. Previously, Krane spent nearly 20 years as a journalist, six of them in the Middle East. He is the author of two books. His 2009 volume *City of Gold: Dubai and the Dream of Capitalism* is widely recognized as the seminal work on the iconoclastic city-state, while his award-winning 2019 book *Energy Kingdoms: Oil and Political Survival in the Persian Gulf* is the definitive study of energy demand in the region. Krane earned a bachelor's from City College of New York, master's from Columbia University, and PhD from Cambridge University. He lives in Houston with his wife and two children.

The author would like to thank the two anonymous peer reviewers as well as Rice University's Michael Maher and Peter Volkmar for their comments on this paper.

Executive Summary

How well does Saudi Arabia's membership in the 14-member OPEC cartel serve the kingdom's interests? Would Saudi Arabia be better off leading a smaller cartel of large producers, or, perhaps, departing the cartel altogether? This paper examines potential incentives for a Saudi withdrawal or restructuring of OPEC, which comes amid challenges to the cartel and suggestions of changes to its longstanding practices. Motivating Riyadh to reconsider are various factors, including Saudi Arabia's disproportionate burdens in complying with OPEC production cuts and the kingdom's subsequent losses of oil market share; avoidance of potential U.S. antitrust sanctions; internal fiscal issues; and the potential for an increase in effectiveness of a smaller cartel. OPEC, as currently composed, may also constrain Saudi Arabia's freedom of maneuver in responding to climate action on fossil fuels.

This paper reviews OPEC's value to global oil markets and its dominant member state and finds that OPEC's actions to constrain oil production enhance revenue for all producers, while its use of spare capacity benefits producers and consumers alike. The case for retaining OPEC in some form is bolstered by the cartel's track record of success with collective action, which comprises useful preparation for the more difficult policies required by climate change and, eventually, a plateauing oil market.

Introduction

In some quarters, the prospect of the collapse of the Organization of Petroleum Exporting Countries, or the OPEC cartel, might be greeted with applause. OPEC has long drawn the ire of oil-importing societies, especially those that endured the 1973 Arab oil embargo. In the United States, politicians and pundits labeled the cartel an "enemy of the free market" and a "club of adversaries" that colluded to undermine economies of the developed world.[1] Exhibit A in this argument is the cartel's role in the quadrupling of oil prices in 1974 and the nationalization of member-state oil sectors. These developments instigated an enormous transfer of wealth and geopolitical power from importing countries in the developed world to oil-exporting states.

However, the avowed role of the 14-member exporter group is not the maximization of profits or prices of oil. OPEC declares its function is to "ensure the stabilization of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a fair return on capital for those investing in the petroleum industry."[2]

OPEC does take action that stabilizes oil markets and reduces volatility in oil prices. But those benefits are achieved by constraining oil production, and by the less understood practice of restraining production capacity through underinvestment in the world's lowest-cost oil reserves.[3] The combined effect of these two measures is to preserve oil prices at higher levels than what unconstrained production and cost-efficient investment would warrant. Price

1 The origins of the villainous portrayal of OPEC in the United States are explored in Joshua A. Merritt, "Using OPEC as a Villain in Narratives" (working paper, Oregon State University, Corvallis, OR, 2016).

2 "Our Mission," OPEC, accessed November 20, 2019.

3 James L. Smith, "World Oil: Market or Mayhem?," *Journal of Economic Perspectives* 23, no. 3 (Summer 2009): 145-64.

manipulation provides a sheltering side effect for higher-cost producers that is sometimes called OPEC's "price umbrella." As a result, OPEC is justifiably defined as a cartel, despite what it publicly avows.

The late Massachusetts Institute of Technology economist Morris Adelman concluded that OPEC members' investment strategy had nothing to do with market stability or other altruistic incentives and everything to do with maximizing profit.[4] "For 70-odd years the constant overriding concern of the owners of the oil has been to prevent the investment from being made and prevent the market price from approaching the long-run competitive supply price," he wrote.[5]

But OPEC's effectiveness in influencing prices also has doubters. Brown University's Jeff Colgan, for instance, finds that while Saudi Arabia "probably does have some market power on its own," OPEC's market power is a "useful fiction" that mainly succeeds in generating political benefits for its members. For long periods, OPEC set modest goals and still failed to meet them. To the extent that cartel members restricted depletion, they did so out of self-interest with no institutional support from OPEC.[6]

Whatever the case, the purpose of this paper is not to readjudicate OPEC's motivations or competence, but to investigate Saudi Arabia's incentives for altering the structure of the cartel or leaving it entirely, in light of oil market developments that raise questions about OPEC's effectiveness.

The first such development is the extreme success of U.S. shale, or tight, oil production. U.S. oil output has risen from 5.1 million barrels per day in 2007 to just over 12 mb/d in 2019, making the United States the world's top oil producer. The shale experience has been a confounding one for OPEC, since the thousands of individual U.S. producers make decisions that have huge implications for OPEC, but which are based on market trends and lie beyond the control not only of the oil cartel, but of the U.S. government. The shale boom has ushered higher-cost U.S. oil into the global market under the OPEC price umbrella. That, in turn, has undermined OPEC's market share, reduced oil prices, and slashed the economic rents flowing to OPEC member states.

Second, the rising energy self-sufficiency of the United States has increased the willingness among U.S. policymakers to act against oil exporting countries. Recent actions include economic sanctions on Venezuela, Russia, and Iran that would have been far more difficult under tight market conditions that prevailed before shale. Also under consideration is the revival in the U.S. Congress of the nearly 20-year-old No Oil Producing and Exporting Cartels Act, or NOPEC legislation. The bill would lift sovereign immunity of government-owned oil companies to be sued for anticompetitive practices under U.S. antitrust law.[7]

4 Morris A. Adelman, "The Real Oil Problem," *Regulation* 27, no. 1 (Spring 2004): 16-21.

5 Morris A. Adelman, "Mideast Governments and the Oil Price Prospect," *The Energy Journal* 10, no. 2 (1989): 15-24.

6 Jeff D. Colgan, "The Emperor Has No Clothes: The Limits of OPEC in the Global Oil Market," *International Organization* 68, no. 3 (Summer 2014): 599-632.

