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The Hard Reality for International Climate Agreements in the United States

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The release of the second installment of the Intergovernmental Panel on Climate Change's Fifth Assessment Report on March 31, 2014, provoked the usual calls for urgent and immediate action in response to climate change, including in particular at the international level in the form of a new climate treaty built upon domestic regulatory regimes.[1] Irrespective of whether these calls for action are overly strident or carefully measured, the law plays a central role. In almost any discussion, the breadth and stringency of national and sub-national regulations and the extent to which a treaty can make them "legally binding" assumes paramount importance. But this emphasis on law is misplaced, because it runs headlong into the hard reality that would confront any international climate agreement in the US Senate. And given the soaring use of coal around the world, it also draws attention and resources away from far more achievable opportunities to develop and deploy advanced coal technologies that would allow the world's most abundant, accessible, and affordable energy resource to meet critical energy needs in balance with each country's environmental, economic, and security priorities.

Energy & Environment Program

The Atlantic Council's Energy and Environment Program is dedicated to identifying and understanding the complex economic, social and technology factors impacting the availability, accessibility and affordability of energy resources. The program focuses on the implementation challenges associated with maintaining economic competitiveness while using a full portfolio of energy supplies and demand actions to transition towards a low carbon energy system.

The Obama Administration's Pursuit of Legally Binding Commitments

In his Climate Action Plan, President Obama outlined an expansive agenda to advance his administration's climate change policies in various international forums involving trade, environmental, energy, and security issues.[2] For the multilateral negotiations under the United Nations Framework Convention on Climate Change (UNFCCC), the president was unequivocal: his goal is a new, comprehensive agreement to reduce greenhouse gas emissions from the world's largest emitting countries while providing financial and technical assistance to poor and underdeveloped countries.

1 *See, e.g.,* Adam Matthews and Terry Townshend, "Climate change laws: time to act on the IPCC report?" The Guardian (March 31, 2014) *at* http://www.theguardian.com/global-development-professionals-network/2014/mar/31/ipcc-climate-change-talks-national-legislation.

2 *The President's Climate Action Plan,* Executive Office of the President (June 2013) *at* 17–21 at www.whitehouse.gov/.../president27sclimateactionplan.pdf (hereinafter "Climate Action Plan").

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At recent international negotiating sessions under the UNFCCC, the administration has joined numerous other governments in support of a new agreement to be negotiated by 2015, and to take effect by 2020. This post-2020 agreement would then define climate policy through the middle part of the century.[3] The president described his vision for this new agreement as imposing varying but substantial emission-reduction obligations on all countries—not just developed countries, as was the case with the Kyoto Protocol.[4] The administration also expressed its preference for an approach that builds upon domestic regulation, as opposed to a "top-down" Kyoto Protocol–type approach that would impose sovereign-level obligations. At least in theory, this "bottom-up" approach is supposed to produce policies that better reflect economic and technological realities within each country and sector.[5]

The Durban round of negotiations in 2011 placed the Parties to the UNFCCC on a path toward a new agreement by the end of 2015. The Durban outcome, however, stated that the Parties would seek to negotiate a "protocol, another legal instrument, or an agreed outcome *with legal force*."[6] Todd Stern, the US special envoy for climate change, described this by saying that the Parties "are discussing a variety of ideas with regard to which elements of a new agreement would be *legally binding,* and the role that both international and domestic bindingness might play."[7]

In a recent submission to the UNFCCC, the administration indicated it could accept an international regime that imposes external monitoring and verification protocols on the US government and, potentially, US businesses. Specifically, the US submission said: "We assume that certain elements [of a future treaty's mitigation program] *will be internationally legally binding*, including that a Party maintain a specific [emission-reduction] commitment in a schedule, provide clarifying information, report on implementation, follow accounting provisions, and subject its implementation to review by others."[8]

Many climate treaty proponents would go further and seek an agreement capable of fully internationalizing a country's domestic regulatory programs. Some proponents have even advocated escalator-type provisions intended to increase the stringency of standards over time in a self-executing manner, such that the emission-reduction commitments undertaken by a country at a treaty's inception could automatically ratchet upward, exposing that country to greater and greater liability for its emissions irrespective of whether it is actually capable of reducing them.[9]

As discussed below, any attempt to create "internationally legally binding" commitments in a future climate agreement will encounter obvious and significant constitutional barriers to formal US participation, given the legal necessity of Senate ratification and the exceptional political dynamics that attend the issue of climate change in the United States. But more than that, any such attempt could undermine opportunities for the United States to demonstrate its customary role as a leader in developing new energy technologies and helping to ensure their dissemination around the world. Simply put: advancing conceptual elements of climate policy should not take precedence over advancing technologies capable of reducing actual emissions.

