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Modernizing the International Energy Agency: A Task Worthy of US Leadership

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In the coming six months, the United States faces an important chance to advance its interests on the international stage. Paradoxically, in a time when the new US Administration has criticized international institutions and called for policies that place "America first"—a time of plenty in domestic US energy markets—this opportunity lies in updating and enhancing a key international body that many Americans have never heard of: the International Energy Agency (IEA).

IEA is a membership organization that has provided benefits to the United States for more than 40 years—since the oil embargoes of the 1970s. It has enabled the United States and its partners to guard against oil market disruptions and has diagnosed the ways in which evolving energy technologies and markets bring new energy security improvements and new risks. It has promoted the collection and analysis of energy data and trends that help to underpin wise investing and strong energy policies—which are especially important as we witness accelerating changes in the global energy economy.

The IEA can bring decades of additional benefits to the United States but only if the agency modernizes to keep up with the times. And that modernization agenda can only be accomplished if the US administration engages closely with other member countries and partners to forge a strong deal.

Benefits after Crisis

From its very start, the IEA has been about enhancing economic opportunities through energy security, energy information, and the development of sound policies. The oil crisis of 1973–74, which had such a significant psychological and political impact in the United States and elsewhere, largely triggered the creation of the IEA.[1] Countries within the Organization for Economic Cooperation and Development (OECD) sought to reduce their vulnerability to energy market disruptions, including especially any future boycotts, so they agreed to form a new "autonomous agency" under the OECD umbrella. The grouping that came to be known as IEA represented a

[1] Debates continue to this day over whether the Arab oil embargo had a significant *economic* impact on the United States. In the popular consciousness of most Americans, the energy disruption of 1973 was absolutely a story about the Arab embargo. The US Energy Information Administration notes that, during the embargo period, consumers paid approximately 57 percent more for regular gasoline and 91 percent more for home heating oil than they had previously. (For EIA figures, see "Petroleum Chronology of Events, 1970–2000," available at https://www.eia.gov/pub/oil_gas/petroleum/analysis_publications/chronology/petroleumchronology2000.htm [last accessed on April 28, 2017].) Nonetheless, certain analysts argue that the economic dislocation of the time may have stemmed more significantly from economically counterproductive price controls and allocation systems. (On this point, see the discussion in Robert McNally, *Crude Volatility: The History and the Future of Boom-Bust Oil Prices*, Columbia University Press, 2017.)

small but weighty circle of countries: they were only sixteen in number, but they represented roughly 60 percent of global energy demand. Secretary of State Henry Kissinger, who today serves as an advisor for the new US president, played a pivotal role in advocating for the creation of the IEA, later describing the moment thus:

> *I suggested a massive effort to provide producers an incentive to increase their supply, to encourage consumers to use existing supplies more rationally, and to develop alternative energy sources. In the months that followed…swift steps were taken by industrialized nations to define broad principles for international cooperation and to determine initial actions that would be taken to rectify major challenges that confronted our energy system.*[2]

The power of the agency came from several considerations: First was the broad recognition that energy serves as the bedrock beneath every country's economy. Without energy, economic activity would grind to a halt. Another factor was the understanding that only a collective institutional response could address the vulnerability arising from reliance on a particular form of energy—oil. This shared sense of the need to band together helped provide the political will to forge a new institution.

A third vital factor was the perception that one needed a systematic response: reducing the vulnerability that was symbolized by the Arab oil embargo required not just measures to address oil market disruptions (such as the establishment, maintenance, and ability to use strategic stocks) but also timely and transparent data about energy markets and trends, dialogue on national energy policies, and efforts to facilitate energy technology development. IEA's founding document, the Agreement on an International Energy Program (the so-called IEP), called out the importance of energy efficiency and conservation and collaborations to speed the development of alternatives to oil such as nuclear, coal, and renewables.[3]

Benefits for the United States and Other Members

If IEA was created for the reasons mentioned above—to guard against future oil market disruptions, as well as to promote healthy global energy markets nourished by good data and analysis, good dialogue over energy policies, and expedited energy technology collaborations—how has the institution performed over more than four decades? IEA's track record has been positive, though in some regards hard to quantify. For example, one certainly cannot prove that IEA's existence prevented the recurrent use of the "oil weapon" to prosecute political arguments against the IEA members. But it seems that IEA and its ability to draw down strategic reserves probably played some form of a deterrent role (as did better policies that allowed quicker responses to changed markets). Embargoes of the sort seen before IEA's creation have not recurred. And when oil market disruptions transpired for reasons other than political ones (such as the market turbulence that accompanied the start of the Iraq War in 1991, the shortage of refined product along the East