7 NOPEC, S.3214, 115th Congress (2018).

Third, the market upheaval created by the shale revolution has enabled an alliance of convenience between the world's second and third largest oil producers, Russia and Saudi Arabia. The two producer states, former enemies, have created a working relationship within the OPEC structure, but one that sidelines the majority of the cartel's member states. The arrangement has triggered discussions of an "OPEC 2.0" that codifies dominant roles for Saudi Arabia and Russia, based on output levels, while downgrading or ejecting OPEC's smaller members and doing away with the cartel's consensual system of decision making.[8]

The cartel's track record of success with collective action comprises useful preparation for the more difficult policies required by climate change and a plateauing oil market.

Given these challenges to the long-standing organization that intervenes so frequently in the world's largest commodity trade, a reappraisal of OPEC is due. This paper provides a qualitative review of OPEC's value to global oil markets and its dominant member state, Saudi Arabia. It concludes that the case for retaining OPEC in some form remains a convincing one for Saudi Arabia itself, oil producers, and the global economy. OPEC's strongest role may lie ahead of it. The cartel's track record of success with collective action comprises useful preparation for the more difficult policies required by climate change and a plateauing oil market.

Background

OPEC was founded in Baghdad in 1960 by representatives of the five original member states: Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. OPEC's initial mandate involved negotiating improved tax and royalty rates with the Seven Sisters cartel of Western oil companies controlling oil production inside member countries. OPEC became a force to be reckoned with in 1973-74 when it collectivized the nationalization of members' oil sectors, and, almost simultaneously, most of its Arab members launched an infamous oil embargo. The two actions resulted in the quadrupling of oil prices and producer states capturing most of the subsequent rent windfall.

"Never in recent history has there been a transfer of wealth and power on the scale and at the velocity that is now being witnessed," one scholar lamented. "Yet with few exceptions, the recipients of this transfer of wealth and power are political systems with little or no accountability to their own citizens, let alone to the world community."[9] The oil cartel became the focus of attempts at curtailing its market power and even threats by prominent Western leaders and academics arguing that the embargo was the "moral equivalent of war"[10] and producers might be dealt with by "taking the Saudi out of Arabia."[11]

8 Benoit Faucon and Summer Said, "OPEC Pursues Formal Pact with Russia," *The Wall Street Journal*, February 6, 2019.

9 Arthur Ross, "OPEC's Challenge to the West," *The Washington Quarterly* 3, no. 1 (1980): 50-7.

10 Jimmy Carter, "Address to the Nation on Proposed National Energy Policy" (speech, White House, Washington, DC, April 18, 1977).

11 Laurent Murawiec, slide presentation delivered to Pentagon's Defense Policy Board in 2002, cited in Del Quentin Wilber and Petula Dvorak, "Bomb Threat Closes Monument," *The Washington Post*, Oct. 8, 2005.

OPEC's radical "politicization of petroleum" in the 1970s damaged the organization for decades. Demand for oil fell during the 1980s, and new production came online in regions outside OPEC's reach, taking its market share. The cartel, and Saudi Arabia in particular, later disavowed its prior tactics in favor of pragmatic longer-term strategies aimed at price stability. Among these were the OPEC production increases in the early 2000s that served to offset high prices.[12]

Even so, in 2000, a U.S. congressional minority launched a bill aimed at lifting the immunity from U.S. lawsuits by government-held firms that pursue predatory pricing. The NOPEC bill would prevent national oil companies from colluding to "limit the production or distribution of oil, natural gas" or "set or maintain the price of petroleum, or to otherwise take any action in restraint of trade for petroleum" when those actions affect U.S. prices.[13]

What is less understood is that OPEC member states have had their own qualms with the organization, some of which came to the fore alongside – and perhaps because of – the NOPEC deliberations.

In December 2018, the energy minister of OPEC member Qatar announced the monarchy's departure from the cartel. Soon thereafter, the country's former prime minister described membership in the cartel as a constraint on Qatari autonomy, saying OPEC was "useless" and "being used for purposes that harm our national interest."[14] Possible legal liabilities under the NOPEC legislation probably further undermined the appeal of an already questionable membership, particularly under the duress of an economic boycott that had been launched by two leading OPEC members – Saudi Arabia and the United Arab Emirates – against Qatar.

OPEC's radical "politicization of petroleum" in the 1970s damaged the organization for decades.

The Qatari withdrawal, followed by Ecuador's announcement that it would leave OPEC in January 2020,[15] coincided with media revelations regarding Saudi-funded research into the potential effects of the cartel's future demise.[16] These disclosures beg the question, how might Saudi Arabia view its OPEC membership? There are several reasons why the kingdom might reconsider its current role in the cartel.

12 Reza Sanati, "OPEC and the International System: A Political History of Decisions and Behavior" (dissertation, Florida International University, 2014).

13 NOPEC, S.3214, 115th Congress (2018).

14 Hamad bin Jassim al-Thani (@hammadjjalthani), "انسحاب دولة قطر من منظمة أوبك هو قرار حكيم، فهذه المنظمة أصبحت عديمة الفائدة ولا تضيف لنا شيء. فهي تُستخدم فقط لأغراض تضر بمصلحتنا الوطنية," Twitter, December 3, 2018.

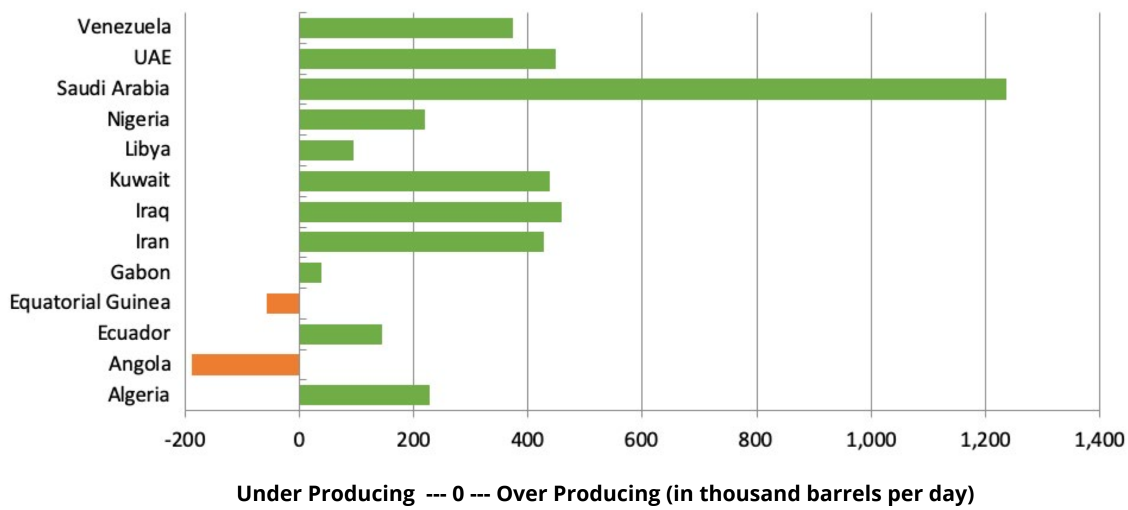
15 Alexandra Valencia, "Ecuador to Quit OPEC in 2020 in Search of Bigger Export Revenue," *Reuters*, October 1, 2019.