Legal Constraints on US Climate Treaty Making

Senate Ratification Requirement for International Agreements

American presidents enjoy substantial discretion when formulating foreign policy and, in particular, when using the presidency to express an administration's preferences, goals, and other ambitions. But translating those preferences into affirmative international law, for purposes of constraining the United States and other nations around the world, requires a discrete legal architecture, usually in the form of a treaty, and the approval of the US Senate.

3 *Climate Action Plan,* at 21.

4 "Remarks by the President on Climate Change," The White House, Office of the Press Secretary (June 25, 2013) *at* http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change.

5 *See* Gwyn Prins, et al., *The Hartwell Paper: A New Direction for Climate Policy After the Crash of 2009,* Institute for Science, Innovation and Society, University of Oxford, and the McKinder Programme, London School of Economics (May 2010) *at* http://eprints.lse.ac.uk/27939/ (*hereinafter* "Hartwell Paper").

6 *Decision 1/CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action,* 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (December 2011) (emphasis added).

7 Todd D. Stern, *The Shape of a New International Climate Agreement,* Delivering Concrete Climate Action: Towards 2015, Chatham House (October 22, 2013) *at* http://www.chathamhouse.org/publications/papers/view/195103 (emphasis added) (*hereinafter* "Stern, *Shape of a New International Climate Agreement*").

8 *US Submission on Elements of the 2015 Agreement* (February 12, 2014) *at* http://unfccc.int/bodies/awg/items/7398.php (emphasis added).

9 *Greenpeace: The Warsaw Demands,* Greenpeace International / Greenpeace Germany (November 22, 2013) ("As such, *in Warsaw,* Parties must agree on: . . . an adjustment procedure or ratcheting-up mechanism to allow for the increase of emission reduction efforts, simply and in response to the latest science. . . .").

Article II of the US Constitution states that the president "shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two-thirds of the Senators present concur. . . ." When the benefits of the United States joining a multilateral agreement are sufficiently clear and tangible as to transcend political parties and capture a bipartisan majority of at least sixty-seven senators, the United States has been a willing and able participant on the international stage. Indeed, over the past century, the Senate has failed to ratify only two major treaties strongly favored by a sitting president—the Treaty of Versailles in 1919, and the Comprehensive Nuclear-Test Ban Treaty in 1997.[10]

Short of Senate ratification, a treaty does not create legal obligations. This makes eminent sense, as the unwillingness of the Senate to ratify an agreement signals a lack of bipartisan support for the policies it contains. Absent the treaty, those policies would not necessarily survive a change in administration. Reflecting this constitutional constraint, US courts have ruled that procedural actions by international bodies, such as "decisions" taken by the Parties to the UNFCCC (which typically comprise the outcome of each year-end negotiating session), have no force of law in the United States.[11]

Of course, climate change is a politically polarizing issue in the United States. This is particularly true in the Senate. Various domestic climate bills have routinely failed to attract even a simple majority of senators during the relatively few times they have come to a vote over the past decade, with Democratic as well as Republican senators voting "no" for a variety of reasons. Any international agreement that includes, for example, a liability-based regime seeking to hold the United States or its citizens accountable for damages allegedly attributable to climate change, would find no support in the Senate and could very well serve as grounds for the censure of those who negotiated such terms. Yet even a more modest treaty, simply "internationalizing" domestic regulatory regimes, still would face insurmountable barriers to ratification.

