

REPATS

Revista de Estudos e Pesquisas Avançadas do Terceiro Setor
Journal of Studies and Advanced Researches on Third Sector

Planetary Boundaries and Governance Mechanisms in the transition to the Anthropocene



NEPATS

REPATS, Brasília/Brazil, Special Issue, n.01, Jul-Dec, 2018

ISSN: 2359-5299

E-mail: repats.editorial@gmail.com

Opinion Paper

Received: December 07, 2017

Accepted: April 15, 2018

From Scarcity to Abundance: The New Geopolitics of Energy*

Michael T. Klare**

For most of the Petroleum Age, and even as recently as ten years ago, the politics of energy were largely governed by perceptions of *scarcity*: the assumption that global supplies of most primary fuels were finite and would eventually prove insufficient to satisfy rising worldwide demand, resulting in intense competition over what remained. The enduring prevalence of this view led many oil-importing nations to establish close ties with their major foreign suppliers and to employ force on occasion to ensure the safety of overseas supply lines. This outlook guided American foreign policy for over half a century, resulting in several U.S. interventions in the Persian Gulf area. Recently, however, a combination of technological and political considerations – the introduction of hydraulic fracturing (“fracking”) to extract oil and natural gas from previously inaccessible shale formations on one hand and rising concern over climate change on the other – has largely extinguished the perception of scarcity, introducing entirely new dynamics into the geopolitics of energy.

Looking into the future, it looks as if *abundance*, not scarcity, will govern the politics of energy. Whereas it was once thought that the major sources of oil and natural gas would soon run dry, prompting an all-out struggle among major consuming nations for control over what remains, it now appears that supplies of fossil fuels will remain plentiful for the indefinite future, eliminating any need to prepare for conflict over their possession. While this is good news for the oil-importing states, it is bad news for the oil-exporting countries, many of which will have to adopt new economic models to avert extreme economic distress. Other developments of equal significance will also unfold as this shift from scarcity to abundance gathers momentum. Before examining these outcomes in greater detail, however, it is worth reviewing the traditional

*This article was originally published at: Current History (New York, N.Y.: 1941), 116(786): 3-9. Reproduced with permission from the author.

**Michael T. Klare is professor emeritus of peace and world-security studies at Hampshire College. He is the author of 14 books, including, most recently, *The Race for What’s Left*. (mklare@hampshire.edu).



perspective on energy geopolitics and how that outlook is being undermined by recent developments in the field.

The Energy-Scarcity Mantra

Up until the onset of this century, the geopolitics of energy was largely driven by a long-held mantra consisting of five cardinal principles: (1) oil was the world's leading primary source of energy, and always would remain so; (2) the United States and its Western friends and allies, members of the Organization for Economic Cooperation and Development (OECD), were the primary users of oil; (3) the Middle East possessed the world's largest reserves of oil, and so would remain major producers for the indefinite future; (4) an uninterrupted flow of affordable oil was an essential precondition for the stability of the world economy; and (5), as a result of the other four points, it was necessary for the United States (aided, where possible, by its allies), to use force when necessary to ensure the safe flow of Middle Eastern oil to Western refineries.

Looking at energy data from that time, it is not hard to understand why this mantra possessed so much credibility. In 1990, according to the Energy Information Administration (EIA) of the U.S. Department of Energy, oil provided approximately 40% of total world energy, and was expected to retain its dominant position for decades to come. The United States accounted for nearly one-third of the world's total consumption of oil that time, 20.5 million barrels a day out of a worldwide total of 66.5 million barrels. Although many countries were contributing to the global oil supply, only the Persian Gulf producers were able to generate the added volumes needed to satisfy the petroleum requirements of countries like the United States with inadequate reserves of their own. With production in most other areas expected to decline in coming years, the Middle East – believed at that time to possess two-thirds of the world's remaining recoverable supplies – would be providing an ever-increasing share of the world's future requirements.

These trends had been evident since the early 1970s, when oil production in the United States reached a peak and began a long decline, forcing this country to become increasingly dependent on imported, especially from the Middle Eastern oil. This was the backdrop to promulgation of the "Carter Doctrine" – the geopolitical expression of the scarcity mantra – in January 1980, following the Soviet invasion of Afghanistan. "The Soviet effort to dominate Afghanistan," President Carter declared, "has brought Soviet military forces to within 300 miles of the Indian Ocean [and so] poses a grave threat to the free movement of Middle East oil." Given the West's critical reliance on that oil, any attempt by Moscow or another hostile power to seize control of the region "will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force."

