U.S.-China Dialogue on Climate Change
BACKGROUND REPORT
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The Georgetown Initiative for U.S.-China Dialogue on Global Issues is a university-wide platform for research, teaching, and high-level dialogue among American and Chinese leaders from the public sector, business, and the academy.

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Created in January 2016 through a gift from the Hong Kong-based Spring Breeze Foundation, the initiative builds on Georgetown’s core strengths of academic excellence, location in Washington, D.C., and Catholic and Jesuit mission of service to the world. Four core principles organize the initiative’s work—independence, transparency, balance, and academic excellence.

About this Report

This background report on U.S.-China dialogue on climate change was developed under the auspices of the U.S.-China research group on climate change. Background reports in this series provide a general overview of the evolution of a critical issue in U.S.-China relations with wider implications for world affairs. The text of this report was crafted by initiative staff under the editorial guidance of the research group, which is led by Dr. Joanna Lewis of Georgetown University and Dr. Zhang Xiliang of Tsinghua University. For more information on this topic and the work of the research group, visit the initiative site at https://uschinadialogue.georgetown.edu/topics/climate-change.

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Introduction

One of the most pressing issues on the global agenda is combating climate change. Until recently, the United States and China had widely diverging perspectives on the issue, reflecting their national histories, political systems, and states of economic development. The past several years have seen critical breakthroughs in bilateral cooperation. During a summit in Beijing in November 2014, President Barack Obama (2009-2017) and President Xi Jinping (2012- ) surprised the world by signing the Joint Announcement on Climate Change and Clean Energy. Intense diplomacy between Beijing and Washington subsequently facilitated the breakthrough agreement announced in December 2015 at the UN’s Paris Climate Change Conference (COP21), where 194 countries adopted a major universal, legally binding global climate accord.

What are the origins and implications of this breakthrough in U.S.-China cooperation around climate change? Will it be sustained under U.S. President Donald Trump? And how can it be best sustained into the future? This report provides background on these key questions. It presents an overview of the history of climate change as a global issue and as a policy challenge confronting the United States and China, with particular emphasis on the critical juncture of 2014-2015. By exploring the journey to U.S.-China collaboration on climate change, we may come to better understand the full potential of U.S.-China cooperation to achieve what President Obama called in a speech at Georgetown University in 2013, “a cleaner, safer, and more stable world.”

The Environment as a Global Issue

The pace of industrialization since the nineteenth century has had a tremendous impact on the environment, depleting natural resources, increasing pollution, and threatening biodiversity. By the middle of the last century—after two world wars, revolutions in travel and communications technologies, and growing awareness through scientific advancements of the fragility of Earth’s ecosystems—the environment gradually emerged as a global issue. This coincided with the establishment of the United Nations in 1945 as a forum for cooperation on international issues. Over
the next two decades, the international community pursued the following actions on the environment:

- A first major accord, the International Convention for the Prevention of Pollution of the Sea by Oil, was signed in 1954.

- The 1959 Antarctic Treaty preserved the entire continent of Antarctica as an international ecological reserve for cooperative scientific study.

- The Ramsar Convention on Wetlands of International Importance, signed in 1971, granted major wetlands protected status.

Around these and other international conventions, regional ecological agreements also proliferated over the postwar decades. A key milestone in the emergence of an international environmental regime was the establishment of the United Nations Environment Programme (UNEP) in 1972 at the UN Conference on the Human Environment in Stockholm, which codified 26 principles. The Stockholm Principles called for safeguarding natural resources and wildlife for future generations; greater reliance on renewable resources; and concerted efforts to redress environmental pollution. The post-Stockholm treaties of the 1970s and 1980s became the cornerstones of sustainability-focused environmental law.

A major turning point in the evolution of the international environmental regime was the confirmation in 1985 of a large and growing hole in the earth’s ozone layer, which absorbs most of the sun’s ultraviolet radiation. Scientists determined it was caused by manmade air pollutants, particularly chlorofluorocarbons (CFCs). For the first time, the international community was confronted with scientific evidence that industrialization not only depleted natural resources and threatened ecosystems, but also posed a threat to the planet as a whole. The international response was swift and effective. The 1987 Montreal Protocol called for the world’s top CFC-producing countries to phase out their production. The protocol was successful because CFC reduction was a relatively manageable issue involving a small group of companies and industries, there were cheap substitutes, and the developed nations offset the cost of compliance for the developing world. Because of this response, ozone levels are predicted to return to pre-1980 levels around the middle of this century.

