

# COLUMBIA GLOBAL ENERGY DIALOGUE

## GREEN STIMULUS PROPOSALS IN THE UNITED STATES AND CHINA

On June 14, 2020 New York time and June 15, 2020 Beijing time, the Center on Global Energy Policy at Columbia University and Center for International Energy and Environment Strategy Studies at Renmin University convened a joint Zoom workshop on green stimulus programs in the US and China. The workshop offered a chance for scholars from the two universities to explore the recent economic downturn due to the COVID-19 pandemic, stimulus measures adopted to date and green stimulus proposals in both countries. Participants also discussed other measures to promote clean energy and low-carbon development in the US and China.

This summary highlights main points made by participants during the discussion.

### Recent Economic Downturn

COVID-19 has produced a sharp economic decline in both the United States and China.

In the United States, gross domestic product (GDP) declined by an annual rate of roughly 5 percent in the first quarter (Q1) of 2020 as compared to the fourth quarter (Q4) of 2019. In Q2, GDP is projected to decline in the range of 25–40 percent, with consumer spending down at the upper end of that range. The unemployment rate reached nearly 15 percent in April 2020 and fell slightly back to 13 percent in May, according to official data. However, these official numbers may understate unemployment by excluding roughly five million people who are on temporary furlough and six million people who left the labor force due to the virus but intend to come back to find another job. Taking those people into account, the unemployment rate in April would have been close to 20 percent, significantly higher than the peak unemployment rate of 10 percent during the 2008–2009 Great Recession.



In China, GDP fell by 6.8 percent year-over-year in Q1 of 2020—the first quarterly GDP decline in more than 40 years. All key sectors except finance and information technology showed negative growth rate during the same period. Power demand fell by roughly 9 percent. Key parts of the economy began to reopen in April and May, beginning to show strong growth. In May, Chinese car sales increased on a year-over-year basis for the first time in two years.

Projections for the rest of the year and beyond depend heavily on the path of the virus and availability of a vaccine.

In the US, annual GDP in 2020 is expected to decline by 5–6 percent in real terms—significantly more than the 2.5 percent GDP decline in 2008. GDP is not expected to return to pre-COVID-19 levels in nominal terms until the end of 2022. The long-term growth rate for the US economy is still 1.5–2 percent in real terms.

Earlier this year the Asia Development Bank (ADB) forecast a 6 percent GDP growth rate for China in 2020, and the Chinese government expected the same. In its June 2020 Outlook Supplement, ADB adjusted its forecast to 1.8 percent. The International Monetary Fund and World Bank project a 2020 GDP growth rate for China of roughly 1 percent. The central government has decided not to publish a GDP target for 2020 and is targeting an unemployment rate of roughly 6 percent, Consumer Price Index increase of roughly 3.5 percent and deficit-to-GDP ratio of roughly 3.6 percent.

## Stimulus Measures to Date

The US Congress passed four bills in March and April, which collectively provided fiscal stimulus of \$2.4 trillion (about 11 percent of US GDP). These bills focused on COVID-19 testing and vaccines, loans to distressed business, extended unemployment benefits and checks to individuals. House Democrats have passed legislation to provide another \$3 trillion of stimulus, with additional unemployment benefits and support for state and local governments; however, the legislation does not have support from the Senate Republican majority or president. None of these bills includes “green” items (targeting clean energy or environmental protection).

In addition, the US Federal Reserve (Fed) has provided \$2.9 trillion of stimulus in less than three months (an unprecedented amount, far greater than the \$1.4 trillion stimulus over two years it provided during after the 2008–2009 Great Recession). The Fed’s objectives are to ensure that credit continues to flow and the financial system does not amplify the shock to the economy. The Fed has cut its target discount rate for short-term loans to banks by 1.5 percentage points, bringing it down to a range of 0–0.25 percent. The Fed is using emergency authority provided by the US Treasury Department, along with \$454 billion provided by the CARES Act, to lend to nonfinancial institutions—a controversial policy. Despite the significant expansion in the money supply, inflation expectations are modest.

In China, stimulus proposals have been announced more gradually than in some other major economies. The Chinese government has announced plans to create nine million new urban jobs and cut taxes and fees for small- and medium-sized businesses by RMB 2.5 trillion. It has announced plans to issue RMB 1 trillion of government bonds for COVID-19 control and RMB 3.75 trillion of special local government bonds to develop next-generation

information networks, build electric vehicle charging and battery facilities, renovate 39,000 urban residential communities and increase national railway development capital. A “New Infrastructure” campaign is being launched to boost sustainable growth. The New Infrastructure campaign encompasses seven areas: 5G networks, industrial internet, new electric vehicle charging stations, ultrahigh voltage transmission lines, artificial intelligence, data centers and inner-city rail systems.

