Chapter 2

The Entanglement of Energy, Grand Strategy, and International Security

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Introduction

Americans are pleasantly surprised about how their energy fate appears to have changed, in such a short time, with little notice or anticipation. Within the last five years, both actual US production of oil and gas and projections for future American production have changed dramatically. Whereas in the mid-2000s, experts predicted that the US should anticipate a future of severe dependence on imported natural gas, in 2012 Washington is debating the pros and cons of becoming an *exporter* of this resource.[2] Even more quietly, domestic production of oil has increased, in large part due to the development of the tight oil in the Bakken formation in North Dakota and the Eagle Ford in Texas.[3]

Innovation and technology deserve the credit for this transformation. The evolution of hydraulic fracturing and horizontal drilling has enabled the development of both oil and gas in locations where the resource was known to exist, but the prospects for extraction at commercial prices had previously seemed remote. These domestic advances are complemented by new energy developments among America's neighbors in the Western Hemisphere. Canada is set to double its production from its oil sands in the coming years, while Brazil is planning to embark on the development of vast sub-salt deepwater oil resources.

There is no question that these energy developments have major economic benefits to the United States. Inexpensive natural gas has spurred a revival in American manufacturing; diminished oil imports are shrinking the trade deficit and will strengthen the dollar; and both oil and gas revivals will bolster employment in direct and indirect ways.[4] But much has also been made of the security benefits that accrue and will continue to accrue to the United States on account of this boom. President Barack Obama has underscored the salubrious effects of these energy shifts for America's strategic position; former CIA director Jim Woolsey sees the energy revolution precipitating a rebalancing of America in the world.

But how exactly should we think about these domestic energy developments in the context of energy security? Much depends on how energy security is defined. Traditionally,

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energy security referred to having access to sufficient supplies at a reasonable price. Energy security was largely perceived to be a notion of relevance to consuming or net importing countries. Access, supply, and affordability were the key concepts. By this traditional, basic definition, the recent revolution in domestic shale gas and tight oil most certainly make the US significantly more energy secure. Imports of oil and gas have dropped markedly, at least in part due to these developments.[5] Gas imports fell from 4.3 billion cubic feet (bcf) in 2005 to 3.5 bcf in 2011. Similarly net oil imports fell from their peak of 12.5 million barrels per day (mbd) in 2005 to 8.4 mbd in 2011, the lowest absolute value since 1995.[6] Moreover, the composition of these imports is likely to be comforting to Americans who examine it; 49% of crude oil imports and 89% of gas imports originate from America's neighbors.[7]

The concept of energy security has been modified in recent years to include additional dimensions.[8] Some rightly point out that consumers are not the only ones concerned with energy security; security of demand is as legitimate a preoccupation as security of supply to a country which reaps a significant portion of its national revenues from energy exports. Moreover, security of transit is a concept important to both consumers and producers. Secure infrastructure and transport routes are essential if accessible, affordable energy is to make it to its destination. Again, on these counts, America's energy boom seems to check the energy security box, and oil from Canada is certain to be less vulnerable to disruption than supplies that need to snake their way through the Bosporus or the Straits of Hormuz.

However, an even more sophisticated definition of energy security could go beyond these ideas to posit that being energy secure means having access to affordable energy *without* having to contort one's political, security, diplomatic, or military arrangements unduly. Is a country really energy secure if obtaining adequate energy supplies is dependent on a particular expensive, high risk, and limiting (in terms of opportunity cost) posture in the world? By this standard, recent energy developments may or may not make America fundamentally more energy secure. If such energy trends enable it to scale back its military presence in the Middle East, or allow it to be less vulnerable to political shocks in other parts of the world, or grant it a substantially freer hand in the pursuit of other foreign policy goals, then such energy developments would make America more energy secure in the fullest sense of the concept. While it is conceivable that the revolution in American energy could have these effects, it is not yet obvious this will be the case.

The purpose of this chapter is to look at the broader interplay between energy and security and the multiple ways in which the two concepts interact. It may be more useful to think about the "geopolitics of energy" rather than "energy security," with all its current associations. The chapter will offer a framework for thinking about the overlap between energy and security as it relates to "hard" national security issues, not economic or environmental ones. Because of the nearly infinite number of contemporary issues that inhabit this intersection, the chapter draws primarily from oil and gas in its illustrations, given the dominance of those fuel sources in the global energy mix. This is by no means to deny the importance of security issues associated with other energy sources, such as nuclear energy, or the possibility of complex interactions between security and renewable energies.[9]

Energy, Security, and the Grand Strategy of Countries

In exploring the interaction between energy and hard security, grand strategy is an appropriate place to begin. Such a lens offers a broader perspective on how energy and security are intertwined; rather than simply asking how countries meet their energy needs,

a grand strategy framework reveals how energy factors into a whole host of interactions between countries, actors, and global institutions.

A grand strategy is an all-encompassing concept which guides a country in its effort to combine its instruments of national power in order to shape the international environment and advance specific national security goals. It is generally considered to have three parts: a vision of a desired outcome or set of objectives (ends); instruments or tools (ways) by which these goals are pursued; and the resources (means) available to apply to the effort. Good grand strategies offer a unifying vision to leaders, policy-makers, and citizens and help them prioritize inevitably scarce resources.

Not every country has a conscious grand strategy. Countries that do generally begin the formulation of such strategies by assessing the country's strengths, vulnerabilities, and the international or regional environment. As the basis for economic growth, energy will be at heart of virtually every country's evaluations. For instance, one of the drivers of a Japanese grand strategy would be the country's near complete dependence on external sources for energy; any subsequent political and military strategy would be crafted at least in part to secure this energy in the most reliable and least costly ways. In contrast, a country like Brazil would consider its energy resources to be a huge strategic asset and would likely develop a grand strategy which relied heavily on its energy for advancing other, non-energy objectives in the international and regional domains.