16 Work by the King Abdullah Petroleum Studies and Research Center in Riyadh. KAPSARC has not produced a paper on the subject nor made public any of its ongoing modeling of oil market reactions to a loss of spare production capacity. See: Benoit Faucon and Summer Said, "OPEC Pursues Formal Pact with Russia," *The Wall Street Journal*, February 6, 2019.

Why Saudi Arabia Might Seek to Dissolve, Leave, or Reconfigure OPEC

OPEC's central conundrum is a collective action problem that pits the collective good of the cartel against the individual best interests of each member state. The interests of OPEC and all oil producers lie in oil prices that are as high as possible without damaging demand. These interests are best served when each member sacrifices a share of its production when required. But the opportunities to free ride on cuts made by others have been well documented. Most countries, on average, have produced more than their allocated quotas (see Figure 1). Since the mid-1970s, Saudi Arabia has served as OPEC's enforcer, a role that has had major downsides. In extreme cases Saudi Arabia has resorted to "price war" behavior by ramping up production to push down prices and punish cheaters, the source of a large measure of its quota overproduction. Might the burdens of cartel leadership spur Saudi Arabia to reconsider its membership?

Figure 1: Underproduction and Overproduction vs Allocation among OPEC Members, 1982-2018



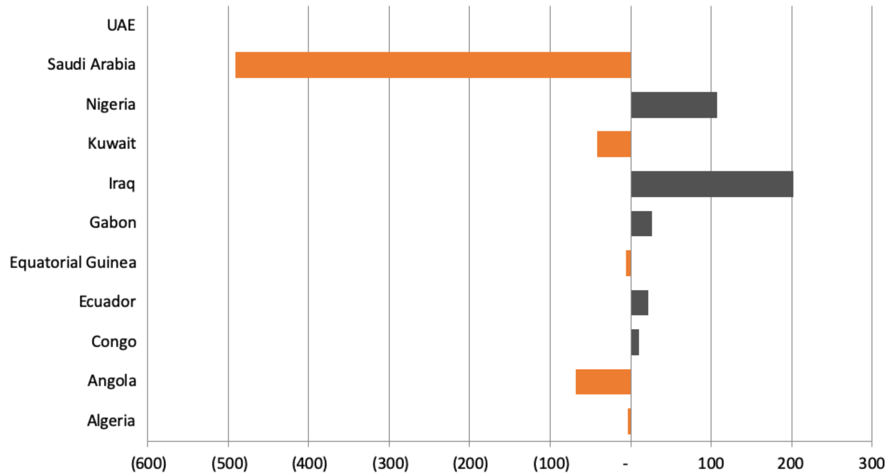
Historically, most OPEC member states have produced far more than their allocations dictated, when averaged over time. (Source: OPEC Annual Statistical Bulletin 2019)

Reducing the Burden of "Collective Action" and Price Wars

The production cuts by OPEC and its non-OPEC allies that took effect in January 2017 looked at the time like a triumph over the usual collective action problem. A remarkable two dozen countries agreed to, and implemented, production cuts of 1.8 mb/d. The OPEC+ configuration grouped 10 non-OPEC producers alongside the 14 OPEC member states. Output reductions that were supposed to last six months have been maintained (with a hiatus during part of 2018) for more than two years.

Saudi Arabia played a dual role in the activities. It assumed control of market share of OPEC producers undergoing outages or sanctions – such as Iran and Venezuela – while also bearing a higher proportion of the cuts. Other members, like Iraq and Nigeria, shifted over time to overproduction (see Figure 2), while Russia steadily increased its cuts to reach a level close to the 230,000 b/d reduction it pledged (see Figure 3).

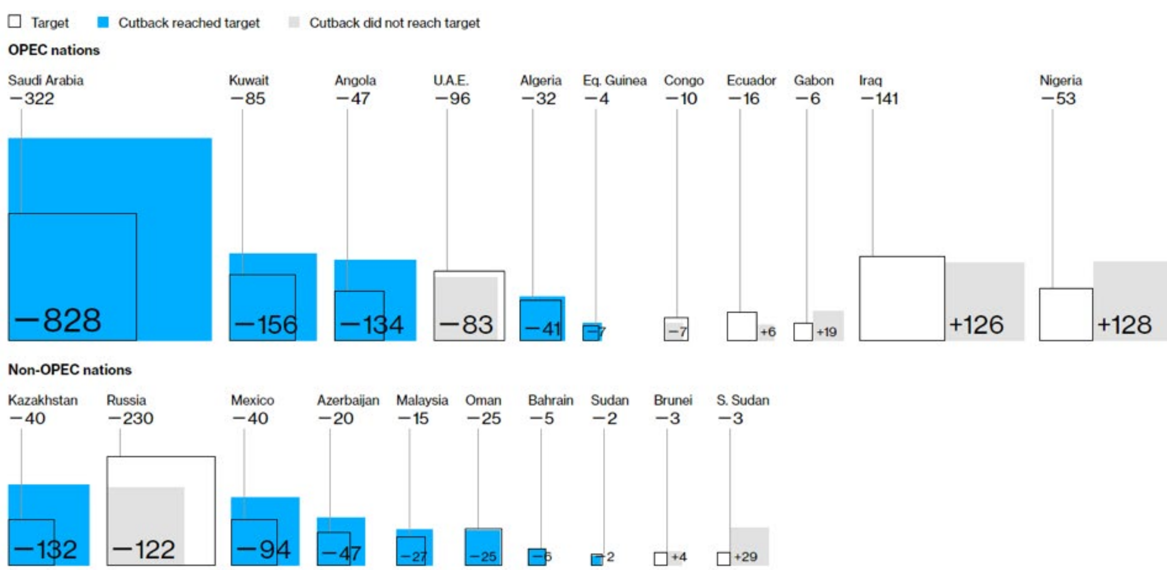
Figure 2: Underproduction and Overproduction vs. Allocation among OPEC Members, Jan.-Aug. 2019



