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Fueling a New Order?

The New Geopolitical and Security Consequences
of Energy

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Introduction

On December 16, 2013, Prince Turki bin Faisal Al Saud, Saudi Arabia’s powerful former intelligence chief, gave an interview to the *Wall Street Journal*. He was speaking out after a turbulent four months in Middle East and Persian Gulf diplomacy, diplomacy that culminated in an interim nuclear deal between Iran and the major powers. Prince Turki, long a close friend to the United States, used the interview to blast American policy. He was critical of U.S. strategy in the region as a whole, but particularly vehement about leaving Saudi Arabia out of the loop as the United States engaged in secret bilateral diplomacy with Iran. “How can you build trust when you keep secrets from what are supposed to be your closest allies?” he fumed.¹

It was an ironic twist of history. Almost 70 years earlier, another Al Saud had met quietly with the American president, while a different U.S. ally was kept in the dark. On February 14, 1945, the *USS Murphy* traveled from Jeddah where it had picked up King Abdulaziz Ibn Saud, the founder of Saudi Arabia,² and rendezvoused with the *USS Quincy* in the Great Bitter Lake, part of the Suez Canal. On board, the King met President Roosevelt for the first and only time. During an intensive afternoon of discussions, focusing primarily on Palestine, the two leaders also forged a relationship, which evolved into a deal that was to sit at the heart of late twentieth century geopolitics:³ the exchange of American security assistance for

access to Saudi Arabian oil.⁴ Prime Minister Winston Churchill of Britain—until the war, the leading external power in the Gulf, and America’s major wartime ally—learned of the meeting too late to try to join it, to his fury.⁵

Oil had been World War II’s indispensable commodity and it was to prove equally central to rebuilding postwar economies. The effort Roosevelt put into wooing King Abdulaziz reflected the growing globalization of its supply. Whereas America had provided the vast majority of the oil that fed the allied war machine, production began to shift to the Middle East as exploration intensified after the restrictions of the war years. Ghawar, Saudi Arabia’s crown jewel and still by far the world’s most important oil field, was discovered in 1948 with production starting three years later.⁶ The erosion of U.S. leadership was crystallized by the formation of the Organization of Petroleum Exporting Countries (OPEC) by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela in 1960, and then by the peak in its oil production in 1970. OPEC’s efforts to entrench its market dominance culminated in the embargo and resulting price shock of 1973, symbolized by high prices and long lines of cars at U.S. gas pumps, and an oil price-induced recession in the West. The era in which the United States (and the major U.S. private oil companies, the so-called ‘Seven Sisters’) could set rules for global oil markets was over.⁷

* Churchill had his own, less successful, meeting with the Saudi king two days later. The King found Churchill culturally insensitive and evasive, and fretted about British willingness to meddle in the region. By contrast, Roosevelt impressed him greatly. “The President seeks understanding in conversations,” the King said after their meeting. “His effort is to make the two minds meet, to dispel darkness and shed light upon this issue.”

Crisis pushed energy to the center of American strategy, however, while helping stimulate innovation in international institutions. “The energy crisis awakened us to a new challenge that would require both creative thinking and international cooperation in order to preserve and further our collective well-being,” Henry Kissinger recalls.⁸ As U.S. Secretary of State, he pushed for the establishment of the International Energy Agency (IEA) in 1974 as a club for energy importers, to balance the negotiating power of the oil exporters. Under U.S. leadership, this new institution was created quickly and with wide-ranging powers, with the governing board empowered to take decisions that would be binding for its member countries.⁹ For forty years, it has remained the principal venue for international energy cooperation among the industrialized countries.

Today, another transformation in the international energy landscape is underway. Now, the United States is poised to overtake Saudi Arabia and Russia as the world’s largest oil producer—a stunning change—and, combined with new developments in natural gas, is on track to become the dominant player in global energy markets.¹⁰ Meanwhile, in 2013 China surpassed the United States in its scale of oil imports, a dubious honor to say the least.¹¹ India’s dependence on imports is also growing, while that of U.S. allies Japan and Korea remains high. So while energy has occupied a modest place in U.S. foreign policy debates in recent years, certainly compared to terrorism or the rise of China, the same cannot be said for the evolving powers of Asia, for whom energy is central to their growth strategies.

This energy revolution is rapidly strengthening America’s global hand. Among the consequences is an accelerating shift in Middle Eastern oil, away from the United States and toward Asia. This helps explain the fractures witnessed in late 2013 between the United States and Saudi Arabia. It has never been the easiest of alliances, and is now troubled by many other strains, notably dissatisfaction with each other’s policy toward Egypt and Syria. But under the surface is a more deep-seated anxiety as the Saudi ruling elite worries that the oil-for-security

bargain is breaking down just as U.S.-Iran negotiations threaten Saudi’s regional leadership. The royal family is feeling dangerously exposed. The current rift would likely not be as wide or as public if oil patterns weren’t changing. Saudi Arabia may still be America’s number two source of imports after Canada, but the future direction of Middle East supplies is becoming clear. They’re heading to Asia.

All this results in a “risk pivot.” The “pivot to Asia” is now well established in the rhetoric of U.S. foreign policy, if not yet fully in material and diplomatic commitments. But it’s not only U.S. foreign policy that’s pivoting; with the shift in energy flows has come a shift in risk exposure. The United States has long been exposed to the geopolitical risks associated with energy production and transit, but now, increasingly, so too are the Asian powers. There are price risks, political risks and—not least—significant risks associated with pollution. Chinese and Indian policymakers are scrambling to understand these risks and to work out how to manage them.

American strategists, meanwhile, may be tempted to fulfill Chinese fears and use energy as a source of pressure on its most significant rival. Others will see an opportunity to disengage from the Middle East during a period of fiscal austerity, leaving Beijing and Delhi to take responsibility for the troubled region. While beguiling, these are false choices. Asia’s risks remain, to a very large degree, global risks. China may be a geostrategic competitor, but it is a critical economic partner, and the United States has a powerful interest in seeing India—in twenty years, a country of 1.5 billion people¹²—continue to tread the difficult path toward widespread prosperity. Nor is it conceivable that the United States can disengage itself from trouble in the Middle East any time soon. The U.S. global presence and its alliance structure in the region mean that it will remain preoccupied by the region’s political instability for a long time to come, even if the scale of its military deployments recedes from the post-9/11 high. The notion that the United States can “withdraw” from the Middle East is at odds with the facts.

And the United States and its core allies are still exposed to the price risk. There's a global price for oil, with regional variations; a rise in the price of oil for China is also a rise in the price of oil for the United States. Greater domestic production certainly helps hedge price risk, but U.S. industry and consumers will still feel the pain when energy costs are high. And Saudi Arabia will continue to have an outsized influence on prices of oil, irrespective of where its oil is destined.

Finally, while the pollution that now clogs cities in China, and increasingly India and Korea, is felt first and foremost locally, its cause—the burning of vast quantities of carbon-based fuels—has global impacts on the climate.

Indeed, these shifts in production and consumption are coming as we're seeing the beginning—perhaps just the beginning of the beginning—of a more serious effort among the top powers to lay the cornerstones of a deal to transition towards a low carbon economy. And the United States has adopted a new strategy: rather than waiting for a moment when a bipartisan deal could be pushed through Congress, the Obama administration has decided to pursue an alternative approach, with two elements. One is the use of regulatory tools at the administration's disposal to improve energy efficiency in the United States. The second is a to adopt a “pursue every course” approach to international negotiations—pushing for action in the Major Economies Forum (MEF), in the G-20, supporting UN efforts on sustainability, pursuing carbon capture and storage, and so on. This does not mean abandoning formal negotiations through the United Nations Framework Convention on Climate Change (UNFCCC), but neither it nor Congress are now seen as the pace-setter for action.

All of this means that energy issues—their geopolitics and their governance—are already pushing their way to the heart of U.S. foreign policy. Energy factors into one of the most fraught issues in the U.S.-China relationship: naval competition in the South China Sea. It is also at the core of perhaps the most promising: increasing U.S.-China cooperation on climate

change. And as we'll see in what follows, the flow of energy across the changing global landscape is inextricably linked with the economic and political vitality of India,¹³ in whose success the United States has high stakes; with energy transit security and nuclear proliferation; with food security; and with fragile states.