The Era of Climate Change

As the world was addressing one long-term environmental threat to survival, scientific consensus was coalescing around another: climate change—that is, global warming caused by emissions of greenhouse gases, mainly carbon dioxide (CO2). The ability of CO2 to warm the atmosphere was first postulated in 1896, and the global warming hypothesis was sharply contested within scientific circles into the 1970s. By the 1980s, a general consensus had emerged that human greenhouse gas emissions were warming the planet, and in 1988, the UN’s Intergovernmental Panel on Climate Change, tasked with monitoring climate change and its consequences, was created.
The year 1992 ushered in a new chapter in the international governance of climate change. World leaders convened in Rio de Janeiro for the UN Conference on Environment and Development. The Rio Earth Summit, as it came to be known, adopted the UN Framework Convention on Climate Change (UNFCCC) and its goal of stabilizing greenhouse gas concentrations in the atmosphere. The UNFCCC did not set binding emissions targets but established a framework for their future negotiation. The Kyoto Protocol of 1997 was the first of these agreements under the UNFCCC, setting legally binding greenhouse gas emissions targets for developed countries to be met in the period 2008 to 2012.5

Nearly every country on the planet signed, ratified, and became party to the Kyoto Protocol. The United States signed the protocol but, due to U.S. Senate opposition, President Bill Clinton (1993-2001) never submitted the protocol for ratification; the victory of George W. Bush in the 2000 presidential election further prevented ratification, as Bush, like the Senate, opposed the protocol. All Kyoto parties subject to 2008-2012 emissions targets met those targets, with the exception of Canada and Japan. The 2012 UN Climate Change Conference in Doha extended the Kyoto Protocol with new targets to 2020, but non-participation by the United States, Russia, Canada, Belarus, Ukraine, and New Zealand—as well as all developing countries like India, Brazil, and the now-top polluter China—left the Doha agreement’s jurisdiction limited to only 15 percent of global greenhouse gas emissions.

In late 2015, global commitment to the issue took a major step forward with the announcement of the Paris Agreement. There were several key building blocks that helped set up the Paris breakthrough. The Bali Action Plan, agreed to at the thirteenth Conference of the Parties to the UNFCCC in December 2007, among other things called for new action from developing countries that had largely remained off the hook in previous negotiations.6 The Copenhagen Accord of November 2009 was the first time that both developed and developing countries pledged to set emission targets.7 And the U.S.-China joint announcement of 2014 created the momentum needed to get all the world’s countries gathered in Paris to agree to set “nationally determined contributions” (NDCs) to greenhouse gas reductions and to increase those contributions over five-year reporting periods.

In joining the Paris Agreement, governments signed on to a long-term goal of keeping the increase in global average temperatures to well below 2 degrees Celsius above pre-industrial levels and on the need for global emissions to peak as soon as possible, recognizing that this will take longer for developing countries. Before and during the Paris conference, countries submitted comprehensive national climate pledges, called “Intended Nationally Determined Contributions” (INDCs). These are not yet enough to keep global warming below 2 degrees Celsius, but the agreement traces the path to achieving this target.8
Addressing climate change and its future effects will be much more difficult than reversing ozone depletion given the continued dependence of industry and commerce worldwide on coal, petroleum, and other greenhouse gas-emitting sources of energy. Still, the Paris Agreement marks a critical turning point, not least in public awareness of climate change as a major challenge for the international community. Setting and achieving ambitious emissions targets and the continued development of renewable, “green” energy resources will be vitally important for the United States, China, and the world in the decades to come.

The United States, China, and Climate Change: Historical Legacies

U.S.-China climate change policy and diplomacy over the past decade has its roots in the postwar decades. Since its founding in 1949, China’s contribution to climate change—in the form of greenhouse gas emissions from fossil fuel combustion and industrial activity—has been closely linked with national economic development strategy. After decades of war and political turmoil, China began a path of rapid industrialization under Chairman Mao Zedong (1949-1976). From 1949 to 1960, China’s commercial energy industry grew at an impressive rate, and the industrialization of the largely agrarian nation proceeded apace with Soviet technical support. Initially, rapid industrialization was fueled by abundant coal reserves, leading to a sharp rise in greenhouse gas emissions. In 1959, China discovered its first large oil field at Daqing in northeast China. As these new fields came on line, oil grew from 2.5 percent of total energy in 1960 to 13.5 percent in 1968.

Over this period, China was far more concerned about economic development and increasing living standards than it was about environmental issues. And as long as the Cold War persisted, the Republic of China on Taiwan retained the Chinese seat in the UN, excluding the PRC from significant international environmental agreements during the first three decades of its existence. Only when it acceded to China’s seat in
the UN in 1971 did the PRC begin to participate in the emerging global environmental regime.

