

**U.S. Climate-Related
Financial Risk
Executive Order 14030**

**A ROADMAP TO BUILD
A CLIMATE-RESILIENT
ECONOMY**

OCTOBER 14, 2021



**THE WHITE HOUSE
WASHINGTON**



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Climate-Related Financial Risk: A Roadmap for Safeguarding the U.S. Economy

Climate change poses serious and systemic risks to the U.S. economy and financial system. As outlined in this report, the United States government is using all of its tools to properly account for and mitigate climate change-related financial and economic risks, as climate impacts are already affecting American jobs, homes, families' hard-earned savings, and businesses. The country must work with urgency to reduce the risks of climate change by addressing its drivers and creating a stronger, more resilient economy. This report lays out a roadmap for measuring, disclosing, managing, and mitigating climate-related financial risk across the economy, including to the Federal Government, while also catalyzing public and private investment to seize the opportunity of a net-zero, clean energy future.

“The intensifying impacts of climate change present physical risk to assets, publicly traded securities, private investments, and companies...the failure of financial institutions to appropriately and adequately account for and measure these physical and transition risks threatens the competitiveness of U.S. companies and markets, the life savings and pensions of U.S. workers and families, and the ability of U.S. financial institutions to serve communities. In this effort, the Federal Government should lead by example by appropriately prioritizing Federal investments and conducting prudent fiscal management.”

—President Joseph R. Biden Jr.
Executive Order 14030, Climate-Related Financial Risk
May 20, 2021



Foreword

The scientific evidence on climate change has grown increasingly stark. Continued warming will further destabilize our climate and produce more frequent and intense storms, wildfires, and heatwaves as well as more damaging droughts and more extensive ecosystem losses. In August 2021, the United Nations’ Intergovernmental Panel on Climate Change released its latest report in which 234 of the world’s leading scientists, citing over 14,000 different studies, concluded with high confidence that the climate crisis is a “code red for humanity.”

This year alone, extreme weather has upended the U.S. economy and affected one in three Americans. Wildfires have burned nearly six million acres of land—equivalent to the total land mass of Massachusetts and Rhode Island combined—and destabilized international supply chains. After carving its destructive path through the Gulf of Mexico and stalling commodity exports to the world, Hurricane Ida took down the New York City subway system for hours, dumping a record 3.15 inches of rain in a single hour and bringing commerce in the most populous city in the United States to a halt.¹ On the other side of the country, the Hoover Dam’s Lake Mead reached its lowest level since the dam was built in 1931, causing the government to declare the first-ever water shortage on the Colorado River and prompting water cutbacks for regional farmers and the economies they support. As this year draws to a close, the total damage of extreme weather will build upon the \$99 billion already incurred by American taxpayers in 2020.

Yet, even as the magnitude and urgency of the climate crisis accelerates, the tools we use to assess risks to the U.S. economy—to families, to businesses, and to government—have failed to keep pace. Wall Street financial models and investment portfolios that manage the assets of millions of Americans continue to rely on the basic assumption that the climate will be stable. Climate risk reporting and disclosure frameworks, although improving, remain inconsistent and only partially adopted by most U.S. companies. In addition, the Federal Government’s assessments of fiscal and macroeconomic risks have yet to incorporate the physical and transition risks of climate change. In short, the current suite of data, tools, disclosures, and mitigation strategies fail to help investors, policymakers, and the public understand and make decisions grounded in the economic realities of the climate crisis.

As a result, America’s families, workers, and businesses large and small are vulnerable. The U.S. Government, as a whole, is vulnerable. Hard-earned life savings are invested in businesses that are unprepared for the low-carbon transition and thus riskier than current disclosure reveals. Disadvantaged communities in flood- and fire-prone areas are disproportionately exposed to flooding caused by climate change, putting homes and generational wealth at risk. Farmers face increasingly volatile crop yields, making it more challenging to sustain their businesses and feed America’s families. In failing to disclose these risks, the Federal Government’s balance sheet falls short of providing a credible assessment of the nation’s fiscal position. Across the board, hidden and underestimated risks from climate change obscure the growing potential for business disruptions, productivity loss, and bankruptcies.

¹ <https://www.nytimes.com/2021/09/02/nyregion/basement-apartment-floods-deaths.html>



By sustaining the status quo, we not only face the mounting repercussions of climate change, but also bear the opportunity cost of missing out on an historic chance for job creation, shared prosperity, and a more resilient future. The United States must integrate climate risks throughout all relevant aspects of the economy and financial system. And, in doing so, it must meet the moral and economic imperative to rectify decades of disproportionate environmental damage imposed on historically disadvantaged neighborhoods.

This report lays out a strategy to advance a whole-of-government effort that safeguards workers and families from financial loss and positions the United States for success in the fight against climate change. It includes a roadmap for a long-term effort to build climate resilience throughout the U.S. economy and drive better long-term investment outcomes for ordinary Americans.

Specifically, this report pushes forward on a broader economic strategy that invests in the country's physical and human infrastructure, reimagines public procurement policy as a tool to strategically shape markets and spread innovation, embeds resilience within supply chains critical to the clean energy transition, leverages the full talent and creativity of all Americans by elevating equity as a top priority in all policy decision-making, and restores the United States' relationship with key allies internationally, finding common ground to meet the global goals of the Paris Agreement.

Protecting the financial health of American households, decarbonizing the United States, and building an economy from the bottom-up and the middle-out all go hand-in-hand. This has been a point of emphasis for the President since his very first day in office, and it will remain an important unifying theme in the days ahead.

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Introduction

This is a decisive decade that will be defined by the world’s collective ability to mitigate and adapt to the catastrophic impacts of global climate change. Over the past century and a half, growing accumulations of greenhouse gases have increased the planet’s global average surface temperature by an estimated 1.1°C.² In its most recent report, the Intergovernmental Panel on Climate Change (IPCC) estimated that the planet will continue to warm until at least the middle of the century.³

The changing global climate poses profound risks to the U.S. economy and financial system. The intensifying impacts of climate change for example - such as increased extreme weather - present *physical risks* to assets, publicly traded securities, private investments, and companies. In recent years, the U.S. has become intimately familiar with the destructive forces and the high costs of the physical damages wrought by climate change. The increasing frequency and severity of floods, wildfires, droughts, and heat waves threaten the lives and livelihoods of millions of people each year.⁴ These physical risks (see Box) are growing. In 2021 alone, one in three Americans were affected by extreme weather as hurricanes wreaked havoc in the Gulf and up the East Coast and wildfires ravaged parts of the West.⁵ Climate-related disasters from extreme weather cost an additional \$600 billion in physical and economic damages over the last five years.⁶ These disasters have disrupted food supplies, business operations, and economic productivity, while damaging homes and personal property, public infrastructure, and critical ecosystems across the country. They also cost lives. Heat exposure alone is estimated to cause 12,000 premature deaths annually in the

Physical and Transition Risk: The intensifying impacts of climate change - such as increased extreme weather - present *physical risks* to assets, publicly-traded securities, private investments, and companies. In addition, the global shift away from carbon-intensive economies presents *transition risk and opportunity* to companies, communities, and workers. While it will be important to work with communities that may struggle to make this transition, this global shift presents generational opportunities to enhance U.S. competitiveness and economic growth, while also creating well-paying job opportunities for workers. The failure to appropriately and adequately account for, disclose and measure these physical and transition risks threatens the competitiveness of U.S. companies and markets, the life savings and pensions of U.S. workers and families, and the ability of U.S. financial institutions to serve communities. In this effort, the Federal Government will lead by example by appropriately addressing climate-related financial risk in Federal decision-making, prioritizing Federal investments in decarbonization, and conducting prudent fiscal management.

² IPCC, “Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.” Cambridge University Press. 2021.

³ Ibid.

⁴ “Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II.” *U.S. Global Change Research Program*, 2018.

⁵ Sarah Kaplan and Andrew Ba Tran, “Nearly 1 in 3 Americans experienced a weather disaster this summer,” *The Washington Post*, September 4, 2021.