### Green Stimulus Proposals

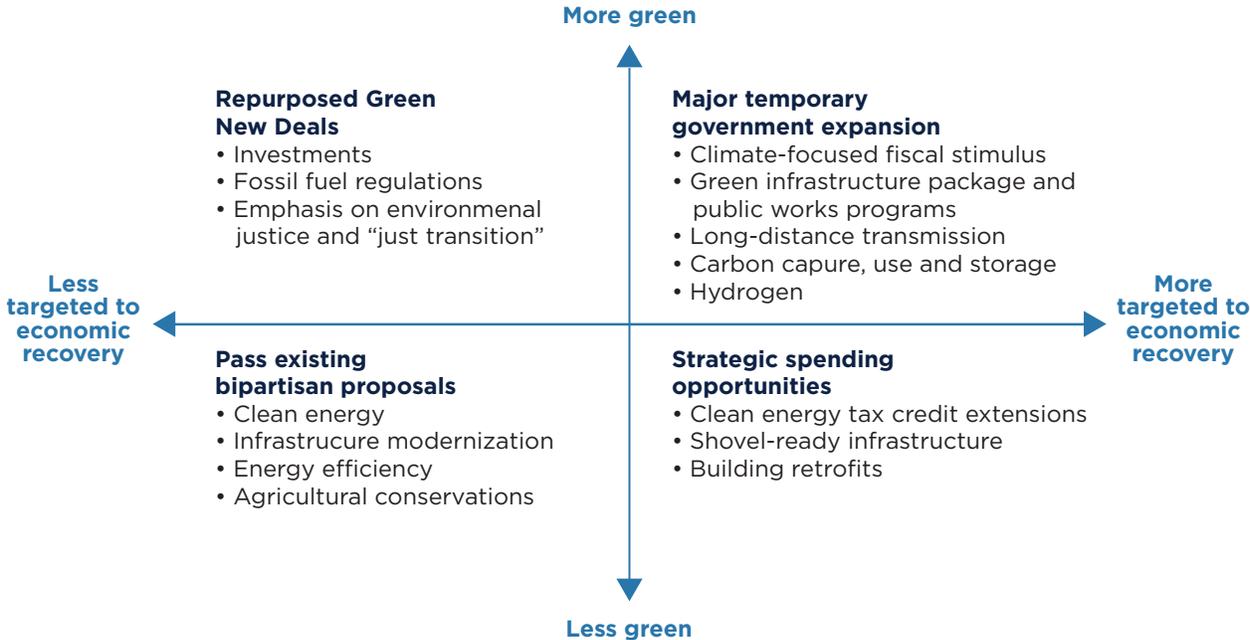
“Green stimulus” is generally understood to mean measures that stimulate the economy while promoting clean energy, responding to climate change and/or protecting the environment more broadly.

#### US Federal Government

No green measures have been included in US stimulus bills to date. Dialogue concerning possible green stimulus measures in future legislation has been growing, with a range of proposals offered.

These proposals have a variety of different attributes. One organizing tool is to group these proposals into four quadrants, based on the extent to which each is more or less focused on economic recovery and more or less focused on clean energy, climate change and environmental protection.

Figure 1: Proposals for Green Recovery in the US



If Congress passes another round of economic stimulus this year, that legislation will likely include support for a wide range of businesses (including clean energy) as well as state and local governments. The support for state and local governments will be spent in part on public transit and programs that may help mitigate and adapt to climate change. Provisions specifically targeted at clean energy—such as clean energy tax credits, shovel-ready green infrastructure and building retrofits—are less likely.

In the longer term, the prospects for green stimulus legislation depend on the outcome of the 2020 election. Possible long-term measures include green banks, support for emerging clean energy industries (e.g., offshore wind), demonstration projects for low-carbon technologies, federal procurement of steel and cement with a low-carbon footprint and green public works programs. Green infrastructure projects could be an especially important opportunity for economic stimulus over the medium to long term. Possible project areas include electric vehicle charging networks, high-speed rail, transmission lines, CO<sub>2</sub> and hydrogen pipelines, and climate change adaptation measures (e.g., sea walls, levees and port-hardening infrastructure).

Expectations for green stimulus in the US are fairly low due to political constraints and the limited impact of using spending as a tool to achieve emissions reduction in the absence of a climate policy framework. Under an optimistic scenario, a green stimulus could help the US continue to decarbonize but will not be transformative from an emissions reduction perspective.

### **Chinese Central Government**

Green issues have not been central to the Chinese government's stimulus plans to date. However, both electric vehicle charging and mass transit have been identified as new infrastructure that will receive priority stimulus investments. Other central government stimulus priorities such as big data and 5G will help improve infrastructure operations, efficiency and connectivity, cutting carbon emissions by reducing energy use and helping integrate variable renewables into electric grids.

There is a risk that some stimulus measures will lock in high-carbon infrastructure. Since the COVID-19 epidemic began, nearly 10 gigawatts of coal power projects have been permitted by provincial and local governments. To help promote low-carbon development and prevent carbon lock-in effects, economic stimulus measures in response to COVID-19 should incorporate green fiscal and finance instruments as part of corporate rescue packages.