To ensure that this dictum could be fully implemented, Carter established a new military organization, the Rapid Deployment Joint Task Force (RDJTF), and ordered it to assemble a rapid-reaction contingent for employment in the region. His successor, Ronald Reagan, elevated the RDJTF to a full-scale regional command, the U.S. Central Command (Centcom), and gave it authority over all U.S. combat forces in the greater Gulf region. Reagan also invoked the Carter



Doctrine when ordering U.S. forces to escort Kuwaiti oil tankers through the Gulf during the later stages of the Iran-Iraq War of 1980-88, claiming that Iranian attacks on those tankers constituted a threat to the free flow of oil and so threatened vital U.S. interests. President George H.W. Bush advanced a similar argument three years later when announcing the deployment of American troops in Saudi Arabia following the August 1990 Iraqi invasion and occupation of Kuwait. “Our country . . . could face a major threat to its economic independence” if oil deliveries from the kingdom were curtailed, he declared, and so “the sovereign independence of Saudi Arabia is of vital interest to the United States.”

In more recent years, Centcom has been given responsibility to prosecute the wars in Iraq and Afghanistan and to combat terrorism throughout its extensive territory; however, one of its key tasks remains ensuring the safety of oil shipments from Gulf producers through the Strait of Hormuz and to destinations beyond. Iranian leaders have made repeated threats to block the Strait in retaliation for any U.S. (or Israeli) effort to strike Iranian nuclear facilities, and this has consistently prompted assurances from Washington that Centcom will take whatever action is necessary to keep the Strait open to oil traffic. “We will ensure the free flow of energy from the region to the world,” President Barack Obama told UN delegates in a speech to the General Assembly on September 24, 2013.

This picture – the centrality of oil in world energy consumption, U.S. reliance on imported oil, the pivotal importance of Middle Eastern oil in global markets, and an inclination to employ military force when needed to ensure the safe flow of global oil shipments – prevailed well into the beginning of the 21st century. Indeed, it gained renewed vigor in the early years of the century when many independent analysts began to warn of an imminent “peak” in world oil production, followed by a gradual contraction in global supplies. Some experts put the peak as early as 2015, others at 2020 or so. Natural gas was said to be capable of providing a temporary supplement to the dwindling oil supply, but then it, too, would reach a peak, plunging the world into chaos and conflict.

The Age of Energy Abundance

What a difference a few years can make! Less than ten years after these apocalyptic scenarios proliferated, the prospect of oil and gas scarcity has totally vanished, and does not appear likely to return in any conceivable future. Instead, the world is drowning in surplus petroleum, resulting in sustained low prices and economic misery for most oil companies and major producing countries. The world is also beginning to move away from reliance on fossil fuels altogether, rendering obsolete many of the strategic plans intended to ensure the safe flow of oil. What happened in this (relatively) short amount of time?

Two big things occurred. The first is hydro-fracking. Developed by independent producers in the United States to exploit oil and gas supplies trapped in underground shale and other “tight” rock formations, fracking combines two innovative technologies: horizontal drilling, or the use of flexible drilling rods to exploit shale formations that extend laterally for long distances; and hydraulic fracturing, or the use of high-pressure water laced with sand and



chemicals to generate fractures in these formations and thereby allow the escape of the oil and gas trapped therein. First employed to extract natural gas from shale “plays” in Texas and Pennsylvania, the technique has more recently been used to obtain oil from formations in Colorado, Texas, and North Dakota.

The increase in U.S. oil and gas production via hydro-fracking has been nothing short of sensational. In 2009, according to the EIA, “tight oil,” or petroleum recovered from shale and other hard-rock formations, amounted to only 250,000 barrels per day; by 2015, it had soared to 4.9 million barrels per day and, according to the latest EIA projections, will reach an estimated 7 million barrels in 2040. Despite a continuing decline in other forms of domestic petroleum output, this increase is so great that it will perpetuate America’s status as one of the world’s top oil producers for decades to come. The picture for natural gas is equally striking. In 2009, U.S. production from shale stood at about 9.3 trillion cubic feet; by 2015, it had jumped to 18.6 trillion cubic feet, and is now predicted to reach 35.6 trillion in 2040. These are extraordinary achievements, with few precedents in the history of hydrocarbon production.