In short, energy can be and often is a key driver in each of the three components of grand strategy: ends, ways, means. Most commonly, people think about energy being the *ends* of a country's action; what does a country need to do to meet the objective of securing sufficient energy at affordable prices? But energy also has a profound influence on the *ways* of a grand strategy; energy is often the vehicle or tool by which a country achieves its non-energy objectives. And finally, energy – and the revenues it brings – can provide the *means* for pursuing non-energy goals. Examining how energy plays these very different roles in the formulation and execution of grand strategy helps us make better sense of the many ways in which energy is shaping the international landscape of today.

Energy as an End/Objective of Grand Strategy

Securing adequate energy supplies at affordable prices is often the end or objective of the grand strategies of consuming countries.[10] The energy imperative is so central to the prosperity and, as a result, the stability of countries that they will often use whatever instruments are at their disposal to ensure their energy security is met. For most countries, their tools are limited and they primarily need to rely on the global market to deliver them energy; their grand strategies may therefore revolve around generating enough foreign currency to purchase needed oil and gas or other forms of energy. But some countries have considerable tools and resources to extend to the pursuit of energy. For these countries, often elaborate political, diplomatic, economic, and military strategies are employed to ensure the energy goal is met.

Blood for Oil?

Many people think that countries often use military force or wage wars in order to meet their energy needs.[11] World War II offers many powerful examples, as the Axis powers believed that their energy needs would only truly be met by physical control of oilfields. This notion was behind Hitler's push to Baku and Japan's invasion of Borneo in southeast Asia.[12]

Since that time, however, relatively few international (as opposed to civil) wars have been fueled by the desire to gain *physical* control over energy resources.[13] Had the Soviets used Afghanistan as a launching pad to seize Iran's oilfields, as the US feared it would, that effort would be a notable exception. Iraq's invasion of Kuwait in August 1990 is perhaps the best contemporary example of a country waging war to control resources; Saddam Hussein wished to terminate the alleged Kuwaiti practice of slant drilling across the international border into the Rumaila oilfield.

Some, including many Iraqis, would attest that the two Iraq wars in 1991 and 2003 were motivated by America's desire to have physical control over Iraq's vast oil resources. Many allege that the US invaded Iraq either to directly control Iraq's oil or to bring in American companies to develop and dispose of Iraqi oil. Others deny that the Iraq wars had anything to do with oil.[14] In parsing these positions, it is important to distinguish between *commercial* and *strategic* interests, a distinction rarely made in the heated debates about "blood for oil."[15]

There is little evidence that the US was motivated by commercial interests – the desire to either directly control Iraq's oil or to bring in American companies to develop and dispose of Iraqi oil – in launching the first Gulf War in 1991. Had this been a primary driver, the US-led coalition would have not quickly relinquished the territory it gained in the push into southern Iraq, which is among the most oil saturated regions in the world.[16] Moreover, had commercial interests in oil been paramount, the US-led coalition might not have ceded sovereignty back to the Kuwaitis with virtually no conditions or understandings related to their vast oil resources. (With very few exceptions, Kuwait today still does not allow foreign involvement in the development of its oilfields.)

However, one can make a very strong case that *strategic* interests related to oil were a major factor in the decision to use military force to oust Saddam from Kuwait. Once Iraq had invaded Kuwait and seized its oilfields, Saddam had 19% of the world's oil reserves under his control. Had he continued his push into Saudi Arabia – as many suspected he might at the time – Saddam would then have had control of 44% of the world's oil reserves. The strategic implications of this situation for the US and the world would have been significant. Such control would shift the regional balance of power toward Iraq and away from other states more aligned with the US, at a time when the collapse of the Soviet Union was creating new and uncertain dynamics. It would also have given Saddam the ability to blackmail other Arab states, to threaten Israel, and to destabilize international oil prices, with all the consequent effects on the global economy. For these reasons, while the US may not have had commercial interests in securing plum positions for its companies in Iraq or Kuwait, it did have clear strategic interests in prying Saddam's grip off Kuwait and deterring Saddam from invading Saudi Arabia.

Similarly, commercial interests do not appear to have been a significant factor in the decision to invade Iraq in 2003. In fact, had access to Iraq's oil been America's primary preoccupation, there were many quicker, less costly ways to achieve it. For years before the 2003 war, Saddam had been negotiating lucrative production sharing agreements with national oil companies such as Russia's Lukoil and China's CNPC, "pending the lifting of sanctions." Given Saddam's demonstrated willingness to trade access to Iraq's oil wealth for the lifting of sanctions, the US could have leveraged its position in the UN Security Council and negotiated key oil agreements for US oil companies in exchange for acquiescing to an end to sanctions in the 1990s or early 2000s – as other members of the UN Security Council did.

The approach of the Coalition Provisional Authority (CPA), the US-led body governing Iraq under the occupation, to oil matters is further testimony to the negligible role that

commercial interests played in spurring the 2003 invasion. While the CPA supported and oversaw the drafting of regulations by the Iraqi Governing Council (the CPA's Iraqi counterpart) to change laws on foreign investment and the ownership of private property, it steered clear of energy and oil, deciding that the disposition of these resources should await the decision of a legitimate, elected Iraqi government. This near allergy to aligning the US too closely to Iraq's oil policy is the outcome of the 2009 and 2010 bid rounds, which eventually did bring foreign companies into Iraq to develop oilfields under very strict terms; rather than "cleaning up," Chinese, Malaysian, European, and other companies fared much better than US ones.[17] This result is consistent with a US hands-off attitude toward Iraqi oil, but not necessarily proof of it; it is at least conceivable that US authorities simply failed in their efforts to exert influence.