Congressional-Executive and Sole-Executive International Agreements

Apart from treaties, the United States has entered other types of agreements, including congressional-executive agreements (where the president is explicitly or implicitly authorized by domestic legislation to enter the agreement, either in advance of or after the international agreement has been signed); agreements pursuant to treaties (where the agreements are authorized by and ancillary to a previously ratified treaty); and presidential, or sole-executive agreements (where the president concludes an agreement solely on the basis of his independent constitutional authority, such as his authority as commander in chief of the armed forces).[12]

One congressional study found that between 1946 and 1972, 88.3 percent of all international agreements made by the United States were based on domestic legislation (i.e., congressional-executive agreements), with only 6.2 percent of the agreements concluded as treaties, and 5.5 percent as sole-executive agreements.[13] Most of these congressional-executive agreements have addressed substantial international and economic or trade issues, such as the Bretton Woods Agreement, the agreements establishing the International Monetary Fund and the World Bank, and the General Agreement on Tariffs and Trade.[14]

Some commentators have argued that a congressional-executive agreement may offer an easier path for US accession to an international climate regime because it could be authorized by Congress through normal legislation, bypassing the sixty-seven-vote threshold for ratification in the Senate, and instead needing only simple majorities (absent Senate filibuster) in both chambers.[15] But it is wholly unrealistic to consider international climate change issues as even remotely similar to the trade and economic issues addressed by congressional-executive agreements. After all, unlike climate change, the promotion of free trade has enjoyed strong bipartisan support throughout the postwar era.

10 John C. Yoo, *Laws as Treaties: The Constitutionality of Congressional-Executive Agreements,* 99 Mich. L. Rev. 758, 759 (2000) (*hereinafter* "Yoo, *Laws as Treaties*").

11 *See*, e.g., *NRDC v. EPA*, 464 F.3d 1 (D.C. Cir. 2006) (holding that decisions under the Montreal Protocol were not binding upon EPA regarding its implementation of the Montreal Protocol's critical use exemptions for methyl bromide, which effectively allowed noncritical users to claim critical-use exemptions in a way that appeared to contradict prevailing practice and the body of international treaty decisions under the Montreal Protocol on this particular issue).

12 *Treaties and Other International Agreements: The Role of the United States Senate, A Study Prepared for the Committee on Foreign Relations, United States Senate,* Congressional Research Service, Library of Congress (January 2001) at 5–6.

13 Yoo, *Laws as Treaties,* at 766.

14 *Ibid.* at 768.

15 *See* Daniel Bodansky, *How to Achieve US Ratification of a New Climate Agreement: A Response to Nigel Purvis,* Opinio Juris (June 12, 2009) at http://opiniojuris.org/2009/06/12/how-to-achieve-us-ratification-of-a-new-climate-agreement-a-response-to-nigel-purvis-by-daniel-bodansky/. *See also* Oona A. Hathaway, *Treaties' End: The Past, Present, and Future of International Lawmaking in the United States,* 117 Yale L. J. 1236 (2008).

Other commentators have properly cautioned against the use of congressional-executive and sole-executive agreements for an issue as complex and as politically volatile as climate change. They argue there is a far higher standard for "international agreements that go beyond the rules of international trade and finance—that involve significant national-security commitments, or that purport to delegate lawmaking and enforcement functions to international organizations, or that could fundamentally alter the American constitutional system of individual rights."[16] These kinds of agreements "should receive the intense scrutiny of the treaty process, regardless of their policy merits."[17]

Beyond its technical complexity, the highly politicized nature of a climate treaty is such that any attempt to exclude the Senate from its traditional and constitutionally mandated ratification role would be met with hostility from a majority of members, easily encompassing both parties. Whatever support there may be for congressional-executive agreements for economic and trade issues, domestic legislation intended to authorize the president to enter into a new climate treaty would fail to pass either chamber.

The Senate's Guidance on International Climate Negotiations: The Byrd-Hagel Resolution

The Senate is not institutionally opposed to addressing global environmental issues.[18] To the contrary, the Senate ratified the Montreal Protocol by a vote of 88–0 after it was signed by President Ronald Reagan in 1988. The Senate also voted unanimously in favor of ratifying the UNFCCC after it was signed by President George H. W. Bush in 1992.

