



US Energy Superpower Status and a New US Energy Diplomacy

Paul Dabbar

INTRODUCTION

A few months ago, we reached the fiftieth anniversary of the 1973 Organization of Petroleum Exporting Countries (OPEC) oil embargo, which inaugurated two generations of weakness in US energy security and diplomacy. However, in the last decade, US energy posture has shifted from one of weakness to one of strength.

The United States has become the global energy superpower. Once the world's largest importer of energy, it became a net energy exporter in 2019.¹ It has become the largest producer of both oil and natural gas, the largest exporter of natural gas, and the third-largest exporter of oil.² In addition, the United States has become the clear leader in the discovery of new energy technologies. It has started to build upon its manufacturing leadership in areas such as oil, gas, and power turbine equipment and is exploring new energy technology manufacturing. And the United States dominates capital raising for investments.³ No other country comes close to that combination.

As a result of this production, technology, and capital leadership, the United States has become the driver of several key achievements in the global energy markets. It has (1) been the global leader in increasing energy production, (2) generated energy price deflation from its technology innovation, (3) led the world in reduction of tons of emissions,⁴ and (4) been the global leader in providing energy market stability and security. These energy strengths of the United States require a new take on how it engages the world. New diplomatic policy is needed based on its energy superpower status. Not only has US diplomacy not caught up with its leadership in these individual areas, but it has also not grasped the power of the combination of these strengths. Most current US energy diplomacy is still moored to the previous energy posture of weakness.

With its current energy posture significantly different than the 1973–2019 timeframe, US energy diplomacy needs to shift to one of positive and engaging strength around topics such as maximizing the energy security of the United States and its allies, energy market stability

in an increasingly unstable world, global supply chains, emerging energy technologies, and environmental policy.

HISTORY OF US ENERGY DIPLOMACY

US energy posture started from a position of strength pre-World War II. The United States was a leading manufacturer of energy equipment and was largely energy self-sufficient. But the early global energy markets were dominated by European colonial countries, who gave oil concessions to their national energy companies in their respective colonial holdings. The United States was largely shut out of energy concessions in those colonial possessions through various diplomatic agreements, such as the 1920 San Remo Oil Agreement between the United Kingdom and France.⁵

However, the United States had a strong domestic oil sector, with strong skill sets in drilling technology and operations. As result, US oil companies started to prospect globally in areas not in European spheres of influence. The first US efforts were in Bahrain, Saudi Arabia, and the Emirate of Abu Dhabi.⁶ These efforts were led by US energy companies such as Standard Oil of California (Chevron), the Texas Company (Texaco), Standard Oil of New Jersey (Exxon), and Socony Vacuum (Mobil). These international commercial energy engagements led to US strength in energy diplomacy.

A major inflection point of US energy diplomacy was the meeting of President Roosevelt and King Abdulaziz of Saudi Arabia in 1945.⁷ At the time, there was a concern that growing demand for oil for the US economy after the end of the war might start taxing domestic US production. Prospecting by the United States in Saudi Arabia showed promise for large reserves in the country. In addition, there was a growing realization that UK and French dominance in global engagement was likely to be significantly diminished due to the toll of the war, and that would lead to a need for US leadership in global energy investment and diplomacy.

President Roosevelt's worry about the United States needing to import increasing amounts of energy post-World War II was realized when the United States became a net-energy importer in 1950.⁸ What occurred in the next two decades was a rush of US private sector energy investment and operatorship of oil production in the emerging markets, and this investment led to parallel increased energy US diplomacy.

A smaller but still important portion of US energy diplomacy and global influence was the growth of nuclear power, the first material energy technology innovation from the US National Laboratories system. The United States invented nuclear power as a part of its "Atoms for Peace" program and was the first country to deploy nuclear power plants.⁹ As a result of that US technology leadership, US companies became global leaders in building nuclear power plants. The diplomatic engagement on this topic was disproportionately higher than its energy production contribution, because of the concerns around nuclear weapons material proliferation.