The COVID-19 green stimulus package could draw both positive and negative experiences from the economic stimulus during the 2008 financial crisis. One good example was the investment in China's high-speed rail network, which helped break the development bottleneck in some regions rather than concentrate economic development in the crowded and heavily polluted eastern regions. One example with adverse effects was the overinvestment in coal power capacity in the face of low growth in electricity consumption.

Investments in infrastructure for clean hydrogen and carbon capture and storage, including hydrogen and CO<sub>2</sub> pipeline networks, would create jobs while helping China meet its climate goals. Today's stimulus should be consistent with the strategic goals of high-quality development and comprehensive modernization, as well as the 2030 Sustainable Development Goals and the Paris Agreement.

## US State Governments

The economic crisis resulting from COVID-19 is hitting US state governments hard. 49 of the 50 state governments are required by their state constitutions to have balanced budgets, and many state budgets are facing severe shortfalls. Cumulatively, those deficits are in the range of \$750 billion and getting larger. The only measure passed to support state governments to date is the Coronavirus Relief Fund of \$150 billion, which was passed with the CARES Act. As state agencies will be essential partners in green stimulus programs, these deficits will make it difficult to implement green stimulus measures in many states.

The impact of the COVID-19 on the California economy has been especially significant. Tourism and education, two of California's primary economic drivers, have been severely hurt. Currently, California has an approximate 20 percent unemployment rate and a \$54 billion budget shortfall. Governor Gavin Newsom announced a budget in May with a \$19 billion cut overall, including a 94 percent reduction to environmental, climate and energy spending. The cut included a proposal of \$1 billion climate catalyst revolving fund and \$4.75 billion climate bonds for wildfire, flood and drought resilience (which is a major challenge that California has been facing over recent years). In addition, due to the reduced demand for fossil fuels, California's cap-and-trade program has been generating severely reduced revenue (\$25 million compared with \$600-\$800 million raised in previous years. More than 100,000 green jobs are estimated to have been lost, especially in the areas of energy efficiency and residential solar, due to the limitation of being able to do physical installation.

In response to the pandemic, Governor Newsom has established a task force working on the Business and Jobs Recovery Plan. Cochaired by billionaire climate activist Tom Steyer, the task force includes all living ex-governors in the state, business leaders, labor and union leaders, academics and others. Proposals to the task force have included recommendations to create new financing mechanisms, such as a new "green stimulus bank," and to invest in grid integration, allowing surplus solar and wind power to be exported to nearby states. Another area of opportunity is to fund climate in all policies. Two recently signed executive orders will require climate to be considered in every aspect of state government, including the development of a state Climate Investment Framework.

## Chinese Provincial Governments

A recent McKinsey report provided a "4 + 3 + 3" framework of action plan for China in response to challenges related to climate change. The framework recommended four measures in mitigation focusing on decarbonization, three measures on adaptation prioritizing the resiliency of planning and infrastructure, and three measures on supporting sustainable economic development emphasizing global impacts on other developing countries. There is great overlapping between the approaches adopted by the Chinese provincial governments and McKinsey's 4 + 3 + 3 strategy. On climate change mitigation, provincial plans mostly cover energy demands, supply, carbon management and other greenhouse gases. On climate adaptation, provincial plans mostly focus on the city plans, financial models, and insurance models and insurances.

Chinese provincial governments play important roles in economic stimulus. Stimulus measures

mentioned in recent provincial plans and reports include green stimulus and “not-so-green” stimulus. Green stimulus measures include development of renewable power, hydrogen networks, energy storage and electric vehicle charging stations as well as the elimination of thermal power units. Not-so-green stimulus includes fossil fuel redevelopment, oil and gas pipelines and reserves, and power grid constructions. The green stimulus measures identified are included in most of the provincial documents.

### Green Stimulus and Innovation

The real cost of borrowing in many countries has become negative, creating an opportunity for governments to deliver significant returns with investments in a range of productive activities, including innovation. Public funding for clean energy research and development will create jobs, produce high long-term economic returns and reduce emissions. Although job creation from research and development (R&D) investments is mostly in the long term, the cost per job created is low.

China now spends twice the US on energy innovation as a percentage of GDP. Germany’s recently announced recovery package includes a large component for research, development and demonstration of new technologies. Among the many areas clean energy R&D investments could target are energy storage, industrial decarbonization and carbon removal technologies. The US, China and other economies should include clean energy R&D in their economic stimulus packages as they recover from COVID-19.

### Conclusion

Participants agreed that the exchange of views and perspectives had been valuable for all. They agreed to continue sharing perspectives on these topics in the months ahead.

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Statements in this report reflect the views of participants in the Columbia University–Renmin University workshop, not necessarily those of the authors of this report.

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