Like the first Gulf war, there is stronger evidence that strategic considerations related to oil – as opposed to commercial ones – played a role in the decision to invade Iraq in 2003. But even here the linkage is not as strong as with the previous war. While in 2003, Saddam's oil resources were limited to those within Iraq's borders, they were still more than adequate to fuel what was perceived to be Saddam's nefarious and threatening behaviors, particularly the pursuit of weapons of mass destruction. As time progressed and international support for sanctions wavered, Saddam's ability to circumvent the sanctions heightened US concerns that Saddam was amassing sufficient resources to advance a destabilizing agenda in the region.[18] Moreover, while oil was not the impetus for war, its existence enabled war proponents to dismiss one possible impediment to the war: cost. Key figures in the Bush Administration downplayed the costs potentially associated with unseating Saddam by claiming that Iraq's oil wealth meant the country could pay for its own reconstruction.[19]

Conflict as a By-Product of Competition over Resources

The pursuit of energy as an end or an objective can also lead to conflict in less direct ways. In several contemporary cases, the quest to meet a country's energy needs is creating tensions which could be precursors to violent conflict. Here, war is not the strategy employed to actually secure energy resources, but armed confrontation is the possible by-product of other sorts of strategies countries employ to secure energy. In the terminology of today, conflict or even war could result from a global resource scramble, particularly if countries believe the world is closing in on the limits of its energy endowment.

The current situation in the South China Sea is a good case in point. This vast area is of strategic interest to the world and, in particular, to the six Asian countries of Brunei, China, Malaysia, Philippines, Taiwan, and Vietnam for two primary reasons. First, the South China Sea and the adjacent Straits of Malacca are key global oil transit waterways. In 2009, 30% of the world's shipped oil passed through the Straits of Malacca on its way to meet burgeoning Asian demand. Tankers move approximately two-thirds of South Korean energy supplies, nearly 60% of Japanese and Taiwanese energy supplies, and close to 80% of Chinese crude oil imports through the South China Sea.[20] Second, the South China Sea is believed to house significant oil and gas deposits, although territorial and other disputes have prevented good seismic studies which could yield more accurate data. Estimates for oil in the South China Seas range from 28 billion barrels to 213 billion barrels.[21]

The combination of these two strategic interests and longstanding territorial and maritime disputes in the area create a potentially dangerous stew. China claims the largest portion of the South China Sea and has used its military and paramilitary to intimidate other countries seeking claim over different areas of it. Each country has declared the

South China Sea a national priority and many are investing heavily in maritime military assets to advance and protect their interests. While China, the Philippines, and Vietnam have locked horns over competing claims since 1974, the intensity and the stakes associated have risen considerably since the prospect of significant hydrocarbon resources has come into play. In 2011, three Chinese vessels cut the survey cables of a Vietnamese ship exploring for oil and gas; in the same year, Chinese patrol boats allegedly challenged Filipino exploration vessels 250 km off the coast of the Philippines, with Manila responding by sending out two military aircraft.[22]

Some people look at these trends – and the burgeoning Asian demand for energy – and anticipate inevitable conflict. Robert D. Kaplan believes that a conflict with China is likely "if not a big war with China, then a series of Cold War-style standoffs that stretch out over years and decades."[23] Military confrontation or war, however, is not inevitable. No parties in fact have an interest in a military confrontation which would jeopardize the smooth passage of critical energy resources, not to mention significant and increasing amounts of trade between countries.[24] Moreover, given the long time lag to develop the energy resources, all parties have at least notionally an interest in resolving disputes in a way which allows for more aggressive exploration and development in the South China Sea. Conflict, however, may result not as a product of a deliberate strategy to assert dominance over resources, but as the upshot of miscalculation or miscommunication in an increasingly militarized arena.

Impediments to Preventive or Punitive Action

Finally, the pursuit of energy as an end of a grand strategy can have significant security implications by undermining or impeding the ability to address important, non-energy national security dilemmas. It is in this domain that China's approach to Africa is most relevant. Over the past 20 years, several factors spurred Beijing to reconsider its approach to securing energy. First, Chinese energy demand began to skyrocket, leading China to shift from being a net exporter of oil to a net importer in 1993. Since that time, China's dependency on foreign oil imports has increased, reaching 55% in 2011. Second, a souring Chinese relationship with the US in the 1990s, capped off by the failed Chinese bid to buy UNOCAL in 2005, led China to conclude that it could not rely entirely on the market mechanism to meet its energy needs, particularly in a time of future conflict.

Over the last decade, China developed and executed an approach which has come to be known as its "going out" strategy. Under this approach, China has sought to secure direct access to oil supplies through equity interests obtained by powerful Chinese national oil companies (NOCs). Unlike Western nations, whose official developmental and commercial interests are not coordinated, China has increased the appeal of commercial bids by Chinese NOCs by coupling them with government-to-government support packages. In many cases, granting Chinese NOCs the rights to an oilfield have at the same time brought the host government much-needed loans, financing, direct investment, and infrastructure development.[25]

This approach has generated significant controversy. Chinese engagement in Africa has fueled a construction boom of railroads, highways, and ports being built at unprecedented rates. But the "going out" approach has also raised legitimate concerns that China is undermining the efforts of Africans and the international community to promote governance, transparency, and accountability. Unlike the US and international institutions, China imposes no political conditions on the assistance which accompanies its commercial bids to develop Africa's resources. Not surprisingly, some African countries have foregone financial assistance from international institutions given the option

of securing the same from China without any conditions: in 2004, the offer of generous, no-strings-attached Chinese aid undercut IMF efforts to advance economic and political reform in the wake of the civil war in Angola.[26] Other objections to China's "going out" strategy include complaints about the poor quality of Chinese infrastructure projects or the influx of Chinese labor to African countries.