As the Obama administration carves out its agenda for the remainder of its second term and potential candidates look to 2016, energy issues will offer important opportunities for U.S. leadership. But the successive administrations' room to maneuver will rest on a basic geopolitical question: whether the leading powers—the United States and China above all, but also India and core Western allies—can agree on a new geopolitical deal over energy and security, similar in importance, if different in content, from the one President Roosevelt and King Abdulaziz reached nearly seven decades ago.

The material that follows is organized around four key messages.

We've begun to witness a major transformation in international energy markets. There are uncertainties here, many of them, and this transformation has only just begun; it will be another decade at least before its market, political, geopolitical, and climate implications will fully manifest themselves. But the basic contours of the global energy landscape are beginning to take shape.

These changes have profound geopolitical consequences, including in terms of security relations among the world's top powers. Two things are clear: that these changes are strengthening America's hand in the world; and that changes in global energy production and consumption are increasingly exposing the emerging powers to risks. America does not escape from risk, but the emerging powers have several more vulnerabilities.

In addition to direct geopolitical risks, there are a set of risks that arise when strong international energy markets meet weak state institutions—or weak states

altogether. These run the gamut from nuclear proliferation to pipeline and sea-lane security to fragile states to energy poverty. These risks arise even in major developing countries like India, Myanmar, and Pakistan, and also in poorer, often fragile states, which play a much larger role in energy and resource markets than is commonly understood. And they could see seemingly unimportant states gain strategic significance, especially when they—or those making use of ungoverned spaces within their territory— threaten pipeline and sea-lane security.

Global institutions are not yet well-configured to help. Despite a recent proliferation of institutions, crucial gaps remain, and they fall short of an effective system for global energy governance: there's neither

a map nor an admiral to guide them. A combination of American leadership, shared interests (or at least overlapping interests) with the emerging powers, and G-20 creativity are the most likely channels for knitting a more effective *system* for energy and climate governance. But tense geopolitical issues remain an obstacle—both in Asia's waters, and in the Gulf's. On the geopolitics, only the United States can lead. Indeed, the changing global energy landscape is a strong net positive for U.S. power (and for the Americas more generally). Although it's still exposed to risks, the United States is being dealt new cards. It now has a choice how to play them: as a stick, as Russia has tried (with major blowback); or as a tool to foster a more stable international order. We believe there's a far stronger case for the latter.

Resource Pivot: New Patterns of Energy Production, Consumption and Flow

In his final year as Chairman of the Federal Reserve, Alan Greenspan became preoccupied with the growing instability of global energy markets. “How did we arrive at a state in which the balance of world energy supply and demand could be so fragile that weather, not to mention individual acts of sabotage or local insurrection, could have a significant impact on economic growth?” he asked in a speech in October 2005.¹⁴

After the turmoil of the 1970s, increased investment and rapid technological innovation had kept down the price of oil and gas. In real terms, the oil price peaked in 1980 and then fell rapidly. By 1998, it had sunk to levels not seen since the Arab countries announced their embargo in 1973. But trouble was brewing. As demand from emerging markets began to surge, investment was slow to follow. International oil companies were largely prevented from opening up new reserves, Greenspan argued, while the world’s dominant national oil companies had limited incentives to respond to rising global demand.¹⁵ Low prices had reduced pressure to increase energy efficiency and a shift in manufacturing from the West to less-efficient China meant that more energy was needed to create the products on which the modern world depended. Greenspan continued to believe that, in the long term, market forces would ensure that the world used its scarce energy resources efficiently, but he also accepted that political impediments would obscure price signals. “We can say with some assurance that developments in energy markets will remain central in determining

the longer-run health of our nations’ economies,” he concluded.¹⁶

A new energy price crisis was in full swing by the time the Chairman left office in 2006. The oil price hit a double peak, first in 2008 and again in 2011, by which time it was more than six times higher than its 1990s low.¹⁷ As in the 1970s, the energy crisis coincided with broader economic turmoil and very high levels of market uncertainty. On the demand side, doubts remain about the strength of recovery in the West and about the resilience of the Chinese, Indian and other emerging economies. This has led to wildly divergent predictions about future energy prices. On the supply side, expectations have also repeatedly been confounded. Both oil and gas have seen surging investment, but with uneven results. U.S. production has grown far faster than predicted, for example, but an expected boom in Brazil has failed (so far) to materialize¹⁸ and shale gas has hit a series of obstacles across Europe. Coal is enjoying an unheralded renaissance within the EU,¹⁹ while nuclear made a sudden retreat (in OECD countries) after the 2011 Fukushima disaster in Japan.²⁰ Add the inherent unpredictability of geopolitical risk into the mix and only the foolhardy would forecast with any degree of confidence future patterns of production, consumption, and the flows of energy around the world.

This uncertainty is, in itself, important, as governments—and opposing political factions in capitals—come to very different conclusions about what the

future holds, increasing the scope for miscalculation, misunderstanding, and sudden swings in policy. Investors face similar constraints, with political risk and regulatory uncertainty complicating their ability to allocate their financial capital in a sector where infrastructure has very long life cycles. So given the extent of these uncertainties, what *can* be said about how the direction the energy revolution is likely to take as it continues to unfold?

The long reign of fossil fuels is far from over. Energy is not just any other ingredient in economic growth; it is the irreplaceable ingredient that makes that growth possible. Before the Industrial Revolution, most energy was consumed within the household for basic subsistence.²¹ Fossil fuels provided a surplus that allowed an escape from Malthusian strictures, with first coal, then oil, and finally gas powering modern economies. While climate change provides a powerful incentive to reduce fossil fuel dependence, any transition to new energy sources will be a drawn-out affair, even if we see unprecedented levels of social mobilization, state-directed investment, and international cooperation.²² According to the IEA, fossil fuel use will still account for more than three quarters of energy use in 2035—and that’s if governments implement at least some of their climate and energy efficiency commitments.²³ Nor will the link between energy and economic growth be broken during this period, although the world will continue to get better at squeezing more GDP from fewer raw materials. Absent a major policy push, fossil fuel use will likely increase by almost a quarter under the IEA’s reference scenario, requiring a continued scramble to open up new resources and putting a 2 degree climate target definitively out of reach.²⁴

But the golden age of oil has drawn to a close. While a period of high prices has discredited the “peak oil”

thesis, oil *is* becoming more expensive, complex, and risky to extract. Anything other than a brief return to the very low prices of the 1990s is likely only if the global economy enters a period of chronic underperformance—a disastrous prospect for both China and India. Prices are more likely to fluctuate around an equilibrium defined by the cost of extracting deep-water and unconventional oil on the one hand, and the level at which low-cost producers such as Saudi Arabia are prepared to sell to global markets on the other. We may see the oil market split into three broad segments. The world’s *accessible oil* will likely be controlled almost exclusively by national oil companies in countries that dominated the oil market in the late twentieth century, with governments deciding how quickly to bring this oil to market. *Smart oil* will be found in countries such as the United States where the right mix of innovation, regulation, investment, and private sector leadership allows technologically complex projects to be tackled. *Risky oil*, meanwhile, will be tapped in contested or very deep waters, and along the unstable frontiers of the developing world, as investors struggle to connect new producer states to global markets. It remains an open question whether the West’s oil majors or the East’s state-owned prospectors will prove best able to navigate the political complexities that abound in these new markets.

The dash for gas seems certain to accelerate. Most of the world’s major energy consumers need more energy for their power sectors. They are also keen to benefit from the low natural gas prices that have transformed America’s energy prospects.* So gas will gain market share, but it will continue to behave very differently from oil. While oil reserves are (relatively) constrained and geographically concentrated, gas is abundant and widely distributed.† Although current production is dominated by the United States and Russia, other regions have potentially significant

* The International Energy Agency projects that China’s consumption of gas could increase over six fold by 2030. U.S. production of unconventional gas is increasing rapidly, with shale gas growing 48 percent annually between 2006 and 2010. It is likely to produce almost all the gas it needs in 2030. European dependence on imported gas is likely to continue to increase, unless it discovers unexpectedly large unconventional reserves, although greater use of imported liquefied natural gas (LNG) may lessen its dependence on Russia.

