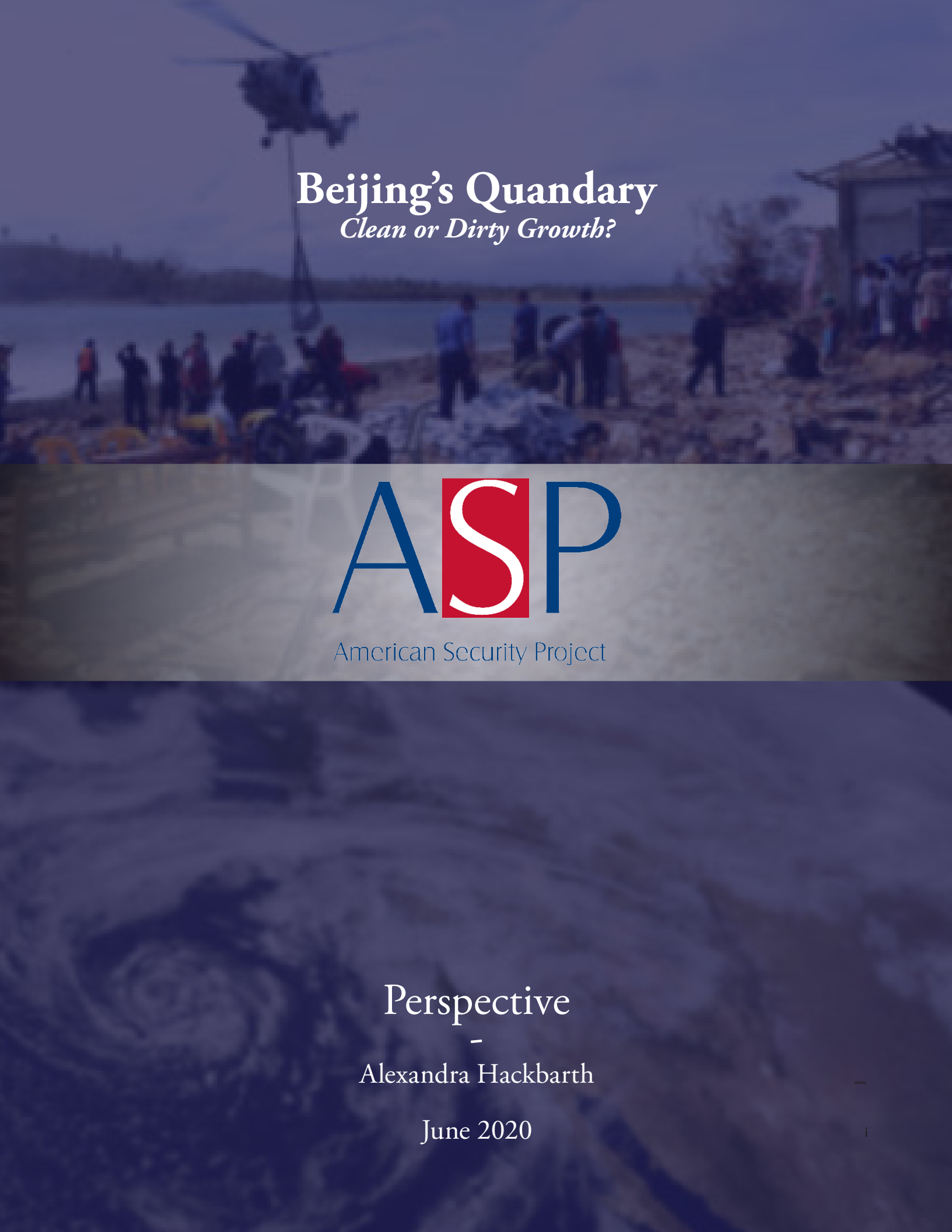

Beijing's Quandary

Clean or Dirty Growth?