⁶ NOAA, “Billion-Dollar Weather and Climate Disasters: Overview,” 2021; Vijay Limaye, “The Costs of Inaction: The Economic Burden of Fossil Fuels and Climate Change on Health in the U.S.,” *The Medical Society Consortium on Climate and Health, NRDC, WHPCA*, May 2021.



continental United States,⁷ and 35 percent of these heat-related deaths—or roughly 4,200 deaths—are estimated to be attributed to human-caused climate change.⁸ The annual and personal damages from climate-related disasters have already reached staggering levels, and the economic impact will only continue to grow as global average temperatures increase.

Achieving the goal of keeping the increase in global average temperature below 1.5°C to avoid the most severe consequences of climate change will depend crucially on the United States and other countries taking decisive action today to decarbonize the global economy and achieve net-zero emissions by 2050.⁹

Unless urgent action is taken, climate change will result in significant and negative impacts on the U.S. economy. Increasing disaster recovery costs will continue to undermine the nation's capacity to support and invest in the American people. Rising temperatures and sea levels, extreme floods and increasing droughts, and ecosystem impacts are expected to significantly alter the way we live, grow food, and preserve infrastructure. This will lead to large transformations in economic productivity, global supply chains, and quality of life.¹⁰

In addition to the physical impacts of climate change, the global shift away from carbon-intensive economies presents *transition risk and opportunity* to companies, communities, and workers. As policies drive toward low carbon transportation and energy options, technologies change, and markets and consumers demand more sustainable goods, the value of existing assets, investments, and savings will change. If managed poorly, this transition could have serious negative impacts. But, the climate crisis also presents a generational opportunity for the United States to emerge as a leader in creating a net-zero economy. As the global economy transforms to respond to the impacts of the climate crisis, the economic health of American businesses and communities will depend on their ability to pivot, lead, invest, and innovate. This transition also presents the opportunity to spur equitable, just, and sustainable economic development, enabling more Americans to realize their fair share of the net-zero future.

Recognizing both the crisis and the opportunity, on May 20, 2021, President Biden signed Executive Order 14030, “*Climate-Related Financial Risk*,” (hereafter referred to as E.O. 14030) the first-ever Executive Order to address the intersection of financial risk and climate change policy. This report lays out a roadmap for measuring, disclosing, managing, and mitigating climate-related financial risk across the economy and to the Federal government while catalyzing public and private investment to seize the opportunity of a net-zero, clean energy future.

This report first lays out a **climate risk accountability framework** that outlines core principles for addressing climate-related financial risk, and then provides a roadmap of executive action along the six lines of work outlined in E.O. 14030:

⁷ <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019GH000234>

⁸ <https://www.nature.com/articles/s41558-021-01058-x>

⁹ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>

¹⁰ <https://www.science.org/lookup/doi/10.1126/science.aad9837>; <https://www.science.org/lookup/doi/10.1126/science.aal4369>;

<https://www.nature.com/articles/s41467-019-12808-z>; <https://www.pnas.org/content/106/37/15594>;

<https://www.nature.com/articles/s41467-021-24487-w>; <https://www.nature.com/articles/s41558-018-0222-x>;

<https://www.aeaweb.org/articles?id=10.1257/pol.20180612>



- Promoting the **resilience of the U.S. financial system** to climate-related financial risks;
- Incorporating climate-related financial risk into **Federal financial management**
- Using **Federal procurement** to address climate-related financial risk;
- Protecting **life savings and pensions** from climate-related financial risk;
- Incorporating climate-related financial risk into **Federal lending and underwriting**; and
- Building **resilient infrastructure and communities**.



Climate Risk Accountability Framework

Today, the United States is at a crossroads. The current set of tools for evaluating financial and economic risk have allowed the U.S. economy to grow and thrive, enabling breathtaking technological advancements and improvements in quality of life. However, rapidly accumulating risks are leading the United States in an unsustainable direction. A new path must be forged in partnership with state, local, and Tribal governments, independent regulators, advocacy groups, labor unions, financial institutions, and companies. Other governments around the world have started to take steps in this direction, and the Federal Government is stepping up to meet this challenge and help lead this effort. The whole-of-government approach to addressing climate-related financial risks to the United States was initiated with E.O. 14030, and its implementation is guided by the following climate risk accountability framework principles:

A Precautionary Approach to Climate: As the federal government works to measure, assess, and mitigate climate-related financial risk, the country faces challenges with imperfect data and disclosure of information. It is important to acknowledge that a lack of perfect information should not be a justification for inaction. **Every fraction of warming that can be prevented will mean lives saved and economic costs reduced.** This is particularly important in light of climate change “tipping points” such as thawing permafrost, ice sheet disintegration, and changes in atmospheric conditions. Climate change tipping points like these are particularly dangerous to the economy because they are uncertain. There is uncertainty around when exactly in the process of global warming they would be triggered, and when eventually known for certain, it will likely be too late to prevent irreversible damage.

- *Mobilizing public and private finance to support the transition to a net-zero U.S. economy* by pursuing strategies to unlock the private capital necessary to meet the complementary goals of building the jobs and infrastructure of the twenty-first century and achieving net zero greenhouse gas emissions by 2050;
- *Protecting climate vulnerable and disadvantaged frontline communities* by making the investments necessary to ensure these communities are protected from the impacts of climate change, positioned to receive their fair share of the benefits from clean energy and climate infrastructure, and are not harmed by measures to address climate change risk;
- *Protecting Against Financial Risk to the Federal Government and the Communities it Serves* by ensuring that Federal agencies are properly accounting for, disclosing, and mitigating these risks as they pertain to Federal assets and programs;



- *Safeguarding the U.S. financial system against climate-related financial risk* by holding financial institutions accountable for properly measuring, disclosing, managing, and mitigating climate-related financial risks; and
- *Demonstrating Global Leadership* by engaging in international efforts underway to address climate-related financial risk, particularly in the face of global supply chains and multinational financial institutions, corporations, and other institutions that can impact U.S. markets.

Mobilizing public and private finance to support the transition to a net-zero U.S. economy

To meet net-zero by 2050, the United States must make significant investments in low-carbon infrastructure, deploying renewable clean energy solutions at a more rapid pace, investing in advanced electricity transmission and distribution systems, decarbonizing the transportation sector, working with heavy industry, and phasing out unabated fossil-fired assets.¹¹ Not only does investing in a net-zero carbon future save money, but by transforming and redirecting resources toward economy-wide decarbonization, the United States can unleash a wave of innovation, job creation, and economic growth necessary to build a stronger, more sustainable economy for communities across the country.

Economic stability demands investing now to prevent additional climate change and prepare for the climate impacts that are already occurring. Pursuing both strategies—prevention by investing in a net-zero future and preparedness to build resiliency now—are critical. Prevention is crucial to avoid the worst impacts of climate change, including climate change tipping points, and preparedness is significantly more cost-effective than response, recovery, and reconstruction. Reviews of thousands of government-funded projects designed to reduce the risk of damage from floods, wind, and earthquakes reveal that for every dollar spent on natural hazard mitigation, six dollars are saved in averted disaster costs.¹² This number rises when one looks beyond government-funded projects. For every one dollar invested by the public or the private sector in adopting more climate-resilient codes, \$11 are saved in averted disaster costs.¹³

Financial markets are beginning to realize the risks of inaction and the opportunities for action, as exemplified by the more than 250 financial firms—with over \$88 trillion in assets—that have

¹¹ Jenkins, J. D., Luke, M., & Thernstrom, S. (2018). Getting to zero carbon emissions in the electric power sector. *Joule*, 2(12), 2498-2510

Grubert, Emily. "Fossil electricity retirement deadlines for a just transition." *Science* 370, no. 6521 (2020): 1171-1173; Alarfaj, A. F., Griffin, W. M., & Samaras, C. (2020). Decarbonizing US passenger vehicle transport under electrification and automation uncertainty has a travel budget. *Environmental Research Letters*, 15(9), 0940c2.

¹² FEMA: https://www.fema.gov/sites/default/files/2020-07/fema_mitsaves-factsheet_2018.pdf

¹³ Natural Hazard Mitigation Saves: 2019 Report | National Institute of Building Sciences (nibs.org)



pledged to become net zero entities.¹⁴ While these commitments are positive, the emissions reductions necessary this decade to meet the goal of net-zero emissions by 2050¹⁵ will require a significant increase in the deployment of additional public and private capital. Globally, annual clean energy investment must increase by 3.5 times—from \$1.2 trillion to \$4 trillion—to achieve net-zero emissions by 2050.¹⁶ This presents an important opportunity for the Federal Government to partner with the private sector to help capital flow more quickly to enable the transformations needed in this decade.