When it comes to an international agreement intended to impose specific emission-reduction obligations upon the United States, the Senate's position is unambiguous and, to this day, still encapsulated in a sixteen-year-old "Sense of the Senate" resolution sponsored by then senators Robert Byrd, a Democrat from West Virginia, and Chuck Hagel, a Republican from Nebraska (now Secretary of Defense). In July 1997, five months *before* the Parties to the UNFCCC convened in Kyoto, Japan, the Senate adopted the Byrd-Hagel Resolution to guide the US delegation in the deliberations.[19] The Byrd-Hagel Resolution articulates the conditions under which the Senate would consider a protocol as being in the interests of the United States: "[T]he United States should not be a signatory to any protocol . . . which would (A) mandate new commitments to limit or reduce greenhouse gas emissions for Annex I Parties, unless the protocol . . . also mandates new specific scheduled commitments . . . for Developing Country Parties within the same compliance period, or (B) results in serious harm to the economy of the United States."[20]

Having passed by a vote of 95–0, the Byrd-Hagel Resolution made it overwhelmingly clear what might stand a chance of ratification by the Senate. Yet the US delegation, led by then vice president Al Gore, agreed to terms under the Kyoto Protocol that blatantly contradicted the Byrd-Hagel Resolution. Among other things, the Kyoto Protocol did not impose emission-reduction obligations upon large, emerging economies, including those who, as expected, have since seen their emissions profiles rival and, in China's case, exceed that of the United States even before the first commitment period of the Kyoto Protocol came to an end, in 2012.[21]

President Clinton signed the Kyoto Protocol, but never submitted it to the Senate for ratification—despite having nearly three full years remaining in his presidency to do so. (By contrast, both the Montreal Protocol and the UNFCCC were submitted to the Senate for ratification after being signed by the president.) President George W. Bush's repudiation of the Kyoto Protocol after taking office in 2001, therefore, was hardly a change in US policy, given the entrenched opposition to the agreement in the Senate and the Clinton administration's apparent indifference to its success.[22]

16 John R. Bolton and John Yoo, "Restore the Senate's Treaty Power," New York Times (January 5, 2009) http://www.nytimes.com/2009/01/05/opinion/05bolton.html.

17 *Ibid.*

18 For a list of treaties pending in the Senate as of April 23, 2013, *see* http://www.state.gov/s/l/treaty/pending/. Some multilateral environmental agreements have not been ratified by the Senate, but there are reasons specific to each agreement; it is not simply because they are international and environmental in character. Additionally, over the past twenty years, none of these agreements have enjoyed the kind of strong support from a sitting president and a sufficiently large group of senators usually needed for ratification of a significant treaty.

19 *See* Jon Hovi, et al., *Why the United States Did Not Become a Party to the Kyoto Protocol: German, Norwegian, and US Perspectives,* 18 (1) European Journal of International Relations 129 (2010) *at* http://ejt.sagepub.com/content/early/2010/12/02/1354066110380964.

20 *S. RES. 98, Report No. 105-54,* 105th Congress, 1st Session (July 25, 1997).

21 *See*, e.g.,"China Overtakes U.S. in Greenhouse Gas Emissions," New York Times (June 20, 2007) *at* http://www.nytimes.com/2007/06/20/business/worldbusiness/20iht-emit.1.6227564.html?_r=0.

22 *See* Guri Bang, et al., *US Presidents and the Failure to Ratify Multilateral Environmental Agreements,* 12 Climate Policy 755, 759–60 (2012) ("In Kyoto, President Clinton and Vice President Al Gore essentially pushed for an agreement that provided their administration with a climate-friendly face, and the US delegation acted upon instructions motivated by considerations other than the attractiveness of the agreement to the

Today, the concepts embodied in the Byrd-Hagel Resolution are even more relevant than they were in 1997. The economies and emissions profiles of many developing countries (i.e., Non–Annex I Parties) are growing significantly faster than those of developed countries (i.e., Annex I Parties).[23] Indeed, by 2020, the cumulative emissions from Non–Annex I Parties will surpass those of Annex I Parties.[24] China is not only the world's largest annual emitter (with total emissions levels nearly double those of the United States), but China is also the world's second-largest historic emitter.[25] And with the world currently emitting as much every decade as all the cumulative emissions occurring before 1970,[26] putting the blame solely on Annex I Parties due to their "historic emissions" and giving non–Annex I Parties a free ride based on opportunistic notions of "equity" are becoming increasingly tired and fruitless exercises in climate diplomacy.