† Proven gas reserves will last for 50 years at current rates of production, but undiscovered conventional and unconventional reserves are many times larger.

reserves.²⁵ However, gas is more challenging to extract, store, and transport than oil. And unlike oil, with a single global price, gas markets remain regional: at present, the United States pays less than half of what Europe pays for gas, and just under a quarter what the major Asian countries pay.²⁶ Given the seriousness of Chinese pollution and Indian electricity scarcity, both countries badly need to make greater use of gas in their power sectors. Domestic production could meet some of this demand, but a very substantial increase in trade seems inevitable, as Russia redirects gas from Europe to Asia and as new exporters, with the United States in the lead, make a significant investment in liquid natural gas. This process will not be painless and, given the fragmented and opaque nature of gas markets and the length of investment cycles, boom and bust cycles are likely to continue to be endemic in the sector.

When the going gets tough, countries will default to coal. Coal is dirty, cutting life expectancies by as much as five years in the worst affected parts of China.²⁷ Coal-fired power stations also produce at least twice the carbon dioxide emissions of a gas-fired station.²⁸ But coal is the world's most plentiful fossil fuel, accounting for 90 percent of the world's non-renewable resources.²⁹ While there are some other factors pushing developed economies out of coal, for emerging markets it is cheap, easy to mine; for China and India in particular, domestic production is an important source of energy security. Despite its commitment to cut pollution, China continues to make massive investments in coal mining and coal-fired power generation.³⁰ The IEA expects India to surpass the United States as the world's second largest coal consumer after 2020 and also to overtake China as the world's largest importer after 2020.³¹ So while some analysts are confident that pollution risks will topple 'King Coal' from his throne, both countries may continue to fall back on coal when they cannot secure other forms of energy at an acceptable price.

Continued reliance on fossil fuels will not go unchallenged. The Chinese government faces growing environmental pressures at home, with pollution emerging as the issue that is most likely to bring the

country's middle class out onto the street.^{32,33} Similar pressures seem certain to grow in India. But it is climate change that will ensure that the energy revolution is increasingly contested, with the IEA's chief economist warning that, on current trends, "the door to 2 degrees will be closed" by 2017.³⁴ In the past, many analysts have operated under the unspoken assumption that fossil fuel scarcity will eventually force a transition to low-carbon growth. A period of high prices, and the carbon intensive investment this has unleashed, have disproved this notion. At a global level, investment in renewables is stagnant, while China, where emissions are growing fastest, may be making an unprecedented investment in wind and solar power but is also increasing its spending on coal and other fossil fuels. This dual track strategy—green *and* black growth—is replicated in other major economies and will be sustained for a decade or more, absent a major policy shift.

The G-20 countries will define our energy future. Understood in global terms, the energy revolution is (so far) largely a story about the members of the G-20 grouping of major economies. G-20 countries produce 73 percent and consume 83 percent of the world's energy.³⁵ But there are marked disparities of interest within the G-20 : between major exporters and import-dependent countries; between the six countries—India, above all—that still suffer significant energy poverty and the rest; and, perhaps above all, between those countries that badly need to secure new energy supplies and those where domestic demand is stable or falling. Import dependence varies widely: Japan and Turkey are most dependent on imports (at 88% and 71% respectively), closely followed by the EU (at 51%). India imports 28% of its energy, but because biomass used for cooking is included in that number it masks a far larger import dependence on oil, gas and coal for industrial production and power generation. The U.S. imports 18.5% of its energy needs. China so far imports 11% of its energy. These numbers underestimate China's dependence on oil and gas imports, though, for those are the only supplies that can grow rapidly. China's growth options are already dependent on imported oil, and this will increase.³⁶ It is also set to become

a significant importer of gas, despite developing domestic reserves.³⁷

While G-20 *countries* will dominate decision-making, it is far from clear that the G-20 Summit mechanism will be engaged in an active attempt to build a robust energy order. It is hard to imagine G-20 leaders not responding collectively to a future energy shock, but outside a crisis, its role is uncertain. Instead, we could see a more chaotic response as the energy revolution transforms alliances within the G-20 and between major powers and those outside the G-20 club.

Finally, in the energy sector, it's *always* political. Global energy markets have become extraordinarily powerful, with fuel accounting for almost one in every five dollars traded in 2008.³⁸ The trend toward further globalization is strong. International markets for both gas and coal are likely to diversify and deepen, while oil will continue to be the single most important traded good. But these are some of the

most politicized and distorted markets in the world. Economies cannot function without energy, so governments obsess at the possibility of any interruption to supplies. Nor can they change their energy mix overnight, leaving countries heavily dependent on key trading relationships. The world's major commodity producers, meanwhile, depend on resources for a substantial share of government revenue with some risking financial collapse if prices go too low. And energy is an essential ingredient of strategic power projection (for example, the U.S. Department of Defense is the world's largest single consumer of energy).³⁹ As a result, energy is treated by most governments not as a market good but as a strategic commodity. Even in the United States, a country whose political identity is bound up in defense of free markets, there are heavy legal restrictions against selling U.S. crude overseas. Any analysis of the energy revolution that fails to put the political and geopolitical dimension front and center is doomed to fail.

Risk Pivot: The Impacts on Great Power Relations

The question of energy strategy doesn't exist in isolation. It's part of a broader geopolitical context, where a deepening debate surrounds the question of whether the strength of the West and the overlap in interests between the West and the emerging powers combine to generate the likelihood of a competitive but not conflictual international order; or whether American economic and military fatigue, disarray in Europe, and the strength and assertiveness of China are already pushing us into a new Cold War, or the early stages of one.

The way in which energy fits into this equation is already the subject of discussion, as the American strategic community becomes increasingly aware of Chinese dependence on American security guarantees in the Gulf. As this has happened, analysts have asked this question with increasing frequency: does the shifting geopolitics of energy give the U.S. a new strategic tool in an intensifying rivalry with China? Another question has an alternative logic: does the changing geopolitics of energy create areas of shared interests and opportunities for cooperation with China, to balance mounting tensions in other regions?

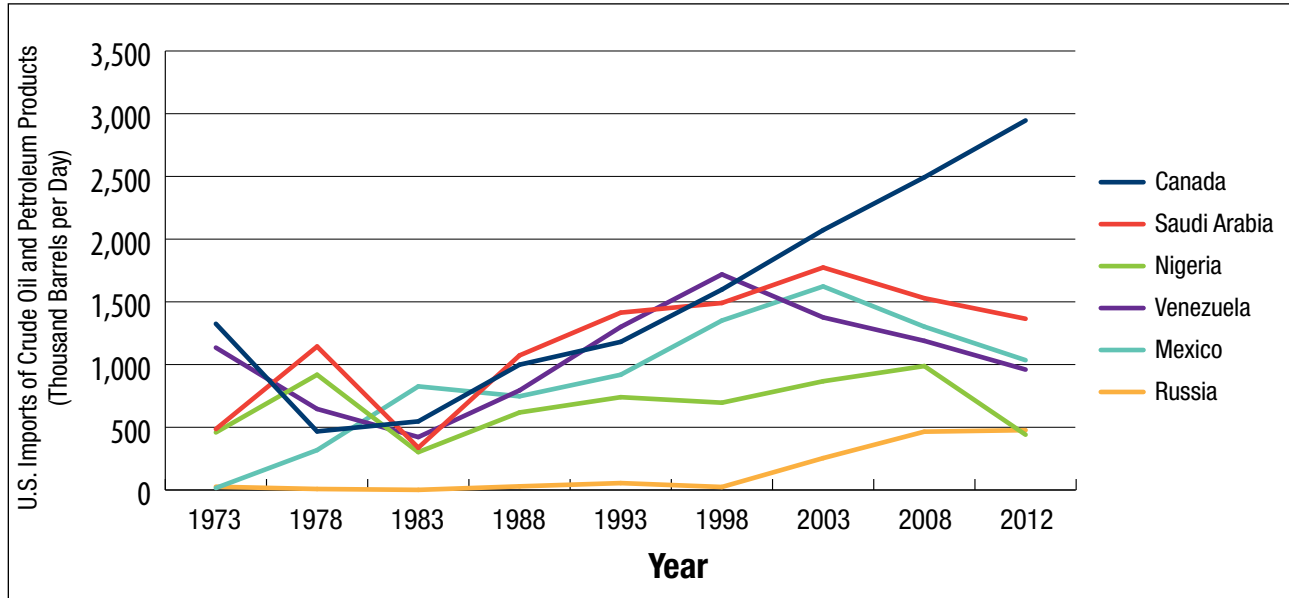
The focus is on China, as the major power most likely to compete with the United States, but U.S.-China relations cannot be considered in isolation. A full range of actors must also be considered, including non-allied emerging powers, but also U.S. allies in both Europe and Asia. India's role is particularly important, given the extent of its resource insecurity and its position in Asia as a potential counter-weight

to China, but so is the part played by the world's great energy producers, Saudi Arabia and Russia.

