

Penn State Journal of Law & International Affairs

Volume 3

Issue 2 *The 9 Billion People Question: The Challenge of
Global Resource Scarcity*

February 2015

From Scarcity to Abundance: The Changing Dynamics of Energy Conflict

Michael T. Klare

ISSN: 2168-7951

Recommended Citation

Michael T. Klare, *From Scarcity to Abundance: The Changing Dynamics of Energy Conflict*, 3 PENN. ST. J.L. & INT'L AFF. 10 (2015).
Available at: <http://elibrary.law.psu.edu/jlia/vol3/iss2/4>

The Penn State Journal of Law & International Affairs is a joint publication of Penn State's School of Law and School of International Affairs.

Penn State Journal of Law & International Affairs

2015

VOLUME 3 NO. 2

FROM SCARCITY TO ABUNDANCE: THE CHANGING DYNAMICS OF ENERGY CONFLICT

*Michael T. Klare**

INTRODUCTION

In November 2012, the International Energy Agency (IEA) triggered headlines around the world when it announced that the United States, by dint of its success in utilizing new extractive technologies, would likely overtake Saudi Arabia to become the world's leading oil producer by 2020.¹ At a time in which many analysts had come to believe that the world was facing an impending "peak" in global oil output followed by an irreversible decline,² the IEA's report was said to herald a new and unexpected era of hydrocarbon plenty. In commenting on the report, many analysts spoke in particular about the purported economic benefits of energy abundance, notably the prospect of new jobs and manufacturing activities.³ As the IEA indicated, however, the new energy bounty

* [Michael T. Klare](#), Five College Professor of Peace and World Security Studies, and director of the Five College Program in Peace and World Security Studies (PAWSS) at Hampshire College.

¹ International Energy Agency (IEA), WORLD ENERGY OUTLOOK 2012 52, 157 (2012), http://www.iea.org/publications/freepublications/publication/WEO2012_free.pdf.

² See, e.g., KENNETH S. DEFFEYES, HUBBERT'S PEAK: THE IMPENDING WORLD OIL SHORTAGE (2001); Robert L. Hirsch, *The Inevitable Peaking of World Oil Production*, 26 BULL. ATL. COUNCIL U.S. 1-9 (Oct. 2005).

³ See, e.g., *Saudi America*, WALL ST. J., Nov. 14, 2012, <http://www.wsj.com/news/articles/SB100014241278873238947045781145911744>

has political and military implications. “This energy renaissance,” it declared, “has far-reaching consequences for energy markets, trade, and, potentially, even for energy security, geopolitics, and the global economy.”⁴

Energy security and geopolitics have, of course, played a pivotal role in international affairs for a very long time, ever since the development of oil-powered vehicles and weapons of war. As the demand for petroleum exploded, especially in the years during and after World War I, the major military and industrial powers fought with one another for control over the world’s handful of oil-producing areas. Gaining access to foreign oil supplies was also a major war aim of Germany and Japan during World II and a major concern of the United States during the Cold War era. After the Cold War, the United States continued to place a high priority on ensuring its access to foreign oil supplies, employing military force on several occasions to protect the oil flow from the Persian Gulf.⁵ The 2012 IEA statement suggested, however, that the well-established relationship between energy and geopolitics would be profoundly altered as a result of the current “energy renaissance.”

As an energy-specific organization, the IEA did not offer its own prognosis on the geopolitical implications of its suggestive comment, except to note that we should expect a shift in the center of gravity of world oil and natural gas production from the Middle East to North America.⁶ Nevertheless, it is obvious from its analysis that this shift and other consequences of the “renaissance” will have profound implications for the foreign and security policies of both energy importing and exporting nations and for the prospects for

[53074](http://www.ft.com/cms/s/0/d1a183d2-40a3-11e2-aafa-00144feabdc0.html#axzz3B4D6zQZy); Ed Crooks, *U.S. Shale Gas Sparks a Chemical Revolution*, FIN. TIMES, Dec. 17, 2012, <http://www.ft.com/cms/s/0/d1a183d2-40a3-11e2-aafa-00144feabdc0.html#axzz3B4D6zQZy>; Jim Motavalli, *Natural Gas Signals a 'Manufacturing Renaissance'*, N.Y. TIMES, Apr. 10, 2012, http://www.nytimes.com/2012/04/11/business/energy-environment/wider-availability-expands-uses-for-natural-gas.html?pagewanted=all&_r=0.

⁴ IEA, *supra* note 1, at 74.

⁵ See generally MICHAEL T. KLARE, BLOOD AND OIL 26-55 (2004).

⁶ WORLD ENERGY OUTLOOK 2012, *supra* note 1, at 74-80.

conflict over oil and gas. In particular, policies aimed at securing the safe flow of oil from the Middle East to markets in the West—a source of repeated crisis and conflict in the past—are now being called into question, while disputes over new sources of energy, such as those in offshore areas and the Arctic, have gained fresh attention. More importantly, the very basis for energy-driven security policies—an expectation of perpetually inadequate supplies of hydrocarbons—appears to have been rendered invalid by the dramatic rise in global output, raising doubts about the future likelihood of wars over oil.⁷

Will conflict over energy supplies disappear in an era of oil and gas abundance? Or will it take new forms, governed by the changing geography of global supply and demand? Although it is still too early to provide a definitive answer to these questions, it is possible to detect several significant trends in energy geopolitics—all suggesting that the risk of conflict over oil and natural gas supplies will not disappear in an era of hydrocarbon abundance. This essay will trace the origins of energy geopolitics and attempt to show how it is being affected by the development of new production technologies.

I. THE GEOPOLITICS OF SCARCITY

The relationship between oil and geopolitics first arose during World War I when oil-powered weapons—tanks, planes, and submarines—first made their appearance on the battlefield and the major powers scoured the world for reliable sources of supply. With reserves limited and only a few major deposits then in production—mostly in the United States, Romania, Iran (then Persia), and Baku in the Czarist empire—the principal belligerents sought to control these

⁷ See generally Ed Crooks & Geoff Dyer, *Energy Security: Strength in Reserve*, FIN. TIMES, Sept. 5, 2013, <http://www.ft.com/cms/s/0/916a6744-0f14-11e3-8e58-00144feabdc0.html#axzz3BMCFD8uY>; Daniel Yergin, *America's New Energy Security*, WALL ST. J., Dec. 12, 2011, <http://www.wsj.com/news/articles/SB10001424052970204449804577068932026951376>.

areas or deny their opponents access to them. After the war, the surviving great powers engaged in a competitive struggle to extend their sway in the major oil-producing areas, especially in the Persian Gulf area and the Caucasus.⁸

Many scholars believe that it was Winston Churchill who first grasped the geopolitical significance of oil and its association with the Persian Gulf. In 1912, as First Lord of the Admiralty, Churchill ordered the conversion of British warships from coal to oil propulsion in the belief that this would give them an advantage over Germany's coal-powered ships in the event of war.⁹ Because Great Britain at that time did not possess domestic oil reserves of its own (the North Sea fields were not discovered until much later), Churchill determined that London must obtain a secure overseas source of oil under direct British authority. The most propitious option, he concluded, was to impose government control over the Anglo-Persian Oil Company (APOC, the forerunner of British Petroleum), which had secured a concession to promising reserves in southwestern Persia. As a result of his prodding, Parliament voted in 1914 to nationalize APOC and bring its Persian concession under London's control. From that point onward, the protection of APOC's concession area, and of British supply lines to the Persian Gulf (especially the Suez Canal), were viewed as matters of vital national security by the British government.¹⁰

The strategic aspect of the international competition for oil reserves continued to play a significant role in international relations after World War I and in the years leading up to the Second World War. The major European powers, possessing few domestic oil reserves of their own, focused much of their efforts on acquiring a foothold in the oil-bearing regions of the Middle East. This was the era of the San Remo Agreement of 1920, under which Britain obtained control over Iraq through a mandate from the League of

⁸ See DANIEL YERGIN, *THE PRIZE: THE EPIC QUEST FOR OIL, MONEY & POWER* 184-206 (2001) [hereinafter *THE PRIZE*].

⁹ See generally GEOFFREY JONES, *THE STATE AND THE EMERGENCE OF THE BRITISH OIL INDUSTRY* 9-31 (1981).