But our real concerns lie in the security realm. Does China's "going out" approach in Africa create serious *security* challenges? Some critics worry that China is "locking up" Africa's natural resource wealth and that its aggressive approach will escalate US–China resource rivalries as both countries seek to develop more oil and gas reserves.[27] These fears are almost certainly exaggerated. First, China's absolute stake in Africa's oil is still comparatively small. According to a 2007 Wood Mackenzie study, China's oil companies are responsible for only 3% of total energy investment on the continent; Chinese production in Africa in 2006 was only one-third of that of Exxon Mobil's and only 7% of that of the Algerian NOC, Sonatrach, which is the largest energy producer on the continent. In addition, until recently, Chinese NOCs have tended not to compete for the same concessions that Western major oil companies were pursuing; rather, China has sought to develop oil in places that Western majors forewent due to high political risk or small anticipated payoffs.[28] The privileged financing that Chinese NOCs receive from their government has enabled them to develop resources that others would likely find too risky or insufficiently profitable. And, finally, oil developed by Chinese NOCs is not being spirited away to Beijing, but sold to China and many other buyers on the open market.[29] These realities suggest that competition for resources in Africa is unlikely to spur superpower conflict unless these patterns change significantly. Rather than "locking up" Africa's oil for itself, China is effectively adding oil to the global supply that would otherwise not be developed – a service to the tight international market and its customers.[30]

More valid are the security concerns that arise from the immunity that Chinese involvement gives some African countries from international pressure. Not only does China's mode of doing business provide countries with a way to skirt the governance conditions of international institutions, it also can neuter international efforts to address genocide, repression, and civil war. China's interests in maintaining its beneficial energy arrangements in certain countries have protected them from UN censure and in some cases sanctions and stricter action. For instance, in 2004, international efforts to condemn and penalize Sudan were significantly weakened at the insistence of the Chinese government, which many assumed was seeking to defend its significant investment in southern Sudan.

Chinese efforts to shield African countries from the censure of the international community are consistent with a longstanding Chinese policy of non-interference in the domestic affairs of other countries. This approach, thus far, has been a nice complement to an energy strategy and energy activities which sometimes have the effect of lending support to recalcitrant regimes. One can imagine, however, that over time, China's international energy strategy and its policy of non-interference could come into tension with one another. Political instability and civil conflict represent one of the greatest likely constraints on increased oil production in the years ahead. China could find itself, inadvertently, as having a major interest in the diffusion of domestic conflicts – and move to use its leverage inside a country to advance outcomes which facilitate the flow of oil.

Energy as a Way/Tool of Achieving Security Objectives

Countries endowed with substantial energy resources are bound to seek to use these assets in the quest to shape the global environment to their benefit. For many countries,

energy is the main vehicle for promoting and protecting their interests; it is the way or instrument deployed in their grand strategies.

Energy as a Political Weapon?

Leaders, policy-makers, and consumers look back on history and fear the use of the "energy weapon" by producing countries. While the 1973 Arab oil embargo provides a sharp memory of such a case, a more dispassionate evaluation suggests that there are limited circumstances under which a country can successfully use energy as a political weapon today. The ability of a producing country or group of countries to exact political concessions by withholding energy is tempered by the state and nature of the international market for that commodity, specific characteristics of that country, and the willingness of the producer to also experience pain.

History is replete with instances in which producing countries have sought to advance specific political goals by terminating or curtailing oil sales to a particular country. In 1956, Saudi Arabia cut off sales to the UK and France, and continued its embargo of Israel, in response to these three countries seizing the Suez Canal after Egyptian nationalization of it; none of the countries, however, experienced supply shortages. In 1967, in an effort to get Western countries to cease their support for Israel in the Six Day War, Arab countries froze oil exports primarily to the US, Germany, and the UK. Again, none of the targeted countries suffered diminished oil supplies. However, in October 1973, at the start of the Yom Kippur War, the Organization of Arab Petroleum Exporting Countries (OAPEC) embargoed oil sales to the US, The Netherlands, Portugal, and South Africa in response to the US decision to restock Israel's depleted armoury. International prices rose dramatically and the global economy lurched into a severe recession which ushered in a period of pernicious "stagflation."

What accounts for the differences of effect in these three seemingly similar instances? In the first two instances, producing countries sought simply to deny particular countries access to their oil. But given that the market for oil is a global one, and that oil can be transported easily, countries denied oil from one source can generally replace it with oil from another as long as quantities in the overall market remain the same. Some difference in the quality of oil and the need to match oil with refineries may slow down or frustrate this process, but in general the global market redistributes oil efficiently. In 1956, moreover, the US was still a net oil exporter, further facilitating the redirection of oil to the UK, France, and Israel, once President Eisenhower had registered his disapproval of their intervention.[31] In contrast, in 1973, OAPEC coupled its embargo to specific countries with progressive cuts in production. Moreover, the state of the market in 1973 differed significantly from early years. Burgeoning demand and slower gains in supply were already contributing to a tightening oil market before the embargo. These combined factors forced the dramatic increase in global price from $3.29 a barrel in 1973 to $11.58 a barrel in 1974. Poor economic policies and efforts to ration gasoline are what drove the long gas lines in the US, not real shortages.

These episodes suggest the difficulty of targeting specific countries to undertake specific changes to their foreign policy or national security policies. In fact, in all three instances, there is little to suggest that the embargos did force the desired political changes.[32] Yet, they do underscore how producer countries can wield influence more generally by forcing up the global price of oil through production cuts. At the same time, however, they also caution that such a generalized attack on the global economy can boomerang on the instigators as it did in the 1970s. Rather than reaping huge profits from the sale of high-priced oil indefinitely, after several years of high oil prices the revenues of

oil producers plummeted as the global economy was sent into recession, forcing down demand for energy and with it the price of oil. In addition, the oil crises of the 1970s spurred consumer countries to develop new institutions to mitigate the dangers which had been realized in the 1973 embargo and the subsequent Iranian revolution. In establishing the International Energy Agency (IEA) for greater coordination among consumers and launching strategic petroleum reserves, the OECD countries sought to – and to some extent did – inoculate themselves from future politically inspired oil crises.