[2] Henry A. Kissinger, "The Future Role of the IEA—Speech for the 35th Anniversary of the International Energy Agency," IEA Ministerial Meeting, October 14, 2009, http://www.henryakissinger.com/speeches/101409.html (last accessed on April 28, 2017).
[3] See Articles 41 and 42 in "Agreement on an International Energy Programme," International Energy Agency, Paris, 1974, available at http://www.iea.org/media/about/iep.pdf (last accessed on May 1, 2017).

Coast of the United States after Hurricane Katrina, or the tight-market disruption after the outbreak of the Libyan Civil War in 2011), IEA members activated their collective emergency response mechanism, drew down strategic reserves, and helped to calm crude and refined product markets.

Moreover, IEA has consistently served as a source for definitive data and analysis of energy markets and energy trends. Its annual *World Energy Outlook* is one of the standard reference documents on the global energy scene. Investors, traders, government officials, and academics also scour the regular market reports on oil, natural gas, coal, renewables, and energy efficiency. Products like *Energy Technology Perspectives* and the in-depth country reviews (especially those conducted at the invitation of emerging economies) provide vital guideposts for what is coming next in energy markets.

To make the point more starkly, even though the United States bears the largest share of the base costs of running the agency—roughly one-quarter of the assessed contributions—IEA has to date been a sound investment for American taxpayers.[4] Why? Because the $5.7 million that the United States pays in annual assessed contributions enable the IEA to encourage the development of an economically rational, market-based, environmentally responsible global energy system. These have been policy objectives of successive US administrations and the US Congress for decades. We occasionally pass through periods where we forget that the energy health of the United States depends on a well-functioning global energy system, but it is true nonetheless. In addition, countries with strong energy policies are usually excellent targets for the exports of US energy goods and services.

The United States has invested heavily in publicly-available energy market data since the creation of the domestic energy statistics and data agency, the Energy Information Administration, in 1977; EIA's regular reports inform the decisions of investors, companies, and policymakers in the US energy markets. The IEA's energy data system, which aggregates information from EIA and other countries' energy statistical agencies, improves and extends the coverage of data and trends beyond our borders. In regard to energy security, the US Strategic Petroleum Reserve represents a significant response mechanism that can be used in time of market disruption (690 million barrels as of late April 2017), but when SPR is used in concert with other IEA members' reserves, the aggregate volume of strategic stocks standing at the ready is twice as large, which matters significantly in terms of the market-calming power.[5] And arguably as important, pairing the use of the US SPR with strategic reserves of our partners signals that a whole set of countries—the IEA members—see the market disruption similarly. This fact gives additional authority to the response. Because IEA surveys the entire energy sector, its perspectives are systems-oriented. This means that IEA diagnoses the way in which different elements of the global energy economy interact with each other. Finally, IEA works with technological neutrality, which is particularly important in a time of major energy sector transitions, such as we are now in.

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[4] Over the years, a progressively greater and greater share of IEA's total funding has been drawn from "voluntary contributions" (or "VCs")—one-off cash injections that member states and even nonmember countries, foundations, international organizations, and companies provide in support of particular projects or programs. At present, these VCs are used to finance close to one-third of IEA's total annual expenditure, which amounted to $43.7 million in 2016. VC data provided by IEA Secretariat, private e-mail exchange.

[5] For information regarding the current inventory of the SPR, see https://www.spr.doe.gov/dir/dir.html (last accessed on May 1, 2017).

In short, for more than 40 years, the United States has benefited significantly from IEA's existence. It has served as a disincentive to market disruptions, as a source of informed analysis of energy markets, and as an advocate for good energy policy.

Challenges Posed by a Changing Energy World

The energy world today, however, looks very different from that of 1974, and many of the features that characterize today's energy world call for an updated IEA. This is where the need for hard work begins.