Under Producing --- 0 --- Over Producing (in thousand barrels per day)

Saudi Arabia's production was well below its target in 2019, while Iraq's and Nigeria's production were significantly above. (Source: OPEC Annual Statistical Bulletin 2019, OPEC Monthly Oil Report, September 2019)

Figure 3: By How Much Did Countries Reduce Oil Production?



(in thousands of barrels per day)

August 2019 crude oil production by OPEC and non-OPEC states, shown in comparison to their allocated quotas. Countries depicted in blue have cut more than their allocations. Those in gray have cut less than their allocations. (Source: Bloomberg, Sept. 19, 2019)

As Figures 2 and 3 show, Saudi Arabia was shouldering a disproportionate share of production cuts, as well as attempting to enforce quota compliance, which may have helped maintain collective OPEC+ output below the production ceiling for much of the period.

The kingdom's chief enforcement tool is the threat of a price war, a deliberate oversupply of markets that brings oil prices and revenue down for all producers. High-cost producers are hit disproportionately. But the price war is a blunt instrument deployed reluctantly, mainly when collusion among OPEC members fails. Price wars tend to break out when quota compliance is unobservable, unobserved, or unstable.[17] Besides undermining revenue, price war behavior also incentivizes competing producers to reduce costs by seeking efficiencies. For example, the 2014 Saudi-initiated price war encouraged oil producers to reduce costs by around 20% on average worldwide. U.S. shale producers went further, with the average break-even price falling by 40% from around $55 per barrel in 2014 to $31/bbl by 2017.[18] Over time, price wars render competing supplies more viable at lower prices. This has a dampening effect on oil prices overall.

Would the kingdom be financially better off looking after domestic interests instead of assuming the burdens of the OPEC collective? Most scholarship argues against this perception. However, a threat to disband or depart OPEC might accomplish the same enforcement outcome as a price war, with less economic damage. Even the suggestion that Saudi Arabia might quit OPEC could be enough to squeeze concessions from other producers and reinforce discipline within the cartel.

A Reformulated OPEC 2.0 with Big Producers in Charge

Indeed, news outlets have reported that Saudi policymakers are investigating leaving the cartel, perhaps jettisoning it in favor of a smaller but nimbler group of larger producers. Rather than operating under unofficial Saudi leadership, the new cartel arrangement might deploy a proportional voting system based on output. This would allow Saudi Arabia and Russia to take *formal* leadership of a reformulated cartel.

This is not the first time Russia and OPEC have joined forces. Russia took part in OPEC-led production cuts in deals in 1998 and 2001 but disregarded its quota allocations and raised output. At the time, the newly privatized Russian oil sector simply declined to follow the terms of a deal negotiated between its government and OPEC.[19] Since then, the Russian government has renationalized much of the industry and exerts more control, making it a more credible OPEC partner.

Perhaps as a result, Russia has also taken a leadership role within OPEC, working directly with Saudi Arabia to coordinate cartel strategy within OPEC's Joint Ministerial Monitoring Committee. The JMMC brought OPEC and non-OPEC members together under the 2016

17 Edward J. Green and Robert H. Porter, "Noncooperative Collusion under Imperfect Price Information," *Econometrica: Journal of the Econometric Society* 52, no. 1 (January 1984): 87-100.

18 Bobby Tudor, "Single Well Breakeven Prices: Breakeven Prices Down More Than 40% since 2014," (slide in presentation "Global Energy Outlook," Rice University, Houston, TX, November 5, 2018).

19 James Henderson and Bassam Fattouh, "Russia and OPEC: Uneasy Partners," *Oxford Institute for Energy Studies*, February 2016.

Declaration of Cooperation to discuss production limits, which have remained in place since 2017, except for a temporary return to higher production during U.S. midterm elections from June through November 2018.[20]

The JMMC appears to have supplanted OPEC as the main forum for quota assignments, with decisions presented to OPEC members as faits accomplis. JMMC membership combines two non-OPEC producers (Russia and Kazakhstan) along with six of the 14 OPEC countries (Saudi Arabia, Kuwait, Algeria, Nigeria, Iraq, and the UAE), as well as the OPEC president (currently Venezuela).

A reformulated OPEC based on dominant JMMC members (or OPEC 2.0) would not deter quota cheating by small producers – not much of a worry anyway – but could engender closer coordination among large producers. A smaller OPEC might limit membership to producers willing to comply with cuts, diminishing the perennial Saudi complaint that the kingdom has been balancing the oil market on its own.

On the other hand, an OPEC 2.0 might also prove counterproductive if a member's production became the basis for its voting clout. Such an arrangement would give producers a perverse incentive to expand capacity, overproduce, and drive down market prices.

A smaller OPEC might limit membership to producers willing to comply with cuts, diminishing the perennial Saudi complaint that the kingdom has been balancing the oil market on its own.

A smaller OPEC could still be effective in boosting oil prices. Prior to the U.S. shale revolution, collusion limited to OPEC member states was sufficient to raise prices and increase collective profitability. Since the onset of shale, profitable collusion has required Saudi Arabia to combine its cuts with member states as well as Russia.[21]

U.S. Extraterritoriality and NOPEC Antitrust Lawsuits

Another factor that could turn OPEC members, including Saudi Arabia, against membership in the cartel is the prospect for sanctions under the U.S. NOPEC legislation.

Momentum toward NOPEC has been stimulated by developments that have taken place since the 2015 accession of Saudi King Salman bin Abdulaziz and the 2016 election of U.S. President Donald J. Trump. For his part, Trump has demonstrated a willingness to publicly criticize OPEC price manipulation. At the same time, the U.S. Congress appears motivated by the killing of a U.S.-based Saudi journalist by officials in King Salman's regime, and by the humanitarian catastrophe created by the Saudi-led intervention in the war in Yemen.