These cases suggest that three factors seem to matter most in determining the prospects of using oil as a foreign policy or national security weapon: the state of the oil market, the willingness of producers to curtail production rather than just re-route it, and the risks producers are prepared to take to their own well-being. When we assess these factors in light of today, we can feel greater confidence that the scope for the successful use of energy as a political weapon is relatively limited. Oil markets could tighten in the foreseeable future, suggesting the potential for disruptions to cause sharp price spikes, but producer countries on the whole are sensitive to the notion that oil which is priced too high can be against their interests, if it drives the global economy into recession or galvanizes importing countries to find a substitute for oil. This realization not only mitigates the chances that oil will be used as a political weapon, but encourages Saudi Arabia and others to seek to moderate the global price of oil through calibrating their overall production. Middle Eastern producers are likely to be more sensitive to protecting their revenue streams today more than ever; political challenges within their own societies demand higher levels of social spending in order to placate domestic demands and protect regime stability.

One notable modern exception may be Iran, and its threat to wreak havoc on the global oil market in response to international pressure on it to abandon its alleged pursuit of a nuclear weapon. On various occasions over the last year, Iranian officials have claimed a willingness either to terminate its oil exports or to close the Straits of Hormuz, though which 17 mbd flowed in 2011, accounting for almost 20% of the global crude oil trade. While Iran could decide to take either course of action, both would come at significant economic costs to itself, with only a meager prospect that the pain endured would lead to a superior political outcome for Iran. In taking its 2.2 mbd of exports off the international market, Iran would be foregoing the revenues which make up 50–80% of its budget. At a time when Iran's economy is already suffering under international sanctions, the loss of this revenue could spur political unrest.[33] Closing the Straits of Hormuz would also effectively take Iranian oil (and most of the Gulf's oil exports) off the global market, with the same potentially destabilizing effects. In the first case, Iran's removal of its oil from global markets would only cause foreign countries significant pain (and stand the chance of exacting political change) if other producers, such as Saudi Arabia, were unable to increase production to substitute for the lost crude. In the Straits of Hormuz scenario, while a sharp increase in the price of oil would almost be inevitable, the US would likely clear the Straits in short order, making the spike relatively transitory and decreasing the chances that foreign countries would lift pressure on Iran as a result.

In contrast, producers of natural gas may be – at least theoretically – better positioned to use their resource as a tool for advancing political goals than their oil-producing brethren. Unlike oil, there is not yet a global market for natural gas.[34] International sales of natural gas are still conducted largely in three segregated markets (North America, Europe, and Asia), so a disruption in one market is less easily allayed by shifting resources from other global producers. Moreover, whereas oil can be transported via pipeline, ship, rail or even truck, the transport of gas requires huge infrastructure developments, either

in terms of pipelines or equipment to liquefy and/or regasify natural gas, which adds greatly to the difficulty of switching seamlessly between suppliers of gas.

This theoretical ability to exercise energy clout is nevertheless limited by the interdependency between gas producers and consumers. Like oil producers, gas suppliers run the risk of damaging their own interests if the political use of energy leads their customers into economic depression, the establishment of alternative supply sources or the development of other resources to meet their energy needs. The major infrastructure requirements of gas trade not only make it hard for consumers to quickly find other avenues to meet their needs, they also limit the extent to which producers can shift gas to other customers. However, the growing trade of liquified natural gas and the rise of the spot market for gas will likely create greater opportunities for substitution, further weakening the ability of producers to use gas sales as a political weapon.

Although often seen as an example of the effective use of gas as a political weapon, Russia's cutoff of gas to the Ukraine actually demonstrates both the possibility of wielding political influence in the gas trade and the limits to doing so. Russia and the Ukraine began to head toward confrontation in 2005 after the Orange Revolution brought to power a westward looking government in Ukraine. Ukraine started to leverage its position as Russia's main transit country for gas exports to Europe and demanded higher transit tariffs.[35] At the same time, Ukraine's turn toward the West underscored the limited value Russia was getting from providing subsidized gas to Ukraine, leading Moscow to re-evaluate this policy and demand that Ukraine begin to pay full market prices. Subsequently, the two sides engaged in several tests of strength which reached a climax in January 2009 when Russian gas exports to Europe stopped for 15 days. The exact flow of events has not yet been fully revealed, with Russia accusing Ukraine of theft and Ukraine accusing Russia of cutting off gas supplies. The consequences were very real, as southeastern Europe found itself deprived of gas in the midst of winter. Lacking alternative supply sources, the countries were literally left out in the cold.

Whether this and other gas cutoffs served Russian interests is, however, debatable. In almost every instance, Russia was able to renegotiate the price at which the importing country bought Russian gas.[36] In the case of Belarus, Russia was also able to acquire greater interest in the country's energy infrastructure, giving it further control, in exchange for continued discounted gas. Almost by definition, the gas cutoffs also had an alleged desired political affect: inflicting punishment for revolutions which moved the countries' politics closer to the West. But in few cases did the gas embargoes reverse political changes and in one case – Georgia – the cutoff actually inspired the target country to diversify its suppliers away from Russia. The full effects of these episodes are still to manifest themselves, as the cutoffs to some extent undermined Russia's reputation as a reliable supplier and inspired greater European action to diversify Europe's supplies.

The use of energy as a foreign policy weapon, as mentioned above, is generally associated with producers. But, in some instances, consuming countries have also sought to leverage their buying power to induce behavior changes on the part of energy producers through the use of sanctions. In many respects, the ability of a country to successfully parlay its willingness to forego energy imports from a particular source into foreign policy influence is the flip side of a producer's embargo. Just as an embargoed consumer can find oil from other sources due to the global nature of the oil market, so too can a sanctioned producer generally find other outlets for its oil. In the 1990s, the US banned the import of oil from Libya, Iran, and Sudan; for the most part, these countries simply replaced the US customer with other buyers.[37] The state of the market – whether it is a buyer's or a seller's market – also affects the ease with which a producer can reposition

itself in the global market. For these reasons, sanctions have only really seemed to bite when a large number of consumers band together to reject the purchase of oil from one source; even multilateral sanctions have generally been ineffective in stopping the flow of oil unless they include all the world's major consumers.