So how are great power relations shifting, as the energy revolution gathers pace? So far, at least, the biggest winner is the United States. The changing geopolitics of energy have put strategic cards back into American hands as a combination of technological innovation, regulatory changes, and market dynamism have reshaped the country's energy production. Most of the attention has gone to natural gas and "fracking": technically, hydraulic fracturing, or the use of massive volumes of water and chemicals under huge pressure to break through rock formations to gas and oil deposits otherwise trapped in tight rock. Natural gas production in the United States has risen by 25 percent in the past five years.⁴⁰ But there's more to the U.S. energy revolution than gas. New technologies have also allowed drilling for what's known as "tight oil," or oil trapped in rock formations in small quantities (but in thousands of different sites). And new discoveries have also brought online new "elephant" fields, or 1,000,000+ barrel/day fields.⁴¹

This is commonly formulated as saying that U.S. energy security is improving, and to some degree it surely is. The U.S. is profiting from the combination of increased domestic production, which is creating jobs and tax revenues (quite a lot of both); from increased physical security of supply, as a greater share of its energy mix is met from a combination of domestic sources and sources from within the

Top Oil Exporters to the United States (1973-2012)



Source: U.S. Energy Information Agency

Americas; and from a lower cost of energy than its competitors, which helps petrochemicals and manufacturing generally. Over time, it also has potential to lower its dependence on Gulf oil, as it consumes more home-produced oil and turns to sources of supply from its own backyards, notably from Canada, Venezuela and Mexico. Brazilian supplies, which are estimated to be among the world's largest, could dramatically reinforce this trend.⁴²

Still, energy security is not an *absolute* concept. As we have argued, none of these changes mean that the United States can insulate itself from global energy markets, nor that it will supplant Saudi Arabia, the only supplier with significant excess capacity of cheap and easily accessible oil, as the world's swing producer. What's more, the U.S. economy is increasingly integrated into the global economy and increasingly trade dependent; as of 2012, 25 percent of American GDP was tied to global trade—low by international standards, but high by American ones.⁴³ This exposes the U.S. to the energy insecurity of its trading partners. If they suffer, it will suffer too.

That said, America's *relative* energy security is certainly improving. Europe is in a weaker position, still heavily reliant on Russian hydrocarbons (an increase in imports from the United States could change this, a fact of which Russia is acutely aware).^{*} As for Russia: remarkably, its geopolitical position has deteriorated as a result of changing energy markets. Market anticipation of the future scale of U.S. gas flows has already depressed global gas prices, while the Europeans have turned to Norway and Qatar to diversify their supplies. Russia has tried using its flows to Europe as a source of leverage, but has found this a tricky card to play. It can credibly threaten to cut off Ukraine, but its own economy would crater if it threatened the European market.⁴⁴ And there are major reputational and political costs to using energy as a weapon, as we've seen from the uprising in Kiev in the winter of 2013–14. Russian energy infrastructure has been starved of investment, as a consequence of Gazprom's lack of market orientation, the unfavorable Russian investment climate, and Putin's tendency to use Gazprom's reserves and networks for geopolitical purposes. The government has also allowed itself to become

* An important issue between the United States and its European allies will be if, or how, energy prices are factored into negotiations over the Trans-Atlantic Trade and Investment Partnership (TTIP). Given export restrictions and domestic finds, the United States is paying a far lower price for energy than Europe. U.S. negotiators point out, though, that by shifting from imports to domestic production, the U.S. is also leaving supplies in global markets which is softening prices for European imports—and there's some truth to this argument.

addicted to high energy prices, with money flowing out of its coffers if the oil price is below \$110 or so.⁴⁵ As one Russian analyst recently noted: “This is a man-made problem, and we know the name of that man.”⁴⁶

But while a broader debate continues as to whether the U.S. is most threatened by a weak Russia or a strong China, we expect the most important energy vulnerabilities to remain with the major Asian powers. For China, energy insecurity is an unwanted by-product of economic success. Massive economic growth over the past decade-and-a-half has meant a commensurate rise in demand for energy. The government has invested heavily in domestic supplies;⁴⁷ but its demand growth has outstripped this progress. The percentage of imports in China’s energy mix is rising, and under virtually any scenario will increase rapidly in years ahead.⁴⁸ And much of China’s energy is transported from unstable countries where it is discovering it has less influence than it expected, via insecure routes that it doesn’t control.⁴⁹ This exposes China to growing levels of both price risk and political risk.

China has now overtaken the United States in terms of volumes of oil imports. Much of this oil, and an increasing quantity of gas, is imported by sea—a lot of it via the Straits of Hormuz and almost all of it through the Malacca Straits. In 2003, as the U.S. invasion of Iraq contributed to spiking oil prices, Chinese President Hu Jintao identified China’s “Malacca dilemma:” its fundamental economic dependence on energy imported through maritime straits under the control of other navies. While China has invested heavily in developing its navy, it is still several years away from having the naval capacity to secure its growing dependence on energy imports.⁵⁰ (See Map in Appendix on Page 14.)

China’s vulnerability to having these imports choked off is acute. While American and European scholars debate what 1914 in Europe teaches us about great

power war,⁵¹ in China there’s more resonance from the lead up to World War II in Asia: a spiral of events that involved, *inter alia*, the Japanese quest for oil, rubber, and other resources in far-flung territories, and the potential for the United States—then the world’s dominant energy producer—to blockade oil and other imports to hobble the Japanese war machine. Today, China feels many of the same vulnerabilities as pre-war Japan.*

Thus energy is an important amplifier—and arguably a driver—of one of the most complex tensions in modern politics: the naval arms race between the United States and China, centered for now in the East and South China seas. Whether these two powers will be able to find a peaceful resolution to their competing interests, perhaps within the framework of what China’s new president Xi Jinping has called “a new type of great power relations,” remains to be seen.⁵² The alternative is years, or decades, of militarized tensions in Asia. This affects India, Japan, and Korea, who are also players in a naval and broader arms race in Asia, driven by nationalism, land disputes, and unresolved historical claims. Again, energy complicates this maritime tension.

A competitive dynamic is not inevitable. China, Japan, and Korea are all major actors on the “demand” side of international energy markets. Common, or at least overlapping, interests in managing prices, diversifying supply, developing new resources, and reducing transport vulnerabilities could open up new common ground in Asia. Incentives are especially powerful to cooperate to transform Asia’s natural gas infrastructure, allowing all regional actors to tap increased gas imports, from the United States as well as Australia and the Gulf, and Asia. The construction of a regional network for gas in Asia is the world’s most significant energy project. It has attracted minimal public attention but has major implications: for the global economy, for stability in Asia, and for climate change.

* Energy is not just an amplifier but a key driver of geopolitical competition in another sea—namely the Arctic, newly accessible as global warming trends are leading to greater sea melt and thus more accessible waterways. For a discussion of how the race for the Arctic’s energy supplies have played into geopolitics and governance developments, see Bruce Jones et al, “Chill Out: Why cooperation is balancing conflict among major powers in the new Arctic,” Brookings Institution, May 2012.