During this time, to a large degree the United States set the global price of oil, exerting another layer of global energy power. The Texas Railroad Commission effectively set the price of oil in the United States, and significantly influenced global pricing, until the 1973 Oil Crisis.¹⁰

However, over the 1950s and 1960s, challenges to the US domination of global energy markets started appearing. Oil-producing nations started to demand higher payments from US and other Western countries' oil companies producing their oil. These demands accelerated to the point that many operations were nationalized, complicating diplomacy.¹¹ In addition, several of the major oil-exporting countries formed OPEC in 1960 to gain greater energy market control and joint diplomatic strength.¹²

By the mid-1960s, the Arab countries started to consider using their growing production capabilities for power-projection purposes. The first big attempt was the 1967 Oil Embargo. The major Arab oil-producing nations ordered oil sale curtailments on countries supporting Israel during the Arab-Israeli Six-Day War. The embargo did not have a major impact on world oil availability due to lack of solidarity among the Arab countries. However, it helped those nations to create the Organization of Arab Petroleum Exporting Countries (OAPEC) and provide a framework for how to successfully execute an oil embargo in the future.¹³

THE 1973 OIL CRISIS, US ENERGY POSTURE DISRUPTION, AND ENERGY DIPLOMACY OF WEAKNESS

Nineteen seventy-three was a pivotal year for US energy diplomacy. The 1973 Arab-Israeli War generated a new national security opportunity for the Arab oil-producing nations to use energy availability against the United States and other supporters of Israel. OAPEC had learned from the ineffectual 1967 Oil Embargo execution and was able to organize much more effectively in 1973. They drove oil prices up from ~\$3/bbl to ~\$10/bbl. This triggered significant energy policy changes in the United States, including oil price controls, energy restrictions and production legislation, domestic private sector energy investment, and the creation of the US Department of Energy.¹⁴

As a result of all those market and domestic policy changes, US energy diplomacy also significantly changed. In the private sector, companies rushed to partner with production opportunities outside of the OAPEC countries. For example, US companies started entering into long-term supply agreements with Venezuela and built new refineries in Texas to specifically process Venezuelan heavy crude.¹⁵ The United States also refocused on the production increase prospects from core allies, such as with the United Kingdom, Norway, and the Netherlands in the North Sea.¹⁶

Subsequent to 1973, US diplomatic engagement in the Middle East also significantly increased. President Carter highlighted the importance of Arab-Israeli peace as a cornerstone to improving Middle East stability and, as a result, US energy security.¹⁷ US diplomatic leadership and financial commitments around the 1978 Egypt-Israel Camp David Accords were influenced by the degraded US energy security coming from potential Middle East conflict.

US energy imports dropped significantly in the late 1970s and early 1980s due to US efficiency policy, but soon thereafter annual increases of imports returned, and were again setting records almost every year.¹⁸ This added to the erosion of US energy diplomatic posture.

One additional factor for US energy diplomacy decline, which is still being felt today, was nuclear power. As a result of the Three Mile Island accident, and a significant decline in the domestic US nuclear construction leadership, the United States lost its position as driver of the global nuclear industry.¹⁹

A significant event affecting US energy international engagement occurred in 1991 when Iraq invaded Kuwait. Not only did the invasion disrupt Iraqi and Kuwaiti oil supplies, but it also created the prospect that Iraq might intimidate or conquer Saudi Arabia, further adding to energy supply challenges. The United States created a global coalition to push Iraqi out of Kuwait. This energy-centric diplomatic and military endeavor had multiple ramifications that still reverberate today. US military deployment in Saudi Arabia significantly influenced the growth of al-Qaeda, the 9/11 attacks, the war in Afghanistan, the US-led invasion of Iraq, and the formation of the Islamic State in Iraq and Syria.

US energy policy and new energy technology development floundered during the 1990s. Energy policy devolved to the point of acceptance that it had to manage US decline of energy security with ever-increasing prices. US energy posture reached a nadir around 2001. In that year, the Bush administration conducted a review of the topic and published a detailed energy policy report, including on energy diplomacy. The report was deeply dour, highlighting the poor energy posture of the United States, and concluded that continued decline in energy security was likely. As a part of that negative view, it recommended that the United States needed to expand its relationships with countries that had prospects of shipping it more oil, including Russia, Azerbaijan, and Kazakhstan.²⁰

It was also at this time that the United States was on a path to becoming a major importer of natural gas. US natural gas production reductions had reached a point that companies were beginning to build liquefied natural gas (LNG) import facilities, further eroding energy security.²¹ However, in the 2001 report there were initial ideas of recommended policy changes that ultimately led to big changes in energy posture. The authors called for accelerated investment in new energy technologies and for changes in policy to encourage production of all energy types.²²

THE PIVOT TO ENERGY STRENGTH

Soon after the 2001 energy policy review, prospects of strength started appearing in US energy posture. There were three major drivers which started the shift:

- **Significant energy technology advances:** A wide array of energy technology discoveries led to major increases in energy production. For example, inventions in drilling including 3D seismic imaging, directional drilling, and hydraulic fracturing, reliable wind turbines, solar photovoltaics, the lithium-ion battery chemistry, and many others.²³ Almost all of this technology discovery was driven in the United States.