New sanctions innovations, however, are testing this age-old maxim that sanctions only work when they are multilateral. Sanctions on oil imports *do* appear to harm the producer, even if they are not universal, *if and when* they are coupled with other measures that frustrate the ability of non-sanctioning countries to purchase the target's oil. The complex array of UN, US, and EU sanctions do not amount to a comprehensive oil embargo on Iran, but the financial measures included in the sanctions regime have created real pressure on companies to stop purchasing Iranian oil, even if it is not official policy of their host country. "Extraterritorial" sanctions threaten to exact a price on third parties for doing business with Iran or entities like the Iranian Central Bank. When forced to choose between processing oil transactions through the Iranian Central Bank and losing some forms of access to the US financial system, many banks have steered clear of Iran. Others simply do not want the hassle, risk, or costs of ensuring they are complying with complicated restrictions, so opt out of handling trade or transactions with Iran altogether.

The Iran case also demonstrates how policy-makers in oil consuming countries are becoming more adept in using the leverage they have, without harming their own fundamental energy interests. Few worried about the impact on the global oil market of the sanctions placed on Iraq, Libya, Iran, and Sudan in the 1990s. With the price of oil dipping to a *real* price of under $10 a barrel in 1998, the prospect of taking some production off the markets was a positive one. In 2012, a tight market and high geopolitical risk has led policy-makers to seek ways of imposing sanctions on Iran *without* harming global oil supply and risking major price spikes. They have, as a consequence, constructed a sanctions regime under which – by limiting but not *eliminating* the number of countries willing to buy Iranian oil – prospective buyers can demand steep discounts on the price they pay per barrel. Ideally, Iran's oil stays on the market, but the Iranian government gets less revenue than it otherwise would.

Energy as a Cement in Alliances

Finally, energy is not only used as a tool of foreign policy in cases where it is wielded as a political weapon; it is also frequently used to shore up alliances and to build support for certain ideologies and national security positions. There are multiple instances in which an energy producing country has provided free or deeply discounted energy exports in order to keep another country in its orbit or sphere of influence. The Soviet Union provided huge energy subsidies to members of the Warsaw Pact during the late 1970s and early 1980s; similarly Russia continued the provision of subsidized energy to the Commonwealth of Independent States after the collapse of the Soviet Union. Saddam Hussein's Iraq also provided cheap oil to Jordan throughout the 1980s and even in the 1990s under the UN Oil-for-Food program. Current examples include Venezuela's provision of cheap energy to Bolivia and Cuba; such transfers are geared to shore up support for President Chavez's anti-American, revolutionary stance in Latin America.

While the motives of these suppliers in providing energy benefits to their near neighbors seem clear, their track record in cementing alliances is more questionable. While such energy largess appears to have been successful in buying support in international forums, it has a mixed record of securing the loyalty of countries to the supplier when national

interests have been at stake. Jordan sat out the Gulf War, at least in part due to the fact that it benefited economically from Saddam's rule, while Yemen sided with Iraq against Kuwait in the first Gulf War *despite* the fact that Yemenis had received cheap energy from Kuwait and Saudi Arabia before Saddam's invasion.[38]

Energy as a Means/Resource for National Security Strategies

The final way in which energy can be a component of a grand strategy – and have major consequences on security issues as a result – is when it provides the means or resources with which countries can advance their foreign policy or national security interests. In short, energy sales in many instances provide large proportions of a country's revenues and national budget; the fact that there are rents associated with the extraction and sale of oil and gas makes these revenues particularly significant. Without these revenues, many countries would not have the financial resources to project power as they do today.

Of course, high revenues from energy exports are not in themselves a determinant of destabilizing international or domestic behavior. In 2011, Canada reaped 25.4% of its export revenues, and close to 7% of its GDP, from the energy industry, and remains a model democracy and international citizen. In Australia, mining and energy exports accounted for 72% of total export revenue in 2011, yet there are no allegations of adventurism abroad or repression at home against Australia. Norway, Brazil, the UK, Mexico, Angola, and China are all in the top 15 oil-producing nations of the world and not one of them is a major instigator of global disorder.[39]

Nor does a country have to have high energy revenues to repress its citizens or create international security woes. The annual *Country Reports on Terrorism* produced by the US Department of State listed Cuba, Iran, Sudan, and Syria in 2010 as state sponsors of terrorism under a designation developed in 1979. Cuba is dependent on external sources for energy; Sudan is now an energy exporter, but has been on the list since 1993, years before it began to export oil in 1999; Syria exports small amounts of oil, but is expected to become a net importer soon. Iran, of course, is a major exporter. North Korea, which produces virtually no energy, had been on the terrorism list from 1998 until 2008 when it was taken off in the context of negotiations about its nuclear program. Similarly, countries which have challenged the global nuclear non-proliferation regime are on the whole *not* energy powerhouses: North Korea, Pakistan, India, Israel, and – the exception – Iran.

While energy wealth is not necessarily a sole determinant of destabilizing behavior, there is clearly a subset of countries whose propensity to engage in such behavior is fueled by their energy wealth. What determines whether a country uses its energy revenues to fund such activity is still a matter of some debate. On the international side, what appears to matter the most is if the country has a revolutionary or expansionist ideology.[40] Without oil revenues, the current regime in Iran would still seek to extend its influence regionally and globally, but it would be far less successful in doing so. Estimates suggest that Iran has spent between $100 and $200 million a year supporting Lebanese Hezbollah and, until recently, an equal sum supporting Hamas.[41] No estimates exist about the level of support provided to Iraqi Shi'a militia, but it is likely to be substantial. Iran's suspected efforts to pursue a nuclear weapon may have cost it close to $1 billion thus far.[42] And, finally, Iran's oil revenues have helped the country weather international pressure and sanctions geared to sway the regime from attaining a nuclear capability. On a lesser scale, Venezuela's oil wealth has enabled Chavez to promote candidates sympathetic

to his "Bolivarian" revolution across Latin America; he has provided financial support for the elections of like-minded politicians in Bolivia, Peru, Ecuador, and Paraguay. Oil revenues also have enabled Chavez to send financial support in the past to the FARC, the group seeking to destabilize neighboring Columbia.