Indeed, Asia is on the threshold of one of two very different geopolitical pathways. Along one, each of its major energy-importing nations will see a strategic interest in diversifying energy supplies and networks, disentangling their interests and restraining the military end of competition. This would facilitate the establishment of a new infrastructure in Asia for natural gas and other energy imports as well as large-scale investment in renewables (see below.) In the other scenario, geopolitical pressure and a sense of constriction rooted in energy insecurity will drive naval competition and contests and a zero-sum approach to energy. The most realistic scenario is a shifting, and tense, blend of the two—but, even then, the balance between will be critical.

Then there's the Gulf, where both resources and risks are pivoting to Asia. For all the changes in global markets, the Middle East remains a central player in the global oil and gas sector. But the region is changing fast. As is the case with Russia, many of its major oil exporters have gained surprisingly little benefit from a period of high prices.⁵³ Fiscal breakeven points have shot up alarmingly, as governments attempt to buy the quiescence of their citizens. While some countries have become powerful global investors through their sovereign wealth funds, broad-based economic growth has proved elusive at home. In the wake of the U.S. invasion of Iraq on the one hand and the Arab Spring on the other, the region is experiencing extremely high levels of political instability. After decades of stagnation, it appears to be part way through an unpredictable transformation that is likely to leave few of its societies unchanged.

This is echoed by broader shifts in the geopolitical balance of power. Saudi Arabian dominance in global oil markets continues, but its role is challenged by Iran. While the Kingdom is a status quo power, Iran has a strong interest in roiling global energy markets, rather than calming them. Like Saudi Arabia, it has massive reserves of oil, heavily concentrated in large fields with cheap production costs, but its fiscal breakeven point is now estimated to have exceeded \$140, higher than any other oil exporter, even after a painful program of economic reforms to rein in domestic

energy subsidies in order to bring the government budget back under control.^{54,55} Iraq, meanwhile, aims very substantially to increase its production over the next decade, leading to a potentially serious challenge to Saudi dominance if Iran is simultaneously freed from the current sanction regime due to the conclusion of a nuclear deal with the United States.

The risk pivot sees China—and Asia more generally—exposed to these potentially dangerous trends. Oil remains the world's most efficient mechanism for translating economic into geopolitical risk. In the modern era, no other commodity has played such a pivotal role in driving political and economic turmoil, and there is every reason to expect this to continue. Nor can the emerging powers rely upon finding more stable sources of supply. Countries that have reported substantial increases in their reserves in recent years are some of the most risky in the world (Iran, Nigeria, and Venezuela).⁵⁶ These countries form a growing part of China's energy import mix. For this reason, a major theme of Chinese (and increasingly Indian) relations with the U.S. is growing nervousness in both countries about America's willingness over the long-term to continue to play its traditional role as the main external guarantor of the security of the Gulf states—a role that goes back to that fateful meeting aboard the *USS Quincy*.

Within the Middle East, a great deal of attention has been paid to China's growing naval role, with the Saudis hinting that they might shift their allegiances from the United States to China. Good luck to them. The reality is that China is at least two decades away, possibly more, from having the scale or quality of naval and broader military capacity to replace the U.S. role in the Gulf. What's more, the United States shows no real signs of withdrawing from the region, despite rhetoric to the contrary, while China (understandably) is reluctant to become embroiled while the U.S. remains prepared to play policeman on its behalf.⁵⁷ The result is something of a standoff, as America pays for security from which others draw an increasing benefit, while China has little control over resources that are critical both to its prosperity and to its internal political stability.

India is a player in this story too. While it has not yet scaled the same economic heights as China, recent rapid growth has similarly increased its reliance on imported energy. Any forward pathway in India will rapidly increase this reliance, with it likely to account for a greater share of growth in oil consumption than China over the next decade or more.⁵⁸ To meet its growing needs, India is looking to all sources, and all suppliers. Oil from Iran has traditionally been an important source, and will be increasingly so if sanctions end for good. Coal imports will be important too, with India likely to become as polluted as China. Natural gas from the United States could play an important role, if the U.S. is prepared to export and the Indians finally invest in the capacity needed to receive and distribute imports. Along with distributed renewables, all of these are part of the mix. But so is oil from the Gulf. India is investing in its naval capacity as well: it has huge stakes in maritime shipping, is not willing to sit back while China expands its naval presence in the Indian Ocean, and seen from an energy perspective would like to see a secure channel between India's shores and the Gulf. Geography plays heavily to its advantage here, compared to China, and this could lead to the Indians attempting to secure an advantage relative to their more powerful neighbor (perhaps with American help) or it could see both Asian powers agree to at least not take actions that threaten the other's energy security.

But India faces other complications. Its domestic energy sector is already in crisis, beset by a lack of planning, weak investment, and rampant corruption. It also has much greater energy poverty than any country in the world, with just over 300 million people with no access at all to modern energy supplies.⁵⁹ It is at once a top-ten economy, a rising maritime power, a G-20 member, a credible aspirant for a permanent seat on the UN Security Council, and a longstanding leader among non-OECD countries. But it is also the poorest member of the G-20 by far, with per capita

wealth roughly 3 percent of the United States,⁶⁰ and it faces energy challenges that are among the most complicated issues in its political landscape.^{61*}

In this regard, India is emblematic of those states in which new energy patterns are a threat both to political and economic stability, and whose success—or otherwise—in meeting these challenges will flow back into increasingly globalized energy markets, and through them to the interdependent, but fragile, global economy.

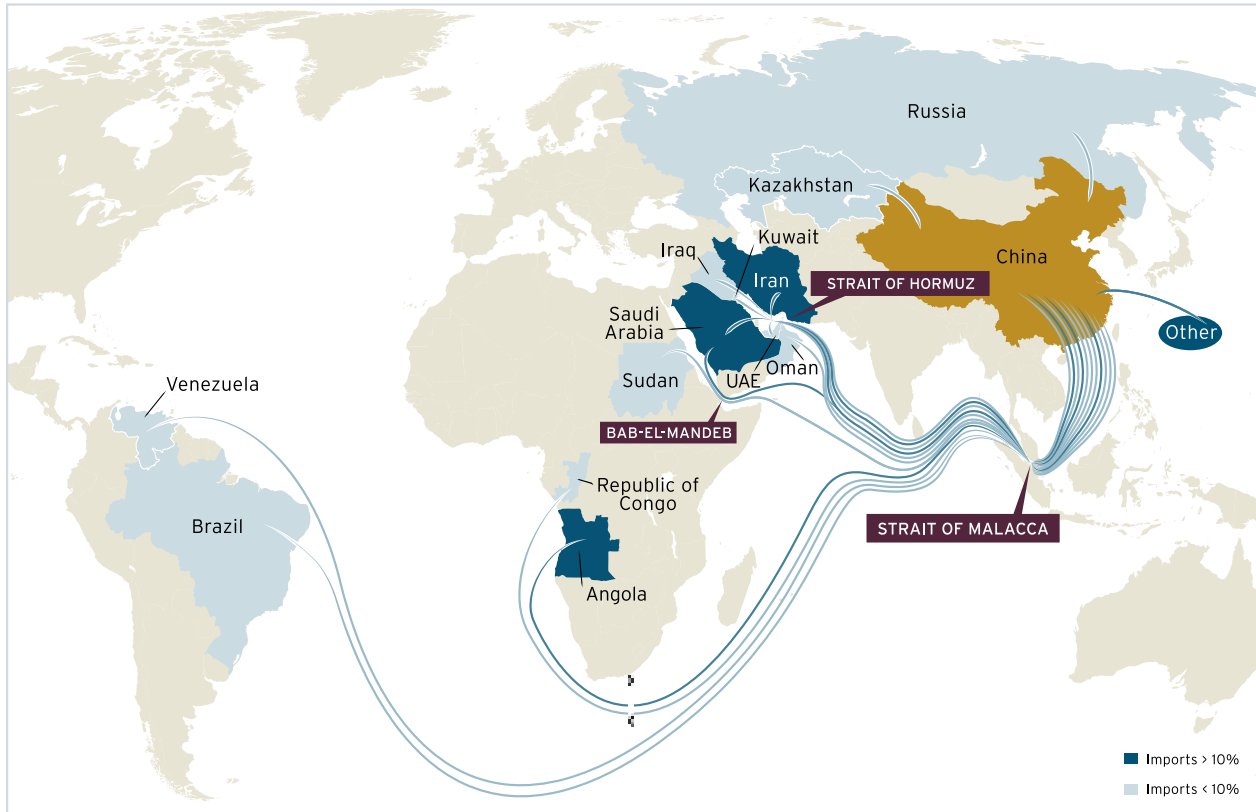
The pivot dynamics bear on Europe and Russia as well. Russia is the EU's largest supplier of gas, but Europe's gas importers have turned to Norway, Algeria and Qatar to reduce dependence. Europe is also attempting to build pipeline capacity that would connect it to the Caspian region and Central Asia, against fierce Russian resistance. Reserve stocks have been increased and emergency planning systems improved. Most recently, during the first phase of the Russia-West crisis in Ukraine, European buyers were able to act quickly to secure additional supplies. The 2014 crisis is likely to see a renewed impetus for Europe to reduce its reliance on Russian energy, with particular emphasis now on American shale gas imports and perhaps a reduction in barriers to producing shale gas within Europe, as well as a shift to other sources.