Yet when it comes to the design of a new climate treaty, many developing countries still advocate a regime that places the lion's share of emission reduction obligations on developed countries and, beyond that, would hold countries such as the United States accountable for any gaps in developing countries' economic development. For example, China still champions the position, held by virtually every developing country, that developed countries such as the United States still must "take the lead" in reducing emissions and not expect developing countries to do the same.[27] The Independent Alliance of Latin America and the Caribbean (AILAC) has described climate change as a "threat to the equitable right of development, not because [of] the need to limit emissions, but because its impacts limit development opportunities and undermine development gains. Poverty eradication efforts are therefore challenged."[28] A submission by Nepal, on behalf of Least Developed Countries (LDCs), stated that, under a future treaty, LDCs must be able to assess whether the emission-reduction targets and financial contributions of countries such as the United States meet "moral and legal obligations to respect the right of the most vulnerable groups of countries to defend their survival under acceptable warming levels."[29]

Even where these and similar statements are earnest and well-intentioned, they nonetheless paint a picture of a regime in which other countries could dictate the nature and extent of US emission-reduction commitments and financial obligations. No matter how one might feel about climate change, such open-ended demands plainly exceed the capabilities of international law, and are jarringly at odds with what the Byrd-Hagel Resolution identified as reasonable contours for an international climate regime. Rather than moving the world toward consensus, such demands undermine the credibility of the UNFCCC as a policymaking forum.[30] Indeed, the current content and trajectory of negotiations are simply too enthralled by notions of liability and legal obligation to be sustained by the relatively weak bonds of international law. They are so far afield from the modest strictures of the Byrd-Hagel Resolution that, absent some dramatic shift, any outcome under the UNFCCC will be entirely unsuited to serious consideration by the Senate.

Senate. Before the arrival of Vice President Gore, the US delegation held out for a US emissions limitation target that would permit yearly US GHG emissions in 2008–12 equal to 1990 levels. However, Gore subsequently instructed the US delegation to show more flexibility, and the United States eventually accepted a target that required emissions in 2008–12 to be 7 percent less than 1990 levels. This target left little doubt that Kyoto would be unacceptable to the Senate, which had unanimously passed the Byrd-Hagel Resolution a few months earlier. . . . A former State Department official of the Clinton Administration said that 'it was better [for President Clinton] to sign the Kyoto Protocol even if he knew that it was not going to be ratified,' and indeed, that the Clinton Administration had 'no strategy to move the Kyoto Protocol through the Senate.' ").

23 *See* Karen Ward, *The World in 2050: Quantifying the Shift in the Global Economy,* HSBC Global Research (January 2011).

24 Stern, *Shape of a New International Climate Agreement,* at 7. *See also International Energy Outlook 2013, with Projections to 2040,* US Energy Information Administration, Office of Energy Analysis, US Department of Energy (July 2013), at 7 ("With strong economic growth and continued heavy reliance on fossil fuels expected for most non-OECD economies under current policies, much of the projected increase in carbon dioxide emissions occurs among the developing non-OECD nations. In 2010, non-OECD emissions exceeded OECD emissions by 38 percent; in 2040, they are projected to exceed OECD emissions by about 127 percent.")

25 *Ibid.*

26 *Ibid.*

27 *China's Submission on the Work of the Ad Hoc Working Group on Durban Platform for Enhanced Action* (March 6, 2014) *at* http://unfccc.int/bodies/awg/items/7398.php ("The 2015 agreement shall be based and built on the structure and provisions of the [UNFCCC] . . . as well as the differentiation between developed and developing country Parties, with developed country Parties taking the lead in greenhouse gas emission reduction and honouring their responsibility and obligation in providing technology and finance support to developing countries.").

28 *Independent Alliance of Latin America and the Caribbean (AILAC), Submission on the Ad Hoc Working Group on the Durban Platform (ADP)* (March 10, 2014), *at* http://unfccc.int/bodies/awg/items/7398.php.

29 *Submission by Nepal on Behalf of the Least Developed Countries Group: Views and Proposals on the Work of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP)* (March 17, 2014) http://unfccc.int/bodies/awg/items/7398.php.

30 Richard E. Benedick, *Avoiding Gridlock on Climate Change,* Issues in Science & Technology (Winter 2007) *at* http://www.issues.org/23.2/p_benedick.html.

Opportunities for US Leadership in International Climate Policy

Given these legal constraints, political barriers, and practical realities, what options exist for the current administration—or a future one—to exercise leadership at the international level? It begins with technology, particularly advanced coal technologies that allow for the continued use of coal to generate electricity, but without emissions of carbon dioxide and other more-conventional impacts on air and freshwater resources.