ASP

American Security Project

Perspective

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Alexandra Hackbarth

June 2020

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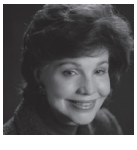

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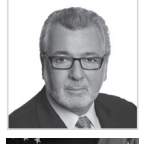

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David Wade is a consultant helping global corporations and organizations with strategic advice, public affairs and thought leadership, crisis communications, political intelligence gathering, and federal and legislative strategy.

Climate Security

In this Report:

China's leadership faces a difficult quandary: how best to balance economic growth and reductions in carbon emissions. In the wake of coronavirus, this balance becomes even more important and difficult. Decisions made now in Beijing may well determine whether it is possible to keep global temperatures from rising more than 2°C above pre-industrial levels, as the 2015 Paris Agreement prescribes.

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IN BRIEF

- To combat climate change, global temperatures must not rise more than 2°C above pre-industrial levels. Drastic reductions in carbon emissions are critical to keeping temperatures below this threshold.
- As the world's largest carbon emitter, China is critical to this effort. China is the world's largest carbon emitter in part due to the government's emphasis on economic growth and poverty reduction.
- For decades, China's economy and coal consumption grew at breakneck speeds. Now, China's leadership faces a difficult quandary: how to grow the economy and reduce carbon emissions.
- Coronavirus has made this balance more difficult, and Beijing's decision will have global implications.

About the Author

Alexandra Hackbarth is the Director of Climate and Energy Security at the American Security Project. She graduated from the Maxwell School at Syracuse University in 2015 with masters' degrees in public administration and international relations. Alexandra studied at Tsinghua University in Beijing as part of her graduate work. From 2017-2019, Alexandra served in Kabul, Afghanistan, as the Special Advisor for Forward Operations for the Special Inspector General for Afghanistan Reconstructions (SIGAR).

Beijing's Quandary

China's leadership faces a difficult quandary: how best to balance economic growth and reductions in carbon emissions. In the wake of coronavirus, this balance becomes even more important and difficult. Decisions made now in Beijing may well determine whether it is possible to keep global temperatures from rising more than 2°C above pre-industrial levels, as the 2015 Paris Agreement prescribes.

China's Growth

To appreciate China's quandary, it is crucial to understand the importance the Chinese Communist Party (CCP) places on economic growth. On December 18, 1978, Deng Xiaoping began the Third Plenary Session, promising "reform and opening."[1] Deng understood that China needed to develop, and development required a stable environment conducive to investment and trade. To cultivate this environment, China made reforms that paved the way for its gradual integration into the U.S.-led liberal international order.

Between 1980 and 2017, China's economy grew at a breakneck speed. China's real gross domestic product (GDP) grew at an average annual rate of roughly 10 percent.[2] According to the World Bank, China has "experienced the fastest sustained expansion by a major economy in history—and has lifted more than 800 million people out of poverty."[3]

As a result of China's dramatic growth, it is a major global economic power and the world's largest carbon emitter. Between 1990 and 2017, China's carbon emissions increased fourfold.[4] In 1990, China emitted 2,089 metric tons of CO_2, and in 2017, China emitted more than 9,000 metric tons of CO_2. This increase is in part due to China's reliance on fossil fuels for energy and industry, primarily coal.

Over the last thirty years, China's annual coal consumption increased from 0.99 billion tons to 4.64 billion tons.[5] In 2011 alone, China burned nearly as much coal as the rest of the world combined.[6] More recently, in 2018, coal made up 59 percent of China's total energy use.[7]

In the early 2010s, China's carbon emissions began to plateaue. This plateau is in part due to Xi Jinping, who became China's president in 2012. Under President Xi's leadership, the government began a transition from a large manufacturing- and export-driven economy toward a service- and consumer-driven one. President Xi believed this transition would help sustain the country's growth, albeit at a slower rate, over the coming decades.