¹⁰ *Id.* at 129-76; see also *THE PRIZE*, *supra* note 8, at 153-64.

Nations.¹¹ Meanwhile, Japan—a rising industrial power with a similar paucity of oil—harbored imperial ambitions over the Dutch East Indies, then the major producer in Asia.

The need to secure overseas sources of oil played a significant role in the strategic planning of Germany and Japan, both of which sought to invade and conquer foreign producing areas in order to fuel their military forces and industrial systems. In 1941, when full-scale combat broke out, both undertook military strikes with this purpose in mind: Germany invaded the Soviet Union, with Baku as one of its primary objectives; Japan invaded the Dutch East Indies. With Washington becoming increasingly alarmed by Japan's aggressive moves in Asia, Japanese leaders concluded that its invasion of the Dutch East Indies would provoke a U.S. military response of some sort. Japan simultaneously attacked the U.S. naval base at Pearl Harbor in Hawaii, thus ensuring American entry into the war.¹²

Until this point, the United States had not participated in the strategic—as distinct from the commercial—pursuit of overseas oil, as it possessed sufficient domestic reserves to satisfy its wartime military requirements and those of its principal allies. As World War II progressed, however, President Franklin D. Roosevelt and his senior advisers became worried that the heavy wartime extraction of domestic oil was rapidly depleting U.S. reserves, thereby eroding America's capacity to sustain another full-scale war on the magnitude of World War II.¹³ Accordingly, Roosevelt ordered the State and Commerce Departments to seek a reliable foreign source of oil to

¹¹ See generally JOHN KEAY, *SOWING THE WIND: THE SEEDS OF CONFLICT IN THE MIDDLE EAST* 124-29 (2003).

¹² See *THE PRIZE*, *supra* note 8, at 328-67.

¹³ At this time, American geologists were unaware of major deposits in Alaska and the deeper waters of the Gulf of Mexico, making it appear that U.S. reserves were shrinking faster than later proved to be the case.

supplement American reserves in the event of a major future conflict.¹⁴

After considering the various possibilities, government experts became convinced that Saudi Arabia constituted the best candidate to serve in this capacity. Whereas most of the rest of the Persian Gulf area was controlled by Great Britain, Saudi Arabia had largely escaped British control. In addition, the Saudi monarch, King Abdul Aziz ibn Saud, had granted a substantial concession to an American oil firm, Standard Oil of California (Socal, later Chevron), giving the United States a significant presence in the country. On this basis, Roosevelt decided in 1943 to anoint Saudi Arabia as America's preferred foreign supplier of oil and to bring the Kingdom under American military protection. Saudi Arabia was made eligible for U.S. aid under the Lend-Lease Act and consideration was given to the construction of a U.S. air base there. To bolster these efforts, Roosevelt met with Abdul Aziz on February 14, 1945, and forged an agreement with him under which the United States received privileged access to Saudi oil in return for a United States pledge to protect the monarchy against its assorted enemies.¹⁵

With the Roosevelt-Abdul Aziz agreement in place, the United States began to insert a permanent military presence in the Gulf region. This led, in 1946-47, to the establishment of an air base at Dhahran in Saudi Arabia and a naval base at Bahrain.¹⁶ For the most part, however, American policymakers relied on Great Britain to maintain stability in the Gulf at this time. But, when London announced that it would withdraw most British forces from "East of Suez" by the end of 1971, Washington was forced to find another friendly power to carry the burden of regional security. The United

¹⁴ See generally AARON DEAN MILLER, *SEARCH FOR SECURITY* 54-57, 62-63, 74-77 (1980); DAVID S. PAINTER, *OIL AND THE AMERICAN CENTURY* 11-31, 34-35 (1986).

¹⁵ See generally MILLER, *supra* note 14, at 19-20, 49, 54-57, 62-63, 74-77, 128-31; PAINTER, *supra* note 14, at 32-95; MICHAEL B. STOFF, *OIL, WAR AND AMERICAN SECURITY* 18-21, 35-39, 48-51, 57-88 (1980).

¹⁶ See generally DAVID E. LONG, *THE UNITED STATES AND SAUDI ARABIA: AMBIVALENT ALLIES* (1985).

States chose to rely on the Iranian regime of Shah Reza Mohammed Pahlavi (whom the Americans and British had helped install as absolute monarch through a CIA-orchestrated coup in 1954).¹⁷ From 1970 to 1979, the United States provided Iran with vast supplies of modern arms, helping to transform the Iranian military into a potent regional force.¹⁸ Not surprisingly, then, the fall of the Shah in January 1979 produced great consternation in Washington, as there was no obvious alternative to assume Iran's role as a "surrogate gendarme." Eleven months later, Washington received another shock when the Soviet Union commenced its invasion of Afghanistan, putting Soviet troops within a few hundred miles of the Persian Gulf and its vital energy supplies.

II. THE "CARTER DOCTRINE" AND BEYOND

The Islamic Revolution in Iran and the Soviet takeover of Afghanistan triggered a thorough review of U.S. policy toward the Gulf. This review coincided with significant shifts in U.S. energy trends. Until the early 1970s, the United States was largely able to satisfy its petroleum requirements with crude from domestic reserves. After 1972, however, domestic production went into decline and, with consumption experiencing steady growth, the country was forced to increase its reliance on imported oil. In 1970, imports accounted for twenty-one percent of total U.S. oil consumption; by 1979, they accounted for forty-three percent of consumption.¹⁹ As the United States was becoming more dependent on imports, the major oil-producing countries were banding together to exact higher prices for their products and, in some cases, to use their newfound economic clout to extract political concessions from the major oil consumers. This was especially evident in 1973-74, when members of the Organization of Petroleum Exporting Countries (OPEC)

¹⁷ See STEPHEN KINZER, *ALL THE SHAH'S MEN* (2003).

¹⁸ See MICHAEL T. KLARE, *AMERICAN ARMS SUPERMARKET* 127-26 (1984).

¹⁹ ENERGY INFO. ADMIN., *ANNUAL ENERGY REVIEW 2000* 123, Table 5.1 (2001), <http://www.eia.gov/totalenergy/data/annual/archive/038400.pdf>.

quadrupled the price of crude and the Arab OPEC members imposed an embargo on sales to the United States, producing widespread shortages and a global economic recession.²⁰

With these developments in mind, then President Jimmy Carter and his top advisers concluded that U.S. interests in the Persian Gulf were too great to be entrusted into the hands of surrogates and must instead come under the direct protection of American forces. This proposition, ever since known as the “Carter Doctrine,” was spelled out in the President’s State of the Union address of January 23, 1980: “The region which is now threatened by Soviet troops in Afghanistan is of great strategic importance.”²¹ By occupying Afghanistan, President Carter explained that the Soviets are “now attempting to consolidate a strategic position . . . that poses a grave threat to the free movement of Middle East oil.”²² Given the importance of that oil to the United States and the world economy, the United States had to be ready to take decisive action: “Let our position be absolutely clear: An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force.”²³

Because the United States did not, at that time, possess any forces earmarked specifically for operations in the Arabian Gulf area, President Carter established a new military organization to implement this policy: the Rapid Deployment Joint Task Force (RDJTF). He also announced plans to deploy additional warships in the Gulf proper and to acquire new bases in the surrounding region. These measures received strong support from his successor, Ronald Reagan,

²⁰ See THE PRIZE, *supra* note 8, at 588–632.

²¹ Jimmy Carter, State of the Union Address, (Jan. 23, 1980) (transcript available at <http://www.jimmycarterlibrary.gov/documents/speeches/su80jec.phtml>).