The United States was a highly industrialized nation by 1949. With a much smaller population than China, the country was consuming seven times more energy than China at the time. Twenty years later, as both countries grew substantially, the ratio remained the same, with the United States emitting far more greenhouse gases. To meet its dramatically increased demand for energy, the United States turned to petroleum and natural gas. From 1950 to 1970, the number of vehicles on U.S. highways doubled from 50 million to 100 million, and petroleum went from about one-third of the energy used in the United States to nearly half. Natural gas, which had been less than 10 percent of the energy supply in 1950, grew to almost 30 percent in 1970. Although coal remained an important source of energy, it dropped from almost 40 percent of the energy supply to about 20 percent in 1970.

In 1972, just as global environmental politics entered a new phase with the creation of the UNEP, President Richard Nixon (1969–1974) made his historic visit to China, inaugurating a new period of rapprochement. However, China was still in the midst of Mao’s turbulent Cultural Revolution and began its engagement around environmental issues with a somewhat adversarial stance. In June 1972, the United Nations Conference on the Human Environment met in Stockholm to discuss “the need for a common outlook and for common principles to inspire and guide the people of the world in the preservation and enhancement of the environment.” China’s representative was outspoken in his criticism of the major powers of the time and derided the draft for failing to point out what the PRC saw as the main reason for environmental pollution, namely “the policy of plunder, aggression and war carried out by imperialist, colonialist and neo-colonialist countries.” China’s delegation refused to sign the final communiqué.

With the end of the Cultural Revolution and the initiation in 1978 of Deng Xiaoping’s bold economic reforms and open door policies, the United States and China began bilateral energy cooperation. In 1979, the year both countries established official diplomatic relations, a memorandum of understanding was signed between the U.S. Department of Energy and China’s State Development Planning Commission. Over time, this led to 19 further cooperative agreements on energy, including fossil energy, climate change, fusion energy, energy efficiency, renewable energy, peaceful nuclear technologies, and energy information exchange.

China’s economic rise from the 1980s onward contributed to growing energy consumption and greenhouse gas emissions. The first decade of Deng’s economic reforms saw the economy take off, with cumulative GDP growth of 113 percent. Energy de-
emand boomed, with energy consumption increasing by 48 percent during the decade. It turns out that China's energy usage in this period would have been much higher had Beijing not instituted some remarkably successful energy efficiency initiatives. During the 1980s, China's energy intensity (gross domestic energy consumption per unit of GDP) improved from about 10 times less efficient than the United States to about six times less efficient. China's annual greenhouse gas emissions doubled over the decade but were still about half of U.S. emissions by 1990.

In 1992, the Rio Summit brought together the international community to take the first globally concerted action on climate change, presenting the United States with its most complex and difficult environmental policy challenge yet. At the Rio Summit, President George H. W. Bush's administration (1989-1993) had opposed calls for the regulation of greenhouse gas emissions as economically harmful. Bush's successor, President Bill Clinton supported the commitments to emission reductions identified in the Kyoto Protocol of 1997, but faced strong domestic opposition to its implementation. For example, the U.S. Senate indicated its unwillingness to ratify any emissions agreement that did not include regulations for developing nations like China. U.S. environmental politics remained contested into the new century, as President George W. Bush (2001-2009) scaled back the power of the EPA in some areas. But bipartisan support did coalesce around some important measures. For example, the Energy Independence and Security Act of 2007 set higher standards for automobile fuel economy, invested in biofuels, and called for energy efficiency in public buildings.

Since the Rio Summit in 1992, China has demonstrated a growing interest in environmental regulation, domestically and internationally. A major impetus for this has been the effects on the Chinese environment wrought by rapid economic growth. China was able through new technology and energy use efficiency to lower its energy intensity from six times that of the United States in 1990 to only three times that of the United States by 2005. However, in 2007 China surpassed the United States as the globe’s largest emitter of greenhouse gases due to the size of its population, although its per capita emissions were still less than a quarter of those of the United States. Despite Chinese government efforts to diversify energy supply with hydropower, nuclear power, and renewable power, China still relies on coal for over two-thirds of its energy needs. Industry consumes about 70 percent of China’s energy, and China’s industrial base supplies much of the world. As such, China’s tremendous economic success has compounded its environmental challenges.

With its Eleventh Five Year Plan (2006-2010), Beijing began a multi-pronged approach across the economy to decrease national energy intensity and to build up a set of strategic low-carbon industries. The plan set a goal of reducing energy intensity...
by 20 percent below 2005 levels by 2010. Beijing has reported that the target was essentially met, claiming a 19.1 rather than a 20 percent reduction. This energy intensity target was part of a broader government goal of quadrupling economic growth while doubling energy consumption between 2000 and 2020. 19

A key element of China’s energy strategy, as well as its low-carbon development strategy, is the promotion of renewable energy technologies. China’s Renewable Energy Law of 2006 established a national renewable energy target; a mandatory connection and purchase policy; a feed-in tariff system; and a cost-sharing mechanism, including a special fund for renewable energy development. 20 The government also set a target of producing 15 percent of its primary energy from non-fossil sources by 2020. 21