Unlocking these opportunities will require strategically deploying public finance and policy in ways that catalyze private finance at scale. In this next critical decade, policy tools and public resources will be essential to accelerate the deployment of existing clean energy technologies and to finance the development of new technologies that will enable further emissions reductions in the decades that follow. There are several barriers to progress that the U.S. Government must continue to work to address. These include the misalignment of policies and financial incentives with climate change goals, including the lack of policies that sufficiently discourage greenhouse gas-emitting activities and encourage climate solutions. Policy uncertainty is compounded by high project preparation, permitting, and other transaction costs, which can deter investment in climate solutions. Another challenge is the lack of clarity or consistency in terms of good market practices for climate or sustainability-aligned investments. This generates confusion among investors and lack of trust in whether a financial product is as “climate-friendly” or “sustainable” as it purports to be. A relative lack of affordable equity capital, particularly for major infrastructure projects, is also a challenge.

The decade of the 2020s is critical for combatting climate change. During this period, the United States will build on the remarkable cost compression of certain clean energy technologies, primarily solar and wind power generation, which have enabled rapid growth in renewable energy deployment globally. The Federal Government is working to better align economic incentives to accelerate finance toward this deployment, including through the Infrastructure Investment and Jobs Act and the Build Back Better Agenda.

This realignment will also include a greater exploration of climate-related financial risks related to the agricultural, forest, and land use sector (AFOLU). The Federal Government needs to better understand how AFOLU climate-related financial risk might affect U.S. supply chains and U.S. farmers, ranchers, foresters, and agricultural workers as well as how the Federal Government can play a positive role by promoting climate-smart agricultural and forestry practices, investing in coastal resilience and other land and water projects that mitigate climate impacts, and using financial and other tools to conserve critical carbon sinks.

¹⁴ www.gfanzero.com

¹⁵ “Global Warming of 1.5°C: An IPCC Special Report,” *IPCC*. October 2018.

¹⁶ Mark Carney, “The Price of (Net) Zero Ambition,” speech delivered September 23, 2021.



The Administration will continue to press for actions that will drive net-zero investment.

Protecting Vulnerable and Disadvantaged Communities

The burdens of climate change, including the disruptions caused by climate-related financial risks, will fall disproportionately on disadvantaged communities and communities of color.¹⁷ Climate risk will particularly impact the millions of Americans who live in underinvested and overburdened communities. Recent research shows these disadvantaged communities are disproportionately exposed to extreme weather as a result of climate change.¹⁸ For example, air conditioning is crucial to lowering heat-related deaths, and lower-income communities have less access to affordable cooling systems.¹⁹ Therefore, as climate-related financial risk is addressed throughout the economy, financial system, and federal decision-making process, there must also be increased investments in the resilience and financial stability of frontline disadvantaged communities that are most exposed to climate risk. This was a motivating factor for the Administration’s groundbreaking Justice40 initiative—a whole-of-government effort aiming to deliver at least 40 percent of the overall benefits from Federal investments in climate infrastructure and clean energy to disadvantaged communities.²⁰ This initiative is already beginning to deliver impacts as agencies like FEMA have begun implementing Justice40 within its Building Resilient Infrastructure and Communities and Flood Mitigation Assistance programs and prioritizing assistance that benefits disadvantaged communities.

In addition to physical climate risk, disadvantaged communities are often disproportionately impacted by the transition risks associated with climate change. Disadvantaged communities that have already been hard-hit by declines in the manufacturing sector are often the same communities that will be impacted by declines in carbon-intensive industries. Further, low-income communities that already struggle to access affordable and resilient housing could be first to be impacted as financial institutions price climate risk into insurance and home mortgage products or as multifamily building owners raise rents to cover the cost of resilience measures.

To avoid disproportionate transition risk impacts of climate change on disadvantaged communities, the Federal Government must spur new net-zero industries and economic revitalization in already hard-hit communities. In May, the President launched the Interagency

¹⁷ EPA Social Vulnerability Report: <https://www.epa.gov/cira/social-vulnerability-report>

¹⁸ “Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II.” *U.S. Global Change Research Program*, 2018; Lara Schwarz, et al., “Spatial variation in the joint effect of extreme heat events and ozone on respiratory hospitalizations in California,” *PNAS*, June 1, 2021; Angel Hsu, Glenn Sheriff, Tirthankar Chakraborty and Diego Manya, “Disproportionate exposure to urban heat island intensity across major U.S. cities,” *Nature Communications*, May 25, 2021 and <https://www.epa.gov/cira/social-vulnerability-report>

¹⁹ <https://www.journals.uchicago.edu/doi/abs/10.1086/684582>

²⁰ The J40 initiative includes federal investments in 7 key areas: climate change; clean energy and energy efficiency; clean transportation; affordable and sustainable housing; training and workforce development; remediation and reduction of legacy pollution; and critical clean water and waste infrastructure.



Working Group (IWG) on Coal and Power Plant Communities and Economic Revitalization²¹ to ensure that energy communities that have been hard hit by changes in the energy markets would have direct Federal investments that spur economic revitalization, address legacy environmental degradation and support transitioning workers.

Protecting Against Financial Risk to the Federal Government and the Communities it Serves

Since 2013, the Government Accountability Office (GAO) has identified climate change as a significant financial risk to the Federal Government.²² The Federal Government's climate-related financial risks are intimately tied to the broader economy and the financial system's climate risks. State, local, and Tribal governments are also threatened by these impacts. In the case of disasters, much of state, local, and Tribal government infrastructure is self-insured or underinsured, leading to Federal assistance supporting a substantial portion of disaster costs. As the insurer, lender, and guarantor for much of the financial system and broader economy, there are several ways that the Federal Government faces significant exposure to climate-related financial risks:

- *Owner and operator of physical assets.* The U.S. Government owns and operates hundreds of thousands of buildings and facilities. For example, the National Aeronautics and Space Administration's (NASA's) real property holdings include more than 5,000 buildings and structures, the U.S. Army Corps of Engineers owns and operates key water resource management infrastructure, the General Services Administration (GSA) leases thousands of buildings for use by Federal organizations, and the Federal Government manages nearly 30 percent of the land in the United States. The Department of Defense (DOD), Department of Veterans Affairs (VA), and GSA also have a significant amount of property and assets at risk. A significant share of these assets may be exposed to climate-related damage, generating costs to the government of replacing and/or repairing those assets. For example, a non-comprehensive assessment conducted using Federal Real Property Profile (FRPP) data was used to map Federal assets. Looking at a subset of the inventory, the Office of Management and Budget (OMB) identified 18,000 individual buildings and structures with a total replacement cost of \$83 billion located in the current 100-year floodplain. Tens of thousands of additional assets, with a total replacement cost of \$25 billion, were identified in the current 500-year floodplain. It is estimated that the Federal structures not examined have a total replacement cost of \$1.0 trillion.²³

²¹ See more about this work here: <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-biden-administration-outlines-key-resources-to-invest-in-coal-and-power-plant-community-economic-revitalization/>

²² "GAO Adds Financial Risks of Climate Change and Gaps in Weather Satellite Data to 'High Risk List,'" *U.S. Government Accountability Office*. February 14, 2013.