²² *Id.*

²³ *Id.*; see also MICHAEL A. PALMER, GUARDIANS OF THE GULF: A HISTORY OF AMERICA’S EXPANDING ROLE IN THE PERSIAN GULF, 1883–1992 101–11 (1999).

who elevated the RDJTF into a full-scale regional combat organization, the U.S. Central Command (CENTCOM).²⁴

President Reagan was also the first American leader to invoke Carter's pledge to use force when needed to safeguard the flow of oil. When Iranian forces attacked Kuwaiti tankers during the Iran-Iraq War of 1980-88, Reagan determined that such action constituted a severe threat to the free flow of Persian Gulf oil and authorized the "reflagging" of those tankers with the American ensign, thereby allowing their protection by the U.S. Navy.²⁵ On May 19, 1987, President Reagan stated: "Mark this point well: The use of the sea lanes of the Persian Gulf will not be dictated by the Iranians."²⁶ The protection of Persian Gulf oil was also cited by Reagan's successor, President George H.W. Bush, as the justification for U.S. efforts to protect Saudi Arabia following the Iraqi invasion of Kuwait on August 2, 1990. "Our country now imports nearly half the oil it consumes and could face a major threat to its economic independence," Bush declared on August 8th.²⁷ Hence, "the sovereign independence of Saudi Arabia is of vital interest to the United States."²⁸

Today, the relationship between oil, security, and the Persian Gulf remains as strong as ever. This is evident in the recurring statements by American leaders that the United States will use force if necessary to ensure the safe flow of Persian Gulf oil through the Strait of Hormuz in response to any effort by Iran to impede such shipping. While the Persian Gulf has remained the principal focus of U.S. efforts to safeguard the global flow of oil, Washington has

²⁴ PALMER, *supra* note 23, at 112-17.

²⁵ *Id.* at 122-49.

²⁶ *Id.* at 124 (quoting Ronald Reagan, Presidential Statement, (May 19, 1987)).

²⁷ George H.W. Bush, Television Address, (Aug 8, 1990) (transcript available at N.Y. TIMES, Aug 9, 1990).

²⁸ *Id.*

extended its protective shield to other oil-producing areas, especially the Caspian Sea basin and West Africa.²⁹

This drive to secure new sources of energy began under President Clinton, who placed particular emphasis on the Caspian Sea region. After the break-up of the Soviet Union and the emergence of independent states in the Caspian basin, Clinton viewed this area as a promising new source of energy as well as a strategic alternative to reliance on the Persian Gulf. While eager to tap into the newly-accessible oil and natural gas reserves of the Caspian area, Clinton understood that any drive to direct Caspian Sea energy to the West would require a substantial reorganization of the region's energy transportation system, as all existing export conduits dated from the Soviet era and traveled through Russia before reaching Western markets—a form of dependence on Moscow that Washington sought to escape.³⁰ To establish an alternative export route to the West, Clinton lobbied for construction of the Baku-Tbilisi-Ceyhan (BTC) pipeline, connecting Azerbaijan's sector of the Caspian Sea to Turkey's Mediterranean coast via Georgia. Because this conduit passed through or near several areas of ethnic unrest, including Chechnya, South Ossetia, and Nagorno-Karabakh, Clinton also promised to bolster the military forces of the transit countries. In this manner, the safe flow of Caspian oil to the West became a matter of U.S. national security, as was the flow of Persian Gulf oil under the Carter Doctrine.³¹

Just as President Clinton had extended the Carter Doctrine to the Caspian Sea basin, President Bush extended it to West Africa. Like the Caspian region, West Africa was said to be of strategic importance to the United States both because of its prolific energy supplies and as an alternative to reliance on the Middle East.³² As

²⁹ U.S. DEP'T OF STATE, CONGRESSIONAL BUDGET JUSTIFICATION: FOREIGN OPERATIONS, FISCAL YEAR 2004 322-23 (Feb. 2003), <http://fas.org/asmp/resources/110th/CBJ08.pdf>.

³⁰ The Caspian Sea itself is land-bound, so any oil or natural gas exiting the region for markets elsewhere must travel by pipeline or rail cars.

³¹ See generally BLOOD AND OIL, *supra* note 5, at 132–39.

³² See *id.* at 142–45.

Assistant Secretary of State Walter Kansteiner observed in 2002, “African oil is of national strategic interest to us, and it will increase and become more important as we go forward.”³³ On this basis, the United States has provided favored African governments with various forms of military assistance, just as it has those in the Caspian Sea region.³⁴ In further recognition of the area’s growing strategic importance, President Bush established a new military organization for the region, the U.S. Africa Command (AFRICOM). Although the establishment of AFRICOM was not explicitly tied to the protection of oil—as was the case for CENTCOM—it is evident from the historical record that concern over instability in the oil-producing areas of Africa was one of the motivating factors.³⁵

III. THE END OF SCARCITY

Even today, the United States is pursuing a strategy driven in large part by concern over the safety of foreign oil supplies. In the Persian Gulf, U.S. forces are poised to counter any effort by Iran to block oil shipping through the Strait of Hormuz; likewise, American forces are involved in efforts to help protect oil pipelines in the Caspian Sea basin and offshore oil platforms in the Gulf of Guinea.³⁶ While the safety of foreign oil supplies remains a major responsibility of the U.S. military, the economic and strategic underpinnings of these activities have shifted. Because of a sudden and significant increase in domestic energy production, the United States needs far

³³ Mike Crawley, *With Mideast Uncertainty, US Turns to Africa for Oil*, CHRISTIAN SCI. MONITOR, May 23, 2002, <http://www.csmonitor.com/2002/0523/p07s01-woaf.html>.

³⁴ Annual appropriations for military aid to Africa are tabulated in the U.S. Department of State’s Congressional Budget Justification for Foreign Operations, *discussed in* Michael Klare & Daniel Volman, *The African ‘Oil Rush’ and US National Security*, 27 THIRD WORLD Q. 609–28 (Aug. 22, 2006).

³⁵ See LAUREN PLOCH, CONG. RESEARCH SERV., RL34003, AFRICA COMMAND: U.S. STRATEGIC INTERESTS AND THE ROLE OF THE U.S. MILITARY IN AFRICA 15–16 (July 22, 2011), <http://fas.org/sgp/crs/natsec/RL34003.pdf>.

³⁶ See, e.g., MICHAEL T. KLARE, RISING POWERS, SHRINKING PLANET 115–209 (2008).

less imported oil than it did before; at the same time, U.S. oil consumption has leveled off in response to the global economic downturn and increases in the fuel efficiency of American vehicles. In place of scarcity, pundits and policymakers are now speaking of energy *abundance* as the determining factor in U.S. strategic planning. “Instead of facing an Era of Scarcity,” observed Rex Tillerson, the chairman and CEO of ExxonMobil, “we are now witnessing the transition to a new Era of Abundance.”³⁷ This transition, he said in 2013, will “spur economic growth, create jobs, and strengthen energy security.”³⁸

The shift from scarcity to abundance has been both extraordinary and unexpected. In 2005, when U.S. leaders were still warning of increased dependence on unreliable foreign suppliers, innovators in the oil and gas industry were already deploying new technologies with explosive potential. These included, most of all, horizontal drilling and hydraulic fracturing, or fracking—techniques that permit the exploitation of previously inaccessible oil and natural gas reserves in shale and other impermeable rock formations. Other innovations allow for the extraction of oil and gas in Arctic and deep-offshore waters, and for the conversion of bitumen and other heavy oils, such as Canadian tar sands (also called “oil sands”) into usable products.³⁹ Together, these technologies have allowed for a dramatic turnaround in North American oil and gas output. Oil production in the United States jumped from 7.6 million barrels per day in 2010 to 10.0 million barrels in 2013, an increase of thirty-two percent in just three years. If current estimates by the Energy Information Administration (EIA) prove accurate, domestic output will jump to 12.8 million barrels per day in 2020, the highest it has been since 1972.⁴⁰ Natural gas production in the United States is also predicted

³⁷ Rex Tillerson, *Capitalizing on the Coming Era of Energy Abundance*, Address to Texas Alliance of Energy Producers, (Apr. 2, 2013) (transcript available at <http://corporate.exxonmobil.com/en/company/news-and-updates/speeches/capitalizing-on-coming-era-of-energy-abundance>).

³⁸ *Id.*

³⁹ See, e.g., MICHAEL LEVI, *THE POWER SURGE: ENERGY, OPPORTUNITY, AND THE BATTLE FOR AMERICA’S FUTURE* (2013).