The United States, China, and Environmental Policy Convergence, 2009-2015

Since President Obama began his presidency in 2009 and President Xi came to power in 2012, both leaders independently have focused greater and sustained attention on the damaging effects of man-made climate change on their nations and on the globe. Even before he took office, President Obama promised the U.S. public that he would make environmental issues a key priority. In China, the effect of dramatically increasing carbon emissions became readily apparent in January 2013 when the country experienced massive fog and haze outbreaks affecting about 600 million people and covering 17 provinces, municipalities, and autonomous regions—a fourth of all Chinese territory.

Policy Innovation under President Obama

During the 2008 campaign for president, President Obama pledged to make the United States a global leader in addressing climate change, rating the threat it posed as on par with other global scourges such as disease and poverty. “No single issue sits at the crossroads of as many currents as energy,” Obama said in a speech at the Clinton Global Initiative in September 2008. Referring to the long-running debate on global warming, he declared, “The time to debate whether climate change is man-made has passed. It’s time, finally, for America to lead.” 22

President Obama’s early attempts to work with the U.S. Congress to pass cap-and-trade legislation, similar to that adopted by the European Union, fell victim to partisan differences over whether such a program would have a negative effect on economic growth, particularly as the U.S. economy was still reeling from the great recession of 2008. President Obama tried to convince the Congress that advances in green technology would allow for a shift away from dependence on foreign energy sources. The U.S. House of Representatives passed the American Clean Energy and Security Act of 2009 by a slim majority in June 2009, just five months into the new Congress. The legislation, as passed by the House of Representatives, set emissions caps that would have reduced U.S. greenhouse gases for all covered entities to 3 percent below their 2005 levels in 2012, 17 percent below their 2005 levels in 2020, 42 percent
below their 2005 levels in 2030, and 83 percent below their 2005 levels in 2050.\textsuperscript{23} However, just one month later, Senate Majority Leader Harry Reid announced that the pending energy legislation would not include cap-and-trade legislation because of irreconcilable partisan differences.

In August 2009, President Obama shifted his focus to use the American Recovery and Reinvestment Act to gain funding for investments to reduce the national carbon footprint. The Recovery Act provided more than $80 billion in clean energy investments intended to catalyze industry development of green technological solutions. This included: $11 billion for a smart grid to connect rural energy-producing sites with cities, and smarter use of energy within homes; $5 billion to weatherize low-income homes; $4.5 billion to reduce the federal government’s own energy bill by making federal buildings more energy efficient; $6.3 billion to support state and local energy efforts; $600 million to train people for green jobs; and $2 billion to promote investments in battery storage technologies.\textsuperscript{24}

President Obama also turned to using the regulatory powers of the EPA to reduce carbon emissions. Basing its authority on the 11 pollution control laws and statutes passed by the Congress over the decades since 1970, the EPA issued new regulations, most notably on cars and trucks:

- In May 2010, the EPA and the National Highway Traffic Safety Administration promulgated integrated greenhouse gas emission standards and corporate average fuel economy standards for new cars and light trucks, a category that includes SUVs and minivans. The regulations required about a 21 percent reduction in CO2 emissions by model year 2016.\textsuperscript{25}

- In September 2011, the Obama administration promulgated standards for medium- and heavy-duty vehicles. These standards are being phased in between 2014 and 2018. When fully implemented, they will require an average per vehicle reduction in greenhouse gas emissions of 17 percent for diesel trucks and 12 percent for gasoline-powered trucks.\textsuperscript{26}

- In October 2012, the Obama administration released standards for new cars and light trucks for the model years 2017-2025—seeking to reduce greenhouse gas emissions from these vehicles by about 50 percent by 2025 compared to 2010 levels.\textsuperscript{27}

Following a year when the United States experienced its hottest temperatures on record, President Obama, during a speech at Georgetown University in June 2013, warned that, because the climate change challenge “does not pause for partisan gridlock,” he needed to act now to position the United States to lead the world in a “coordinated assault on a changing climate.”\textsuperscript{28} He directed the EPA to develop a new Climate Action Plan to put an end to what he described as the “limitless dumping of carbon pollution” from power plants, and establish new pollution standards for both new and existing power plants.

After lengthy consultation with state governments and legal wrangling with the energy industry, the EPA in October 2015 promulgated new carbon pollution standards for new, modified, and reconstructed power plants. The emission standards for
new units were set at levels achievable by most natural gas-fired units, but new coal-fired units would need to use carbon capture and storage technology to meet the goals.