²³ OMB Climate Change Fiscal Risk Report:

https://obamawhitehouse.archives.gov/sites/default/files/omb/reports/omb_climate_change_fiscal_risk_report.pdf



- *Provider of key insurance and lending programs.* The U.S. Government provides and manages important insurance programs like the National Flood Insurance Program (NFIP) and the Federal Crop Insurance Corporation (FCIC). If the country fails to act quickly on the climate crisis, these programs will become increasingly vulnerable to the physical and transition risks presented by climate change. In the case of NFIP, the Federal Government covers flood insurance claims that meet required eligibility criteria through the program. It also subsidizes premiums for some policyholders, many of whom own properties at high risk of flooding. In part because climate-related sea-level rise and more intense storms have increased the flood exposure of insured properties, potential losses generated by NFIP are increasing. FEMA, which administers NFIP, has turned to reinsurance purchases and catastrophe bonds in an effort to mitigate the risk that payouts will exceed a certain threshold in any given year. The NFIP is also updating its risk rating methodology to Risk Rating 2.0, which intends to use industry best practices to achieve rates that are more actuarially sound and equitable while better reflecting and pricing a property's flood risk. At the same time, FEMA is undertaking efforts to ensure affordable access to these programs for the communities that most need them. Ultimately, NFIP may have to better account for the rising frequency and severity of flooding by amending the NFIP minimum standards for floodplain management to incorporate, as appropriate, forward-looking standards. The current floodplain management standards for flood-prone areas have not been revised since they were implemented in 1976. In fiscal year (FY) 2022, FEMA is seeking input from the public on the NFIP's minimum floodplain management standards that communities should adopt to result in safer, stronger, and more resilient communities.²⁴

In the case of crop insurance, the U.S. Government covers claims through the FCIC program and subsidizes premiums for many policyholders. The FCIC programs' cost to the Federal Government has increased significantly over time, as program expansion and rising crop prices have led to larger subsidy outlays and higher claims payments.²⁵ The program's exposure to weather-related events has grown over time. It is estimated that the Federal fiscal burden of providing subsidized crop insurance to American farmers could increase by billions of dollars each year by late-century due to the effects of climate change.²⁶ The Federal Government needs to better understand the magnitude of the costs that the NFIP and FCIC are likely to expose the Federal Government to in the near and long-term.

²⁴ GAO 15-28 Climate Change: Better Management of Exposure to Potential Future Losses Is Needed for Federal Flood and Crop Insurance, recommended FEMA consider updating the NFIP floodplain management standards. The RFI seeking public comment on the NFIP's floodplain management standards published in October 2021 directly address that recommendation. "GAO 15-28 Recommendation: To promote forward-looking construction and rebuilding efforts while FEMA phases out most subsidies, the Secretary of the Department of Homeland Security should direct FEMA to consider amending NFIP minimum standards for floodplain management to incorporate, as appropriate, forward-looking standards, similar to the minimum standard adopted by the Hurricane Sandy Rebuilding Task Force."

²⁵ Crane-Droesch, B. A., et al. "Climate change and agricultural risk management into the 21st century." Economic Research Report-Economic Research Service, USDA 266 (2019).

²⁶ Pg. 14: https://obamawhitehouse.archives.gov/sites/default/files/omb/reports/omb_climate_change_fiscal_risk_report.pdf



Additionally, both physical and transition effects will expose the U.S. government—which provides direct loans and loan guarantees to support a wide range of economic activities, including home ownership, infrastructure, and education—to climate risk. At the end of FY 2020, outstanding Federal credit totaled \$5.12 trillion. Of this amount, over \$2 trillion was for single family housing programs, an example of the type of asset that can be at high risk due to climate-related risks.²⁷

- *Provider of disaster relief.* Congress provides, through supplemental appropriations, Federal disaster relief. Over the past fifteen years, Congress has provided \$320 billion in disaster relief to pay for hurricane and wildfire damage from 2005-2008, in 2012, and in 2017. In 2018, Congress required that up to six percent of post-disaster assistance provided by FEMA should go into the agency’s National Public Infrastructure Pre-Disaster Mitigation Fund, which can help build resilience and reduce losses over time. The Fund supports FEMA’s newest mitigation program, BRIC, which was launched in FY 2020. FEMA’s other hazard mitigation programs, including the Hazard Mitigation Grant Program (HMGP), the FMA program, and HMGP Post Fire (addressing wildfire), also provide financial assistance that contributes to building resilience and reducing long-term losses. FEMA’s Stafford Act Section 406 mitigation funding under the Public Assistance program also contributes to these objectives. As the incidence and/or frequency of hurricanes, storm surge, flooding, and wildfires continues to rise due to climate change, so will costs to the Federal Government of providing disaster relief.

In addition, the Department of Housing and Urban Development works with communities to respond to or prepare for natural disasters through two primary funding sources: the Community Development Block Grant Disaster Recovery (CDBG-DR) and the Community Development Block Grant Mitigation (CDBG-MIT) funds. Since 1993, Congress has appropriated a total of \$94.8 billion for CDBG-DR. Active CDBG-DR and CDBG-MIT grants total over \$67 billion. Since 2019, HUD has allocated more than \$16 billion of CDBG-MIT funds to 22 states and local governments for activities that lessen the impact of future disasters. CDBG-MIT is a unique and significant opportunity for grant recipients to use this assistance in areas impacted by recent disasters to carry out strategic and high-impact activities that mitigate disaster risk and reduce future losses, especially for low- and moderate-income families and households. CDBG-DR grants are also a significant source of Federal support for building resilience, particularly in low- and moderate-income areas impacted by a major disaster. HUD requires CDBG-DR grantees to implement certain climate-related measures as part of recovery (e.g., elevation of structures in the flood plain, green building standards) and many CDBG-DR grantees have implemented additional forward-looking investments in resilience. Additionally, HUD obligated nearly \$1 billion of

²⁷ https://www.urban.org/sites/default/files/publication/104862/housing-finance-at-a-glance-a-monthly-chartbook-september-2021_0.pdf



funding through the National Disaster Resilience competition, funding 13 innovative resilience projects across the country.²⁸

The Federal Government will need to continue to work with state, local, and Tribal governments who make key development decisions to support the adoption of more resilient standards.

- *Manager of pension assets.* The Federal Government administers the Thrift Savings Plan (TSP), which provides retirement benefits for the Federal workforce. With more than \$790 billion in assets under management and 6.4 million participants, it is the largest defined-contribution plan in the world.²⁹ The Federal Employees' Retirement System Act (FERSA) specifies the funds which the TSP must offer and limits the TSP's discretion to take climate risk, and environmental, social, and governance (ESG) considerations into account. The overall exposure of the TSP's assets to both physical and transition risks is not well understood. It is critical that, going forward, Federal government related pension and retirement plans can consider material climate risk and other ESG factors in their investment practices, and TSP is aiming to make progress in this area.³⁰
- *Consumer of critical supplies and services.* The Federal Government awarded over \$650 billion in contracts for goods and services in FY 2020. These included contracts for mission-critical goods and services that are potentially exposed to physical and transition risks from climate change, such as data and telecommunications infrastructure, medical supplies, fuels, and electricity. Federal agencies depend on uninterrupted supplies of goods and services to achieve their missions, making the resilience and risk exposure of Federal contractors and supply chains critical to everyday government activities from national security, science, and weather forecasting, to healthcare provision and benefits administration.

Additionally, both physical and transition effects will expose the Federal Government to new macroeconomic risks. For example, there are strong indications that climate change reduces economic growth, and climate risks to key drivers of the US economy will grow larger over time.³¹ We may see new and challenging macroeconomic conditions as more extreme weather leads to repeated supply shocks, and an economy in transition creates sectoral imbalances as some regions lose industries, experiencing unemployment, reduced output, stranded assets, and

²⁸ This includes initiatives in Virginia to foster the development of businesses focused on resilience (<https://riseresilience.org/>) and to increase California's resilience to wildfires (<https://www.hcd.ca.gov/community-development/disaster-recovery-programs/ndrc.shtml>). HUD has also obligated \$930 million for regional flood mitigation projects in New York, New Jersey, and Connecticut through Rebuild by Design. (<http://www.rebuildbydesign.org/our-work/sandy-projects>)

²⁹ "Financial Statements," *Thrift Savings Fund*. December 31, 2020. <https://www.frtib.gov/ReadingRoom/FinStmnts/TSP-FS-Dec2020.pdf>³⁰ Retirement Savings: Federal Workers' Portfolios Should Be Evaluated For Possible Financial Risks Related to Climate Change | U.S. GAO

³⁰ Retirement Savings: Federal Workers' Portfolios Should Be Evaluated For Possible Financial Risks Related to Climate Change | U.S. GAO

³¹ Hsiang et al., "Estimating economic damage from climate change in the United States," *Science*. June 2017.



loss of tax revenue, while others rapidly ramp up, promoting growth and raising prices in the face of competition for resources.