⁴⁰ See Table 1, *infra*.

to see a sharp increase, with output climbing from 21.3 trillion cubic feet in 2010 to an estimated 31.4 trillion in 2035.⁴¹ Canada, meanwhile, is expected to see its oil output jump from 3.6 million barrels per day in 2010 to 6.1 million barrels in 2035, with most of this increase coming from Alberta's tar sands.⁴²

Not only is the United States enjoying an increase in domestic energy output, but it is also using less oil. Total consumption dropped from a high of 20.7 million barrels per day in 2007 to 18.6 million barrels in 2012, and is expected to remain at that level for the indefinite future.⁴³ When combined with rising domestic oil output, this decline has resulted in a significantly reduced need for imported oil. From a peak of 13.8 million barrels per day in 2007 (or sixty-seven percent of total U.S. consumption), U.S. oil imports fell to 8.9 million barrels in 2013 (forty-seven percent of consumption). According to the most recent EIA projections, U.S. oil imports will decline even further in the years ahead to 6.7 million barrels per day in 2020 (thirty-four percent of consumption).⁴⁴ Of this 6.7 million barrels, moreover, approximately half is expected to come from Canada (mostly in the form of diluted bitumen), reducing U.S. reliance on imports from extra-hemispheric sources even further.

Although the United States and Canada are, at present, the principal beneficiaries of the revolution in energy technology, they are not expected to remain the sole proprietors of these new techniques. Many other countries possess large deposits of shale oil and gas and are beginning to employ hydraulic fracturing in a drive to exploit these reserves. China and Russia, for example, have announced ambitious plans to develop their extensive shale deposits, as have Argentina, Poland, Ukraine, the United Kingdom, and South

⁴¹ ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2014 WITH PROJECTIONS TO 2040 A-28, Table A14 (2014), <http://www.eia.gov/forecasts/aeo/pdf/0383%282014%29.pdf>.

⁴² ENERGY INFO. ADMIN., INTERNATIONAL ENERGY OUTLOOK 2013 247, Table G1 (2013), <http://www.eia.gov/forecasts/ieo/pdf/0484%282013%29.pdf>.

⁴³ *Id.* at 184, Table A5.

⁴⁴ *Id.* at 247, Table G.

Africa.⁴⁵ Similarly, nations with significant offshore and Arctic reserves, including Canada, China, Norway, Russia, and Vietnam, have marshaled advanced technologies to develop these resources. As a result, global supplies of oil and natural gas are expected to remain relatively robust for years to come.⁴⁶

As suggested by the IEA in its 2012 report, these developments are bound to affect energy geopolitics in many ways. Some of these effects are not likely to be evident for many years, but some are already being felt. In particular, the new energy abundance appears to be altering U.S. relations with the Persian Gulf, Russia, and Europe. At the same time, new forms of energy-related competition and conflict are emerging in other areas, including Eurasia, the Arctic, and the deep oceans.

IV. AMERICA'S "ENDURING POSTURE" IN THE PERSIAN GULF

For some analysts, the natural response to diminished U.S. reliance on Middle Eastern oil would be the withdrawal of American forces from the Gulf and their deployment elsewhere to areas of greater strategic significance. As paraphrased by *The Economist*, these analysts argue that "if America can produce its own oil . . . why waste so much blood and treasure policing the Middle East?"⁴⁷ On the surface, this outlook seems to make eminent sense, especially given the high cost of maintaining a substantial military presence in the Gulf at a time of diminished budget allocations. However, most senior policymakers reject this option, saying the Gulf area remains

⁴⁵ See *Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States*, ENERGY INFO. ADMIN. (last updated June 13, 2013), <http://www.eia.gov/analysis/studies/worldshalegas/> (assessing global shale oil and gas reserves); see INTERNATIONAL ENERGY OUTLOOK 2013, *supra* note 42, at 50-56 (discussing plans for the exploitation of shale gas reserves).

⁴⁶ WORLD ENERGY OUTLOOK 2012, *supra* note 1, at 81-154.

⁴⁷ *The Petrostate of America*, ECONOMIST, Feb. 15, 2014, <http://www.economist.com/news/leaders/21596521-energy-boom-good-america-and-world-it-would-be-nice-if-barack-obama-helped>.

vital to U.S. security.⁴⁸ Because the continued flow of Middle Eastern oil is considered essential to world economic vigor—whether or not that oil flows to U.S. markets—any significant U.S. military withdrawal could lead to increased regional instability, disruptions in the oil flow, and global economic chaos. As noted by Rex Tillerson of Exxon, the uninterrupted flow of Persian Gulf oil is essential “to global economic stability,” and thus to U.S. security.⁴⁹ Even if “we’re no longer getting any oil from the Middle East because we’re secure here,” he explained, “a disruption of oil supplies from that region will have devastating impacts on global economies,” ours included.⁵⁰

This logic appears to have persuaded President Obama, who has pledged to retain a strong military presence in the Gulf. “The United States of America is prepared to use all elements of our power, including military force, to secure our core interests in the region,” he told the U.N. General Assembly on September 24, 2013.⁵¹ “We will ensure the free flow of energy from the region to the world.”⁵² Even though America is steadily reducing its dependence on imported oil, he explained, “the world still depends on the region’s energy supply, and a severe disruption could destabilize the entire global economy.”⁵³

⁴⁸ See Thom Shanker & Steven Lee Myers, *U.S. Planning Troop Buildup in Gulf after Exit from Iraq*, N.Y. TIMES, Oct. 29, 2011, http://www.nytimes.com/2011/10/30/world/middleeast/united-states-plans-post-iraq-troop-increase-in-persian-gulf.html?_r=1&.

⁴⁹ Rex Tillerson, “The New North American Energy Paradigm,” Address at the Council of Foreign Relations (June 27, 2012) (transcript available at <http://www.cfr.org/north-america/new-north-american-energy-paradigm-reshaping-future/p28630>).

⁵⁰ *Id.*

⁵¹ President Barack Obama, Remarks by President Obama in Address to the United Nations General Assembly (Sept. 24, 2013) (transcript available at <http://www.whitehouse.gov/the-press-office/2013/09/24/remarks-president-obama-address-united-nations-general-assembly>) [hereinafter Obama to U.N. General Assembly].

⁵² *Id.*

⁵³ *Id.*

Obama has also indicated that there will be a major shift in U.S. strategy in the region. Instead of employing troops on the ground to affect the outcome of regional power struggles as it has in the past, the United States will rely on air and naval forces to ensure the uninterrupted transportation of oil. This requires maintaining sufficient forces in the area to prevent any attempt by Iran to block the Strait of Hormuz, the crucial waterway connecting the Gulf to the Indian Ocean. According to the *New York Times*, President Obama, through intermediaries, has told Iran's Supreme Leader, Ayatollah Ali Khamenei, that closing the Strait of Hormuz is a "red line" that would provoke an automatic U.S. military response.⁵⁴ To ensure that this is not an empty threat, Obama has ordered the Pentagon to deploy sufficient air and naval strength in the area to overcome any move by Iran to block the Strait. In the event Iran attempted such a move, General Martin E. Dempsey, Chairman of the Joint Chiefs of Staff, said the United States will "take action and reopen the Strait."⁵⁵

It is evident, however, that U.S. policy extends beyond simply keeping the Strait open. As suggested by Obama in his 2013 speech to the United Nations, the United States intends to remain the dominant military power in the region and exercise ultimate control over the global flow of oil—and this, in fact, remains one of the principal missions of the U.S. Central Command.⁵⁶ "The U.S. fully intends to maintain a strong and enduring military posture in the [Gulf] region, one that can respond swiftly to crisis, deter aggression and assure our allies," declared CENTCOM commander General Lloyd J. Austin III in his March 2014 testimony before Congress.⁵⁷ This "enduring posture" is intended to overcome any threats to

⁵⁴ Elisabeth Bumiller, Eric Schmitt & Thom Shanker, *U.S. Sends Top Iranian Leader a Warning on Strait Threat*, N.Y. TIMES, Jan. 12, 2012, http://www.nytimes.com/2012/01/13/world/middleeast/us-warns-top-iran-leader-not-to-shut-strait-of-hormuz.html?pagewanted=all&_r=1&.

⁵⁵ *Id.*

⁵⁶ Obama to U.N. General Assembly, *supra* note 51.

⁵⁷ General Lloyd J. Austin III, Statement before the House Armed Services Committee (Mar. 5, 2014) (transcript available at <http://www.centcom.mil/en/about-centcom-en/commanders-posture-statement-en>).

regional security and the safety of oil exports, but also to deter any *other* power from assuming such a role.