However, the far more controversial elements of the Climate Action Plan were announced a few days later. In what President Obama characterized as “the biggest, most important step we have ever taken” to tackle climate change, he announced a goal of cutting greenhouse gas emissions from U.S. power stations by nearly a third within 15 years—a 32 percent reduction of carbon emissions from power plants compared with 2005 levels.29 The plan required individual states to submit plans by September 2016 to meet the goals and to have those plans operating by 2022. If states failed to create their own plans, the EPA would impose a federally-developed model on them. The model would allow participation in regional cap-and-trade emissions programs, which reward clean-burning power sources by giving them credits they can then sell to heavy polluters.

By allowing the states to create and manage their own plans to meet the goals, the Obama administration believed that it could blunt criticism that the federal government was being heavy handed. However, as soon as the plan was announced, 27 states and several major business groups launched a legal effort to block it. The states said the emissions curbs would have a devastating impact on their economies. More than a dozen other states and the National League of Cities, which represents more than 19,000 U.S. cities, filed court papers backing the rule.

In early February 2016, the U.S. Supreme Court voted to place the regulations on hold until the legal challenge is completed—the first time the Court has ever blocked an EPA regulatory action. Although many states had been preparing to comply with the regulations pending judicial resolution, the election of Donald Trump to the presidency has put the regulations’ prospects in doubt due to the new president’s stated opposition.30

**A New Departure under Xi Jinping**

When Xi Jinping became China’s most powerful party leader in November 2012, he suggested in his remarks to the media that environmental issues would receive greater attention. The Chinese people “love life,” he said in late 2012, and they wish for better education, more stable jobs, better medical care—in short, “more comfortable living conditions and a more beautiful environment.”31 This recognition of the rising public concern in China for the deteriorating ecosystem was more pointed than any Chinese leader had acknowledged before and suggested that Xi understood that his tenure would be judged, in part, on how he addressed growing alarm about the environmental and health effects of China’s three decades of unprecedented industrialization.

On the first day of 2013, the Chinese government began publishing the daily air quality index (AQI), measuring fine particulate matter per cubic meter in real time in 74 cities across the country. Suddenly, the deterioration of the country’s air quality became quantifiable. Within the first few weeks of this new government service, Beijing’s AQI soared up to 993, far beyond what health officials consider extremely dangerous.32
In September 2013, the Chinese State Council announced an action plan with 10 measures that it characterized as guidance for a national effort to control and prevent air pollution. It called for a five-year initiative to improve the air quality in the area surrounding Beijing by 25 percent, the Yangtze River Delta by 20 percent, and the Pearl River Delta near Hong Kong by 15 percent. The action plan focused on making polluters pay and rewarding energy efficiency, conservation, and emission reduction efforts. It set the overarching goal of reducing the country’s dependence on coal energy generation from over 75 percent to below 65 percent by 2017. By early 2014, the plan had been augmented with new goals of cutting the state-owned enterprise sector’s outdated steel production plant capacity by 27 million tons, cement production by 42 million tons, and shutting down 50,000 small coal-fired furnaces.

The Ministry of Environmental Protection put new regulations in place in 2014, calling for reductions in industrial pollution enforceable by fines, seizure of assets, and jail time, and incorporating environmental management into the central government’s assessment of provincial and local governments, which were previously judged only on economic performance. Under the new regulations, citizens affected by pollution can sue polluters. The law followed China’s Twelfth Five-Year Plan, issued in 2011, which named increased environmental protections as a national policy priority for the first time.

Progress in 2014 on improving the air quality in China was slow despite the new government commitments, in part because enforcement was still being left to local levels where industries sometimes struck deals with regional officials and found it easier to pay fines than reform. According to Beijing municipal authorities, the level of PM2.5—small airborne particles with a diameter small enough to deeply penetrate the lungs—declined by 4 percent in 2014 compared with 2013. But air quality in 68 of China’s 74 major cities, including Beijing, was still below acceptable Chinese air quality standards.

In March 2015, Chinese Premier Li Keqiang told the delegates to the National People’s Congress (NPC) that environmental pollution was a “blight” on the quality of life for the Chinese people and that the government must fight it with “all our might.” He pledged a new emphasis on weaning China from coal, promoting renewable energy, and making polluting companies “pay a heavy price” for their offenses.

Three major developments occurred at the NPC in March 2015 that showed that the tide had turned on Beijing’s commitment to dealing with the crisis:

• First, the NPC passed the first revisions to China’s Environmental Protection Law since 1989. These revisions, which went into effect in January 2016, allow central government environmental agencies to enforce strict penalties and even seize the property of polluters. The new law placed no upper limits on fines and stated that companies that break the law will be publicly criticized.