20 Temporary higher production appears to have been a Saudi response to Trump's request for lower oil prices ahead of the 2018 U.S. midterm elections. John Kemp, "Why Trump is Pressing Saudi Arabia to Lower Oil Prices," *Reuters*, July 5, 2018; Tom DiChristopher, "Trump on Falling Oil Prices: 'That's Because of Me,'" *CNBC*, November 9, 2018.

21 Peter Volkmar, "Is OPEC Dead without Russia? Shedding Light on the Question Using Game Theory," (working paper, Baker Institute for Public Policy, Rice University, Houston, TX, December 1, 2018).

These developments coincide with a trend toward rising frequency and effectiveness of U.S. extraterritorial sanctions and applications of the Foreign Corrupt Practices act of 1977. The U.S. legislative and executive branches have increasingly turned to unilateral measures that penetrate the national sovereignty of other countries, leveraging the United States' role in the international financial system and the dominance of the U.S. dollar as the world's reserve currency.[22] Once enacted, sanctions bring together Congress, the U.S. civil and criminal court system, the departments of State and Treasury, the intelligence services, and other authorities. Any foreign company that maintains a subsidiary on U.S. territory, or even conducts transactions using the U.S. dollar, lies within reach of such legislation.[23]

U.S. sanctions on Iran, Russia, and Venezuela penalize foreign firms for practices that take place outside U.S. borders. Compliance with such sanctions is driven more by U.S. military and diplomatic power than any basis in international law. The fact that U.S. policymakers are scrutinizing OPEC member states for potential sanctions provides governing elites in those states with reason to consider departing or restructuring the cartel.

Passage of the NOPEC bill would likely permit antitrust lawsuits to move ahead in U.S. courts. Plaintiffs might seek billions of dollars in damages for OPEC's well-documented actions to constrain production and increase global oil prices, which guide pricing levels on petroleum products inside the United States. While successful judgments might not be uniformly enforced – and could perhaps be waived by the executive branch on grounds of national security – at minimum, the law's passage would expose all member states to the possibility of future sanctions.

The specter of U.S. sanctions has not yet been threatening enough to prompt OPEC's disbanding or a Saudi departure from the cartel.

The specter of U.S. sanctions has not yet been threatening enough to prompt OPEC's disbanding or a Saudi departure from the cartel. However, the risk has been sufficient to convince OPEC members and collaborators to alter their language. OPEC officials began to describe the cartel as a "mechanism" rather than an organization. A document outlining the new OPEC+ alliance was carefully worded to emphasize "market stability" functions while avoiding antitrust trigger terminology such as price preferences, quotas, or coordinated cuts in production.[24]

The NOPEC bill has been introduced in Congress numerous times since 2000 and has never achieved final passage into law. While sanctions on OPEC would play well among segments of the U.S. public, such measures would also have major drawbacks.

22 The Jacques Delors Institute recently defined extraterritoriality as "the unilateral use of measures that are taken under a state's sovereign powers to enforce its own law, in a territory other than its own, for actions committed outside its territory by entities or people from other countries." See: "EU and US Sanctions: Which Sovereignty?," *Jacques Delors Institute*, October 23, 2018.

23 Ibid.

24 "OPEC, Russia Draft Cooperation Charter Offers No Formal Body: Document," *Reuters*, February 11, 2019.

First, the precedent set by such a law might deter foreign investors and governments from maintaining assets in the United States, U.S. dollar transactions, or even using the U.S. financial system. Losses to the United States could be significant. For instance, Adel al-Jubeir, then Saudi foreign minister, said in response to a separate case in 2016 that the kingdom might sell off $750 billion in U.S. assets.[25]

Second, the NOPEC bill is so broad that, were it law, it would likely be selectively enforced against the 14 OPEC member states and the 10 non-OPEC members recently cooperating with the cartel. U.S.-allied OPEC members could presumably be given waivers. Sanctions might be pursued against member countries with more problematic relations with the United States, such as Iran and Venezuela. If the law covered OPEC+ collusion, Russia might also be targeted. But, the United States already maintains sanctions against Iran, Venezuela, and Russia. And it is unclear what would be achieved by selective enforcement.

Third, Washington retains treaty relations with countries that are major importers of crude oil from states targeted by the NOPEC legislation, including Japan and South Korea. U.S. interference with allies' energy security and long-standing trade relations is unlikely to be welcomed. Since OPEC supplies a third of the world's crude oil, passage of the bill could provoke widespread consternation with U.S. overreach.

Fourth, U.S. interests could be harmed if NOPEC works as intended and reduces global oil prices. Cheaper oil would undercut profitability of the U.S. oil sector, which reaps substantial benefits from OPEC actions. All else constant, cheaper oil would also encourage increased consumption and undermine environmental and climate goals.

The Clean Energy Transition and "Stranded" Reserves

Another reason that oil producers might prefer to unburden themselves from OPEC's production constraints has to do with the global transition toward clean energy. While oil's lack of substitutes insulates it from major disruption over the short and medium terms, countries that hold large reserves harbor concerns over the long-term viability of those resources. A potential response might involve the stepping up of oil production so as to shorten the timeline to depletion and reduce the risk of "stranded" reserves.[26]

Since OPEC quotas are levied against production, member states could find themselves constrained – in theory – from meeting their crude oil export commitments while delivering sufficient feedstocks for refining and petrochemical production.

25 The basis of Jubeir's accounting was unclear, but probably included U.S. real estate holdings, Saudi-U.S. joint ventures, and U.S. securities held by the Saudi government. The foreign minister was responding to the U.S. Congress' threatened action on the Justice Against Sponsors of Terrorism Act, which would have allowed U.S. citizens to sue Saudi officials on terrorism charges in U.S. courts. See: Tom DiChristopher, "Saudis Threaten $750B Asset Sale, but Experts Question It," *CNBC*, April 20, 2016.

26 Jim Krane, *Energy Kingdoms: Oil and Political Survival in the Persian Gulf* (New York: Columbia University Press, 2019), 160-72.