There are also concerns that energy revenues enable and encourage the development of repressive regimes. Rentier states, as they are known in the academic literature, are ones which use the revenues from oil and gas (and other natural resources) to construct societies beholden to and/or repressed by the ruling group. Given that rents or energy revenues can absolve a government from imposing taxes on its population, the citizenry have little recourse to demand accountability from its rulers. Undemocratic regimes result, often with robust security apparatuses to ensure that any dissent which is not co-opted is crushed. Again, not every energy exporting country becomes a rentier state, but a subset of energy exporters clearly manifests some or many characteristics of one. Timing of institutional development, political culture, and diversity of economy seem to be some of the additional factors at play in determining whether an energy exporter also becomes a rentier state.[43]

Conclusion

This chapter has sought to provide a framework for thinking about the wide variety of ways in which energy and international security overlap, as well as to illuminate many contemporary issues inhabiting this intersection. It has explored how energy shapes and influences every component of a grand strategy that a country might develop. Energy may be an ends to a grand strategy, shaping political, military, diplomatic, and economic strategies created by leaders who seek to provide secure energy resources at reasonable prices to their economies and constituents. Energy can also provide the ways or the tools through which countries seek to advance their non-energy goals; countries use *either* their energy production or their energy demand to try to shape the international arena in a way which is most conducive to their broader national interests. And energy can also provide the means – or revenues – for countries to pursue particular foreign policy or domestic agendas which can have international security implications.

In spurring us to adopt a lens much broader than the traditional "energy security" one, this grand strategy framework has encouraged us to reconsider some conventional wisdoms about energy and international security. While energy resources can be the impetus for conflict, they may do so more by empowering expansionary states than by enticing others to invade. China's "going out" policy in Africa – an example of energy serving as an ends of grand strategy – may create security problems, but not the ones generally anticipated. Rather than sparking conflict over scarce resources, China's activities create potential security issues by insulating energy producing regimes from pressure to curb their own destabilizing behavior. Energy can be, and is, used as a political weapon, but the circumstances under which such an endeavor can be successful are fairly limited and specific, and the risks to the instigator quite high.

The grand strategy framework used also gives new meaning to what is construed as global energy policy. Nothing in this chapter diminishes the importance of international cooperation around policies related to managing oil stocks to buffer economies from price shocks, minimizing CO_2 in the environment, pursuing alternative sources of energy, or engaging in transnational energy projects from the Nabucco gas pipeline to the massive solar and wind effort envisioned by the conceivers of Desertec. This chapter, however, reveals how a country's "energy policies" go far beyond those generally considered to

pertain to energy. Changes in political, military, diplomatic, and economic policies and strategies directly relate to the energy challenges and opportunities which shape the global energy landscape.

Given that oil and gas account for more than half of the energy used today in the world, it is no surprise that the predominance of energy related security issues connect to oil and gas. As this chapter has shown, the specifics surrounding oil and gas – their finite nature, their association with rents, the particular characteristics of oil and gas markets – are important factors in shaping the particulars in the interaction between energy and security. For instance, while gas producers may have better luck than oil producers in using their resource as a political weapon due to the lack of a global market and the massive infrastructure investments involved in gas trade, both are limited by mutual dependencies between producer and consumer.

Recognizing how the unique characteristics of oil and gas shape today's security issues should prompt us to think about the energy transitions which lie ahead. Although the shift away from fossil fuels in the global economy is and will continue to be slower than many desire, it is also inevitable. At some point in the future, likely out of both necessity and ingenuity, the dominance of fossil fuels will give way to one or more new energy sources. The shift to these new energy sources – whether solar, wind, biomass, nuclear or something we cannot yet imagine – will bring with it its own host of peculiar security issues. The challenges in anticipating this new landscape are further complicated by another related transition: the emergence of a more multipolar energy world, where emerging economies are now the drivers of energy demand and other global trends.

As oil and gas diminish in the global energy mix, the international security dilemmas associated with their use will gradually become less relevant to understanding global politics and security. In their place will arise a new set of factors, which will similarly shape the ends, ways, and means of grand strategies. Countries will continue to pursue energy as an end of their strategies, to utilize energy as a way or instrument of exerting influence on the international stage, and to use the resources that the energy trade provides to fund their foreign policy and national security strategies. Today, policy-makers, academics, businesses, environmentalists, and consumers are all focused on *how* the world can make the transition away from fossil fuels. While this question demands our urgent attention, we should also be anticipating how such a shift will change the world in which we live – in ways far beyond simply how we fuel our cars or make our electricity, but also in the sorts of international security challenges we will face.

Notes

1. I am grateful for the hard work and excellent insights of Kaweh Sadegh-Zadeh in helping me research this chapter. I also appreciate the comments of Andreas Goldthau on earlier drafts.
2. In 2005, energy companies were engaged in elaborate plans to construct more than 40 liquefied natural gas import terminals in the US, each with a price tag of $500 million to $1 billion. See Romero (2005).
3. American "tight oil" production has increased significantly in the last decade. Production grew from 10,000 bd in 2003 to 900,000 bd by the end of 2011. The Bakken formation in North Dakota and Montana, and the Eagle Ford in south Texas, account for 84% of total US tight oil production. The energy consultancy Wood Mackenzie expects tight oil production to hit 2.5 million bd by 2015.