• Second, to demonstrate this new commitment, Beijing appointed Chen Jining, the president of the prestigious Tsinghua University and a holder of a doctoral
degree in civil and environmental engineering from the Imperial College London, as the new minister of environmental protection.\textsuperscript{39}

- Third, the NPC markedly increased national funding for energy conservation and emissions reduction work to over 47 billion yuan—a hike of more than 40 percent from the previous year.

In late September 2015, President Xi launched China’s boldest initiative on climate change to date—the creation of a new emissions trading scheme to begin operating in 2017 that will cover key industrial sectors such as iron and steel, power generation, chemicals, building materials, paper making, and non-ferrous metals.\textsuperscript{40} Xi’s announcement followed several years of pilot programs in seven provinces that have been closely studied by the central government. The irony that China has turned to a market-led cap-and-trade policy when the United States is still debating the issue is not lost on many observers.

**U.S.-Chinese Dialogue and the Road to Paris**

This domestic policy progress in combatting climate change in both countries laid the foundations for the breakthrough in bilateral cooperation around the issue in 2014-2015. Already on the occasion of his first visit to Beijing as U.S. president in November 2009, Barack Obama and then-Chinese President Hu Jintao (2002-2012) announced a package of measures to strengthen bilateral cooperation on clean energy. The most far-reaching of these was the creation of the U.S.-China Clean Energy Research Center (CERC).\textsuperscript{41} Supported by public and private funds, the research center facilitates joint research and development of clean energy technology by a team of scientists from the United States and China. It touts broad participation from universities, research institutions, and private industry, supporting more than 1,100 researchers, with more than 100 U.S. and Chinese partnering entities. In addition to CERC, the two presidents also agreed to launch a separate electric vehicles initiative, an energy efficiency action plan, a renewable energy partnership, a shale gas initiative, and an energy cooperation program.

Despite the positive bilateral atmosphere engendered by these agreements, the United States and China had difficulty finding common ground at the UN’s Copenhagen Conference in December 2009. By the end of the first week of negotiations, two make-or-break issues emerged that separated U.S. and Chinese negotiators: funding commitments of developed countries to support mitigation and adaptation efforts in developing countries and transparency surrounding the reporting of emissions. The first issue was resolved when Secretary of State Hillary Clinton announced that the United States was prepared to work with other countries to jointly mobilize “$100 billion a year by 2020 to address the climate change needs of developing countries... in the context of a strong accord in which all major economies stand behind meaningful mitigation actions and provide full transparency as to their implementation,” but the second issue remained unresolved.\textsuperscript{42} The conference was on the verge of ending without any kind of agreement when President Obama and Secretary Clinton were
informed that the leaders of Brazil, China, India, and South Africa were meeting separately to author their own statement on the conference. President Obama made his way into the meeting and, at the eleventh hour, forged an agreement with these leaders that “climate change is one of the greatest challenges of our time,” and recognized the scientific view that “the increase in global temperature should be below 2 degrees Celsius.” Although targets for reducing greenhouse gases were committed to by most major economies including the United States and China, it was clear that future UN climate change conferences needed to find a way to reach binding national commitments.

U.S.-China dialogue continued to move forward from 2010 to 2013 through such bilateral platforms as the U.S.-China Strategic Economic Dialogue, the U.S.-China Energy Efficiency Forum, and the U.S.-China Renewable Energy Forum. However, a new opening for major progress developed when President Xi and President Obama held an informal summit in June 2013, at the Annenberg Retreat in Sunnylands, California, just three months after Xi assumed the presidency. President Xi articulated a new model of great country relations with the United States in which China was treated more as an equal. One area that showed promise was on the environment. At the end of the summit, Obama and Xi were able to announce an entry point for such cooperation: The United States and China agreed to work together and with other countries to use the expertise and institutions of the Montreal Protocol to phase down the consumption and production of hydrofluorocarbons (HFCs).

By early 2014, President Obama brought John Podesta, former White House chief of staff under President Bill Clinton, onto his team, in part to reinvigorate environmental policymaking in his second term. President Obama realized that if the United States was going to lead the global community on combating climate change, he would need to get President Xi to help lead because of the influence China could exert on leaders in other emerging countries.

In June 2014, President Obama sent a high-level delegation including John Podesta to hold an in-depth discussion with Vice Premier Zhang Gaoli—a member of China’s Politburo Standing Committee and the senior-most policymaker on the environment. They engaged in a detailed discussion about their respective domestic policies, and the U.S. side pressed China to consider working on announcing targets for limiting greenhouse gases post-2020. Perhaps reflecting that President Xi’s administration needed more time to settle in before dealing with an issue of this magnitude,
the U.S. delegation left Beijing with only a vague promise from the Chinese that they might be ready to put a deal together in 2015.