For starters, if the members of the OECD represented just more than 60 percent of global energy demand in 1974, by 2017 that share has fallen to below 40 percent. Several countries that were not members of the OECD in 1974 have joined that organization, and many of them have also then become IEA members (including a number of the Central and Eastern European states that were part of the Warsaw Pact in the 1970s). But today's fastest-growing energy economies are clustered in Asia. Many of these Asian countries are not members of OECD today and have not signaled any desire to become such in the near future. China and India, as two prime examples, together represent more than one-third of the global population. The leadership of both countries have staked their political prestige and economic aspirations on rapid growth and transformation of their energy systems. What is more, the billion-plus people around our globe who lack access to modern electricity—the vast majority of whom live in the developing world—face a most fundamental obstacle to human development, well-being, and economic opportunity because they lack the ability to power their lighting after dark, refrigerate perishable food and medicines, and even charge a mobile phone, that ubiquitous tool of modern life.

Today's energy sector is also far more complex than was the energy world of 1974. Technological frontiers have moved rapidly, allowing diversification of the very sort that Henry Kissinger called for at the time of IEA's founding. Some of this diversification has occurred on the supply side of conventional fuels markets. The United States, whose domestic production of oil and natural gas failed to keep pace with consumption through much of the first decades of IEA's existence, has in the most recent decade seen a dramatic reversal of fortunes. Shale gas and light tight oil have grown in the course of roughly a decade to represent roughly half of all US natural gas and crude oil production. Imports of oil have dropped, and the United States even reversed its longstanding policy and began permitting the export of crude oil in late 2015. Natural gas became another export commodity for US producers. The Department of Energy has approved potential exports of up to 19.2 billion cubic feet per day (198 billion cubic meters per year) as of this writing.[6]

Today, oil is still the predominant fuel for transportation, but it represents only an insignificant share of fuel for worldwide power generation. Natural gas, however, has a rapidly growing role. The

[6] Under the provisions of the US Natural Gas Act, DOE reviews applications for the export of natural gas to countries on the basis of a test of the "public interest." The Federal Energy Regulatory Commission reviews additional applications for the construction and operation of the export facilities themselves. As of this writing, DOE has issued approvals for exports to countries with which the United States does not have a free trade agreement covering natural gas (the so-called non-FTA category) in volumes as large as those cited above. Whether all those volumes will actually be exported is a matter that will be determined by the market. For more on the US LNG export approval process, see https://energy.gov/fe/services/natural-gas-regulation (last accessed on May 12, 2017).

shipment of liquefied natural gas (LNG) is coming to rival pipeline transportation and is allowing cost-competitive shipment of natural gas between far-flung producers and consumers.

Worldwide solar and wind power, however, have emerged as the leading choices of new power-generating capacity in the past several years. This new prominence for renewables has occurred in part due to policy incentives in different countries and subnational jurisdictions—for example, carbon pricing and targeted shares of renewables in the fuel mix. But the dramatic growth of variable renewable energy systems has also been facilitated by dramatic cost reductions and significantly increased ability to manage variability in the context of utility grid systems.[7]

The energy sector must also respond to an imperative that was basically invisible in the 1970s when IEA came into being—climate change. As the source of roughly two-thirds of global emissions of greenhouse gas emissions, the energy sector must change at an accelerating pace in order to allow human society to limit climate change. Countries that gathered in Paris in late 2015 agreed that they collectively need to limit global warming to less than two degrees Celsius, and if possible "well below" that level. For to happen as quickly as possible, the energy transition must be executed in a cost-effective manner. Countries need to learn from informed analyses, and from each other, about what policies and technologies can help address this challenge. IEA addresses these needs.[8]

Another aspect of our changing energy world has been the emergence of numerous other international energy institutions. In addition to the Organization of Petroleum Exporting Countries (OPEC), today's global energy institutional landscape includes the following organizations and initiatives, among many others: the United Nations' Sustainable Energy for All initiative (SE4All, which addresses energy poverty); the International Energy Forum (which focuses most effectively on dialogue on oil and gas markets and involves members of both OPEC and IEA and countries that are in neither organization); the International Renewable Energy Agency (IRENA, which is sectorally specialized and extremely broad in its membership); and regional energy entities such as the Latin-American Energy Organization (OLADE) and the Asia-Pacific Energy Cooperation (APEC) energy working group.[9]

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[7] For a discussion of the reduction in costs for solar photovoltaic systems and on-shore wind power, see "Revolution…Now—the Future Arrives for Five Clean Energy Technologies—2016 Update," US Department of Energy, September 2016, available at https://www.energy.gov/sites/prod/files/2016/10/f33/Revolution%20Now%202016%20Report.pdf (last accessed on May 1, 2017).