- **Impactful all-the-above energy supply government policy:** Examples include the 2005 Energy Policy Act, which expanded energy production prospects, including renewables production, and delegated regulatory authority of unconventional drilling to the states.²⁴ In 2011, the United States also approved the first LNG exports in over a generation, which stimulated even more natural gas production in the country.²⁵ The 2016 budget agreement allowed crude exports for the first time since the 1973 Oil Crisis, which led to a dramatic rise in US oil production, and it also extended renewable tax credits.²⁶ Those bipartisan compromises can be summarized as follows: “If you give me my pro-supply policies, I will give you your pro-supply policies.”
- **Large increases in private market investment into the new technologies:** The private capital markets flooded funding into the energy sector to take advantage of these new technologies and policies. For example, North American upstream capital investments went from approximately \$50 billion annually in 2001 to \$250 billion annually at its peak in 2014.²⁷

These three drivers led to significant energy production increases. For example, crude production in the United States increased from a low of 4.0 mm bbl/day in 2008 to 12.9 mm bbl/day in 2019 (and reached 13.2 mm bbl/day by the end of 2023).²⁸ That 9 mm bbl/day US increase was more than the total production of almost all the individual countries in OPEC+ (consisting of OPEC members plus 11 other oil-producing countries). US innovation and investments led to vast increases in wind, solar, advanced gas turbines, and the development of electric vehicle technologies.

THE COMPONENTS OF US ENERGY SUPERPOWER STATUS

The list of US energy posture strengths that built up this as a result of the 2001 energy policy review was unique in the history of the world. US leadership positions included being the top global producer of both oil (~13.2 million bbl/day) and natural gas (~102 bcf/day), the top exporter of LNG (~12 bcf/day), and the third-largest exporter of oil (~5 million bbl/day), as well as having the world’s largest capital markets for investment and leading basic research of new energy science and technologies.²⁹ The United States was also a leader in a reasonable amount of energy industry manufacturing, in areas including nuclear power equipment, oil and gas field services, electric vehicles, and turbines. It was also the leading country in emissions reductions (on a tons-per-year reduction basis), based on successful development of lower-emitting energy supplies and deploying new technologies.³⁰

No other country in the world comes close to that combined set of strengths. Saudi Arabia is strong in oil production, Qatar in LNG, Russia is a smaller player in both, China leads in mostly appropriating US discovery science and efficiently building materials processing and power equipment manufacturing capacity, and the United Kingdom is strong at capital markets. But none of these competitors have anything close to the combined strengths of the US energy posture.

As a result of this uniquely strong energy posture, an interesting set of global energy engagements and events have occurred this century that begin to show the new power of the United States on the global energy stage. Examples include:

- OPEC tried to raise oil prices in 2015 by reducing production, but they ended up giving significant market share to the United States, who filled the gap with unconventional drilling production.³¹
- US oil producers were cutting shale-lifting costs annually during the 2010s.³² And given US production was the marginal-cost barrel on the global market, the country generated oil price deflation for consumers globally.
- The United States was able to impose oil sale embargoes on Venezuela and Iran for national security reasons without negatively impacting global oil prices.³³
- When Iran attacked Saudi Aramco facilities in 2019, oil prices barely moved, due in large part to the markets believing US production could cover for Saudi production losses.³⁴
- When the United States decided to move its embassy in Israel to Jerusalem, the Trump administration knew that OPEC could not retaliate with oil market moves like it had in 1973.
- During the late 2010s, the United States was able to help organize the Central European Three Seas Initiative, which was developed to support member countries to reduce dependence on Russian energy imports.³⁵ This turned out to be very helpful for those participating countries when the Russia-Ukraine War erupted.
- The United States became a net energy exporter to a Persian Gulf emirate, Abu Dhabi, for several years, exporting LNG for its power sector.³⁶ And the LNG was partially regasified on US-owned floating regasification units.³⁷
- The United States was a key leader of stabilizing the global energy markets in 2020 when they were disrupted as a result of COVID-19 demand destruction. It used its Strategic Petroleum Reserve capacity to help place excess global oil.³⁸ The United States also led the global oil production negotiations, resulting in an agreement among OPEC+ members to cut production, which was announced by the White House.³⁹ As a result, OPEC+, including Saudi Arabia and Russia, asked the United States to continue to partner with it on an ongoing basis on production coordination, which the latter declined to do.⁴⁰
- The United States took the lead at providing replacement oil and natural gas supplies to Europe needed as a result of the Russia-Ukraine War.⁴¹
- In the last year, the United States and Canada achieved a combined natural gas and crude oil production level that overtook the combined Persian Gulf production, a dramatic shift in energy production power to North America that author Dan Yergin calls “the great rebalancing.”⁴²

A NEW POLICY FOR US ENERGY DIPLOMACY BASED ON STRENGTH

As a result of this great rebalancing, a large shift is required on how the United States engages with the world on energy. Several steps need to be taken to both optimize that diplomatic power and then develop and implement new engagement policy.

DEVELOP DOMESTIC AWARENESS OF US ENERGY LEADERSHIP STATUS AND ITS VALUE

The first challenge of shifting diplomatic policy is an acknowledgment by US policymakers that the United States is no longer a weak energy nation, and it has significant posture strengths that can be used individually or in combination. While the newly emerged combined energy strengths of the country might appear obvious, much of the US energy policy community still believes that the United States is in a weak position. US policymakers need to broadly recognize that their country is the leading energy power in the world.

In addition, diplomatic policymakers should become aware of the various strengths of the US energy posture and the value of combining them. Currently, energy diplomacy tends to focus on one-off narrow topics, such as LNG exports or a certain technology. The United States should develop policy on how to use the combination of its strengths for global engagement.

IMPLEMENT DOMESTIC ENERGY POLICIES THAT MAXIMIZE ITS DIPLOMATIC POSTURE

While the United States is clearly the dominant energy power in the world, it can improve its domestic energy posture by acting on the following recommendations:

- Return to all-the-above energy policy positions to maximize energy production prospects. Recent US government policies have deviated from previous multi-administration all-the-above energy positions, and some in the energy industry have had to overcome near-term policy impediments.
- Improve all-the-above energy production, markets, and transportation prospects, including easing siting restrictions under the National Environmental Policy Act, and reforming the Federal Power Act, Natural Gas Act, and various acts focused on the Environmental Protection Agency.
- Create a mechanism to allow for easier and more rapid-swing production of oil and gas.
- Continue to execute on reshoring manufacturing of energy equipment.
- Reform the Bipartisan Infrastructure Law and Inflation Reduction Act to prevent subsidizing adversary nations' energy companies and technologies.
- Develop new policies to support domestic critical minerals mining and processing.

- Accelerate investment in both early-stage energy R&D and product innovation.
- Create better mechanisms for national laboratories and universities to accelerate moving technology discovery to deployment.
- Pass legislation that would ease exports of energy, such as amending the Natural Gas Act to allow LNG exports to US allies.

ALIGN THE DIPLOMATIC STRATEGIES OF THE UNITED STATES, CANADA, AND MEXICO

The US and Canadian energy markets are very integrated and complementary. Power, natural gas, and oil markets are linked as a result of energy transmission infrastructure. Most of the oil that the US imports is from Canada, and subsequently refined and/or re-exported. In addition, the two countries' transportation manufacturing industries are highly intertwined, and Canada has significant critical minerals mining prospects. The United States and Canada have similar policies on emissions and environmental topics. Ownership of many of the energy assets is held by companies with significant holdings in both countries. And as of the end of 2023, combined US and Canadian oil and gas production exceeded that of the Persian Gulf.

The United States and Canada could take further steps beyond the current provisions of the United States-Mexico-Canada Agreement around reducing barriers between the two countries such as easing cross-border approvals for energy infrastructure. The two countries could develop joint investment and regulatory approval mechanisms for additional mining and processing of critical materials. Finally, they could create a mechanism for regular dialogue on all global energy issues and seek to align energy diplomacy positions.