President Xi's transition included investment in renewable energy. Investment served two purposes: continued economic growth and a reduction in emissions. According to the Global Commission on the Geopolitics of Energy Transformation, "no country has put itself in a better position to become the world's renewable energy superpower than China."[8]

China's share of total global renewable energy investment is approximately 23 percent.[9] From 2013 to 2018, China's investments in renewables increased more than twofold.[10] However, investment in renewables has fallen since 2018.

China's investment paved the way for it to become the world's largest market for renewable energy. China will generate roughly one in every four gigawatts (GW) of global renewable energy through 2040.[11] As a comparison, China's share of global GDP is roughly 15 percent.[12]

Hydroelectric Power

Between 2012 and 2017, hydroelectric power was China's third-largest source of electricity, behind coal and oil. China has constructed four of the ten largest energy-producing hydroelectric dams in the world, including the controversial Three Gorges Dam.[13] Three Gorges alone cost over $37 billion, is the world's largest, and can produce 22,500 megawatts (MW) of electricity.[14]

Three Gorges Dam, China circa 2004. Photo credit: Richard Chambers / Wikimedia Commons. CC BY-SA 3.0

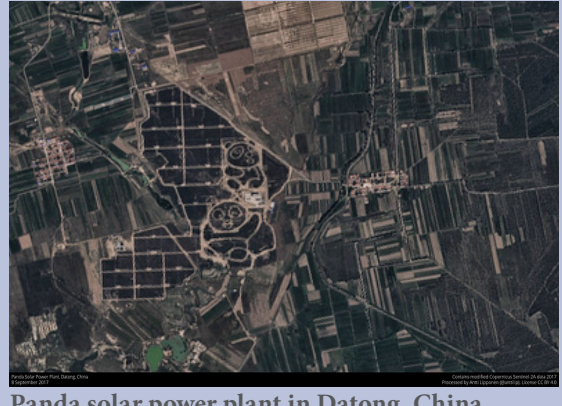
Wind Power

China's electricity derived from wind increased more than threefold between 2012 and 2017.[15] China's electricity generated by wind power accounted for roughly 2.1 percent of its total energy consumption in 2012, compared to 3.7 percent in the U.S.[16] In 2017, China's wind-energy generation surged to 295 billion kilowatt-hours (kWh) and accounted for over 25 percent of the global wind-energy generation.[17] According to the Global Wind Energy Council, China installed 21 GW of onshore wind capacity and 1.6 GW of offshore capacity in 2018.[18] These installations cement China's position as the world's largest wind power market. Its onshore capacity represents 46 percent of the world market, while its offshore is 40 percent of the market.

A wind farm outside of Urumqi, China.

Solar Photovoltaic Power

China is both the leading supplier and consumer of solar photovoltaic technology. Due to rapidly decreasing manufacturing costs, aggressive policy incentives, and low-interest rate loans from the government, China has drastically increased the production of solar panels. China is now home to two-thirds of the world's solar production capacity and is home to the world's largest solar farm in the Tengger Desert. However, solar is still a small percentage of the country's overall energy mix. In 2017, solar electricity generated only 130,658 gigawatt-hours (GWh), compared to 4,485,361 GWh from coal, according to the IEA.[19]



Panda solar power plant in Datong, China. Image Credit: Antti Lipponen / Wikimedia Commons. CC BY 2.0.

President Xi's strategy also included a shift in China's climate diplomacy. At the 2009 Copenhagen Summit, or COP15, China opposed the idea of pushing developing countries, including itself, to make cuts in carbon emissions.[20] In 2014, China and the U.S. signed an accord to reduce carbon emissions in the hope of spurring other countries to also reduce emissions.[21] All of this laid the groundwork for the carbon emissions reductions agreed to in the 2015 Paris Agreement.[22]

President Xi's strategy was mostly successful. The economy continued to grow, and China's carbon intensity, a measure of emissions per unit of GDP, did decrease; however, China's overall carbon emissions did not.