Russia will likely continue to look eastwards for markets in any case. European demand will decline over the next twenty years and Russia expects to be exporting almost a quarter of its energy to the Asia Pacific region by 2035. So: the more risks that are associated with Russian gas in particular, but its hydrocarbons more generally, the tighter the expected links between Russia and Asia, with Europe looking for sources of supply that carry lower levels of geopolitical risk, or investing in domestic production or demand reduction. In short, Russia is a fulcrum for the risk pivot, alongside the Middle East.

*For a more detailed discussion of India's energy challenges, see: "India's Energy, Food, and Water Security: International Cooperation for Domestic Capacity" by Arunabha Ghosh and David Steven in *Shaping the Emerging World: India and the Multilateral Order*, Waheguru Pal Singh Sidhu, Pratap Bhanu Mehta, and Bruce Jones (Eds.), Brookings Press, 2013.

Appendix: China's Energy Vulnerabilities

China Import Countries, 2011



Country	Saudi Arabia	Angola	Iran	Russia	Oman	Iraq	Sudan	Venezuela	Kazakhstan	Kuwait	UAE	Brazil	Republic of Congo	Other
Percentage of Imports	19.8	12.3	10.9	7.8	7.2	5.4	5.1	4.5	4.4	3.8	2.7	2.6	2.2	11.3
Thousand Barrels	366,825	227,395	202,575	144,175	132,495	100,740	94,900	83,950	81,760	69,715	49,275	48,910	41,245	208,780

Created by Marcia Underwood of the Brookings Institution with data compiled from the U.S. Energy Information Agency's China Country Report 2012. <http://www.eia.gov/countries/cab.cfm?fips=CH>.

Of Strong Markets and Weak States: Other Security Effects of the Energy Revolution

Every state and every population in the world needs and uses energy. So far we've been discussing the security and geopolitical implications of changing energy patterns for some of the world's most important states, among them the United States, China, Japan, India, and the major European economies. But many states, including some who are G-20 members, have important gaps in their state capabilities and face significant challenges in managing aspects of their energy mix, including its impact on growth and development. And more problematic still, when we look to states not just with gaps but with weak state capacity overall, we see several ways in which new energy patterns are complicating their stability, both economically and politically. These patterns amplify instabilities that increasingly can flow back into global markets and the global economy. Just think of this one statistic: almost 50 percent of China's oil imports come from fragile states.⁶²

The huge growth in global energy consumption has driven a far-flung search for new supplies—what's being described as a new scramble for resources. Much of the attention in that scramble goes to China, which has grown fastest and was first among the emerging powers to adopt a “go out” strategy to gain access to global resources at the source of supply.⁶³ But this is a genuinely global scramble. Brazil is the leading investor in Mozambique's huge new natural gas fields; Turkey is a leading player in oil fields of the coast of Somaliland; and so on. China and India are omnipresent—as, of course, still are the major

Western players, notably the United States, the United Kingdom, and France.

The scramble reflects the convergence of two good news stories: economic growth in developing Asia and the steady decline in the number and scale of civil wars in every corner of the world—except the Middle East, that is, where conflict has recently ticked upwards. As peace has spread across Africa, Asia, and Latin America, growing economies have reached into previously unstable markets to develop new resource flows. This means that many of these new flows are in places that as little as ten years ago were gripped by large-scale internal war and still have very weak state capacity. Angola, mired for twenty years in a brutal civil war that killed over 1 million, now provides around 15 percent of China's oil.⁶⁴ Sudan supplies another 5 percent of China's oil while still facing serious internal instability.⁶⁵ And so on. The Table on the next page shows the major role that some of the world's most fragile states play in global resource flows. During the height of the commodities boom from 2005–08, around \$1 trillion in oil alone was extracted from resource-rich poor countries.⁶⁶

This has produced a paradox. As weak states exit conflict and stabilize to some degree, powerful market forces make them attractive targets for resource development, but new investment flows create—or in some cases recreate—conditions for a “resource curse.” There is nothing inevitable about the curse, good policy can lift it, but in the wrong policy en-

vironment, economic incentives become perverted due to the sheer scale of the short-term returns on resource development. And there's another risk: that uneven resource development creates, or recreates, incentives for renewed conflict.

Table of Fragile States/Resources

	Top 20 Oil Reserves	Borders Shipping Choke Point	Ranking in Failed States Index 2013
Somalia			113.9
Yemen			107.0
Iraq			103.9
Nigeria			100.7
Eritrea			95.0
Egypt			90.6
Iran			89.7
Angola			87.1
Libya			84.5
Algeria			78.7
Azerbaijan			78.2
Venezuela			75.3

Witness Mozambique. In 1992, Mozambique's government and rebels signed the General Peace Agreement, bringing to an end one of Africa's longest and bloodiest civil wars.⁶⁷ Peace in Mozambique was fragile, but it held. By the mid-2000s, Mozambique had become a poster-child for post-war recovery and is now among the world's ten fastest growing economies.⁶⁸ In 2008, the World Bank hailed Mozambique for its success in "beating the odds."⁶⁹

With this stability came new opportunities, including in resource discovery. In recent years, Mozambique has emerged as a potentially significant player in the natural gas and coal sectors.⁷⁰ Exploration has found substantial natural gas reserves both onshore and off Mozambique's coast, with some claiming these are the century's largest natural gas discoveries to date.⁷¹ International investors have flooded in. Unsurprisingly, the major players here include the emerging powers; China is now Mozambique's main trade

partner, with Chinese companies investing in gas, coal, ports, and other infrastructure,⁷² while India Oil and Natural Gas Corp. has recently made a big investment.⁷³ Brazil has also emerged as a major player, both in mining and in agriculture, with Brazil emerging as Mozambique's largest aid donor (and the recipient of the largest share of the aid that the Brazilians send to Africa)⁷⁴.

So what benefit will a resource boom bring to Mozambique? Former Mozambican minister and first lady, Graça Machel has warned of the potential for resources to create political upheaval if resource wealth is monopolized by the elite, claiming that uneven patterns of development are already "sowing the seeds of hate."⁷⁵ "It's a race against time," an international official argues. "Is the big money that corrupts going to come before stronger checks and balances?"⁷⁶ Despite twenty years of stability, Mozambique's institutions remain weak, receiving a "failing" score on the Resource Governance Index.⁷⁷ Worryingly, Renamo, the conservative resistance movement, has again dabbled in violence and has threatened the railway link that carries Mozambique's coal to overseas markets.⁷⁸ Its grievances are fuelled by the belief that its rival Frelimo, which has ruled Mozambique since independence, is consolidating its grip on power by monopolizing the proceeds from natural resource extraction. And Mozambique is not alone. Other countries at risk of seeing resources fuel conflict include Angola, perhaps Nigeria (which also faces huge problems in the "bunkering," or theft, of oil from its Niger Delta), and Equatorial Guinea—in other words, three of Africa's largest oil producers.