While the domestic politics of energy in Mexico has a long history and energy is a strategic sector of the economy, the energy markets between the United States and Mexico are also quite integrated. After Canada, Mexico is the second-largest exporter of crude oil to the United States. Further diplomatic support for cross-border natural gas investment can be accelerated to increase oil and refining infrastructure and power generation investment. And subject to Mexican sensitivities, an alignment on diplomatic positions on the energy sector globally could be pursued.

NORWAY ALIGNMENT, AND A NORTH ATLANTIC PETROLEUM EXPORTING COUNTRIES FORUM

During the last fifty years, arguably the largest influencer of global energy has been OPEC. With oil being the largest globally traded energy commodity, and with OPEC+ representing almost 50 percent of global oil production, OPEC has been the keystone of global energy diplomacy. However, with the United States tripling its oil production from its post-1973 lows and achieving the status of top global producer, OPEC's position has dramatically changed.

The United States and its close allies that are also leaders in oil production can now provide a counterbalance to OPEC. The three largest democratic, free market oil-producing countries

currently are the United States, Canada, and Norway. To a large degree, Norway has similar national security worldviews, and energy and environmental standards and policies to the United States and Canada. As a result, having a regular G7-style forum for the three countries to discuss oil and related production, investment, and environmental policy alignment could be productive. With production representing approximately half of OPEC+'s, it would represent a material portion of the global market. While this potentially named "North Atlantic Forum of Petroleum Exporting Countries" (NAFPEC) would not be a production cartel, this joint forum could be another voice around that important global market.

ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES

The OPEC nations have a few key policy goals: (1) oil market stability; (2) keep oil prices high but not to the point of significant demand destruction; (3) maximize revenues for their national budgets; and (4) diversify their economies away from reliance on the oil sector.

There is no bigger shift in the global energy posture of the United States than its relative change in the area of oil production. As a result of this shift, there has been a dramatic change in its energy security position vis-à-vis OPEC. US oil imports from OPEC nations have been significantly reduced. And OPEC is increasing exports to Europe, India, and China. OPEC is still a major driver of international oil prices, and that affects the US economy. But the United States has far more impact on international oil prices than when it was only producing 4.0 mm bbl/day. In some respect, it has more flexibility on oil policy than OPEC countries, which have limitations on their policy based on the importance of oil revenues for their national budgets. And given that the global-leading US oil industry also benefits from market stability and predictability, the United States now has a partially aligned interest with OPEC on that topic.

The net impact of all these changes is significantly to the benefit of US energy diplomacy posture. As a result, a significant shift in diplomacy with OPEC, in particular with the large Arab members like Saudi Arabia, is deserved. The United States is now a peer of Saudi Arabia on oil, and should engage with the country on that basis, rather than as a weakly positioned customer and price-taker. It is clearly a leader in many other areas of the energy sector that interest OPEC members as well.

However, the shifts in the individual components of diplomacy between the United States and the OPEC producers are not all in the positive direction for this country. As a result of these changes, the Biden administration has felt emboldened to criticize the leader of Saudi Arabia around human rights, which has not had a positive impact on energy diplomacy, and likely helped trigger oil market actions by Saudi Arabia opposite to those the Biden administration desired. These US diplomatic steps likely influenced Saudi Arabia to reconcile with Iran with the help of China, which may not be attractive to US national security interests.

Saudi Arabia has also taken a series of energy market and diplomacy steps in the direction of China as it absorbed the reduction of aligned interests due to the United States importing less Middle East crude. Saudi Arabia is discussing with China the possibility of using yuan-denominated oil sales contracts, undermining the dollar's dominance in international trade.

And Saudi Arabia has been accelerating discussions about China investing in their country, including in energy.

The United States now has a much wider set of tools to engage with most of the OPEC members than it had before 2019. It should therefore develop new diplomatic policy, in particular for the large Arab members, that can be much more advantageous to it on various topics, including further efforts on Arab-Israeli peace efforts, regional conflict management, and Iran policy.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT AND CLOSELY ALLIED NATIONS

The most multifaceted energy engagement of the United States globally is with the Organisation for Economic Co-operation and Development (OECD) nations. Some of these countries are fellow net energy exporters, like Australia; some are significant importers, like Japan and Germany; but all care about emissions policy and related clean technology supply chains, innovation, and deployment.