For the Federal Government, a slower-growing economy and lower output levels due to the physical damages of climate change would mean less tax revenue; at the same time, the need for help for businesses, families, and communities to recover (or migrate), as well as to transition quickly to new technologies, will require increased government resources and investment. Macroeconomic damages from climate change are projected to be non-linear, and will worsen as temperatures increase, particularly when damages to growth are taken into account. This will require new thinking about how to assess government fiscal responsibility and macroeconomic conditions.

Actions to tackle climate change also present an enormous opportunity to shift the direction of public and private finance toward a more resilient future and a smooth transition to a cleaner economy. Through procurement and as a provider and consumer of financial products and services, the Federal Government plays an important role in the U.S. economy by setting underwriting standards, loan terms and conditions, insurance requirements, and asset management and servicing procedures, as related to Federal lending policies and programs, which are then generally adopted by relevant market participants. By properly accounting for climate-related financial risks in its various roles, the Federal Government will take actions and make investments to reduce long-term fiscal exposure and drive us toward a net zero, more sustainable economy. For example, Federal procurement standards set the types and amounts of insurance that contractors must obtain when completing a project or providing a service to the Federal Government. Those standards can then also influence industry standards for the construction, transportation, and other sectors as well as influence the standards of the insurance industry.

Safeguarding the U.S. Financial System

U.S financial markets and institutions face systemic risks from climate change. Extreme climate-related events present risks to the smooth operation of financial markets, for example, through disruptions to liquidity or financial market utilities.³² Financial institutions will also be affected, as a wide variety of assets are exposed to climate-related impacts and shifts in asset values that are occurring in the transition to a net-zero emissions economy. Large and sudden adjustments in the price of these assets can negatively impact financial institutions and can have spillover effects across the financial system.³³

³² Commodity Futures Trading Commission, Report of the Climate-Related Market Risk Subcommittee, Market Risk Advisory Committee, “Managing Climate Risk in the U.S Financial System,” 2020.

³³ Financial Stability Board, “The implications of climate change for financial stability,” 23 November 2020; Hyeyoon Jung, Robert Engle, and Richard Berner, “Climate Stress Testing,” Staff Report, Federal Reserve



The health of the financial system requires an honest assessment of assets, liabilities, risk, and uncertainty, alongside rules to ensure that those assessments limit potential risks to the system at large. The financial sector and the U.S. Government must come to terms with how both the physical and transition risks associated with climate change affect these five components of financial system stability and work to address them head-on.

Climate-related risks to the financial system must be taken seriously because they present a uniquely complex set of risk management challenges. Climate change is affecting a wide range of sectors, geographies, and assets across the United States. These impacts threaten homes, businesses, infrastructure, supply chains, food supply, and human health and safety—all of them urgently challenged by a climate that

is changing rapidly. Even with steep emissions reductions, certain climate impacts are now “locked in” because of warming that has already taken place.³⁴ Climate change is causing increases in the frequency and severity of climate-related disasters. The breadth of these changes challenges traditional notions of risk diversification. These changes also make historical patterns less useful for financial risk assessment and management and require using forward-looking assessments, all of which are considerations that may exceed the parameters of traditional risk management frameworks used by financial actors. And, climate change involves “tipping points,” conditions in which a certain long-standing Earth feature (e.g.; ice sheets, Amazon forest cover, or permafrost) can deteriorate or change quickly and irreversibly after a long period of relative stability, resulting in severely negative effects for the planet.³⁵ Climate change tipping points are particularly dangerous to the economy because they are uncertain and are likely to increase economic losses almost everywhere.³⁶

Climate Tipping Points: Many economic models fail to account for the fact that there are “tipping points” when it comes to climate change. Climate change “tipping points” such as thawing permafrost, ice sheet disintegration, and changes in atmospheric conditions would have severe impacts on society. Once these warming tipping points are triggered, they can cause severe and *irreversible* impacts like mass extinction and sea level rise that would drown our coasts. Climate change tipping points are particularly dangerous to the economy because they are uncertain and are likely to increase economic losses almost everywhere. We don’t know exactly at what point of global warming they would happen, and when we do know, it will likely be too late to prevent irreversible damage. Tipping points are just one example of the unique nature of human-induced climate change and the need to act urgently to reduce its drivers.

Moreover, climate change may lead to economic and financial strains in regions of the country – situations that do not threaten the stability of the whole system, but which can disrupt the ability of local banks, insurance companies, and other institutions to serve particular communities.

³⁴ IPCC (2021) “Climate Change 2021: The Physical Science Basis.”

³⁵ Lenton et al., “Climate tipping points—too risky to bet against,” *Nature*. November 27, 2019.; May, R.M., Levin, S.A. and Sugihara, G., 2008. Ecology for bankers. *Nature*, 451(7181), pp.893-894.

³⁶ <https://www.pnas.org/content/118/34/e2103081118>



These might include, for example, community banks and sector-focused regional banks. In fact, these threats are already playing out in some local insurance markets within regions of the United States affected by hurricanes and wildfires.

In light of these risks, the Federal Government, including financial regulators, have critical responsibilities in safeguarding the U.S. financial sector and addressing climate-related risks to the economy.

Demonstrating Global Leadership

Consistent with this roadmap, the U.S. International Climate Finance Plan, and the Executive Orders tasking those documents, the United States is engaging in international forums and institutions working on the management of climate-related financial risks—including the G7, G20, COP26, the Financial Stability Board (FSB), and standard-setting bodies—to improve the information available and methods to assess and monitor such risks and promote consistent and effective approaches to managing these risks.

The FSB is coordinating many international workstreams on climate-related financial risks and is a central focus of U.S. international engagement on this topic. The FSB’s Roadmap for Addressing Climate-related Financial Risks identifies priority work on disclosures, data, vulnerability analysis, and supervisory and regulatory approaches that is being implemented across the FSB, sectoral standard-setting bodies, International Monetary Fund (IMF), World Bank, Organization for Economic Cooperation and Development (OECD), and the Network of Central Banks and Supervisors for Greening the Financial System (NGFS).

The Department of Treasury (UST) is co-chairing the G20 Sustainable Finance Working Group (SFWG), which is conducting work to identify barriers to scaling up sustainable finance and develop options to overcome them. The SFWG developed a G20 Sustainable Finance Roadmap for delivery to G20 Finance Ministers and Central Bank Governors in October. The Roadmap identifies G20 priorities for scaling up sustainable finance and articulates the breadth of international work that addresses these priorities. The priorities include consideration of climate- and other sustainability-related financial risks and improving the information and tools needed to address them. UST’s Roadmap provides a strong foundation for the G20 to continue working in the near- to mid-term to scale up sustainable finance, including addressing climate-related financial risk in coordination with the FSB.

The U.S. also recently joined the Coalition of Finance Ministers for Climate Action. The Coalition brings together fiscal and economic policymakers from over 60 countries to promote national climate action, especially through fiscal policy and the use of public finance.



Summary

This Climate Risk Accountability Framework makes the case that the health of the U.S. economy is intrinsically linked to climate change, that climate change poses a systemic risk to both the economy and financial system, and that the Federal Government has an important role to play in setting a floor for voluntary, regulatory, and public management action to protect U.S. fiscal and financial health. In taking this action, the Federal Government will be guided by five primary principles: to safeguard the financial system, protect the Federal Government’s fiscal health, protect vulnerable and disadvantaged communities, mobilize public and private financing for decarbonization, and demonstrate global leadership. The United States is driven to act urgently for three reasons: 1) the most effective risk strategy is investing in decarbonization; 2) climate change is already impacting the economy and poses a systemic risk to the financial system; and 3) the potential for irreversible climate impacts demands a precautionary approach.



A Whole-of-Government Implementation Strategy to Address Climate-Related Financial Risk

Based on the framework and guiding principles above, this Administration is leading a whole-of-government effort outlined in Executive Order 14030³⁷ of identifying measuring, disclosing, managing, and mitigating climate-related financial risk to the Federal government and across the U.S. economy. This strategy involves efforts along six major work streams:

- Promoting the **resilience of the U.S. financial system** to climate-related financial risk;
- Protecting **life savings and pensions** from climate-related financial risk
- Using **Federal procurement** to address climate-related financial risk;
- Incorporating climate-related financial risk into **Federal financial management and budgeting**
- Incorporating climate-related financial risk into **Federal lending and underwriting**; and
- Building **resilient infrastructure and communities**.