4. See Morse *et al.* (2012).
5. The diminution of imports is also due to decreased economic activity in the last few years and increased efficiency over time. Yergin (2012) talks of the US (and other OECD countries) having reached "peak demand."
6. See Nerurkar (2011).
7. This 49% number includes imports from Venezuela, which make up 10% of overall imports. Put another way, the US receives 39% of its crude oil imports from friendly, stable neighbors.
8. See Yergin (2006).
9. See for instance, Evans and Kawaguchi (2009: 124–146); Lovins *et al.* (2008); Deutch *et al.* (2003).
10. Security of demand could also be an objective driving the foreign policy or national security strategy of producing countries. For instance, due to European efforts to diversify gas imports sources away from Russia, the Kremlin started to look to China as an alternative market. Energy is today one of the driving forces of cooperation between Russia and China. Although it is too early to determine, part of the motivation of Qatar in pushing for intervention in Libya could relate to Doha's need to secure markets for its gas in the future. Qatar is now involved in Libya's energy reconstruction and such involvement may give Qatar the opportunity to integrate some aspects of the two industries, helping guarantee continued Qatari access to European markets.
11. A total of 32.7% of 6,909 US respondents in Zogby interactive poll conducted January 16–18, 2007 said Iraq's oil was a "major" concern; 23.7% said it was not a factor. http://www.upi.com/Top_News/2007/01/25/UPI-Poll-Oil-seen-as-factor-for-Iraq-war/UPI-37491169740800/, accessed 04/06/2012.
12. For full accounts of these decisions, see Kershaw (2008: Chapters 2 and 8).
13. See Jaffe *et al.* (2008).
14. In a July 10, 2003 press briefing, Secretary of State Colin Powell stated: "We have not taken one drop of Iraqi oil for US purposes, or for coalition purposes. Quite the contrary . . . It cost a great deal of money to prosecute this war. But the oil of the Iraqi people belongs to the Iraqi people; it is their wealth, it will be used for their benefit. So we did not do it for oil."
15. Alan Greenspan wrote in his memoir, "I am saddened that it is politically inconvenient to acknowledge what everyone knows: the Iraq war is largely about oil." But even this statement obscures whether Greenspan saw commercial or strategic interests – or both – as the drivers behind the war (Greenspan 2007: 463).
16. Iraq's southeastern cluster of super-giant fields forms the largest known concentration of such fields in the world, accounting for close to 80% of Iraq's proven oil reserves.
17. Only two US companies (Exxon Mobil and Occidental) were part of consortium that successfully bid for 11 oil projects made available in 2009 and 2010 bid rounds. See *Bernstein Research* (2010).
18. A 2004 GAO report estimated that between 1997 and 2002, Saddam accumulated $10.1 billion in illegal revenues. Approximately $5.7 billion resulted from illegal sales, while the remaining $4.4 billion was due to surcharges and kickbacks imposed on those who bought the oil. See Christoff (2004).
19. Ari Fleischer, White House Spokesman, said in a February 18, 2003 briefing: "Iraq, unlike Afghanistan, is a rather wealthy country. Iraq has tremendous resources that belong to the Iraqi people. And so there are a variety of means that Iraq has to be able to shoulder much of the burden for their own reconstruction." Paul Wolfowitz, Deputy Defense Secretary, in speaking to the House Appropriations Committee on March 27, 2003, stated: "We're dealing with a country that can really finance its own reconstruction, and relatively soon."
20. Kaplan (2011).
21. See EIA (2008).

22. Hookway (2011).
23. Kaplan (2005). See also Lieberthal and Herberg (2006).
24. Trade volumes between China and the members of ASEAN are expected to hit a new record of U$350 billion in 2012 (Shan 2012).
25. For an in-depth analysis of Chinese energy strategy, see Kong (2010).
26. See Campos and Vines (2008) and Corkin (2011).
27. For different views on the future of US–Chinese relations, see Kissinger (2011) and Freidberg (2011).
28. This pattern, however, shows recent evidence of changing, as Chinese NOCs have competed with Exxon Mobil and other international oil companies in places like Ghana and Nigeria.
29. See Downs (2007).
30. According to an IEA study, there is no evidence that the Chinese government is imposing any quotas on Chinese NOCs for equity oil to be sold to China (Jiang and Sinton 2011). Andreas Goldthau (2010) argues that while Chinese oil investment in Africa and elsewhere is good for the global supply, it has the adverse effect of using capital less efficiently than if market mechanisms were to drive investments rather than political opportunity.
31. For an account of the 1956 Suez crisis, see Yergin (2008).
32. In 1956 France, the UK, and Israel did withdraw from the Suez Canal, but largely on account of diplomatic and financial pressure from the US, not due to the oil embargo. Even in 1973, despite significant economic pain, the US did not abandon its support for Israel.
33. Sanctions, however, can also have the opposite result, known at the "rally around the flag" effect, in which external pressure allows a government to solidify its support.
34. A variety of recent developments are putting pressure on gas markets to integrate. See Deutch (2011).
35. Around 80% of Russia's gas exports were transiting Ukraine before the Nord Stream pipeline came onstream and opened up a new route to Europe.
36. For more on these cases, see Stern (2005); Boussena and Locatelli (2005); and Rutland (2008).
37. See O'Sullivan (2003).
38. For a fuller treatment of this issue, see Crane *et al*. (2009: 35–37).
39. See Energy Information Agency data on top world oil producers in 2010. http://www.eia.gov/countries/index.cfm, accessed 04/06/2012.
40. Jeff Colgan argues that revolutionary petro-states are far more inclined to initiate military conflict than non-revolutionary petro-states (Colgan 2010).
41. See Bruno (2011).
42. Crane *et al*, (2009).
43. A vigorous debate also exists about whether resource rich countries are doomed to be undemocratic. See Ross (1999).

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