These risks flow back to the global level, but again they are borne asymmetrically by those countries that have the greatest unmet appetite for imported energy. While the U.S. has seen a substantial decrease in the energy it imports from Africa, the emerging powers are rapidly deepening their ties in the world's fragile resource frontiers. Many have found much greater political risks than they expected. Brazil has struggled in Guinea—where Rio Tinto has not had an easy time with its huge find Simandou—and even in Mozambique, where it has long-established

Lusophone ties backed up by considerable commercial investments.⁷⁹ China's oil companies have experienced a 'baptism of fire' in countries with weak institutions and complex political economies,⁸⁰ while the Governor of the Central Bank of Nigeria recently accused the Chinese of stripping commodities from Africa, while aggressively exporting manufactured goods to the continent. "Africa is now willingly opening itself up to a new form of imperialism," he claimed.⁸¹ Increasingly, Chinese and Indian investors have faced substantial push-back on their least responsible investments. The first person to be expelled from Africa's newest state, South Sudan, was the Chinese head of Petrodar, a Chinese-Malaysian oil company and the government's largest client; he was alleged to have links to an \$815 million oil theft.⁸² Algerian courts blocked two Chinese firms from government procurement, pointing to corruption.⁸³ There have been diplomatic consequences for China in particular within the African Union—consequences that matter to the Chinese, given their continuing effort in vital global negotiations (like climate talks) to portray themselves as a champion of developing countries.

These problems will continue to grow unless external actors—the emerging powers included—provide incentives that help increase transparency, strengthen institutions, and encourage legitimate financial flows to local citizens. That Nigeria loses an estimated 5 percent of its oil to "bunkering" (i.e., theft at production or in the Niger Delta by criminal groups) or that its Central Bank recently wrote to its President accusing the state-owned oil company of failing to account for \$50 billion of oil revenues is indicative of the kind of problem that is likely to grow, not recede.^{84, 85}

At the same time, the world will have to cope with the consequences of fragile states attempting to hedge their own energy and climate risks. Nigeria hopes to persuade the Russians to help it build the continent's second nuclear power plant, while the number

of aspirant nuclear powers is growing rapidly across the Middle East.⁸⁶ A resort to civilian nuclear energy is a perfectly legitimate way for oil exporters to avoid consuming a growing proportion of their own resources (and for other rapidly growing economies to meet their needs), but these states have important weaknesses in their capacity for managing these systems, especially around the human resource aspects of nuclear safeguards and security. (Accidents are as much a risk here as theft of nuclear material.)*

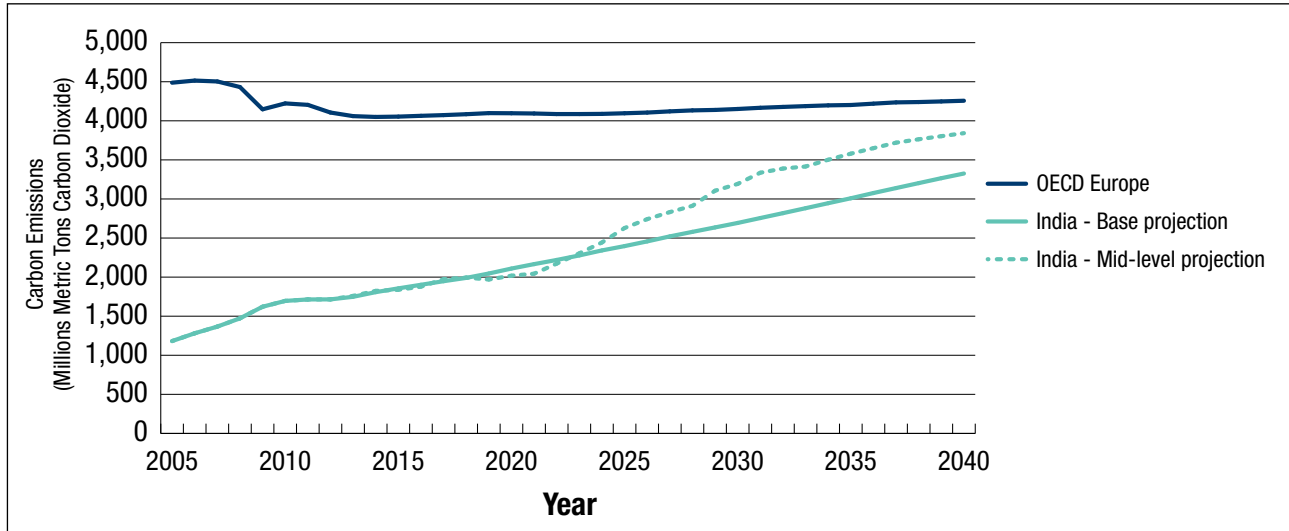
Climate change is also a growing threat to many already unstable states, with low-lying, fast growing conurbations facing the greatest short-term dangers, and many agricultural systems seeming unsustainable given likely climate trajectories. The world's poorest countries also have the greatest need of carbon space in which to grow their economies. Debates about climate change tend to focus on the United States, China, and the European Union—unsurprisingly, given that these three entities account for about one-half of global energy use and just over half of carbon emissions.⁸⁷ That's now. If we look ahead, India looms large. Over the course of the next three decades, India's carbon emissions will grow to match those of the EU—and that's if India doesn't substantially increase its carbon emissions, as China did at a similar stage in its economic development.⁸⁸

The Middle East is also becoming a major emitter as it continues to consume its own oil at rock bottom prices, while Africa could make a significant contribution to global emissions if its much-heralded economic 'miracle' is delivered.

All of this brings us full circle to the geopolitical level. We are at an unusual geopolitical moment, when some of the top powers are also developing nations. India is the most obvious example, but Nigeria is on track to surpass the American population by the middle of the century.⁸⁹ Much smaller states, however fragile, can also be strategically significant if they

* See: Kevin Massy and John Banks, "Security Implications for the Expansion of Nuclear Energy," Brookings Institution, October 2009. And: Kevin Massy and John Banks, "The Human Element: Nuclear Power Development in the Middle East," *Georgetown Journal of International Affairs* 14, no. 1 (May 2013).

India's Emissions vs OECD Europe's Emissions



Source: U.S. Energy Information Administration

India mid-level growth rates were projected by halving the annual growth rates that China experienced in the period from 1990-2011 and the annual growth rates predicted by the EIA from 2011-2020. This provides an optimistic, though realistic, view of Indian growth.

account for a significant proportion of a G-20 country's energy imports, or if they can threaten a transportation route.

In the United States, analysts and decision-makers who focus on geopolitics and strategy tend to ignore climate change and to pay only modest attention to energy issues. For the emerging powers, however, energy is crucial to their economic growth, and growth in turn is fundamental to their political stability. If climate change negotiations limit their access to energy, this is perceived not just in climate terms but strategic ones. There's much debate about whether the West will "allow" the emerging powers to enter the established order, and whether the emerging powers will choose that pathway.⁹⁰ That's normally thought

of in terms of free trade and global financial systems. But the reality of the existing order is that the rise of the West encompassed very cheap energy and an unlimited right to emit carbon. Take away either or both and it's a very different order on offer.

Thus, the risk pivot places both energy and climate at the heart of geopolitics and it does so for risks that emerge from the interaction of major powers, and from the interaction of these powers—and the markets they have created—with more fragile states. So how can these risks be managed through a global order that is itself in flux? And how can the U.S. best exploit the opportunities that its new energy riches offer it?

Of Great Powers and Global Energy Governance—Opportunities for Leadership

Energy has given the United States choices, but they're not easy ones. It could use its dominant naval position and energy strength as a "boot on the throat" of China—as some Chinese fear it will. But there would be huge costs, not least to the security and economy of America's Asian allies, and to its trade with China. Just ask Vladimir Putin how well it works to wield energy as a stick, rather than a commodity. The United States could pursue a "hands off" strategy in which it genuinely decides not to try to respond to instability in oil producing states, or to threats to energy transmission from rogue states or non-state actors—to let these be other peoples' problem. To some extent, doubtless, this will be part of America's strategy. But it is hard to see the U.S. permanently retreating to the sidelines on energy, especially when its economy and those of its allies begins to suffer in an inevitable crisis.