Up to this point, most of the progress in utilizing hydro-fracking to exploit shale reserves has occurred in the United States, where the technology was first developed and put to use. The U.S. is also blessed with mammoth oil and gas-bearing shale formations, and so the potential for future increases in output here remains substantial. However, other countries also possess large shale reserves. According to the most recent EIA estimates, Russia possesses almost as much shale oil as the United States, and three countries – Algeria, Argentina, and China – possess larger reserves of shale gas. All of these countries, as well as others identified by the EIA with large shale reserves, are now attempting to exploit these formations, albeit with varying degrees of success. Whether or not they are ever fully developed, the sheer existence of these reserves – coupled with the widespread utilization of fracking technology – ensures that oil and gas will remain abundant for a very long time to come.

The second big development of the past ten years is the huge increase in international concern over climate change, accompanied by a vigorous worldwide effort to slow its advance by imposing curbs of various sorts on human emissions of greenhouse gases (GHGs), especially carbon dioxide released in the combustion of fossil fuels. Global warming has, of course, been a major concern since the 1980s, as demonstrated by the signing, in 1992, of the United Nations Framework Convention on Climate Change. This was followed by various efforts at the local, national, and regional level to impose curbs on CO₂ emissions and promote the installation of non-carbon-based sources of energy, particularly wind and solar systems. It is only in the past decade, however, that the political will has materialized to move these endeavors from the margins to the mainstream, with a demonstrable shift in energy utilization. In the United States, for example, many states have adopted “renewable portfolio standards,” requiring electrical utilities to derive a certain percentage (often 10% or more) of their total generating power from renewable sources of energy. The European Union, for its part, is implementing its “20-20-20” climate and energy package, requiring that member states jointly reduce their GHG emissions by



NEPATS

20% over 1990 levels by 2020, secure 20% of their energy from renewables by that year, and achieve a 20% increase in energy efficiency.

As a consequence of these, and many other such measures, the demand for renewable energy has soared around the world and the manufacturers of wind turbines and solar panels have ramped up production, investing in new cost-cutting technologies and mass-production techniques. This, in turn, has resulted in a dramatic reduction in the price of these options, further stimulating demand. The U.S. cost of solar power, for example, dropped by 70 percent between 2009 and 2015; similar gains have been observed in the delivery of wind power. With costs dropping and demand rising, the installation of wind and solar power has experienced an extraordinary surge. In the United States, electricity generation from wind rose by 2,600% between 2001 and 2015, jumping from 7 to 190 million megawatt-hours, while similar gains have been achieved in solar power. Rapid growth of this sort is expected to continue in the years ahead, as more and more countries adopt measures to curb CO₂ emissions and promote use of renewable energy. According to the International Energy Agency (IEA), worldwide consumption of renewables in electricity generation (excluding hydropower) will climb by 450% over the next quarter-century, jumping from 1,316 terawatt-hours in 2013 to 7,248 terawatt-hours in 2040. In this way, as well, an era of energy abundance is upon us.

The big question, of course, is how the surge in renewable energy output will affect the global demand for fossil fuels. At present, renewables still constitute too small a share of the total energy mix – about 15% -- to threaten the dominance of carbon-based fuels, but that is changing rapidly. In 2015, for the first time, renewables surpassed coal as the leading source of newly installed electric power around the world, adding an additional 153 gigawatts to global generating capacity. Expecting this trend to continue, the IEA revised its projections for future renewables growth, seeing a steady erosion of coal's once dominant position in the power sector. As for oil and natural gas, the picture is somewhat different: petroleum-based fuels are still predominant in the transportation field, and gas is viewed in many communities as a less-polluting alternative to coal. Nevertheless, the strong appeal of renewables in the power sector has softened the demand for gas in some markets, while the growing appeal of hybrid and all-electric cars has begun to erode the demand for oil. While there is no consensus on the matter, some analysts now foresee the advent, perhaps in the late 2020s, of peak *demand* for oil – completely reversing the conversations over peak *supply* that so animated the first decade of the century.