This posture was on clear display in the spring of 2014, when Islamic militants invaded Iraq from their strongholds in Syria and captured Mosul, Iraq's second largest city. With these militants—largely Sunnis under the banner of the Islamic State of Iraq and Syria (ISIS)—in control of major population centers and key energy infrastructure, President Obama decided to send hundreds of U.S. military advisers to Iraq to help the beleaguered forces of Prime Minister Haider al-Abadi fend off the threat to Baghdad and Shiite-populated areas in the south. “We will be helping Iraqis as they take the fight to terrorists who threaten the Iraqi people, the region and American interests as well,” Obama told reporters on June 19.⁵⁸ How this initiative will evolve in the months ahead cannot be foreseen, but it starkly testifies to Washington's enduring interest in the stability of the Persian Gulf area.

V. INCREASED UNITED STATES PRESSURE ON RUSSIA

If increased North American energy output has failed to produce a dramatic shift in U.S. ties with the Persian Gulf area, it is having a significant impact on U.S. relations with Europe and Russia—particularly in response to the Ukraine crisis of 2013-14. Even before Russia seized Crimea and began its meddling in eastern Ukraine, U.S. pundits and policymakers were calling on the Obama administration to facilitate the export of U.S. natural gas to Europe as a way of reducing Europe's reliance on Russian gas—and thus, it was claimed, Europe's excessive deference to Moscow's political preferences.⁵⁹ Once the crisis broke out, these calls became even

⁵⁸ President Barack Obama, Remarks by the President on the Situation in Iraq (June 19, 2014) (transcript available at <http://www.whitehouse.gov/the-press-office/2014/06/19/remarks-president-situation-iraq>).

⁵⁹ See Coral Davenport & Steven Erlanger, *U.S. Hopes Boom in Natural Gas Can Curb Putin*, N.Y. TIMES, Mar. 5, 2014, <http://www.nytimes.com/2014/03/06/world/europe/us-seeks-to-reduce-ukraines-reliance-on-russia-for-natural-gas.html>.

more strident, with Republicans in Congress introducing legislation to eliminate regulatory barriers to such exports.

At present, Europe relies on natural gas for about one-fourth of its total energy consumption, with about thirty percent of that gas coming from Russia. Europe's dependence on Russian gas is a product of several factors, including proximity, prolific Russian gas deposits, limited European reserves, and an elaborate system of pipelines connecting Russian fields to European markets.⁶⁰ To further cement these ties, Gazprom—the Russian state-controlled gas behemoth—has established partnerships with many of the leading European gas-distribution companies, including Eni of Italy and E.ON of Germany.⁶¹ Ukraine occupies a particularly significant role in this elaborate system, as more than half of all the gas supplied to Europe by Russia in 2013 was carried through pipelines crossing that country.⁶²

Because so much of Europe's gas is obtained from pipelines that pass through Ukraine, European consumers have periodically suffered from shortages resulting from Moscow's efforts to intimidate Ukrainian officials by halting or reducing the inflow of gas into those conduits, usually during negotiations over the price Ukraine pays for its imports of Russian gas. Initially, when Ukraine first separated from the former Soviet Union in 1991, Gazprom provided it with gas at a discounted rate compared to what the same gas sold for in Western Europe. As Ukraine moved closer to the West, however, Moscow raised the price it charged Ukraine for gas. When Ukrainian officials refused to pay the higher amount, Moscow cut off supplies—thereby reducing or eliminating the flow to

⁶⁰ See generally *Russia*, ENERGY INFO. ADMIN. (Nov. 26, 2013), <http://www.eia.gov/countries/analysisbriefs/Russia/russia.pdf>; see also INTERNATIONAL ENERGY OUTLOOK 2013, *supra* note 42, at 45, 51, 58.

⁶¹ See *16% of Natural Gas Consumed in Europe Flows through Ukraine*, ENERGY INFO. ADMIN. (Mar. 14, 2014), <http://www.eia.gov/todayinenergy/detail.cfm?id=15411>.

⁶² *Id.*

European recipients further along the pipelines' path.⁶³ In response, individual European countries and the European Union have adopted a series of measures intended to reduce their reliance on Russian gas and/or their exposure to political strife in Ukraine. These have included the construction of Nordstream, a Russian-German pipeline that bypasses Ukraine, and plans for additional pipelines that rely on non-Russian sources in the Middle East and Africa.⁶⁴

American officials have long urged Europeans to further reduce their dependence on Russian natural gas, saying such reliance undermines Euro-Atlantic solidarity and, accordingly, NATO's ability to confront Moscow in a crisis. In particular, Washington has sought to persuade European leaders to accelerate the construction of pipelines that would bypass Russia and to increase their reliance on imports of liquefied natural gas (LNG), which can be shipped from numerous suppliers, including the United States. The Obama administration has also encouraged Europeans to develop their domestic reserves of shale gas, further diminishing their reliance on Russian supplies.⁶⁵

Not surprisingly, these efforts received a substantial boost when the Ukraine crisis erupted in the fall of 2013. This crisis had many roots, including anger over widespread governmental corruption and a desire on the part of many Ukrainians to reduce their economic ties to Moscow, but also revolved to a considerable degree around energy issues. As part of the "association agreement" Kiev was planning to sign with the European Union prior to the onset of the crisis, Ukraine's energy systems would come under

⁶³ See DANIEL YERGIN, *THE QUEST: ENERGY, SECURITY, AND THE REMAKING OF THE MODERN WORLD* 239–41 (2011).

⁶⁴ *Id.* at 241-43; see also EUROPEAN COMM'N, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL: EUROPEAN ENERGY SECURITY STRATEGY (May 28, 2014), http://ec.europa.eu/energy/doc/20140528_energy_security_communication.pdf.

⁶⁵ See Conal Walsh, *Gas on High Heat as Western Power Takes on Russia's Energy Giant*, *GUARDIAN*, July 8, 2006, <http://www.theguardian.com/business/2006/jul/09/russia.g8>.

European Union rules and regulations on competition and transparency,⁶⁶ thereby precluding secret deals of the sort previously concluded between Ukraine’s natural gas oligarchs and their counterparts in Russia. Under pressure from Russian President Vladimir Putin, the Ukrainian president, Viktor Yanukovich, scrapped the European Union deal and opted instead for closer ties with Moscow—thereby triggering the mass protests that eventually led to his flight and the establishment of a new government in Kiev.⁶⁷ Russia, fearing the loss of its influence in the region and key strategic assets, seized Crimea and instigated an anti-government insurgency in eastern Ukraine. Although driven in part by nationalistic impulses, Putin’s seizure of Crimea gave Russia control over a significant swath of the Black Sea thought to house substantial reserves of oil and natural gas.⁶⁸

To discourage further adventurism by Moscow, the United States has imposed tough sanctions on key members of Putin’s inner circle and warned of further such measures if Moscow does not exercise restraint. Recognizing that U.S. efforts alone are insufficient to deter Moscow, American leaders have also sought to stiffen Europe’s resistance to Russian provocations by helping to reduce its reliance on Russian natural gas.⁶⁹ As suggested by House Speaker John A. Boehner, European reliance on Russian energy “has diplomatic repercussions, making them more reluctant to challenge some of Mr. Putin’s arrogant actions.” The answer to this dilemma,

⁶⁶ EUROPEAN UNION EXTERNAL ACTION, EU-UKRAINE ASSOCIATION AGREEMENT – THE COMPLETE TEXTS, http://eeas.europa.eu/ukraine/assoagreement/assoagreement-2013_en.htm.

⁶⁷ See *Ukraine Crisis Timeline*, BBC NEWS, July 5, 2014, <http://www.bbc.com/news/world-middle-east-26248275>.

⁶⁸ See William J. Broad, *In Taking Crimea, Putin Gains a Sea of Fuel Reserves*, N.Y. TIMES, May 17, 2014, <http://www.nytimes.com/2014/05/18/world/europe/in-taking-crimea-putin-gains-a-sea-of-fuel-reserves.html>.