The goal of these actions is to set a floor for regulatory, voluntary, and government public management action to address climate-related financial risk and a foundation to build from together for a better future.

Financial Regulation

***Challenge:** The failure of financial institutions to appropriately and adequately account for and measure physical and transition risks threatens the competitiveness of U.S. companies and markets...and the ability of U.S. financial institutions to serve communities.*

- E.O. 14030 on Climate-Related Financial Risk. **See Section 3** for the text guiding this effort.

In recent years, financial regulators around the world have explored or instituted a variety of measures to better safeguard their financial systems against climate-related risks. These include the development of climate scenarios to assist in risk management and, in some jurisdictions, the application of climate scenario analyses for bank and insurance company balance sheets. For example, the Bank of France, European Central Bank, Bank of England, Australian Prudential

³⁷ See full E.O. 14030 text in Appendix.



Regulation Authority, and the Nederlandsche Bank have completed or are in the process of launching climate risk assessments for non-financial companies, banks and/or insurance companies. Financial regulators around the world have also taken steps to encourage the incorporation of climate-related risk management into the roles and responsibilities of corporate boards, including for financial institutions.

Climate-related financial disclosure requirements have been discussed internationally and implemented in some jurisdictions. For example, Article 173 of France’s Energy Transition Law is an early example and uses a “comply or explain” approach that provides flexibility for how firms disclose their risks. Authorities in the United Kingdom set an expectation for all listed companies and large asset owners to provide disclosures in line with TCFD recommendations by 2022 and are working on implementing climate-disclosure requirements across the economy. A number of other jurisdictions are considering or already implementing disclosure requirements or guidance, for which both the G7 and G20 have provided support.

Climate-Related Financial Risk and Financial Stability

To enhance the U.S. financial system’s ability to address climate-related financial risks, and to advance U.S. leadership in this area, E.O. 14030 directed the Secretary of the Treasury, in her role as chair of the Financial Stability Oversight Council (FSOC), to engage with FSOC members and consider key actions. Among these actions is assessing climate-related financial risks and their impacts on U.S. financial system stability. The FSOC will also consider steps to facilitate the sharing of relevant climate-related financial risk data among FSOC members, in order to inform their climate-related regulatory and supervisory efforts. The Treasury Department’s Office of Financial Research is working with Treasury and the FSOC to support the assessment and identification climate-related financial risks to financial stability, particularly around the collection of data, as appropriate, and research on climate-related risks to the U.S. financial system.

An FSOC report forthcoming by November 2021, reflecting engagement across FSOC member agencies, will discuss the importance of climate-related disclosures by regulated entities, current approaches to incorporating climate-related financial risk into regulatory and supervisory activities, and recommended processes to identify climate-related financial risks to U.S. financial stability. The forthcoming FSOC report is the first step in a robust process of U.S. financial regulators developing the capacity and analytical tools to effectively assess and mitigate climate-related financial risks.

Climate-Related Insurance Risks

E.O. 14030 also emphasizes the important role that the insurance sector can play in combatting climate change, instructing the Treasury Secretary to direct the Federal Insurance Office (FIO)³⁸ to assess climate-related issues or gaps in the supervision and regulation of insurers, including as

³⁸ Learn more about FIO’s establishment via the Dodd-Frank Act and mission here: <https://home.treasury.gov/policy-issues/financial-markets-financial-institutions-and-fiscal-service/federal-insurance-office/about-fio>.



part of the FSOC’s analysis of financial stability, and to further assess, in consultation with states, the potential for major disruptions of private insurance coverage in regions of the country particularly vulnerable to climate change impacts.³⁹

As a result, in August, FIO issued a Request for Information (RFI) to solicit public input on FIO’s forthcoming work addressing climate-related financial risks in the insurance sector.⁴⁰ The RFI highlights that FIO’s climate efforts focus on three initial priorities:

1. The assessment of climate-related risks or gaps in the supervision and regulation of insurers, including their potential impacts on U.S. financial stability;
2. The assessment of the potential for major disruptions of private insurance coverage in U.S. markets that are particularly vulnerable to climate change impacts, as well as the facilitation of mitigation and resilience efforts for disasters; and
3. Increasing FIO’s regular engagement with insurers on climate-related matters; leverage the insurance sector’s ability to help address climate-related insurance risks.

Because traditionally underserved communities and consumers, minorities, and low- and moderate-income persons have disproportionate challenges in obtaining affordable property insurance to cover the risks posed by climate-related disasters, further declines in available and affordable insurance could exacerbate the inequities that these communities currently face. Therefore, FIO also intends to assess the availability and affordability of insurance coverage in high-risk areas, particularly for traditionally underserved communities and consumers, minorities, and low- and moderate-income persons, as part of the second climate-related priority.⁴¹

Consistent with its statutory mandate, the Securities and Exchange Commission (SEC) staff is developing recommendations to the Commission for a mandatory disclosure rule for public issuers that is intended to bring greater clarity to investors about the material risks and opportunities that climate change poses to their investments. This rule is expected to be proposed in the coming months.

Separately, the executive actions laid out in this report would work to hold companies, financial institutions, and Federal Government leaders accountable for mitigating the risks of climate change to the financial system and economy. For example, the Federal Acquisition Regulatory Council (FAR Council), which oversees Federal procurement, has begun the process of amending Federal procurement regulations to require agencies to consider a supplier’s

³⁹ E.O. 14030—Section 3bi

⁴⁰ See the full text of the RFI here: <https://www.federalregister.gov/documents/2021/08/31/2021-18713/federal-insurance-office-request-for-information-on-the-insurance-sector-and-climate-related>

⁴¹ Ibid.



greenhouse gas emissions when making procurement decisions and to give preference to bids from companies with lower greenhouse gas emissions. This work, which will continue over the next 18 months, is not simply about adding an additional demand signal for data—it is about leveraging the data to drive decisions and demand action.

Beyond these initial steps, the President has made it clear that concrete action to mitigate the effects of climate-related financial risks is needed. The President has made it clear that when it comes to climate-related financial risks, actions will speak louder than words. A more robust data environment—around physical impacts, transition risks, and greenhouse gas emissions, including for short-lived, super-pollutants like methane—can enable companies, financial institutions, and Federal Government leaders to drive urgent and necessary action to mitigate these risks. But even with this data available, boards, officers, and other corporate leaders will need to bring their expertise and judgment to bear in addressing the financial risks that climate change poses. The data should not merely be algorithmic inputs for investors; they must also be prompts for action by those corporate leaders charged with duties of care and loyalty.

Protecting American Life Savings and Pensions

***Challenge:** The failure of financial institutions to appropriately and adequately account for and measure physical and transition risks threatens...the life savings and pensions of U.S. workers and families.*

- E.O. 14030 on Climate-Related Financial Risk. **See Section 4** for the text guiding this effort.

E.O. 14030 addresses the importance of enhancing the resilience of life savings and pensions in the face of climate-related financial risks and opportunities. This effort is led by the Department of Labor (DOL), which regulates private retirement plans under the Employee Retirement Income Security Act of 1974 (ERISA), safeguarding the 54% of American workers who participate in a retirement plan through their job,⁴² and potentially over \$12.5 trillion in assets.⁴³ Action to address climate risks to these hard-earned savings is imperative to the financial health of America's families.

The current U.S. regulatory framework makes it difficult for pension plan managers to adequately consider climate-related financial risk when they invest workers' pensions. Therefore, DOL is leading efforts to remove regulatory barriers and ensure that employee benefit plan fiduciaries can incorporate material climate-related risks into their investment decisions. These efforts will better protect the life savings of America's workers and their families from the impacts of climate change, and could also mobilize capital towards sustainable investments. This is part of DOL's broader efforts to enable fiduciaries to incorporate climate-related financial risk, racial and economic justice considerations, sustainability, and other material ESG factors into

⁴² <https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/fact-sheets/what-is-erisa>

⁴³ EBSA projected ERISA-covered pension assets based on the 2019 Form 5500 filings with the U.S. Department of Labor (DOL), reported SIMPLE assets from the Investment Company Institute (ICI) Report: The U.S. Retirement Market, Second Quarter 2021, and the Federal Reserve Board's Financial Accounts of the United States Z1 September 23, 2021.



investment practices. This work can be furthered by enhancing efforts to increase awareness among and relevant training for fiduciaries.