The Middle East's Declining Geopolitical Centrality

Of the many geopolitical implications of the new energy order, the first and most significant, perhaps, is a decline in the geopolitical centrality of the Middle East. During all those years when the Persian Gulf region was perceived as the principal fount of the world's primary energy supply, it is hardly surprising that the major oil-importing nations, led by the United States, attached overarching importance to stability in the region. By the second decade of the 21st century, however, it was no longer evident that the United States would remain dependent



on Middle Eastern oil to meet its petroleum requirements, or indeed that the region would ever again play the pivotal role in world energy that it had in the past. True, Middle Eastern oil will continue satisfy an important share of the energy needs of some U.S. allies, such as Japan and the EU countries, but with fracking spreading around the world it appears likely that other suppliers will be offering a reliable alternative to the Gulf producers; in light of the growing concern over climate change, moreover, many of these countries are taking steps to reduce their reliance on fossil fuels altogether.

This reappraisal of the Persian Gulf's geopolitical significance clearly underlay the Obama administration's 2011 decision to shift the main focus of U.S. strategic planning from the Middle East to the Asia-Pacific Region. Although the energy dimensions of this shift – popularly known as the “pivot” strategy – was never made explicit, Obama has top aides made it clear that, in Washington's view, Asia had come to replace the Middle East as the principal focus of U.S. planning. “After a decade in which we fought two wars [in Iraq and Afghanistan] that cost us dearly, in blood and treasure,” Obama told the Australian Parliament on November 17, 2011, “the United States is turning our attention to the vast potential of the Asia Pacific region. “As the world's fastest-growing region and home to more than half of the global economy, he continued, Asia would now receive the bulk of U.S. policy attention and military engagement. “As we end today's wars [in the Middle East], I have directed my national security team to make our presence and mission in the Asia Pacific a top priority.”

In line with this outlook, President Obama undertook the phased withdrawal of American combat forces from Iraq and Afghanistan along with the redeployment of some U.S. military capabilities from that region to the Pacific. However, circumstances do not always allow for the attainment of one's strategic preferences, and Obama's desire to focus on the Pacific has been stymied by the rise of ISIS and the chaos in Syria. In response to ISIS-inspired terrorist attacks in France and the United States, coupled with rising international concern over the fate of civilians in Syria, he has been forced to reverse course and increase the American military presence in Iraq and Syria. Obama made it perfectly clear, however, that he would never approve an intervention on the scale of that undertaken by President George W. Bush in Iraq and Afghanistan, and none of the candidates in the 2016 presidential campaign advocated such a move.

While sharing in the consensus view that another large-scale deployment of U.S. ground forces in the Middle East is off the table, Donald Trump has proposed an odd exception to the rule: the use of military force to seize Arab oil fields and use the proceeds to finance American operations. “I always said, take the oil,” he told Matt Lauer of NBC News on September 7. “We go in, we spent \$3 trillion,” he said, speaking of the Iraq war. “We lose thousands and thousands of lives, and then look, what happens is we get nothing. You know, it used to be to the victor belong the spoils.” Aside from the dubious moral legitimacy of appropriating oil from Iraq, a nominal U.S. ally and a sovereign nation, there is the practical issue of accomplishing such a feat. Most analysts believe this would require a sizeable military force spread out over a large territory for a considerable length of time, inviting constant sabotage and terrorist attack – exactly what



Trump says he wants to avoid. It is unlikely, then, that this proposal will survive for long once Trump enters the White House.

Up until now, Trump's main interests in the Middle East have been the war against ISIS and what he views as the flawed nuclear pact with Iran, and this is likely to remain the case once he assumes office. These are major topics of concern, and are bound to command the attention of U.S. policymakers for some time to come. But these issues aside, the Middle East is not likely to retain the pivotal status in U.S. policymaking it long enjoyed while its oil exports were deemed so critical to the American and the world economy.

If, however, the Middle East is not destined to retain its central role in U.S. foreign policy, will it gain greater status in that of other major powers? This is difficult to predict, but it there doesn't seem to be any rush to fill the dominant role long played by the United States. True, Russia has sought to preserve the preeminent position it long enjoyed in Syria by providing arms and military support to the embattled regime of Bashar al-Assad, but it has paid a high price for its involvement – both in rubles and international prestige – so it is unclear how far Moscow is prepared to go in protecting its foothold there. Other powers, including China, India, and Japan, have been more active in the region, sending high-level emissaries and signing trade deals, but none appears willing to replace the United States as the region's principal gendarme. As time goes on, then, it is conceivable that the Middle East will become less important as a cockpit for international competition – still constituting a source of friction and tumult in world affairs, but hardly the only such region and not necessarily the most significant.