⁶⁹ See Davenport & Erlanger, *supra* note 59.

he suggested, is to provide Europe with gas from America's "vast supplies of natural energy."⁷⁰

Before the United States can act on this strategy, however, the White House must facilitate the construction of new facilities for converting domestic gas supplies into LNG, thereby enabling its shipment to Europe by sea. At present, only one such facility, at Sabine Pass, Louisiana, has received the necessary permits and is actually under construction. Plans for another half-dozen such facilities have received preliminary clearance and are expected to proceed into development, but will not commence operations for several years; applications for another twenty-four LNG terminals are under evaluation by the Department of Energy.⁷¹ Part of the holdup is existing U.S. legislation, which requires a comprehensive assessment of each facility's contribution to the national interest. In response to the Russian intervention in Ukraine, however, American politicians are calling for the adoption of new rules allowing a more rapid approval process. In March, Boehner declared that "[e]xpediting approval of natural gas exports is one clear step the U.S. can take to stand by our allies and stand up to Russian aggression."⁷²

Although calls for quicker approval of LNG export facilities enjoy strong support in Washington and are likely to result in new rules and regulations, some analysts question whether such actions will have any significant impact on Putin's strategic calculations. For one thing, the earliest U.S. shipments of LNG to Europe will not occur until late 2015 or early 2016, by which time the political situation in Ukraine will, presumably, be resolved. Furthermore, the

⁷⁰ John Boehner, *Counter Putin by Liberating U.S. Natural Gas*, WALL ST. J., Mar. 6, 2014, <http://www.wsj.com/news/articles/SB10001424052702303824204579421024172546260>.

⁷¹ See *Project Sponsors Are Seeking Federal Approval to Export Domestic Natural Gas*, ENERGY INFO. ADMIN. (Apr. 24, 2012), <http://www.eia.gov/todayinenergy/detail.cfm?id=5970>.

⁷² *Boehner: Stand Up to Putin by Ending De Facto Ban on U.S. Natural Gas Exports*, press release, Speaker Boehner's Press Office (Mar. 4, 2014), <http://www.speaker.gov/press-release/boehner-stand-putin-ending-de-facto-ban-us-natural-gas-exports>.

added cost of liquefying the gas, shipping it across the Atlantic, and turning it back into gas at the other end will make U.S. gas as expensive as Russian gas, eliminating some of the incentive to switch. On top of this, LNG prices in Asia are significantly higher than those in Europe, so future U.S. exports are likely to cross the Pacific, not the Atlantic.⁷³

Despite these doubts, U.S. leaders are likely to continue advocating the shipment of U.S. gas to Europe as a way of exploiting growing U.S. energy abundance for political advantage. “Moscow is not immune from pressure,” former Secretary of State Condoleezza Rice wrote in March.⁷⁴ The Putin regime relies on oil and gas exports for its economic survival, she noted. But soon, “North America’s bounty of oil and gas will swamp Moscow’s capacity,” deterring Russian adventurism.⁷⁵

VI. NEW SITES OF CONTENTION

The introduction of new modes of extraction is altering the global geopolitical equation in other significant ways. Among many noteworthy effects, new modes of extraction enable the exploitation of once-inaccessible oil and gas reserves in the Arctic and the deep oceans. In some cases, however, the ownership of these reserves is in dispute, as they lie in areas with unresolved boundaries. This is producing new sources of friction and conflict, as nations fight for control over these promising resources.

⁷³ See, e.g., Stephen Munson, *Can U.S. Natural Gas Rescue Ukraine from Russia?* WASH. POST WONKBLOG, Mar. 25, 2014, <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/03/25/can-u-s-natural-gas-rescue-ukraine-from-russia/>.

⁷⁴ Condoleezza Rice, *Will America Heed the Wake-Up Call of Ukraine?*, WASH. POST, Mar. 7, 2014, http://www.washingtonpost.com/opinions/condoleezza-rice-will-america-heed-the-wake-up-call-of-ukraine/2014/03/07/cf087f74-a630-11e3-84d4-e59b1709222c_story.html.

⁷⁵ *Id.*

Energy companies have, of course, long drilled for oil and natural gas in shallow coastal areas adjacent to their onshore deposits, for example, in waters of the Gulf of Mexico off Louisiana and in the Caspian Sea off Baku in what is now Azerbaijan. The development of deepwater drilling, however, is a relatively recent phenomenon. In 2005, Chevron set a record by drilling in 3,500 feet of water in the Gulf of Mexico, a major site for deepwater innovation. Just one year later, Chevron doubled that depth at its Jack No. 2 well at another Gulf location.⁷⁶ Shell was the next to break records, announcing in 2010 that it had drilled 8,000 feet beneath sea level at its Perdido field, 200 miles east of the Texas coastline.⁷⁷ Brazilians are also beginning to reach extreme depths in their efforts to exploit newly discovered undersea reservoirs in the South Atlantic, called “pre-salt” fields because they lie below a thick layer of salt.⁷⁸ Record-breaking depths have also been reached in waters off India and Angola.

The introduction of deep-sea drilling technologies is expected to result in a substantial increase in hydrocarbon output from offshore fields. “In deepwater around the world, our industry’s technologies will allow production to more than double over the next 30 years,” Exxon’s Tillerson affirmed in 2013.⁷⁹ At the same time, however, the onset of drilling in some offshore areas is generating new sources of conflict, as countries fight over the possession of undersea reserves in disputed maritime areas. While some offshore fields lie in areas that are under the undisputed jurisdiction of adjacent countries, such as Shell’s and Chevron’s operations in the U.S. portion of the Gulf of Mexico, others lie in areas that are disputed by two or more countries, as is the case of promising reserves in the East and South China Seas.⁸⁰

⁷⁶ See, e.g., Michael T. Klare, *THE RACE FOR WHAT’S LEFT* 41–49 (2012).

⁷⁷ *Id.*

⁷⁸ For more information on Brazil’s “pre-salt” development plans, see *Brazil*, ENERGY INFO. ADMIN. (Oct. 1, 2013), <http://www.eia.gov/countries/cab.cfm?fips=BR>.

⁷⁹ Tillerson, *supra* note 37.

⁸⁰ For background on this issue, see *THE RACE FOR WHAT’S LEFT*, *supra* note 76, at 63; Tillerson, *supra* note 37.

The East and South China Seas are semi-enclosed extensions of the western Pacific Ocean that harbor a number of small uninhabited islands and are bordered by China and a number of other states: the East China Sea by Japan and Taiwan; the South China Sea by Brunei, Malaysia, the Philippines, Taiwan, and Vietnam.⁸¹ In both cases, the bordering countries have laid claim to significant swaths of these waters, citing historical ownership of assorted islands as well as development rights provided under the United Nations Convention on the Law of the Sea (UNCLOS). The UNCLOS treaty, first approved in 1982, grants signatory powers an “exclusive economic zone” (EEZ) extending up to 200 nautical miles from their coastline. In the case of continental states, such as China, the UNCLOS treaty also allows them to exploit their outer continental shelf, even if it extends beyond 200 miles. Given the relatively small size of these two seas, this has led to a welter of overlapping claims to the waters involved, with China claiming the lion’s share of both areas and the other states contending with both China and their immediate neighbors.⁸² To demonstrate their resolve to protect their claims, most of these countries have deployed naval or coast guard vessels in their respective EEZs. On some occasions, this has resulted in maritime clashes between the contending forces.⁸³

Energy analysts are divided over the energy potential of the East and South China Seas, but both are believed to harbor significant reserves of oil and natural gas. According to the EIA, the

⁸¹ On disputes in the East China Sea, see *East China Sea*, ENERGY INFO. ADMIN. (Sept. 25, 2012), <http://www.eia.gov/countries/regions-topics.cfm?fips=ECS>; for more information on disputes in the South China Sea, see *South China Sea*, ENERGY INFO. ADMIN. (Feb. 7, 2013), http://www.eia.gov/countries/analysisbriefs/South_China_Sea/south_china_sea.pdf.

⁸² See *id.*; see also U.N. Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 397 (entered into force Nov. 16, 1994), part V, arts. 55–60, available at http://www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm.

⁸³ For a timeline of these clashes, see *Timeline: Disputes in the South China Sea*, WASH. POST, June 8, 2012, <http://www.washingtonpost.com/wp-srv/world/special/south-china-sea-timeline/>.