As part of these efforts, yesterday DOL's Employee Benefits Security Administration released a proposed rule to safeguard the savings of America's workers from climate risk by making it clear that fiduciaries may consider material climate-related risks when they make investment decisions. Under the proposed rule, fund managers would be better able to include in their evaluation of an investment the vulnerability to the physical and transition risks posed by the climate crisis. They would also be able to incorporate climate-related financial risks into their decisions on how they vote on shareholder resolutions and board nominations.

This proposed rule would bring the United States closer in alignment with other countries, including the United Kingdom, the European Union (EU), and Japan, that have already taken steps to incorporate climate-related risks into their retirement plan management. For example, under EU rules, EU Member States must allow Institutions for Occupational Retirement Provision, the equivalent of U.S. pension funds, to consider the potential long-term impact of investment decisions on ESG factors. Also, the governance arrangements of such funds must include consideration of ESG factors in investment decisions. Where ESG factors are considered, an assessment must be made of new or emerging risks, including risks related to climate change. Also, the funds must provide prospective clients with information on whether and how environmental, climate, social, and corporate governance factors are considered in the investment approach.

The Federal Government also administers the largest defined-contribution retirement plan in the world, with more than \$790 billion in assets under management and nearly 6.5 million participants. Since E.O. 14030 was issued, DOL has solicited input from the Federal Retirement Thrift Investment Board (FRTIB) and other stakeholders to better understand how the TSP has taken climate-related financial risk and other ESG factors into account to date, to inform an understanding of current challenges and opportunities.

DOL is further protecting retirement savings from climate risk by evaluating the legal parameters surrounding the FRTIB's investment decision-making process and conducting its own legal analysis of the existing authority to address climate-related financial risks to Federal employee retirement plans under the Federal Employees' Retirement Savings Act (FERSA). The Department will supplement its internal analysis with an RFI soliciting public input on additional actions that could be taken under ERISA, FERSA, or other laws to further protect workers' life savings from climate-related risks. DOL will then submit a report to the President in November with an update on its efforts to address climate-related financial risk to retirement and pension plans.



Federal Procurement

Challenge: Consider amending the Federal Acquisition Regulation (FAR) to require major Federal suppliers to publicly disclose greenhouse gas emissions and climate-related financial risk and to set science-based reduction targets; and ensure that major Federal agency procurements minimize the risk of climate change, including requiring the social cost of greenhouse gas emissions to be considered in procurement decisions and, where appropriate and feasible, give preference to bids and proposals from suppliers with a lower social cost of greenhouse gas emissions.

- E.O. 14030 on Climate-Related Financial Risk. See **Section 5b** for the text guiding this effort.

As the world's single largest purchaser of goods and services, spending over \$600 billion in contracts in FY 2020 alone, the Federal Government has an obligation to be a leader and model contracting partner. Public procurement can shift markets, drive innovation, and be a catalyst for new global standards. The FAR Council⁴⁴ is exploring two substantial amendments to Federal procurement regulations in order to better disclose and mitigate the risks climate change poses in Federal contracting.

First, the FAR Council is considering requiring that companies with substantial Federal contract activities disclose their climate risks and greenhouse gas emissions and establish science-based emissions reduction targets. Second, it is considering requiring Federal agencies to consider climate risks and greenhouse gas emissions in their own procurement decisions, including by giving preference to proposals from suppliers with a lower social cost of greenhouse gas emissions. The FAR Council opened two cases on these proposed amendments in May 2021.⁴⁵

Together, these changes would reduce greenhouse gas emissions throughout the Federal supply chain and the entire U.S. economy, increase the resilience of the Federal supply chain, and support the competitiveness of U.S. companies in a global clean economy.

Additionally, this Administration is leading all Federal agencies to develop ambitious climate action plans, detailing how each agency will bolster adaptation and increase resilience of their facilities and operations to the impacts of climate change. Plans from 24 major agencies were released publicly on October 7, 2021,⁴⁶ and each agency will report annually to the National Climate Task Force (NCTF)⁴⁷ on the status of implementation actions and share progress on these climate risk efforts publicly.

⁴⁴ Read more about the FAR Council here: <https://www.acquisition.gov/far-council>

⁴⁵ <https://www.acq.osd.mil/dpap/dars/opencases/farcasenum/far.pdf>

⁴⁶ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/07/fact-sheet-biden-administration-releases-agency-climate-adaptation-and-resilience-plans-from-across-federal-government/>.

⁴⁷ <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>



Federal Budgeting, Financial Management and Reporting

Challenge: *Develop recommendations for the National Climate Task Force on approaches related to the integration of climate-related financial risk into Federal financial management and financial reporting; and also identify the primary sources of Federal climate-related financial risk exposure and develop methodologies to quantify climate risk within the economic assumptions and the long-term budget projections of the President's Budget.*

- E.O. 14030 on Climate-Related Financial Risk. **See Section 5a and 6** for the text guiding this effort.

Climate-related financial risks touch every aspect of the economy, and the Federal Government's budget is no exception. The Federal budget has broad exposure to climate change through increased costs, lost revenue, and knock-on effects to the broader economy. For example, an increase in the intensity of catastrophic storms will require more disaster relief spending and flood insurance payouts. Rising seas and heavy rainfall events will require investments to protect, repair, and relocate Federal facilities. Changing weather patterns and extreme weather events will affect American farmers and the Federal programs that support their risk management. As a result, the Federal Government is taking steps to integrate climate-related financial risk into core business practices, including developing more specific and actionable information as it relates to risk and tradeoffs within the Federal budget, and Federal financial reporting and financial management.

As a first step, for FY 2021, OMB updated the Federal Government's A-136, *Financial Reporting Requirements*, and A-11, *Preparation, Submission and Execution of the Budget*, guidance for Federal agencies⁴⁸ to incorporate a discussion of climate-related risks. OMB, Federal agencies, and the Federal Accounting Standards Advisory Board (FASAB) are taking steps to further develop robust climate-related risk assessments and disclosure requirements for Federal agencies. Through these efforts, the Administration will work to improve stewardship of government assets and taxpayer resources, and transparency into the risks to the U.S. government's fiscal health posed by climate change.

Additionally, next year, the Administration's FY 2023 President's Budget will include an assessment of the Federal Government's climate risk exposure and impacts on the long-term budget outlook, along with additional assessments. Federal agencies will continue work to further develop assessments and report climate-related risk to their programs and services. In addition, the Federal Government will further develop new methodologies for quantifying economic impacts of climate risk.

Over the next 18 months, Federal agencies will continue to work to incorporate climate risk into their assessments and improve their management of enterprise risks and opportunities. In addition, agencies will begin to report climate-related financial risk in both the Budget and

⁴⁸ See Circular A-136 and A-11: <https://www.whitehouse.gov/wp-content/uploads/2018/07/A-136-2018.pdf>, <https://www.whitehouse.gov/wp-content/upload>.



agency financial reports to increase transparency and promote accountability. This work will be executed in conjunction with the Administration’s efforts to reform Federal programs to address climate change and improve adaptation and resilience to climate impacts.

Federal Lending and Underwriting

***Challenge:** Consider approaches to better integrate climate-related financial risk into underwriting standards, loan terms and conditions, and asset management and servicing procedures, as related to their Federal lending policies and programs.*

- E.O. 14030 on Climate-Related Financial Risk. **See Section 5c** for the text guiding this effort.

Federal agencies are creating approaches to better integrate climate-related financial risk into underwriting standards, loan terms and conditions, and asset management and servicing procedures, as related to their Federal lending policies and programs. This includes the Department of Housing and Urban Development (HUD), VA, and the Department of Agriculture (USDA), which are each working to enhance their underwriting and lending program standards in order to address climate-related financial risks. These agencies are coordinating their efforts in partnership with the Federal Credit Policy Council (FCPC). The FCPC is convened by OMB and includes representatives from UST, and the Chief Financial Officer, Chief Risk Officer, and other senior officials from Federal credit and debt collection agencies. The FCPC established a Climate-Related Financial Risk Task Force to coordinate interagency analysis and opportunities, and evaluate resource considerations.