The United States is in a position with the countries that have energy deficits to negotiate new energy agreements that combine energy exports, preferred energy supply chain agreements, new technology innovation and manufacturing policy, and emissions policy. US leadership across these areas allows the United States to offer much more diplomatically than previously.

This posture strength can also enable this country to lead proposals with OECD countries on joint energy policy and diplomacy with other countries around energy policy, both with friends in the emerging markets and adversaries such as Russia and China.

ENERGY TECHNOLOGIES AND GLOBAL EMISSIONS DIPLOMACY

One of the largest implications of the dramatic shift in US energy posture is related to clean energy and emissions. The United States can arguably claim it is the leader in the combined efforts around clean energy. US drilling innovation significantly reduced emissions as a result of natural gas use replacing coal. In addition, the United States is the leader in discovery of new energy technologies. Historical leadership in areas such as discovering the lithium-ion chemistry, first commercial-performing solar photovoltaic systems, and first-generation electric vehicles is clear. And current US discovery leadership is also widening that historical gap, in areas such as beyond-lithium-ion batteries, advanced fission, and commercial fusion. In addition, the US private and public capital markets dominate investment into new discovery developments, such as the venture capital and private equity markets.

The United States can leverage this clean technology leadership in its diplomatic policies, including enhancing supply chains with critical mineral mining countries, entering into agreements with fellow OECD countries, and policies to remove China's dominance in certain sectors of their leadership.

The United States can also use this leadership to drive discussions on balanced all-the-above sources and technologies to address emissions policy. Its leadership of emissions reduction

success versus China's significant increase in emissions allows it to take the offense, along with its allies, to address China's and others' poor emissions trends.

EMERGING MARKETS: LATIN AMERICA, AFRICA, INDIA

The United States was the leader of energy investments in the emerging markets up until recently. Today, it could re-engage with the emerging markets, now with a much broader portfolio of energy sector options. It can now combine its strengths in energy export capacity, new technology products, and export finance to provide a much broader set of options than any other country can offer.

In addition, much of the minerals needed for clean energy technologies come from emerging market countries. As a growing manufacturer and large customer of those products, and the leader in investing in the energy sector, the United States can use these positions in mutually beneficial ways. For example, it can jointly negotiate preferred critical mineral agreements with individual countries while concurrently including terms around investment, processing, products, and technology.

MINING AND CRITICAL MATERIALS POLICY

While much has been written about the need to secure various metals required for new energy and related transportation technologies, including the national security implications of international supply chains of these materials, little has been done to implement recommended changes.

The United States has general consensus that continuing importing these materials from adversarial nations is poor for national and economic security. As a large consumer of these raw and processed materials, as well as the end products from these materials, the country has significant power to select where it purchases those materials.

While a shift to procuring certain materials from China and Russia, such as processed lithium or enriched uranium, will take time, the United States should negotiate preferential agreements with friendly supplier nations, including off-take agreements and investment, while increasing restrictions on adversarial nations over time.

These materials and processes supply chains took a long time for US adversaries to build. It will take time to use diplomacy to create a new playing field to allow for a shift in production. But the United States should not let the scope and duration of that shift dissuade it, and should concurrently pursue domestic production expansion as much as possible.

ACTIVE ADVERSARIES: RUSSIA, VENEZUELA, IRAN

The combined energy posture of the United States towers over its adversaries. But up until now it has not used this strength to its full extent.

Venezuela and Iran have been affected by diplomatic actions enabled by new US energy leadership. The United States was able to impose oil export bans on both countries, in large part

because its domestic oil production increases obviated the need for those countries supplies on the global market. And when Iran attacked the Saudi oil production facilities in 2019, global oil prices barely moved, due to market stability provided by the increased US oil production.

The adversary most impacted by active US energy diplomacy since it achieved energy leadership has been Russia. The United States was able to support Europe's rapid shift away from Russian oil and gas imports as a result of the Russia-Ukraine War. Given that Europe was able to weather this large energy supply rupture with Russia because of alternative supplies from this country, and as a result was able to support Ukraine's defense, Ukraine's successful ability to repulse the Russian invasion was in part achieved because of US energy leadership. The United States could continue to take advantage of its enhanced energy posture by taking further actions as needed against Russia, Venezuela, and Iran.