The importance of coal in global efforts to address climate change is almost always overlooked. True, the combustion of coal is a significant source of carbon dioxide emissions. But coal is also the world's most abundant, most accessible, and most affordable fossil fuel, on track to surpass oil as the world's top energy source by 2017.[31] The world is relying on coal more than ever before, with its use soaring by approximately 355 percent since 1970.[32] Coal provides 40 percent of the world's electricity, making "a lump of coal . . . a thoroughly ubiquitous 21st century artifact, as much an emblem of our time as the iPhone."[33] By one estimate, at least 434 gigawatts of coal-fired power generation will be built by 2020, compared to 241 for natural gas and 92 gigawatts for nuclear.[34] If there is a "war on coal," coal is winning—and it is not even close.

The United States is no stranger to coal, having relied heavily upon it to drive decades of economic expansion and to serve as a bulwark against the chronic uncertainty typically plaguing other energy sources. Since 1970, coal use in the United States has increased by more than 173 percent. However, emissions of sulfur dioxide, particulate matter, and other air pollutants have declined by approximately 90 percent over that same time.[35] This cleaning up of coal has been driven by environmental regulatory standards, but the standards themselves owe much of their efficacy to extraordinary advances in emission control technologies over the past forty years—a product not just of activism, but of research and development and industry leadership.[36]

Today, coal use is growing fastest in emerging economies. China now consumes nearly as much coal as the rest of the world combined.[37] And in Southeast Asia, where energy demand is expected to increase by more than 80 percent over the next two decades, coal consumption is likely to triple.[38] So long as coal remains the surest path to wealth and security, it will serve as the fuel of choice in lifting more and more of the world's poorest countries into the ranks of emerging economies.[39]

No climate treaty—not even a treaty fully ratified by the Senate—can be expected to override the fundamental economic, social, and security priorities underlying every country's vision of its future.[40] And indeed, this is ultimately why every emerging economy and poorer developing country has, within the UNFCCC negotiations, refused to accept a mitigation target involving absolute reductions—even as their annual (and historic) emissions have come to rival, if not exceed, those of developed countries, and even though absolute reductions solely by developed countries (including drastic ones) would seem to be insufficient to meet the recommendations of the Intergovernmental Panel on Climate Change (IPCC).

Tom Donilon, the president's national security advisor, has described this economic and security imperative, common to every country and community, as being grounded in the fundamental role that affordable, reliable energy plays in maintaining prosperity at home and projecting strength abroad:

> . . . [E]nergy matters profoundly to US national security and foreign policy. It matters because the availability of reliable, affordable energy is essential to our economic strength at home, which is the foundation for our leadership in the world. It matters because scarce resources have driven both commerce and conflict

31 International Energy Agency (IEA), *Medium-Term Coal Market Report* (December 17, 2012) *at* http://www.iea.org/newsroomandevents/pressreleases/2012/december/name,34441,en.html (*hereinafter* "IEA Coal").

32 *International Energy Agency World Energy Outlook 1995–2011.*

33 Charles C. Mann, "Renewables Aren't Enough. Clean Coal Is the Future," Wired (March 25, 2014) *at* http://www.wired.com/wiredscience/2014/03/clean-coal/ (*hereinafter* "Mann, *Renewables Aren't Enough*").

34 Rakteem Katakey and Winnie Zhu, "Coal 4-Year Low Lures Utilities Ignoring Climate: Energy Markets," Bloomberg (October 11, 2013) *at* http://www.bloomberg.com/news/2013-10-11/coal-4-year-low-lures-utilities-ignoring-climate-energy-markets.html.

35 US Energy Information Administration 2014 Annual Energy Outlook (2013); US Energy Information Administration Annual Energy Review, 2012; US Environmental Protection Agency, "Clean Air Markets," 2013.

36 *See generally* Sam Heys, *Innovative Solutions: A History of R&D at Southern Company,* Southern Company, 2013.

37 "China Consumes Nearly as Much Coal as the Rest of the World Combined," United States Energy Information Administration (January 29, 2013) *at* http://www.eia.gov/todayinenergy/detail.cfm?id=9751.

38 *Southeast Asia Energy Outlook,* International Energy Agency (September 2013), at 11.