In late 2019, the Chinese economy grew only 6.1 percent, the lowest level in nearly three decades.[23] To combat the sluggish growth, Premier Li Keqiang announced the relaxation of government air-quality controls and urged the coal industry to play a role in securing the country's future.[24] Many speculate this policy announcement was designed to assist important, yet dirty, drivers of economic activity, like the coal and cement industries.[25]

In January 2020, China and the U.S. signed Phase One of a bilateral trade agreement. This agreement committed China to increase imports of U.S. crude oil and natural gas. Specifically, China committed to $18.5 billion in energy imports in 2020 and $33.9 billion in 2021.[26] This trade deal is illustrative of the U.S.' retreat from its position as a global climate leader, and possibly China's retreat as well.

Premier Li's announcement, combined with the declining investment in renewables and China's commitment to import fossil fuels from the U.S., suggest that Beijing may favor economic growth over reducing carbon emissions. However, it is unclear whether this is a shift to achieve a short-term economic goal by the end of 2020 or a longer-term change in priorities.

China's Future

Beijing expected 2020 to be a celebratory year, marking the doubling of the economy in the last ten years. The novel coronavirus, however, has shattered all economic forecasts.

When the coronavirus emerged in Wuhan, the government implemented draconian measures to prevent the spread. These measures saved lives but also shut down China's economic engine. China is reopening, but the economic damage is severe.

China's economic indicators for the first quarter were significantly weaker than had been predicted. As a result, analysts have downgraded China's economic outlook. Even with economic stimulus policies, estimates for growth in 2020 vary from 1 percent to 4 percent; growth numbers below 6 percent will prevent China from reaching its economic goal by the end of the year.

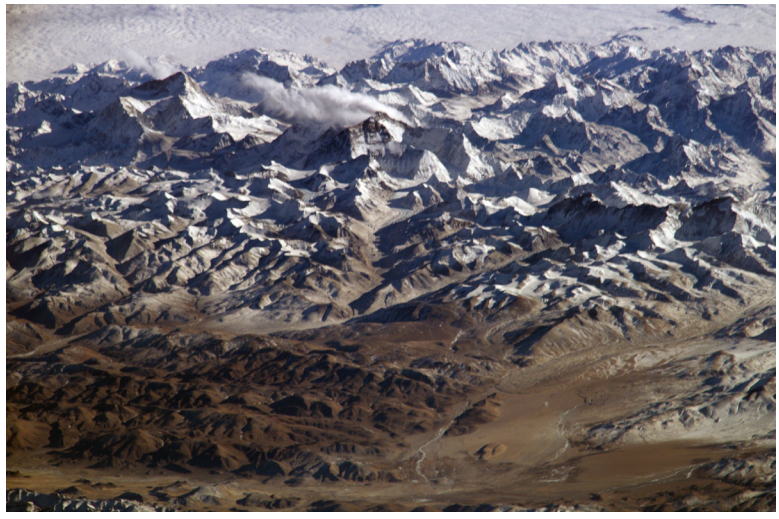
No one knows how the Chinese government will stimulate growth in response to coronavirus; however, it is important to note that much of the CCP's legitimacy rests on its ability to grow the economy. To that end, Beijing may elect to prioritize short-term economic goals over long-term sustainability, loosening environmental regulations and their enforcement.[27] In this scenario, China's carbon emissions are likely to increase dramatically, limiting the world's ability to achieve the targets set in Paris.

China's Decision Has Global Implications

Global carbon emissions need to decline by about 3 percent annually to limit warming to the 2°C target.[28] However, actual emissions have grown by about 2 percent annually over the last twenty years.[29] Scientists say that if temperatures surpass 2°C above pre-industrial levels, the adverse effects—sea-level rise, worsening storms, extreme heat, and melting sea ice—will be devastating.