Saudi Arabia has made several increases in production and capacity over the past two decades. Its minister of energy suggested in October that another increase was under consideration that would bring theoretical production capacity from about 12 mb/d to 13 mb/d.[27] Other OPEC members have overridden quotas, led by Iraq. At some point, OPEC production constraints and producer country climate strategies could come into conflict.

OPEC member states have also intensified investments into refining and petrochemicals, for reasons that include hedging against the prospect of intensified climate action. Since OPEC quotas are levied against production, member states could find themselves constrained – in theory – from meeting their crude oil export commitments while delivering sufficient feedstocks for refining and petrochemical production. Again, OPEC could be a source of unwanted checks on a member state's industrial policy. Such limits could be alleviated within the OPEC framework through informal quota bargaining among OPEC members, or by a more formal shift in the focus of OPEC's constraints to *exports* of crude oil, rather than production.

Other Quota Challenges

A final factor that might motivate a disbanding or reformulation of OPEC has to do with the ease of flouting its rules and the difficulty of enforcement. Over the years, policymakers in OPEC member states have offered numerous reasons for producing crude oil in quantities higher than allotted quotas. Most tend to cite internal fiscal issues or problems with the fractious dynamics within OPEC:

- Maintaining national balance of payment or sufficient fiscal balance
- Compensating for reduced revenue in preceding periods
- Perceiving unfair allocations
- Other members exceeding their allocations[28]

Since OPEC has no formal mechanism for penalizing members for surpassing their quotas – and in practice, the omnipresent Saudi threat of a price war is rarely followed through – little can be done about such violations.[29]

In summary, motivating factors for a Saudi withdrawal from OPEC – or the disbanding or downsizing of the cartel – include: disproportionate Saudi compliance burdens amid losses in market share; the potential for increasing effectiveness with a smaller cartel; avoidance of U.S. sanctions; more freedom of action to deal with climate change and peak oil demand; reduced interference with industrial diversification; and internal fiscal issues.

27 Dennis Pinchuk, Dimitry Zhdannikov, and Olesya Astakhova, "Saudi Arabia to Invest $20 Billion in Spare Oil Production Capacity," *Reuters*, October 4, 2018.

28 Philipp Galkin, Tarek N. Atalla, and Zhongyuan Ren, "An Estimation of the Drivers Behind OPEC's Quota Decisions," *King Abdullah Petroleum Studies and Research Center*, July 2018.

29 Ibid.

Reasons to Preserve OPEC

Despite the litany of drawbacks that OPEC members face, the cartel has persevered since 1960 and the five original members retain prominent roles. The OPEC cartel continued to function during times of crisis, famously even when member states Iran and Iraq were at war during the 1980s. The foundation of its appeal to oil producers – and the aspects that have thus far protected it from antitrust actions – are found in two widely held principles of national self-determination. First, nation-states hold undisputed sovereignty over national resources, and, second, sovereign governments are free to confer with each other over decisions that affect their individual and collective well-being. Beyond these bedrock principles, further rationales suggest that OPEC provides its members and the world with useful services.

OPEC's Record of Successful Influence over Oil Prices

Perhaps the most important reason to preserve OPEC is the financial benefit that its actions bring to oil producers. Producer-imposed constraints on oil production have been repeatedly validated in peer-reviewed scholarship as robust tools for increasing international oil prices and remuneration for export states.

OPEC's imposition of quotas on production and its investments in production capacity – or lack thereof – have been demonstrated to hold "considerable" power over international oil prices.[30] Public announcements of production decisions made at OPEC's regular meetings have also been determined to affect prices, particularly when markets are tight.[31] OPEC decisions are even credited with moving oil prices *before* they are made, by encouraging commodity traders to take positions based on expectations.[32] OPEC announcements of cuts in production appear to have the strongest effect on price – usually positive – at times when volatility is low.[33] Saudi Arabia could exercise even more market power by cutting production more than it has in the past. According to one paper, the kingdom could have increased its 2004 rent income by $1.9 billion with a 4% larger cut.[34]

If no organization with a similar mandate replaced OPEC, there could be a reduction in producer discipline, extended periods of oversupply, lower oil prices, and lower oil revenue.

30 Robert K. Kaufmann, Stephane Dees, Pavlos Karadeloglou, and Marcelo Sanchez, "Does OPEC Matter? An Econometric Analysis of Oil Prices," *The Energy Journal* 25, no.4 (October 2004): 67-90; James L. Smith, "World Oil: Market or Mayhem?," *Journal of Economic Perspectives* 23, no. 3 (Summer 2009): 145-64.

31 Sharon Xiaowen Lin and Michael Tamvakis, "OPEC Announcements and Their Effects on Crude Oil Prices," *Energy Policy* 38, no. 2 (February 2010): 1,010-16.

32 Harald Schmidbauer and Angi Rosch, "OPEC News Announcements: Effects on Oil Price Expectation and Volatility," *Energy Economics* 34, no. 5 (September 2012): 1,656-63.

33 Loutia Amine, Constantin Mellios, and Kostas Andriosopoulos, "Do OPEC Announcements Influence Oil Prices?," *Energy Policy* 90 (March 2016): 262-72.

34 Ayed Al-Qahtani, Edward Balistreri, and Carol A. Dahl, "A Model for the Global Oil Market: Optimal Oil Production Levels for Saudi Arabia," Colorado School of Mines, 2008.