39 Mann, *Renewables Aren't Enough. See also* James Fallows, "Dirty Coal, Clean Future," Atlantic Monthly (December 2010) *at* http://www.theatlantic.com/magazine/archive/2010/12/dirty-coal-clean-future/308307/.

40 *See* Gwyn Prins and Steve Rayner, *The Wrong Trousers: Radically Rethinking Climate Policy,* James Martin Institute for Science and Civilization, University of Oxford and the MacKinder Centre for the Study of Long-Wave Events, London School of Economics (2007).

since time immemorial—and still do today. It matters because energy supplies present strategic leverage and disposable income for countries that have them. It matters because the challenge of accessing affordable energy is one shared by people and businesses in every country in the world—in young democracies, emerging powers and developing economies; in allies and adversaries alike. It matters because disruptions in supply anywhere can have economic impacts that are global. . . . Energy shapes national interests and relations between nations. It shapes politics, development, and governance within nations. And it shapes the security and stability of the climate and environment. *For all these reasons and many others, increasing global access to secure, affordable, and ever cleaner supplies of energy is a global public good and a national interest of the United States*.[41]

Similarly, the president's Council of Advisors on Science and Technology (PCAST)—an organization comprised of the nation's leading scientists and engineers—echoed the importance of the energy–economic security nexus in addressing climate policy. According to PCAST, in order to address climate change competently, the president must provide greater and more-consistent support for the research, development, and deployment of new energy technologies, including advanced fossil energy technologies such as carbon capture and storage (CCS): "Continued support for [CCS] projects is important not only for the purpose of establishing the technical and regulatory basis for CCS in the United States, but also because US support for and success with this technology will likely be influential in moving other countries such as China and India toward CCS use."[42]

Given coal's surging use around the world, no serious person would question the vital importance of advanced coal technologies. Their proliferation will, more than anything else, determine whether all this new coal capacity will be built over the next decade with the technologies of yesterday, or the cleaner, more-efficient technologies of tomorrow. This is why the global deployment of CCS and other advanced coal technologies have been widely recognized as essential to meeting energy and economic objectives, while also addressing climate mitigation concerns by the middle of this century.[43] This is not to say that CCS should be pursued exclusive of other strategies, but it does make plain that unrealistic expectations about renewable energy, for example, are an invitation to failure, and will, in all likelihood, do more harm than good.[44]

The need for advanced coal technologies to proliferate globally, then, is the kind of opportunity the United States can seize in the international climate policy arena. Not insignificantly, this is also the kind of opportunity that, in breaking with the divisive and ineffective climate policy approaches of the past two decades, would resonate with senators of both parties as representing sound energy, economic, and security policies—as well as environmental ones.

After all, carbon prices remain in the midst of a sustained depression,[45] and the drivers of investment in highly capital-intensive, long-lived infrastructure have proven to be largely insensitive to price signals from emissions trading schemes and carbon tax proposals.[46] Regulatory mandates alone—including the EPA's most recent proposal effectively requiring CCS on new coal plants—also appear to be insufficient

41 "Remarks by Tom Donilon, National Security Advisor to the President, at the Launch of Columbia University's Center on Global Energy Policy," The White House, Office of the Press Secretary (April 24, 2013) *at* http://www.whitehouse.gov/the-press-office/2013/04/24/remarks-tom-donilon-national-security-advisor-president-launch-columbia-. (emphasis added)

42 President's Council of Advisors on Science and Technology, Executive Office of the President (March 2013) *at* http://www.whitehouse.gov/blog/2013/03/22/pcast-releases-new-climate-report. *See also* Julio Friedman, *Carbon Capture and Green Technology: Environmentalism's Step Forward and Two Steps Back,* Foreign Affairs (September 11, 2011) *at* http://www.foreignaffairs.com/articles/68256/s-julio-friedmann/carbon-capture-and-green-technology.