[8] In addition to IEA's own core programs, which cover data, analysis, and policies in the areas of energy efficiency and low-carbon energy supply, one other exciting way in which IEA is helping to facilitate well-informed, efficient actions to address climate change is by hosting the Secretariat of the Clean Energy Ministerial (CEM). CEM is a peer-to-peer structure focusing on deployment of clean energy technology, and it has 24 member countries that are a mix of IEA members and nonmembers. For more on CEM, see www.cleanenergyministerial.org (last accessed on May 30, 2017).

[9] Atlantic Council recently convened an outstanding task force to review the entire landscape of global energy institutions. It provides an important analysis of the strengths and weaknesses of different international energy bodies, as well as a clear argumentation for the importance of sustained US leadership in these entities. See "Report of the Atlantic Council Task Force on Reform of the Global Energy Architecture," David Goldwyn and Phillip Cornell, task force cochairs, Washington, DC, Atlantic Council, April 2017, available at http://www.atlanticcouncil.org/publications/reports/reform-of-the-global-energy-architecture (last accessed on May 1, 2017).

In the face of this multiplying list of energy institutions, however, IEA has to date remained distinct. Its core features—the emphasis on energy data and trends, energy policies, and the functioning of energy markets—have enabled it to produce high-quality reports and assessments that serve as core reference materials for the global energy industry. Even though its membership has not been representative of the entire global energy world, the agency has always employed a global lens in order to understand the position of its membership in the broader, global context.[10] Simply put, IEA has delivered competence, expertise, and a systems perspective that has allowed it to keep up.

Modernization Agenda

Distinctive as the IEA remains and valuable as it has been for the United States and other members, the IEA is nonetheless not perfect. In fact, with age, some in the IEA community have accumulated a false sense of comfort. Some hard issues and long-needed changes have been deferred or ignored. IEA members have been unable to carry out effective priority setting to align resources with the issues of greatest importance today as opposed to yesterday. Budget debates at the Governing Board table have stalled, with few members large or small showing real leadership or flexibility. In most budget debates at IEA, delegations on opposite sides could switch seats and deliver each other's talking points without any written scripts.

The IEA's members and its secretariat, led by Executive Director Fatih Birol, nonetheless have recognized the need to update IEA and have started to act on this need. The vision for the future of a modernized IEA has already taken shape through an iterative process involving IEA member countries, especially through the every-second-year ministerial meetings, and through more frequent meetings of IEA's Governing Board. That said, charting the specific course to modernization now lies ahead, and it will be much harder. This effort will succeed or fail depending on members' readiness for strategic give-and-take that enables the achievement of a strategic outcome and accommodates key partners' interests. US activism and leadership will be needed, both because the United States is the largest shareholder in IEA and because the United States will play a key role in keeping the discussion focused on essential elements of the modernization process.

The agenda for a modernized IEA is clear in broad strokes. At the most recent ministerial meeting in November 2015, members endorsed a three-part program including the following elements: "Enhanced engagement with major emerging economies, strengthened and broadened commitment to energy security, and greater focus on clean energy technology, including energy efficiency."[11] Importantly, all of these elements faithfully reflect not just the general spirit but the written objectives of the original documents that created the IEA in 1974—the first principles that must be central.

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[10] A number of well-informed observers have attributed a significant share of IEA's success through the years to the fact that it has never been an all-inclusive organization. The less-than-representative nature of the membership, these observers argue, allows IEA to be more nimble and more focused than a larger, more inclusive organization could be. For a discussion of this question, see "Energy Sector Governance in the 21st Century," William C. Ramsay, in *Energy and Security: Strategies for a World in Transition*, edited by Jan H. Kalicki and David L. Goldwyn, Woodrow Wilson Center Press and Johns Hopkins University Press, 2013.