Tough Times for Petro-States

One of the most immediate and powerful consequences of both abundant oil and slowing fossil fuel demand is the dramatic plunge of petroleum prices. From a high of \$115 per barrel in June 2014, Brent crude – the industry benchmark blend – plummeted to a low of \$26 per barrel in January 2016 before recovering to the \$50 mark this past summer. This descent had a devastating impact on oil-producing countries such as Algeria, Angola, Nigeria, Russia, Saudi Arabia, and Venezuela that depend to a considerable extent on oil income to stimulate the economy and finance government expenditures. Algeria and Nigeria, for example, rely on oil and gas production for approximately 60% of government revenues; in Russia's and Venezuela's case, it's about 40-50% of such income. During the boom times, when oil prices were robust, these "petro-states," as they are often called, spent colossal sums on public works and other social amenities, winning widespread public support; but now, with prices in the doldrums, they have had to cut back on such endeavors, causing economic hardship for many and provoking widespread social unrest.

From a geopolitical perspective, the most significant outcome of all this is the political trajectory pursued by the Russian leader, President Vladimir Putin. As a consequence, both of low oil prices and the economic sanctions imposed by the EU and the U.S. following Russia's seizure of Crimea, Russian government spending (other than for the military) has been slashed and the economy has fallen into prolonged recession. Ordinary Russian citizens have experienced



a substantial loss of income, with real monthly wages now worth only 87% what they were in August 2014. This, in turn, has sparked widespread strikes and protests – although nothing yet on a scale large enough to threaten the survival of the central government. Perhaps in fear of just such an eventuality, Putin has stepped up Russia’s military involvement abroad, thereby stoking nationalistic fervor at home. Russian television and other media – largely controlled by the Kremlin – regularly extol Russia’s alleged successes in the international arena but rarely, if ever, mention the budget cuts or the protests at home. To what extent this syndrome will lead to continued Russian adventurism in the future cannot be foreseen, but the persistence of low oil prices is likely to remain a factor in Putin’s continued quest for notoriety in the international sphere.

Also grabbing the international spotlight is the current political disorder in Venezuela, where the embattled president, Nicolás Maduro, is facing massive protests by the opposition, which seeks a national referendum aimed at ensuring his ouster. Here too, low oil prices have played a pivotal role. While prices were high, Maduro’s predecessor, the widely revered Hugo Chávez, siphoned billions of dollars from the state-owned oil company, *Petróleos de Venezuela, S.A. (PdVSA)*, into his so-called “missions” for the poor, elevating millions of people out of poverty. Chávez (who died in 2013) also borrowed billions of dollars to finance these endeavors, assuming that continued high oil prices would make repayment a non-problem. But with prices now less than half of what they were when Maduro took office, the missions have had to be scrapped and what little money the government retains is being used to pay back the loans. As in Russia, the country has fallen into recession and the living standard of most citizens has declined. Vital commodities are no longer available outside the black market, and many people report severe malnutrition. It is hardly surprising, then, that an ever-increasing share of the population appears to favor Maduro’s recall via a referendum.

Low oil prices are also generating budget difficulties and political turmoil in other oil-producing countries. In Nigeria, budget cutbacks in 2014 and 2015 – combined with deeply ingrained corruption – helped cause a series of setbacks in the military’s campaign against the Boko Haram terrorist organization, provoking widespread anti-government sentiment. This led, in the 2015 presidential election, to the defeat of the incumbent, Goodluck Jonathan, and his replacement by Muhammadu Buhari, a former general who promised to clean up corruption and wipe out the terrorists. Buhari has achieved some success in those efforts, but the persistence of low oil prices has impeded his efforts to improve economic conditions in depressed parts of the country, including the Niger Delta region, where a long-dormant insurgency is again challenging government control.

All of these countries, and the others like them, will be forced to adapt, as best they can, to a time of petroleum abundance and anemic demand. Some, like Russia, may be tempted to perpetuate their dependence on oil exports for as long as possible, while others appear determined to diminish their reliance, focusing instead on the development of other sources of income. Of particular note in this regard is the announcement of a long-term drive of this sort by Saudi Crown Prince Mohammed bin Salman, the second in line to the throne and head of Saudi



Aramco, the state-owned oil company. In announcing his blueprint for this drive, “Saudi Vision 2030,” Prince Mohammed asserted that Saudi Arabia – the world’s leading producer – was dangerously “addicted” to oil and would need to develop other streams of income, such as tourism and e-commerce. Many obstacles stand in the way of success of this ambitious venture, but the very fact that the Saudis are even contemplating such a scheme reveals the degree to which the old mantra of oil’s perpetual centrality has begun to fade.