A more realistic option would mix carrots and sticks. The United States could extend the role it has played as a guarantor of the free flow of oil and trade, while using the now high stakes that China and India have in global energy flows as a source of more constructive leverage: pushing for better burden-sharing arrangements on pipeline and, perhaps eventually, maritime security. It could also look to Chinese and Indian investors to be part of a global effort to help fragile states ward off the resource curse. But this would leave a question looming. Can the United States and China (and India) forge a new basic geopolitical deal—trading some form of balance of power in Asia for some form of condominium of

power in the Gulf? That will be a central question—perhaps *the* central question—in U.S. strategy in the coming years.

At its core, this U.S.-China bargain would have two elements. First, in the East and South China Sea, the United States and China must each recognize that the other has no intention of fading away or giving ground. The United States will retain a major presence and stake in open seas around China's shores; and China will build its naval capacity to ensure that it can't be subject to an economic or energy blockade by sea. Through a combination of negotiations and evolving realities, the United States and China could reach an understanding that could be described as 'mutually assured denial'—that is, the United States recognizes that China will develop enough naval capacity to stop the U.S. from blockading the sea lanes, and China recognizes that the United States is not going to be pushed out of those waters. Much of this would occur through mutual signaling rather than through explicit negotiation.

A critical piece is the tacit recognition by China that the U.S. presence in the Persian Gulf enhances stability and helps guarantee the flow of energy to China. China would be loath to recognize this fact openly, but the idea of substituting for American power in the Persian Gulf is a mammoth, generational project for which China has shown no appetite. But it may be time for the United States to start impressing on China that the Chinese themselves hold part of the key to maintaining an effective U.S. presence in the

Persian Gulf: the more instability there is in Asia's waters, the more resources the United States will have to rebalance from the Middle East to cope. Moreover, the United States should look for China to play more of a role in other domains of maritime security, like counter-piracy and Arctic navigation, alongside other claimants like India. These developments will be complex and fraught—and the underlying dynamic will remain unspoken. But bold ideas are going to be needed to give meaning to the idea that there can be “new kinds of great power relations,” not just a steady accumulation of suspicion and tension.

In Europe, the U.S. will have to play the long game. It can accelerate the development of natural gas terminals to facilitate sales to Europe (as well as Asia), but that will take significant investment on both sides of the Atlantic. Energy markets have to be seen comprehensively, and U.S. strategy should continue to orient around diverse, resilient energy markets in both Europe and Asia. That increases the logic for a deal—if a stable deal can be found—with Iran, and will require keeping a close eye on developments in Venezuela.

In the meantime, the United States can lead on energy governance at the global level, as it did during the 1970s. Of course, the United States is not the only potential source of leadership. India is making strides on the development of distributed technologies like small-scale solar, to tackle sustainable approaches to energy poverty. China is emerging as a market leader in low-cost nuclear.⁹¹ Europe has been most active on driving international climate negotiations. But the United States has more capacity than most countries—arguably, more capacity than the rest of the G-20 combined—to push and cajole the evolving global energy governance system into greater effectiveness.

It is already becoming a source of innovation in energy, but also on climate, where falling emissions (until 2013 at least) have offered it the chance to lead on global climate issues. That does not, in our view, necessarily translate into too strong a focus on the UNFCCC, but it does require a sustained, deliberate effort to pursue multiple tools and multiple strategies

(including potentially an agreement at the UN) to use the power of the American market, and the huge market power of the G-20, to shift the balance of incentives away from coal and oil and toward a more sustainable mix of gas, renewables, and increased efficiency. We can only provide a broad outline of the key governance challenges here, but a more detailed outline is in our forthcoming book. The essential challenges are these:

Managing the new price instability. Large, short-term fluctuations in energy prices are in no one's long-term interest. They cause huge economic costs and disruptions for importers and major distortions for producers. And they have had devastating effects on poor populations and poor countries, while making the challenge of navigating growth and poverty harder for middle-income countries. But the reality is that with natural gas playing a larger role in the market, with changing patterns of oil flows, with uncertainty about growth levels in the emerging powers, with the shape of any future international climate change regime in grave doubt, and above all with the potential for major instability in the Persian Gulf, price volatility looks to remain a feature of global energy markets. This means that it's all the more important to retool the mechanisms we have, primarily the OECD-owned International Energy Agency, to promote price stability. A new IEA “outreach” mechanism to non-OECD members is good news, but can only take us so far. China's former premier recommended a G-20 working group on energy,⁹² and this has promise given the geopolitical basis of the G-20 is far more solid than that of the OECD for managing relations between the established and the emerging powers. But perhaps best would be to build a new IEA on the old one, with the U.S. developing a detailed plan for bold reform, which it could propose if a politically opportune moment opens up, perhaps when the next energy crisis hits.

Asia's Contested Networks. Investment in energy infrastructure in Asia is currently high on the international agenda, given the need to secure the next phase of the region's development, but also to turn large quantities of dormant capital into productive

spending. The G-20 is likely to make this the focus of its decision-making in 2014.⁹³ These decisions will set patterns for energy consumption in Asia for two decades; and in so doing will likely have more impact on the options for climate stabilization than anything that happens through formal climate bodies. Thus, the question of whether the next wave of infrastructure spending in Asia is “green” (that is, is based on efficient technologies and driven toward renewable energy sources) or “black” (the opposite; and the path of least resistance) is hugely consequential in economic, energy, and climate terms. The G-20 could focus on both investment incentives, cuts to fossil fuels subsidies (as it has begun to do), and regulatory changes required to generate the necessary levels of return on ‘green’ investments. But investment in energy networks in Asia will be more complicated if geopolitical tensions mount, and especially if naval contestation in the South and East China Seas escalates.

The Revolution is Not Yet Born. If Asia’s booming demand and America’s booming growth in supply is driving a revolution in energy affairs, we urgently need a new one: around renewables and efficiency. That revolution is necessary if we’re to have a hope of attaining what already looks tough: a less-than-2-degree rise in average global temperatures, which is the threshold under which climate impacts are likely to be manageable. Estimates of the role that could be played in carbon emissions reductions by the simple expedient of energy efficiency, combined with renewables, ranges as high as 50 percent.⁹⁴ That may be a high estimate, but few dispute that efficiency can and should be a major part of any climate stabilization strategy.⁹⁵ Despite this, there is no sustained international focus on efficiency, and among a panoply of regional and international institutions, initiatives, and public-private-partnerships, few focus on efficiency. The market will not deliver this change unaided: the actors who pay for efficiency do not necessarily capture the gains. So there is a solid case for government intervention and international cooperation to change the incentive structure. Whether or not a major new international body is needed to tackle this (questionable), a sustained set of po-

litical signals is certainly essential, combined with the detailed work of aligning regulations, financing, and insurance markets around some set of efficiency solutions. And over time, a willingness to move the fiscal burden away from labor and onto fossil fuels, and to do so in a coordinated way, will become increasingly urgent.

Making energy sustainable. Related are questions of energy access for the poor, the sustainability of energy growth in large developing countries, and the impacts of energy prices on food insecurity for the poor and in the world’s poorest countries. It’s possibly the case that the debate at the United Nations General Assembly over “sustainable development goals” is the right place to forge broad political understanding on this issue; but the UN General Assembly will never be the right place to drive concrete action. The UN’s new initiative on Sustainable Development for All (SE4ALL), which is the most ambitious of the UN’s new public-private partnerships, could help deliver (and contribute to efficiency and renewables goals). But it will have to be given the political space and staff resources to do so. Right now, there isn’t just a gap between the scale of ambition of SE4ALL and the staff budget allocated to it, there’s a yawning chasm. The interplay between energy, poverty, and food will also have to become central to the agenda of the world’s main development actors and the world’s governments will need to move beyond rhetoric about private-public partnerships to concrete delivery.

The post-war world order had oil at its core and oil will continue to be vital to 21st century prosperity and security. But the future global order needs a much broader grasp of energy issues, and it also needs to have a commitment to low carbon at its heart. By some metrics, the U.S. has a declining stake in these discussions, as others become increasingly important consumers of the world’s resources. But there are also opportunities for collective action and for cooperation, as rising powers respond to rising levels of risk. Energy has once again put the leadership card in U.S. hands. It is time for a debate about whether, how, and when the U.S. should play it.

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