[11] International Energy Agency, "Summary of the Chair, the Honorable Ernest J. Moniz, Secretary of Energy—2015 IEA Ministerial Meeting—17–18 November 2015," available at https://www.iea.org/media/news/2015/press/IEAMinisterialChairsSummary.pdf (last accessed on May 1, 2017).

All three elements rely integrally upon IEA's emphasis of, and strength in, energy data and trends; meaningful engagement with major emerging economies, for example, must be informed by good energy data and analysis of trends. Equally, all three reflect the central importance of energy security for the flourishing of our economies and societies. The stronger and broader commitment to energy security that ministers called for in 2015 signals a recognition that oil markets have changed significantly since the 1970s (through the growth in trading, price deregulation, the diversification of production, and the development of financial instruments such as futures and options trading, among other features). But it also signals a recognition that contemporary systems present additional dynamics in regard to energy security—for example, challenges stemming from the increased use of natural gas in power generation or the technological requirements and vulnerabilities arising from today's electricity grids. The ministers' statement underscores the continued importance of IEA's facilitating dialogue that encourages countries to institute good energy policies, and it highlights the importance that ministers have attached to the energy transition, a transition where each country will determine its own specific course best suited for its own circumstances.

What is hardest to script out are the details of this modernization effort. As an example of this challenge, consider IEA's stated goal of opening its doors more widely to countries that are not currently IEA members. Two countries are currently moving through the process of becoming formal members of IEA, but they are proceeding at very different paces. Mexico has moved with surefootedness and focus through the accession process since the promulgation of that country's historic energy reform, but Chile has basically frozen in place (largely because of the cost of establishing strategic oil reserves when the country faces so many other economic challenges). Both of these countries, as the first Latin American members of IEA, would strengthen IEA because their participation would help spread awareness of the value of good energy data and sound, market-based policies across Latin America.

IEA has also established a nonmember status called "Association," which to date involves a small number of countries that are either major energy powerhouses, regional leaders, or traditionally strong partners of IEA: China, India, Indonesia, Morocco, Singapore, and Thailand.[12] A key question that must now be resolved among the IEA members and these Association partners is whether the Association status is an end point or a waypoint. Are all parties content to have a nonbinding, loose linkage between IEA and the six Association countries? Or would all concerned see benefit in those latter countries becoming members, which would both imply new benefits and new obligations.

Even when talking only to current members, reaching conclusions on these questions will be tricky. Some members fear that the acceptance of new members will unacceptably dilute their countries' voices in the IEA's decision-making structures. Bringing in new and consequential members would ensure that IEA's voice remains critical through the years instead of representing a dwindling share of the global energy scene. To date, however, IEA members have not identified a mutually agreeable pathway to the future of the agency.

[12] Two other countries have for some time engaged in discussions about joining the Association but have not decided whether they wish to join—Brazil and South Africa. Each is an important energy leader in its region; each could benefit from participation in the Association and could bring important perspectives to the discussions at IEA.

As if that dynamic were not complex enough on its own, there is another and more structural complication—IEA's relationship to OECD. At the time of IEA's founding, the initial members sought to profit from the administrative ease of creating IEA as an "autonomous agency" within the existing structure of the OECD. They also took care to establish a distinct governance structure, led by the IEA's Governing Board, that would have a more operational orientation—and especially an ability to reach decisions more quickly than was deemed to be the case with OECD itself.[13] Members were to be represented in the quarterly board meetings by officials with "policy responsibility" in their home governments, senior officials answerable to the ministers who would gather every second year to take stock and provide top-level guidance and instructions.

To this day, however, a sensitive and unresolved legal and policy question is whether only OECD members are eligible to become members of IEA under current legal understandings.[14] If this is the case, then amending the legal foundations to enable non-OECD countries to join the IEA as members would require changing the IEP—a major undertaking indeed. Certain IEA members treat the IEP as a formal treaty under their laws, and amending the IEP would require repeating a ratification process through their parliaments. (The United States treats the IEP as an executive agreement not subject to Senate advice and consent.) Moreover, if there were also a decision to separate IEA organizationally from OECD, this would represent an additional complexity. IEA's placement within the OECD structure allows the IEA to benefit from the legal status of the OECD and provides not only administrative structures but also diplomatic privileges and immunities under the laws of France, OECD and IEA's host country.