East China Sea holds between 60 and 100 million barrels of oil and between 1 and 2 trillion cubic feet of natural gas. Chinese experts, however, see a much larger potential: as much as 70 to 160 billion barrels of oil and 250 to 300 trillion cubic feet of gas.⁸⁴ A similar mismatch prevails in estimates of reserves in the South China Sea: the EIA sees only 11 billion barrels of oil and 190 trillion cubic feet of gas, while Chinese experts see as much as 125 billion barrels of oil and up to 500 trillion cubic feet of gas.⁸⁵ Very little systematic testing has been conducted in these areas, so it is impossible to verify these estimates. Nevertheless, it is evident that both bodies of water possess oil and gas reserves on a scale sufficient to attract the interest of all surrounding countries.

Until now, most of the drilling in the East and South China Seas has occurred at sites in the undisputed EEZs of one or another of the states involved. Recently, however, China has begun drilling in parts of the South China Sea claimed by Vietnam, provoking naval clashes and anti-Chinese riots in Vietnamese cities. The most serious episode erupted in May 2014, when the China National Offshore Oil Corporation (CNOOC) deployed its largest deepwater drilling rig, the HD-981, in waters off the northern coast of Vietnam.⁸⁶ Once emplaced in the drilling area, the Chinese surrounded the HD-981 with a large flotilla of naval and coast guard ships; and when Vietnamese coast guard vessels attempted to penetrate this defensive ring in an effort to drive off the rig, they were rammed by Chinese ships and pummeled by water cannon. No lives were lost in those

⁸⁴ *East China Sea*, *supra* note 81.

⁸⁵ *South China Sea*, *supra* note 81.

⁸⁶ See Jane Perlez & Keith Bradsher, *In High Seas, China Moves Unilaterally*, N.Y. TIMES, May 10, 2014, http://www.nytimes.com/2014/05/10/world/asia/in-high-seas-china-moves-unilaterally.html?_r=0; Keith Bradsher, *China and Vietnam at Impasse Over Rig in South China Sea*, N.Y. TIMES, May 13, 2014, <http://www.nytimes.com/2014/05/13/world/asia/china-and-vietnam-at-impasse-over-drilling-rig-in-south-china-sea.html>.

encounters, but anti-Chinese rioting in Vietnam proper led to several deaths and scores of injuries.⁸⁷

As noted in most press accounts of these events, the naval clashes and rioting sparked by the deployment of HD-981 in Vietnamese-claimed waters were driven in large part by nationalism and resentment over past humiliations. The Chinese, insisting that the islands in the South China Sea were once ruled by China, are seeking to overcome the territorial losses they suffered under the sway of the Western imperial powers and Imperial Japan. Similarly, the Vietnamese, long accustomed to Chinese invasions, seek to protect what they view as their sovereign territory. Despite the socio-political implications, the energy dimensions of the conflict should not be minimized. Both China and Vietnam are determined to exploit the oil and gas reserves of the South China Sea, and neither shows any inclination to compromise on their respective claims.⁸⁸ The same can be said of the Philippines with respect to its swath of that sea, and of Japan with respect to contested areas of the East China Sea. So long as these bodies of water are viewed as a valuable source of energy, the parties to these disputes are likely to persist in their efforts to exploit what they view as their rightful resources—even if this means risking armed conflict with their neighbors.

⁸⁷ See Chris Buckley, Chau Doan & Thomas Fuller, *China Targeted by Vietnamese in Fiery Riots*, N.Y. TIMES, May 14, 2014, <http://www.nytimes.com/2014/05/15/world/asia/foreign-factories-in-vietnam-weigh-damage-in-anti-china-riots.html>; Jane Perlez, *Vietnam Issues Stern Warning on Protest Violence Amid Standoff with China*, N.Y. TIMES, May 18, 2014, at A10; Jane Perlez, *China and Vietnam Point Fingers After Clash in South China Sea*, N.Y. TIMES, May 27, 2014, http://www.nytimes.com/2014/05/28/world/asia/vietnam.html?gwh=831C4FAC884E04DEB4AA14093F61C971&gwt=pay&assetType=nyt_now.

⁸⁸ See, e.g., *Stirring Up the South China Sea*, INT'L CRISIS GROUP (Apr. 23, 2012), <http://www.crisisgroup.org/en/regions/asia/north-east-asia/china/223-stirring-up-the-south-china-sea-i.aspx>.

VII. THE MILITARIZATION OF THE ARCTIC

The development of new drilling technologies is also leading to increased oil and gas drilling in the Arctic region—and here, too, disputes have arisen over the ownership of valuable reserves.

The Arctic region, encompassing the northern reaches of Alaska, Canada, Norway, and Russia, plus the Arctic Ocean itself, occupies only six percent of the Earth's surface yet is believed to house approximately thirty percent of the world's undiscovered natural gas and thirteen percent of its undiscovered oil.⁸⁹ Until recently, the Arctic's harsh weather conditions and year-round ice cover made it highly unattractive as a site for oil and gas drilling; however, as a result of climate change and the introduction of ice-hardened drilling rigs, energy companies are finding it easier to operate in the region. With sea ice now vastly reduced in summer months, the drilling season has been extended and drilling platforms can operate further north. To take advantage of these conditions, oil companies are stepping up their efforts to exploit the Arctic's energy resources.⁹⁰ Royal Dutch Shell, for example, is attempting to drill in areas of the Beaufort and Chukchi Seas off Alaska, while Statoil is extracting gas from Norway's sector of the Barents Sea, and Gazprom is preparing to drill in the Pechora Sea off northern Siberia. Many other such endeavors, including a collaborative effort between Exxon and Rosneft to exploit oil reserves in the Kara Sea, are likely to get under way in the years ahead.⁹¹

⁸⁹ U.S. GEOLOGICAL SURVEY, CIRCUM-ARCTIC RESOURCE APPRAISAL: ESTIMATED OF UNDISCOVERED OIL AND GAS NORTH OF THE ARCTIC CIRCLE (2008), <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

⁹⁰ See, e.g., RONALD O'ROURKE, CONG. RESEARCH SERV., R41153, CHANGES IN THE ARCTIC: BACKGROUND AND ISSUES FOR CONGRESS (Aug. 4, 2013), <http://fas.org/sgp/crs/misc/R41153.pdf>; see also Philip Budzik, *Arctic Oil and Natural Gas Potential*, ENERGY INFO. ADMIN. OFFICE OF INTEGRATED ANALYSIS AND FORECASTING (Oct. 2009), http://www.eia.gov/oiaf/analysispaper/arctic/pdf/arctic_oil.pdf.

⁹¹ For background on these endeavors, see THE RACE FOR WHAT'S LEFT, *supra* note 76, at 70–93; see also Clifford Krauss, *Exxon and Russia's Oil Company in Deal for Joint Projects*, N.Y. TIMES, Apr. 16, 2012,

Although promising as a fresh source of energy, the development of the Arctic's oil and gas reserves is likely to spark new geopolitical tensions. This is due to the region's immense resource potential and the fact that disputes have arisen over the location of offshore boundaries in the Arctic Ocean—and thus over the ownership of certain promising energy reserves. The United States, for example, has a boundary dispute with Russia in the Bering Sea and with Canada in the Beaufort Sea; Canada has a dispute of its own with Greenland over their mutual boundary; and Greenland has one with Iceland.⁹² All of these countries, moreover, are vying for control over the outer Arctic, beyond their respective 200-nautical-mile EEZs. These disputes would not provoke much concern in the absence of major energy deposits, but take on increased significance when the countries involved hope to procure significant economic benefits from the disputed areas. As noted by Secretary of Defense Chuck Hagel in November 2013, “a flood of interest in energy exploration [in the Arctic] has the potential to heighten tensions over other issues.”⁹³

The risk of tension and conflict in the Arctic is further exacerbated by the determination of key regional policymakers to rely on military power to reinforce their claims to contested territories. Although the Arctic states have pledged to refrain from the use of force in asserting their claims, most have taken steps to enhance their capacity to engage in combat operations in the area.⁹⁴ Russia, for example, has announced plans to establish new bases in the Arctic

http://www.nytimes.com/2012/04/17/business/energy-environment/exxon-and-russian-oil-company-agree-to-joint-projects.html?_r=1&&gwh=D4243D6AF66DF59057355FEED9D935F8&gwt=pa

⁹² For background on Arctic boundary disputes, see Reginald R. Smith, *The Arctic: A New Partnership Paradigm of the Next “Cold War”?* 63 *JOINT FORCES Q.*, 117–24 (2011); see also *Changes in the Arctic*, *supra* note 90, at 15–16.