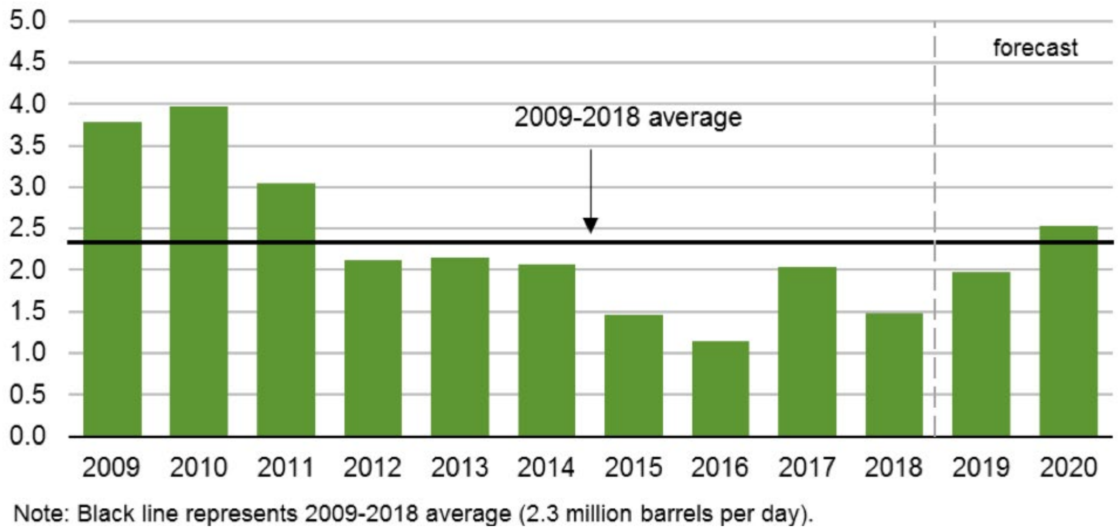
The dismantling of OPEC would, all else constant, jettison the credibility the cartel built over decades of familiar and semitransparent oil market manipulation. If no organization with a similar mandate replaced OPEC, there could be a reduction in producer discipline, extended periods of oversupply, lower oil prices, and lower oil revenue. Put simply, the economic interests of oil producers, whether members or not, align with the preservation of OPEC.

Spare Capacity and Oil Price Volatility

Another strong reason to maintain OPEC in some form is the increased stability the organization's actions impart upon world oil markets. Oil price paths are volatile and notoriously difficult to predict. Price shocks and swinging revenue impose costs on national economies, businesses, and individual consumers. These include inflationary or deflationary pressures, changes in consumer demand, and cascading effects on revenue for energy-intensive businesses.

Volatility risks are such that companies spend significant sums to reduce exposure through hedging, vertical integration, oil storage, and long-term contracts. States and the International Energy Agency likewise spend on strategic stockpiles of oil that are held in reserve to cope with outages and price spikes.

Figure 4: OPEC Surplus Crude Oil Production Capacity (Millions of Barrels per Day)



U.S. government estimates of OPEC spare oil production capacity, dominated by Saudi Arabia. (Source EIA 2019)

An important moderator of volatility is the wherewithal of some producing countries to hold surplus output capacity that allows an increase in oil production at times of market stress. Saudi Arabia is the primary example. The kingdom retains 1 mb/d to 2 mb/d of capacity that it normally holds in abeyance (see Figure 4).[35] Few (perhaps no) other entities have been willing to invest billions of dollars into oil production infrastructure that is intended to be used on

35 At the time of writing, the U.S. Energy Information Administration estimated Saudi spare capacity just under 1 mb/d. "Short-Term Energy Outlook," *U.S. Energy Information Administration*, November 2019.

rare occasions. Certainly, the shareholders of a publicly traded oil company would balk at such an inefficient use of capital. But Saudi policymakers view their role as the self-appointed global suppliers of last resort due to concerns that unusually high prices would undermine long-term oil demand. Saudi leaders have made the conscious choice to leverage idle capacity to underpin strategic alliances with powerful importing countries, led by the United States.[36]

In periods when producer quotas are not constraining output, Saudi Arabia holds nearly all of the world's short-term spare oil production capacity. Saudi Arabia has deployed spare capacity to balance the market in times of war, embargo, sanctions, natural disaster, terrorist attacks, and workers' strikes. The kingdom's actions – coordinating cuts in output with the rest of OPEC and increasing production to replace losses in capacity elsewhere – suggest that it places a greater value on oil market stability than on price.[37] The kingdom also appears to prize stability to a greater extent than its OPEC peers, which tend to have a short-term price focus and compete within the group.[38]

Saudi Arabia has deployed spare capacity to balance the market in times of war, embargo, sanctions, natural disaster, terrorist attacks, and workers' strikes.

Saudi surplus capacity is a key attraction for other producers to join OPEC, so that they share in the cartel's strategic importance. Leadership of the 14-member producers' group, in turn, further enhances Saudi geopolitical stature.

But the main benefit of Saudi spare capacity flows to consumers of oil who would be harmed by price spikes. OPEC spare capacity was deployed frequently between September 2005 and October 2014 and was demonstrated to reduce volatility of global prices by as much as half.[39] Depending on price elasticity of global demand, Axel Pierru, James L. Smith, and Tamim Zamrik calculate that a 500,000 b/d increase in oil production (from OPEC spare capacity) provides oil importers with a collective reduction in oil prices of some $13 billion, at the mid-range estimate of price elasticity of -0.3.[40]

36 For a more thorough discussion of strategic relevance of Saudi spare capacity see: Gabriel Collins and Jim Krane, "Carter Doctrine 3.0: Evolving U.S. Military Guarantees for Gulf Oil Security," *Baker Institute for Public Policy*, April 27, 2017; and Jim Krane, *Energy Kingdoms: Oil and Political Survival in the Persian Gulf* (New York: Columbia University Press, 2019), 15-16.

37 Khalid Alkhathlan, Dermot Gately, and Muhammad Javid, "Analysis of Saudi Arabia's Behavior within OPEC and the World Oil Market," *Energy Policy* 64 (January 2014): 209-25.

38 Philipp Galkin, Tarek N. Atalla, and Zhongyuan Ren, "An Estimation of the Drivers Behind OPEC's Quota Decisions," *King Abdullah Petroleum Studies and Research Center*, July 2018.

39 Axel Pierru, James L. Smith, and Tamim Zamrik, "OPEC's Impact on Oil Price Volatility: The Role of Spare Capacity," *The Energy Journal* 39, no. 2 (April 2018): 103-22.

40 Ibid.

Demand Destruction

Of course, there are self-serving aspects to spare capacity. The economies most exposed to volatility in oil prices are those most dependent on oil revenue, including Saudi Arabia and the remaining members of OPEC. Saudi Arabia derives roughly 90% of export earnings and a slightly smaller percentage of its national budget from oil revenue, which accounts for around one-third of gross domestic product.

The kingdom's experience during the 1985-2003 "oil bust" reveals the dangers of volatile prices and demand destruction. High prices in the late 1970s prompted a reaction among consumers that wound up reducing OPEC's market share from over 50% in the early 1970s to less than 30% by 1985, as the kingdom cut production in an unsuccessful effort to raise prices. A second round of demand destruction is linked to the extreme volatility of 2007-08, when oil prices topped out above $140/bbl. World oil demand slipped due to high prices and the ensuing global recession.[41]

Demand destruction is a virulent threat for oil producers with large reserve bases like Saudi Arabia. The kingdom's interests are congruent with preserving oil's current role in the global economy.