Sustaining a Vital IEA

Modernizing IEA would ensure that it remains relevant and effective into the future, and this would provide benefits to the United States in the years ahead—just as IEA has done in the past. That modernization is no light task. But the alternatives are still less desirable.

One alternative would be to create a new, broader organization untethered to OECD or any other such organization. Some analysts have asserted that such a formal organization could be created on

[13] For a thorough discussion of the creation of the IEA, see "The History of the International Energy Agency—the First Twenty Years," Richard Scott, *Volume One: Organization for Economic Cooperation and Development and International Energy Agency*, Paris, 1994, available at http://www.iea.org/media/about/1ieahistory.pdf (last accessed on May 1, 2017).

[14] The question of whether OECD membership is a *prerequisite* for IEA membership has been discussed and considered by lawyers representing the current IEA members. Some delegations say that this matter is clearly determined by the language found in the decision of the OECD Council (its governing body) and the IEP Agreement, and is not subject to change without formal amendments to both the OECD Council decision and the IEP. Others point out that certain aspects of the IEP, such as the very prescriptive language concerning the allocation of oil during market disruptions, have been altered through the years by simple decisions of the IEA Governing Board. The resolution of this matter, which clearly must involve a sound legal basis, appears in the view of the author to require also clarity of policy objectives. For the precise terms under which IEA was created, see "Decision of the Council Establishing an International Energy Agency of the Organization," Organization for Economic Cooperation and Development, Paris, 15 November 1974, available at http://www.iea.org/media/about/decesionofthecouncil.pdf (last accessed on May 1, 2017) *and* "Agreement on an International Energy Programme," International Energy Agency, Paris, 1974, available at http://www.iea.org/media/about/iep.pdf (last accessed on May 1, 2017).

the basis of the G-20 energy sustainability working group, for example.[15] In 2012, before IEA started to consider seriously how to modernize the agency, China's premier Wen Jiabao suggested the creation of a new, freestanding energy organization.[16] Others have suggested that the International Energy Forum could be the energy organization of the future.[17]

The key defect in these ideas is that creating a new successor organization would result in wasting a significant amount of time, staff bandwidth in all the participating countries, and funding. This would not be in the interest of the United States or of other IEA members. After all, the attributes and capabilities that the current IEA members—and arguably many of the countries that are currently not IEA members—would seek from a successor organization would be the very same hallmarks that distinguish IEA today; namely, the strength in energy data and trends, energy policy, and energy security including emergency response capability. Countries would find themselves simultaneously paying for the operation of IEA in its dying days and paying for the birthing phase of the new institution.

The best path forward—though no easy path—is for the United States to sustain IEA by ensuring that it stays focused on today's top-most energy challenges and that it provides a path to membership for those countries wishing to become members. If the United States and other partners wish to pursue the IEA modernization agenda—which critically must play out as IEA prepares for the next IEA Ministerial meeting, scheduled for November 2017 in Paris—the task will require patience, clarity of purpose, and strategic focus. But if the Trump team opts to pursue modernization of IEA and finds a workable path forward with other members and partners, then they will have invested wisely in an institution that has served the United States and its partners well for more than 40 years and that will be ready for the next 40 years. To miss this opportunity would be a waste.

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[15] The prominence of the G-20 is a core suggestion of recent work undertaken jointly by China's NDRC Energy Research Institute and Britain's Grantham Institute. See "Global Energy Governance Reform and Chinese Participation," available at https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/collaborative-publications/Global-Energy-Governance-Report-final.pdf (Last accessed on May 1, 2017).

[16] See discussion in "The Reform of Global Energy Governance," Neil Hirst, Antony Froggatt, Discussion Paper No. 3, Grantham Institute for Climate Change, Dec 2012, https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/discussion-papers/The-Reform-of-Global-Energy-Governance--Grantham-DP3.pdf (last accessed on May 1, 2017).

[17] For an enumeration of several such possibilities, see "Report of the Atlantic Council Task Force on Reform of the Global Energy Architecture," David Goldwyn and Phillip Cornell, task force cochairs, Washington, DC, Atlantic Council, April 2017, available at http://www.atlanticcouncil.org/publications/reports/reform-of-the-global-energy-architecture (last accessed on May 1, 2017).