⁹³ Chuck Hagel, Speech at the Halifax International Security Forum (Nov. 22, 2013) (transcript available at <http://www.defense.gov/speeches/speech.aspx?speechid=1821>).

⁹⁴ See, e.g., Heather Conley & Jamie Kraut, *U.S. Strategic Interests in the Arctic: An Assessment of the Current Challenges and New Opportunities for Cooperation*, CTR. FOR STRATEGIC & INT'L STUDIES (Apr. 2010); Smith, *supra* note 92, at 124.

and to deploy specially equipped combat forces there. This buildup, said President Putin, “will make it possible to substantially strengthen our military and border security and also to increase the effectiveness of the protection of natural resources.”⁹⁵ Canada has also taken steps to bolster its presence in the Arctic, establishing a new base at Resolute Bay on Cornwallis Island and ordering a new fleet of ice-hardened patrol ships.⁹⁶ Norway, which shares a border with Russia in its far north, has relocated its combined military headquarters to Boda, above the Arctic Circle, and has taken other steps to bolster its Arctic combat capabilities.⁹⁷

The potential for friction and conflict arising from the contention over prime Arctic real estate is further exacerbated by the lack of a clear legal regime and adjudicative system for the resolution of Arctic boundary disputes. UNCLOS provides conflicting guidance on the determination of offshore territories, awarding coastal states a 200-mile EEZ but also allowing them to claim control over their outer continental shelf, even if it extends beyond 200 nautical miles. The Convention also provides for the adjudication of offshore boundary disputes by the newly-established International Tribunal for the Law of the Sea, but few states have been willing to bring their disputes to this body, which only examines cases brought on a voluntary basis.⁹⁸ The only other international organization with jurisdiction in the region, the Arctic Council, is not empowered to address territorial disputes.⁹⁹ It is likely, then, that these disputes will

⁹⁵ Jacob Kipp, *Russian Strategic Interests Expand in the Arctic*, 8 EURASIA DAILY MONITOR 173 (Sept. 21, 2011), http://www.jamestown.org/single/?tx_ttnews%5Btt_news%5D=38430&no_cache=1#.VNfS5HacMU1; for background on Russian military initiatives in the Arctic, see Conley and Kraut, *supra* note 94, at 23–25.

⁹⁶ See Conley and Kraut, *supra* note 94, at 17–18.

⁹⁷ *Id.* at 21–23.

⁹⁸ See generally RONALD O’ROURKE, CONG. RESEARCH SERV., R42784, MARITIME TERRITORIAL AND EXCLUSIVE ECONOMIC ZONE (EEZ) DISPUTES INVOLVING CHINA: ISSUES FOR CONGRESS (Aug. 5, 2014), <http://fas.org/sgp/crs/row/R42784.pdf>; see also International Tribunal for the Law of the Sea, *The Tribunal*, <https://www.itlos.org/index.php?id=15&L=0>.

⁹⁹ See *Arctic Council*, U.S. DEPT OF STATE, <http://www.state.gov/e/oes/ocns/opa/arc/ac/> (last visited Oct. 9, 2014).

continue to fester as the drive to exploit the Arctic's energy riches gains momentum.

VIII. THE ROAD AHEAD

As this brief survey suggests, the geopolitics of energy was long governed by expectations of *scarcity*—the presumption that oil and natural gas reserves are limited in extent, and that, as global demand increased, the competition for what remained would become increasingly intense and fractious. In fact, significant shortages and supply disruptions have occurred in past decades, lending credibility to this presumption. However, earlier predictions that the world of 2014 would be facing a downward curve in the global supply of hydrocarbons have been replaced by expectations of energy abundance, stretching out for decades to come. Indeed, many analysts now suggest that the global demand for fossil fuels like oil and natural gas will begin to contract long before supplies disappear, as countries around the world institute measures to reduce emissions of climate-altering greenhouse gases.¹⁰⁰ Under these circumstances, we might reasonably expect a dramatic shift in the character of energy geopolitics, with considerably less emphasis on the use of force to secure overseas sources of supply. Yet, while there has been some alteration in the global policy landscape, conflict over energy continues to convulse international affairs.

Several factors can be identified to explain the persistence of energy competition and conflict. To begin with, the expectations of abundance expressed in the United States, Canada, and some other countries are not shared by all major energy consumers. The leaders of China and Japan, for example, continue to worry about their ability to procure sufficient oil and gas supplies from foreign suppliers to meet their long-term requirements. And while the new

¹⁰⁰ See Brad Plumer, *Is Peak Oil Demand Just Around the Corner?* WASH. POST WONKBLOG, Aug. 9, 2013, <http://www.washingtonpost.com/blogs/wonkblog/wp/2013/08/09/is-peak-oil-demand-just-around-the-corner/>.

extractive technologies are expected to permit the exploitation of vast hydrocarbon reserves in such locales as Argentina, Brazil, China, Russia, and Saudi Arabia, it is still not known whether they will perform as well in these places as they have in the United States and Canada.¹⁰¹ Under these circumstances, many countries will continue to view energy through the lens of potential scarcity, as they have in the past.

Even if oil and natural gas prove to be more abundant than originally assumed, these products continue to be viewed as vital materials whose possession, in adequate amounts, is essential for the well-being and security of the nation. As noted by Robert E. Ebel of the Center for Strategic and International Studies in a 2002 address at the State Department, “[o]il fuels much more than automobiles and airplanes. Oil fuels military power, national treasuries, and international politics.”¹⁰² Far more than an ordinary trade commodity, “it is a determinant of well-being, of national security, and international power for those who possess this vital resource and the converse for those who do not.”¹⁰³ This assessment has governed international policymaking for over a century, and while the widespread introduction of renewable energy may, in time, render it moot, it will continue to shape the foreign and security policies of nation-states for some time to come.

The struggle for control over key deposits of energy has been a significant source of conflict in the past, and is likely to remain so for some time into the future. The nature, locale, and dynamics of such conflict may well experience change in the years ahead, but the underlying motive—to ensure adequate supplies to satisfy critical national requirements—will not.

¹⁰¹ See INTERNATIONAL ENERGY OUTLOOK 2013, *supra* note 42, at 51–55.

¹⁰² Robert E. Ebel, *Geopolitics of Energy Into the 21st Century*, Remarks to the Open Forum, U.S. Dep’t of State (Apr. 30, 2002) (transcript available at <http://2001-2009.state.gov/s/p/of/proc/tr/10187.htm>).

¹⁰³ *Id.*

Table 1: U.S. Oil Production, Consumption, and Imports, Actual 2005-2013 and Projected 2015-2040 (in million barrels per day)

	Oil Consumption	Oil Production	Oil Imports	Imports as % of consumption
2005 Actual (A)	20.8	6.9	13.9	66.8
2010 A	19.1	7.6	11.6	60.5
2013 A*	18.9	10.0	8.9	47.0
2015 Projected (P)	19.1	12.2	6.9	36.1
2020 P	19.5	12.8	6.7	34.4
2025 P	19.2	12.1	6.9	35.9
2030 P	18.7	11.5	7.2	38.5
2035 P	18.6	11.6	7.0	37.6
2040 P	18.6	11.7	6.9	37.1

Source for Actual data: BP, STATISTICAL REVIEW OF WORLD ENERGY JUNE 2013 8, 9 (2013), http://www.bp.com/content/dam/bp/pdf/statisticalreview/statistical_review_of_world_energy_2013.pdf.

Source for Projected data: ENERGY INFO. ADMIN., INTERNATIONAL ENERGY OUTLOOK 2013, *supra* note 42, at Tables A5, G1.

Source for 2013: Petroleum and Other Liquids Supply and Disposition, ENERGY INFO. ADMIN. (2013), http://www.eia.gov/dnav/pet/pet_sum_snd_d_nus_mbbldpd_a_cur.htm.