In September 2014, President Obama sent President Xi another private letter outlining what might be accomplished when he visited Beijing for the November APEC summit. On his list was a joint announcement on combating climate change. Xi responded positively by asking Obama to make an unusual exception to protocol and meet with Vice Premier Zhang Gaoli at the UN Climate Summit in New York later that month. In that meeting, Zhang suggested that China was ready to complete a deal by the APEC summit.

John Podesta and U.S. climate change negotiator Todd Stern returned to Beijing during the last week of October and hammered out the outlines of a deal. On November 11, 2014, Xi and Obama told the world that the United States had agreed to a target of cutting greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2025 and to submit this target to the UN. China had agreed to a target of peaking greenhouse gas emissions around 2030, with the intention to try to peak early, and to increase the non-fossil fuel share of all energy generation to around 20 percent by 2030.47

The China-U.S. negotiations on climate change are a model of how the United States and China can find common ground on complex and weighty problems with global ramifications. Both leaders were committed to finding a way to combat global warming and exhibited an eagerness to find areas where the United States and China could collaborate to their mutual benefit. President Obama’s decision to place the negotiations in the hands of a seasoned political figure, known to carry great gravitas within U.S. politics, demonstrated to Beijing the seriousness that Obama attached to the issue. John Podesta did not present Zhang Gaoli with public demands but with an offer to jointly announce commitments, meeting President Xi’s expectation that the Americans would begin to treat China as an equal on the world stage. The meeting in Washington in March between Xi and Obama grew out of this approach. At that meeting, Obama announced to the world that “Our cooperation and our joint statements were critical in arriving at the Paris Agreement.”48 After the Paris climate change accord was reached, Obama called Xi and expressed appreciation for the “important role China played in securing an historic climate agreement.”49

**IMPLICATIONS OF CHINA’S PLEDGE**

China’s pledge to increase non-fossil fuel energy to around 20 percent is significant because China currently gets almost 90 percent of its energy from fossil fuels. U.S. negotiators pointed out that this commitment would mean it will have to install more nuclear, wind, solar, and other zero-emission generating capacity by 2030 than is produced by all of China’s coal-fired power plants today.
In addition to the 26 to 28 percent emissions cut by 2025 proposed by U.S. negotiators and reflected in existing U.S. law, the United States also stated its intention to pursue possible further reductions based on executive actions the president was likely to take during the rest of his term. U.S. climate change negotiator Todd Stern noted that 28 percent puts the United States on a straight-line path to 80 percent reductions from 1990 levels by 2050, a broadly shared goal within the international climate community. U.S. negotiators assessed that the Chinese agreement to move away from heavy dependence on fossil fuels for energy generation by 2030 was a major commitment that would set the bar for other emerging nations at the Paris Climate Change Conference. John Podesta stressed in an interview that, while China’s commitments are voluntary, Beijing is not prone to make international commitments that it is unready to fulfill. The Chinese Foreign Ministry spokesman in December seemed to echo this message, saying that the deal “gives full expression to China’s sense of responsibility as a major country tackling climate change.”

The agreement satisfied a longstanding Chinese principle of common but differentiated responsibility—that the developed world acknowledge that it held greater immediate responsibility for past environmental degradation and that the emerging world was still modernizing and needed to continue high rates of economic growth for some time before attempting to reduce greenhouse gas emissions. Both presidents were able to use the agreement to demonstrate to their domestic constituencies that they were aggressively tackling environmental problems. They also demonstrated to the international community that the world’s two largest emitters of greenhouse gases were ready to do their part to address the problem and that they expected others to do their part.

What is perhaps most impressive is the speed with which the divide between developed and developing states enshrined in both the UNFCCC and its Kyoto Protocol crumbled once the United States and China came to an agreement. Both developed and emerging economy countries in Paris in December 2015 stated their climate pledges, or “intended nationally determined contributions.” In this way, a bottom-up process had replaced the Kyoto model of targets and timetables that were internationally imposed. The threshold for entry into force was achieved on October 5, 2016, and the Paris Agreement entered into force one month later on November 4, 2016.
The Paris Agreement Going Forward

The NDCs in the Paris Agreement are only the beginning of an ambitious, iterative process. As noted in Paris, the voluntary plans presented are not sufficient to meet the goal of keeping global warming to below 2 degrees Celsius. Anticipating this outcome, the participating countries have agreed to revisit their commitments every five years in a global stocktaking designed to ensure that countries regularly strengthen their agreements.\textsuperscript{54}

Countries have agreed to meet again in 2018 to review achievements and inform the development of further pledges. As some countries have 2025 targets, they will be expected to put forward their 2030 targets by 2020. Starting in 2023, governments will come together every five years to take stock of the global situation based on the latest scientific findings and the progress to date. Under the agreement, countries are to comply with a transparency and accountability system under which they will submit to technical expert reviews, a multilateral peer review process, and a standing committee on implementation and compliance.