Conclusion: A Soft Landing for Petro-States?

OPEC provides useful services for oil producers in terms of increased revenue and moderating fluctuations in prices. Economic gains to oil producers from coordinated output appear too great to toss aside: OPEC cut its production by 5% in 2016 and revenue jumped 29% in 2017.[42] The cartel's meetings provide a useful forum for discussion among exporters and a setting where oil states interface with the global public. OPEC leverages the economic magnitude of its activities to enhance the geopolitical profile of its members, including many small and weak states that otherwise lack comparable opportunities.

OPEC leverages the economic magnitude of its activities to enhance the geopolitical profile of its members, including many small and weak states that otherwise lack comparable opportunities.

OPEC provides a net benefit to world energy consumers in the form of supply continuity that reduces price volatility and the related economic damages. In addition, OPEC's output manipulations might arguably be portrayed as marginally beneficial to the climate, in the sense that, in a counterfactual world with no cartel, oil prices might be lower and demand higher. Christoph W. Frei of the Swiss Federal Institute of Technology came to a similar conclusion via a different route, arguing that OPEC may provide a small environmental benefit by improving security of oil supply and allowing countries to focus on higher-order needs.[43]

41 Robert McNally, *Crude Volatility: The History and the Future of Boom-Bust Oil Prices* (New York: Columbia University Press, 2017), 146, 191.

42 "Short-Term Energy Outlook," *U.S. Energy Information Administration*, 2018.

43 Christoph W. Frei, "The Kyoto Protocol – A Victim of Supply Security? Or: If Maslow Were in Energy Politics," *Energy Policy* 32, no. 11 (2004): 1,253-56.

Saudi Arabia's geology and overbuilt production infrastructure allow it to act as the market's balancer. The kingdom shares in the benefits above, but its enhanced balancing role requires it to vary its crude oil output to a larger extent than that of other members. This disadvantage renders the Saudi economy more prone to revenue volatility.

There is a lack of convincing motivation for the total disbanding of OPEC other than as a drastic response to the extraterritorial sanctions under consideration in the U.S. Congress. A stronger argument can be made for a Saudi-led reformulation of OPEC in which the kingdom acts as the formal (rather than informal) leader, alongside another major producer, such as Russia. A streamlined cartel with membership premised on demonstrating willingness to oscillate output could increase the efficiency and, perhaps, the profitability of the oil industry. Smaller producers would lose some of the less tangible geopolitical benefits of membership but would be free to raise oil production without being penalized for free riding. Even the *prospect* of a reformulated OPEC could result in compliance concessions from small producers.

In coming years, OPEC's attention will inevitably turn to the global climate accords that seek to reduce fossil fuel demand and encourage adoption of substitute fuels and technologies. As the effects of climate change intensify, oil producers face reduced acceptance among the international community for business-as-usual production, exportation, subsidization, and consumption of fossil fuels.

As the effects of climate change intensify, oil producers face reduced acceptance among the international community for business-as-usual production, exportation, subsidization, and consumption of fossil fuels.

OPEC presents an ideal forum for producers to respond to demands around climate change and greenhouse gas mitigation. OPEC's structures and mandate are already designed for problems of collective action, and the bloc has decades of experience dealing with multilateral activities that tend to promote free riding in similar fashion to climate action. OPEC still plays a significant role in determining oil output levels among states with heterogeneous strategies, incomes, and quota compliance.[44]

The cartel could present an opposition front to climate pressure, perhaps greeting a global move toward alternative fuels with demands for compensation, backed by the threat of stepped-up production that could undercut the economics of alternative fuels.[45] Conversely, OPEC might assume a more cooperative role, perhaps allocating reduced quotas and overseeing compliance with member states' greenhouse gas mitigation commitments.

A future OPEC might also be reconfigured to assist member states in coping with a plateaued or declining oil market. It is not hard to imagine the cartel's existing structures being repurposed to equitably allocate portions of a stagnant or declining market. Quotas might

44 Philipp Galkin, Tarek N. Atalla, and Zhongyuan Ren, "An Estimation of the Drivers Behind OPEC's Quota Decisions," *King Abdullah Petroleum Studies and Research Center*, July 2018.

45 The Saudi Nationally Determined Contribution under the Paris Agreement of 2015 explicitly requests international assistance with economic diversification. See: Kingdom of Saudi Arabia, "The Intended Nationally Determined Contribution of the Kingdom of Saudi Arabia under the UNFCCC," United Nations Framework Convention on Climate Change, 2015.

take on a more important role, being based on production costs or greenhouse gas intensity of upstream emissions, rather than output capacity.[46] The specter of state failure, unrest, and mass migration from insufficiently diversified exporting states poses a vivid argument for preserving a robust OPEC.

The loss of OPEC could result in a more chaotic oil market where the failure of collective action makes all participants worse off. Competition for market share could resemble a price war, with producer prices driven down and climate goals undermined unless end-user prices are insulated by carbon taxes. In extreme cases, exporting states might find themselves with insufficient revenue to maintain public order[47] or resorting to desperate measures, such as subverting political stability in rival states so that oil output is undermined.[48] Or perhaps petro-states might depart the cartel to adopt bilateral relations with importing states, in hopes of locking in long-term demand for reserves that might otherwise be stranded in the clean energy transition.[49] Collective action by OPEC provides the world with a public good that may well rise in value as climate action comes to the fore.

46 Jim Krane, "Climate Strategy for Producer Countries: The Case of Saudi Arabia," (working paper, Baker Institute for Public Policy, Rice University, Houston, TX, 2018).

47 Thijs Van de Graaf, "Battling for a Shrinking Market: Oil Producers, the Renewables Revolution, and the Risk of Stranded Assets," in *The Geopolitics of Renewables*, ed. Daniel Scholten (Springer: 2018), 97-121; and 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.

48 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.

49 Steven Griffiths, "Bilateral Energy Diplomacy in a Time of Energy Transition," *Emirates Diplomatic Academy*, December 2018.