Smart Cities and Green Superpowers

While the plight of the petro-states represents one aspect of the changing energy landscape, another is the emergence of “green cities” and the outbreak of a competition to join the front ranks of what have been called “green energy superpowers.” Just as the rise of the petroleum industry in the final decades of the 19th century ignited a global race to discover and control new sources of crude, the current surge in demand for alternative sources of energy is spurring a similar drive to master the production and distribution of renewable technologies. While still in its early stages, this competition has the potential to alter the geopolitical map in new and interesting ways. Exactly how, of course, cannot be foreseen, but we are glimpsing some beguiling hints of what this new world might look like.

One of the most conspicuous expressions of this transformation is the avid competition among major cities to be perceived as being ranked among the world’s top “smart cities” or “green cities” – large metropolises with advanced low-carbon energy and transportation systems and a strong commitment to environmental sustainability. Cities like these, it is said, will enjoy an economic and political advantage in the years ahead as they will be better positioned to attract investors, entrepreneurs, and creative types who identify with technological innovation and a green agenda. “There’s a compelling moral imperative but also a fantastic economic case to be a green city,” said Andrea Reimer, deputy mayor of Vancouver, at an April 2015 conference of local governments.

With this in mind, cities like Vancouver are competing with each other for the claim to be the “greenest.” That city, for example, has pledged to obtain 100% of its heating, cooling, and electrical power from renewables by 2030 or 2035 and 100% of its transportation requirements by the middle of the century. Other big cities are now rushing to join the list of future “100% green” title-holders. When campaigning for mayor of London last fall, Sadiq Khan promised that, if elected, he would strive to make that city 100% carbon-free by 2050. “Yes to 100% London,” he declared. “If it’s good enough for Sydney and Copenhagen and New York, why not London?” (Khan won his campaign to be mayor in May 2016.)

On an even larger scale of endeavor is the emerging competition to be anointed one of the “green energy superpowers” of the future – a goal often embraced by Hillary Clinton during her 2016 presidential campaign. There is, of course, no shared understanding of what this concept might entail, but there is no doubt that many world leaders hope that their country will gain increased economic clout as a result of their early mastery of non-carbon energy technologies. The Obama administration, for example, provided loans and other assistance for



the development of advanced solar and battery-storage industries. Germany, as part of its *Energiewende*, or energy transition, has placed a high premium on the installation of solar panels and wind turbines – investing it, for a time, with claim to the world’s largest installed solar capacity. But China is now soaring ahead, having recently overtaken Germany as the number one solar-power generator. Under its 13th Five-Year Plan, moreover, China plans to triple its solar capacity between now and 2020, adding 15 to 20 gigawatts of solar capacity every year over this period; similar advances are also mandated in the installation of wind turbines.

Those, like Hillary Clinton, who advocate for success in the race to become a green energy superpower typically argue that the transition from a carbon-based economy to one powered by alternative forms of energy will unleash a tsunami of innovation and investment, creating new wealth and jobs. But those who retain a stake in the carbon economy and fear the disruptive effects of an energy transition claim the opposite, saying the abandonment of fossil fuels will squander the nation’s existing economic and employment advantages. This was a major component of Donald Trump’s successful presidential campaign, and no doubt is reflected in the arguments of oil, gas, and coal producers in China, Russia, and Europe. Trump has pledged to rescind many of the measures adopted by the Obama administration to curb fossil fuel use, and to disregard the 2015 Paris Agreement on climate change. How successful he will prove in fulfilling these promises remains to be seen, but for now the United States has abandoned the race for green energy supremacy.

Will Trump’s victory in the 2016 election deter other leaders from pursuing early success in this race, or will they see it as an opportunity to gain added advantage? Alas, it is too early to tell. At present, it seems obvious that power is slowly slipping away from the once dominant oil-producing countries, but it is not yet apparent that a parallel shift has occurred in the direction of prominent wind and solar-generating countries. It may be that more time will be needed to detect such a trend, or that, in an era of energy abundance, no particular geopolitical advantage accrues to the pioneers of renewable energy, as the necessary technology is becoming widely available and the wind and sun are available to all.