43 IEA, *Redrawing the Energy-Climate Map: World Energy Outlook Special Report* (June 10, 2013). ("[CCS] is the most promising technology to reach near-zero [carbon dioxide] emissions from large [carbon dioxide] sources."); Professor Ogunlade Davidson, et al., *New Unabated Coal Is Not Compatible with Keeping Global Warming below 2° C, Statement by Leading Climate and Energy Scientists* (December 2013) ("Only coal-fired power plants that are equipped with [CCS] systems can . . . be considered a low-carbon technology. The only way that coal plants can be part of a low-carbon future is for all new coal plants to include CCS from the outset.") *at* www.europeanclimate.org/documents/nocoal2c.pdf; Catherine Brahic, "We'll Have a Global Climate Treaty in 2015: The Head of the UN Convention on Climate Change Has One of the World's Most Challenging Jobs," Slate (March 22, 2014) ("[UNFCCC Executive Secretary Christiana Figueres:] 'It is only with marketable CCS that we will be able to use the fossil fuels that we need. Storage and CCS would be my top two choices for technology investment.'") *at* http://www.slate.com/articles/health_and_science/new_scientist/2014/03/global_climate_treaty_u_n_s_christiana_figueres_says_we_ll_have_an_agreement.html.

44 *See Mann, Renewables Are Not Enough* (" 'Even if we cut demand by 50 percent,' says [former US Secretary of Energy and Nobel Laureate Steven Chu], 'something I would be very much in favor of, solar and wind can't yet provide the kind of steady power needed by a modern society. . . . [F]or decades to come,' he says, 'fossil fuels will be a very important factor, and we'll need CCS to mitigate that.' "

45 *See,* e.g., Stanley Reed and Mark Scott, "In Europe, Paid Permits for Pollution Are Fizzling," New York Times (April 21, 2013) *at* http://www.nytimes.com/2013/04/22/business/energy-environment/europes-carbon-market-is-sputtering-as-prices-dive.html?pagewanted=all&_r=0, and "Low CER Prices Leave Chinese CDM Contacts in Disarray," Thomson Reuters Point Carbon (February 27, 2013) *at* http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.2199929.

46 *Ibid.*

in stimulating project development (or even to have anything more than a negligible effect on actual emissions).[47] And policies seeking to bottle up public financing for the construction of coal power plants, while politically symbolic, would seem only to divert project developers away from transformational opportunities and toward the least costly, and often the dirtiest, options.[48]

Instead, the United States should revisit the PCAST recommendations on CCS and craft a broad suite of policies and measures to advance new coal technologies and support their demonstration and commercial-scale deployment over the next decade. The administration should look to partner with those companies that have shown a willingness to lead on advanced coal technology issues, and work collaboratively to extend that leadership into the international arena, engaging bilaterally, in small multilateral groups, and even in large multilateral forums.

At heart, these efforts should seek to embody the principles set forth below and, to demonstrate how US leadership can make a difference when it comes to climate change, the administration should direct executive agencies (including the departments of state, commerce, and energy) to promote these principles across all applicable international climate, energy, economic, and security programs:

- Recognize the essential importance of the further development and broader deployment of advanced coal technologies, noting in particular that coal is the most abundant, accessible, and affordable energy source in world;
- Create and support more public-private partnerships and other initiatives focused on technology research and development for CCS and other advanced coal technologies;
- Provide more financial support and other incentives for demonstration projects and early commercial pilot projects; and
- Ensure opportunities for knowledge-sharing and technical exchanges among diverse regions and organizations around the world.

As is so often the case at the international level, the law will not be a driving force of success, but a result of it. The technological capabilities resulting from these principles will, along with leadership from the private sector, determine the post-2020 emissions profiles of major-emitting countries and those on track to join them in the near future. In the meantime, the most important work lies in creating and maintaining conditions conducive to investment and commercial-scale project development for the technologies of tomorrow.

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47 US Environmental Protection Agency, *Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units; Proposed Rule*, 79 Fed. Reg. 1430, 1433 (January 8, 2014) ("EPA projects that this proposed rule will result in negligible CO_2 emission changes, quantified benefits, and costs by 2022 [and] . . . coal units built between now and 2020 would have CCS, even in the absence of this rule.").

48 *Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector,* World Bank (July 16, 2013) *at http://www.worldbank.org/en/news/feature/2013/07/16/world-bank-group-direction-for-energy-sector; Supplemental Guidelines for High Carbon Intensity Projects,"* Export-Import Bank of the United States (December 12, 2013), *at* http://www.exim.gov/newsandevents/releases/2013/SUPPLEMENTAL-GUIDELINES-FOR-HIGH-CARBON-INTENSITY-PROJECTS.cfm.

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