China is not immune to the effects of climate change. Nearly 30 percent of China's territory is covered by desert, affecting 400 million people.[30] Human and environmental factors are mostly to blame, but climate change is making China's desertification worse. The northwest region is especially sensitive to warming temperatures; it is already very arid, and the annual precipitation in the area is below 100 millimeters annually.[31] Increasing desertification threatens to destroy homes and farmland, forcing millions of Chinese to move to already crowded cities, testing the limits of infrastructure, and posing a threat to stability.

In China's backyard, disappearing Himalayan glaciers will affect a critical water source for 250 million people living across eight different countries.[32] The glaciers feed ten of the world's most important river systems, including the Ganges, Indus, Yellow, Mekong, and Irrawaddy rivers. These rivers directly or indirectly supply billions of people with food, energy, and livelihoods. Without the glacial water from the Himalayas, billions may migrate in search of water, food, and jobs, potentially stoking ethnic tensions and threatening regional stability.



The Himalayas. NASA Photo.

If temperatures warm such that Arctic summers are ice-free by 2050, as some scientists predict, a new frontier will open.[33] An Arctic free of ice may mean billions of dollars in investment for energy production, maritime navigation, and fishing. However, it may also inflame geopolitical rivalries, as Arctic and near-Arctic nations increase their regional military presence.

Extreme drought threatens crop yields and food security. The World Economic Forum (WEF) predicted that just 1.5°C of warming by 2030 could lead to a 40 percent loss in maize crops in sub-Saharan Africa, a vital breadbasket for the Middle East and North Africa.[34] Corn, wheat, rice, and soy make up two-thirds of human caloric intake. With each degree of warming, these crops will see decreased yields (7 percent, 6 percent, 3.2 percent, and 3.1 percent, respectively).[35]

A young man in drought conditions in Ethiopia. USAID photo.

Decreasing crop yields present a threat to livelihoods and regional stability. Agriculture is a significant source of employment in the region. In Egypt, Sudan, and Ethiopia, more than 50 percent of all employment is linked to agriculture.[36] The region's bulging youth population, growth rate, and high rate of youth unemployment make it vulnerable to civil unrest. The collapse of the agriculture industry due to crop failure or supply chain disruptions—like those casued by COVID-19 or the recent locust swarms—would lead to food shortages, price spikes, widespread hunger, and likely force millions to migrate to an urban center in search of food and work. Widespread migration will exacerbate overcrowding, intensify competition for jobs, and pose a threat to stability and security in the Middle East and Northern Africa.

Decisions in Washington May Affect Beijing's Course

Much emphasis is put on China to reduce emissions. However, the U.S. must do its part too. China is not going to make difficult policy decisions to reduce emissions, potentially forgoing economic growth, if the U.S. is not also reducing emissions. To that end, the U.S. must resume its position as a climate leader and make reducing carbon emissions a national priority.

Rather than retreating from climate leadership, the U.S. should be out front leading the way. Rather than withdrawing from the Paris Agreement, the U.S. should be integral to achieving the targets. Rather than rolling back fuel efficiency standards, the U.S. should be investing in the adoption of electric vehicles and the infrastructure needed to support their long-distance use.[37] Rather than replacing the Obama-era Clean Power Plan, the U.S. should be promoting the use of renewable and clean energy sources.[38]

Conclusion

Beijing faces a quandary: how to balance continued economic growth and reductions in carbon emissions. The CCP's legitimacy and ability to maintain power hang in the balance. Coronavirus, unfortunately, has made this decision much harder. Decisions made now in Beijing will echo around the world for decades.

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We believe that America must lead in the pursuit of our common goals and shared security. We must confront international challenges with our partners and with all the tools at our disposal and address emerging problems before they become security crises. And to do this we must forge a bipartisan consensus here at home.

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We live in a time when the threats to our security are as complex and diverse as terrorism, nuclear proliferation, climate change, energy challenges, and our economic wellbeing. Partisan bickering and age old solutions simply won't solve our problems. America – and the world - needs an honest dialogue about security that is as robust as it is realistic.

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