A vulnerability of the Paris Agreement is that, as the commitments are voluntary and need not be ratified by formal treaty, they are vulnerable to political developments in the individual countries. A major political development in the United States has already thrown the prospects of the Paris accord into question—the election of Donald Trump to the U.S. presidency. During his presidential campaign, Trump vowed to pull the United States out of the agreement. With the United States potentially turning away from the agreement, there is a chance that the historic accord will not have the impact envisioned by those who negotiated it.

The Future of U.S.-China Climate Change Cooperation

China’s demand for energy will continue to grow, albeit at a slower pace than in the past in part because of slowing economic growth. In 2010, China surpassed the United States as the world’s largest energy consumer and its energy needs will greatly outpace those of any other country into the foreseeable future. However, as outlined in China’s Thirteenth Five Year plan (2016-2020), Beijing has set ambitious goals of limiting its growth in energy consumption to about 15 percent by 2020. Fossil fuels will remain the largest energy source for China but, as part of the low carbon transition, the plan sets a target of having non-fossil fuels comprise 15 percent of the total energy mix by 2020 and 20 percent by 2030.\textsuperscript{55}

The Thirteenth Five Year Plan reflects China’s commitment to tackling climate change and outlines an ambitious set of targets for controlling greenhouse gases and ultimately setting a cap on them. Beijing plans to closely regulate emissions from energy-intensive industries like power and steel, build a unified national carbon emissions trading market, implement emissions reporting and verification for key industries, and
establish a green finance system. The plan reflects China’s commitment to peak carbon emissions by 2030 and also make its “best effort” to peak earlier.

The plan also reiterates China’s commitment to work bilaterally and globally to combat climate change. In that vein, climate change and clean energy remained a key topic at the 2016 Strategic and Economic Dialogue in Beijing and at the second meeting of the U.S.-China Climate Change Working Group held just prior to the dialogue. The seven-page report of the working group attests to the breadth and depth of cooperation.56 Some of the key initiatives are:

- **Heavy-Duty and Other Vehicles Initiative**: Begun in 2013, this initiative works to cooperatively enhance fuel efficiency standards, improve vehicle emission control technologies, and promote efficient, clean freight.

- **Electric Power Systems Initiative**: In 2013, both sides agreed to four collaborative smart grid demonstration projects. In December 2016, both sides jointly published a white paper on the analytic results of the four projects.

- **Carbon Capture, Utilization, and Storage Initiative**: The U.S. Department of Energy and China’s National Development and Reform Commission are working together to facilitate the development of pilot carbon capture, utilization, and storage projects in both countries to help drive down the cost of commercial projects.

- **U.S.-China Climate-Smart/Low-Carbon Cities Initiative**: The initiative’s goal is to respond to increased urbanization by sharing at local levels experiences and best practices in mitigation and climate resilience. Annual summits have been held in Los Angeles and Beijing, with Boston set to host in 2017.

On the sidelines of the G-20 summit in Hangzhou in early September, President Obama and President Xi had one last opportunity before the end of Obama’s presidency to meet and discuss their successful collaboration on climate change. On September 3, Obama and Xi presented to UN Secretary General Ban Ki-moon their respective legal instruments to join the Paris Agreement. The following month, the international community reached agreement on both the Kigali Amendment to the Montreal Protocol and the Carbon Offsetting Scheme for Global Aviation. Also at the G-20, the results of the first peer review were presented on “rationalizing and phasing out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption.”

In 2013, the United States and China agreed to advance this agenda item by allowing the OECD to conduct the first round of fossil fuel subsidy peer reviews on their economies.57 The OECD’s report on China proposes nine inefficient fossil fuel policies for reform, most of which are exemptions from excise or land-use taxes that benefit fossil fuels. The largest concerns a bundle of subsidies for fossil fuels used in transport, and is worth around $15 billion. The OECD’s report on the United States highlights 16 policies for reform, most of which are special features of the tax code relating to upstream activities, such as the exploration, development, and extraction of oil of natural gas.58
If President Trump reaffirms the Paris Agreement, other pressing issues also need further discussion in the near term. How can the United States and China cooperate with other global players to more effectively ensure that developing nations have the funding and access to the appropriate low-carbon green technologies needed to meet their emissions targets? Is there more room for U.S. and Chinese experts to cooperate to create more advanced green technology solutions? The past few years have proven that Beijing and Washington can find a way forward on this key global issue. The challenge now is to sustain and build on this impressive achievement.
Notes


19 Lewis, “China’s Environmental Diplomacy,” 211.


21 Lewis, “China’s Environmental Diplomacy,” 212.


28 “Remarks by the President on Climate Change.”