CHINA

China is a complicated adversary on many fronts, including around energy. China has significant weaknesses in its energy sector: when it comes to energy sources, domestic coal is its largest source of energy, and it is exposed to imported energy, in particular oil and natural gas. China is also not particularly strong in discovery of new energy technologies. None of the current new wave of clean energy technologies, such as solar, wind, electric vehicles, or batteries were discovered by researchers in China. And much of the next wave of clean energy technology discovery is also primarily coming from the United States, such as advanced nuclear technology like fusion, beyond lithium-ion battery chemistries, and carbon capture. China is also exposed to significant imports of metal ore needed for its energy equipment manufacturing.

However, China has positioned itself very well on manufacturing new clean technologies, and processing critical materials needed for that manufacturing. These technologies are in increasing demand around the world, and as a result China is penetrating energy markets globally with these products. Before this current wave, China had never been a large global player in energy equipment and products. As a result, this is eroding a portion of US energy posture.

The United States should develop energy policy engagement further around the implications of China becoming increasingly dependent on imported energy (including from the United States) and create policy options that could advantage the United States economically and strategically, including in conflict scenarios.

China is also the largest emitter of greenhouse gases, emitting more than all the OECD countries combined. And while the United States has led the world in the last decade in reducing annual carbon emissions from energy by 635 million metric tons/year, China has more than overcome that achievement by increasing its annual emissions by 1,729 million tons/year.⁴³ US energy diplomacy can be much more aggressive to address this significant China environmental position.

The United States needs to develop both greater awareness of and more aggressive policies around China and new energy technologies, including those to prevent China's appropriation

of US innovation, to more aggressively reduce new China's penetration of US clean technology product markets, and to further onshore or friend-shore critical material supply chains and processing.

DOMESTIC AND MULTILATERAL FINANCIAL INSTITUTIONS: EXPORT-IMPORT BANK, WORLD BANK, AND THE INTERNATIONAL MONETARY FUND

The United States has not effectively used its diplomatic power for financing international energy infrastructure construction for quite some time. Historically the Export-Import Bank has been supportive of all-the-above energy infrastructure construction by US companies, but that effort has receded over the past generation. The United States could look at resuscitating that effort, which would have positive implications for bilateral diplomacy, US economic interests, national security, and countering China's much more aggressive financing efforts under its Belt and Road Initiative.

In addition, the United States should regain policy leadership at the World Bank. In many respects, the institution has been more supportive of China's energy developments in the emerging markets than those sponsored by the United States and its allies, notwithstanding the United States has a much larger shareholding interest in the bank than China. The United States and its allies should use their leadership position at the World Bank and at the International Monetary Fund to better position OECD members' efforts versus China's.

CONCLUSION

Overall, the United States now has the top global energy position. Its combined leadership in innovation, historical all-the-above policies, and capital has catapulted it to all-time heights of energy strength. Its newly achieved energy superpower status gives it energy diplomacy options that it has never had in the past, and it is now in the position to drive global energy policies in an increasingly complex world. At the same time, however, the United States needs to revamp its energy diplomacy to match its newfound strength.

NOTES

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ABOUT THE AUTHOR



PAUL DABBAR

Paul Dabbar is a former under secretary at the US Department of Energy, where he served from 2017 to 2021 as the department's principal advisor on fundamental energy research, energy technologies, science, and commercialization of technologies. A senior research scholar at the Center on Global Energy Policy at Columbia University and CEO of Bohr Quantum Technology, Dabbar is a graduate of the US Naval Academy and Columbia University.

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The George P. Shultz Energy Policy Working Group takes a balanced approach toward sustaining the economic, environmental, and security dimensions of energy policy. Rapid advances in technologies and resources put the United States in a position of strength with respect to our energy system. Having grown accustomed to reacting to external energy dependencies, however, we find ourselves without an energy strategy of our own. Now is a time for US businesses and policymakers to prioritize how we use these strengths to meet emerging social and geopolitical energy goals.

Hoover Institution, Stanford University
434 Galvez Mall
Stanford, CA 94305-6003
650-723-1754

Hoover Institution in Washington
1399 New York Avenue NW, Suite 500
Washington, DC 20005
202-760-3200