Addressing Climate Risk in HUD Lending Programs

HUD is working to move the nation forward in meeting the challenges posed by climate change to American homes, healthcare facilities, and neighborhoods. As a first step, HUD and its agency partners will address climate risk by identifying potential options for incorporating climate-related considerations into its policies and procedures governing the origination of Federally-insured or guaranteed single-family mortgages. This will include ensuring that homebuyers of Federal Housing Administration (FHA)-insured homes, including HUD homes⁴⁹, have necessary information about flood and other climate risks. These disclosures will better allow homeowners the ability to make appropriate decisions about their purchase. HUD will analyze current processes and procedures, seek to improve the quality and integration of climate-related data, assess current loss mitigation outcomes related to climate events, and evaluate opportunities for inclusion of climate-related risk in underwriting policies and practices, including additional disclosures, while balancing these efforts with other priorities such as housing affordability, equity and environmental justice, access to credit, and industry alignment.

⁴⁹ A HUD home is a 1-to-4 unit residential property acquired by HUD as a result of a foreclosure action on an FHA-insured mortgage. HUD becomes the property owner and offers it for sale to recover the loss on the foreclosure claim. https://www.hud.gov/program_offices/housing/sfh/reo.



Over the next 18 months, HUD will work in conjunction with OMB, USDA, and VA to ensure that government-supported mortgage programs are adequately and uniformly measuring climate-related financial and physical risks while continuing to meet the mortgage credit needs of low- and moderate-income households. HUD will also engage stakeholders from industry, states, and local communities—including underserved communities of color and Indigenous communities—to determine the best way to address climate-related risks to properties and communities, including evaluating issues of equity, community blight, and historic racism in housing policies.

Further, due to the immense risks that flooding pose to the integrity of American homes, HUD is in the process of finalizing rulemaking to allow for the use of private flood insurance with FHA-insured mortgages for properties in flood zones.

Addressing Climate Risk in VA Lending Programs

VA's Loan Guaranty Service (LGY) guarantees home loans for the nation's veterans with \$913 billion in loan volume outstanding, and will protect the interests of veterans and lenders by incorporating a review of climate-related financial and physical impacts to VA's home loan benefit program. LGY has established a team to analyze areas such as underwriting standards, loan terms and conditions, and asset management and servicing procedures, to identify specific climate-related financial risks and possible solutions that could be implemented.

The VA has also recently put in place a process which will provide more accurate data to better evaluate the impact of climate change to specific locations that could negatively affect veteran homeownership access and property damage; home loan program and portfolio monetary risk; environmental social justice information and data germane to climate and financial risk; and decisions investors, lenders, appraisers, and servicers make to provide the home loan benefit. This will provide data supporting responsible home loan lending to all qualified veterans, servicemembers, and surviving spouses, regardless of socioeconomic status, gender, race, age, or property location. VA expects that this will better assist the agency with the information that is needed to make informed decisions to address climate-related financial risk in its lending programs.

Addressing Climate Risk in USDA Lending Programs

USDA Rural Development's direct and guaranteed single-family loan programs help low- and very-low income applicants obtain decent, safe, and sanitary housing in rural areas through direct loans for borrowers who cannot obtain a loan from other sources on terms and conditions they can reasonably be expected to meet, or through loan note guarantees to reduce the risk to approved lenders of extending 100 percent loans to eligible homebuyers. The multi-family direct and guaranteed loan programs increase the supply of affordable rental housing for low- and moderate-income individuals and families in eligible rural areas and towns.

Climate change-induced severe weather events pose a serious financial risk to Rural Development's existing portfolio of loans and loan guarantees because of the increased risk of physical damage to the properties and because of the potential economic disruptions that may negatively affect borrowers' ability to repay their loans. In addition, these weather events may



require that Rural Development revise some of its underwriting standards to ensure the financial integrity of future loans and loan guarantees while continuing to support affordable housing in rural areas. Rural Development is collaborating on a workgroup with OMB, HUD, and VA to identify and quantify the financial risks associated with climate change, and to determine risk mitigation strategies for the loan programs. The OMB-sponsored workgroup is initially focusing on single-family guaranteed loan programs because they are a common program across the three departments, with the goal of applying the lessons learned across the entire range of loan programs.

Resilient infrastructure and communities

Challenge: *Re-establishing a Federal Flood Risk Management Standard (FFRMS) to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.*

- E.O. 14030 on Climate-Related Financial Risk. **See Section 5e** for the text guiding this effort.

Protecting U.S. Government Facilities and Operations

E.O. 14030 reinstated and reestablished the Federal Flood Risk Management Standard (FFRMS),⁵⁰ which aims to improve the resilience of communities and Federal assets against the impacts of flooding. These impacts are projected to increase over time due the effects of climate change and other threats. Losses caused by flooding affect the country's environment, economic prosperity, and public health and safety, each of which affects national security.

To support FFRMS implementation, the President's NCTF established a Flood Resilience IWG, which brings together more than 20 Federal agencies⁵¹ to coordinate implementation of the FFRMS and other flood resilience activities. The Flood Resilience IWG will initially focus on three major topics: (1) supporting agencies' implementation of Federal flood programs and regulations, including FFRMS; (2) coordinating science-based and technical assistance needs for accurate data-driven decisions throughout the making and implementation of agency flood-related activity; and (3) providing agencies with appropriate climate projections and datasets, such as flood frequency and sea level rise data, identification of unmet data needs, and creation of new tools and solutions.

Interagency Efforts to Build Resilience

In addition to flood risk, climate change threatens to bring other types of more severe and frequent extreme events, such as heat waves, droughts, storms, and wildfires. Federal agencies continue to take action to increase preparedness, adaptation and resilience to these growing

⁵⁰ See: <https://www.whitehouse.gov/ceq/news-updates/2021/08/27/readout-of-the-first-white-house-flood-resilience-interagency-working-group-meeting-on-implementation-of-the-federal-flood-risk-management-standard/>

⁵¹ For full list of agencies, see White House fact sheet in the footnote above.



threats, including by initiating a number of new IWGs under the auspices of the NCTF. Like the Flood Resilience IWG, the IWGs focus on coastal resilience, drought resilience, heat waves, and wildfire resilience.

Additionally, as directed by Section 211 of E.O. 14008 *Tackling the Climate Crisis at Home and Abroad*, other interagency efforts on adaptation and resilience are ongoing that are related to and part of the United States Government's strategy to address climate-related financial risk:

Federal Agency Climate Action Plans: Federal agencies have developed climate action plans, outlining how each agency will bolster adaptation and increase resilience of their facilities and operations to the impacts of climate change. Building on the October 2021 release of these action plans, each agency will report annually to the NCTF on the status of implementation efforts and post public progress reports.

Climate Information and Services: The National Oceanic and Atmospheric Administration (NOAA), FEMA, and the Office of Science and Technology Policy (OSTP) have submitted to the NCTF a report on ways to expand and improve climate information products for the public. The report aims to assist Federal agencies; state, local, Tribal, and territorial governments; communities; and businesses in preparing for and adapting to the impacts of climate change. Additionally, the Department of the Interior (DOI) and OMB, in their capacities as leaders of the Federal Geographic Data Committee, have submitted to the NCTF improvements to consolidated Federal geographic mapping services that can increase public access to climate-related information that will assist Federal, state, local, and Tribal governments in climate planning and resilience activities. Both of these reports respond to E.O. 14008 Section 211d and are important to informing climate-related financial risk.

Promoting Resilience of Financial Sector Critical Infrastructure

In its role executing UST's duties as Sector Risk Management Agency for the financial sector, UST's Office of Cybersecurity and Critical Infrastructure Protection (OCCIP) will work with the interagency, financial regulators, and the private sector to identify, analyze, and communicate climate-related risks to financial sector resilience. OCCIP is developing a risk management program to analyze linkages between climate change-related risks and operational impacts to the financial sector. This program will be supported by Project SECURE, which will enable analysis of climate-related threats to the operational resilience of financial services critical infrastructure. OCCIP will incorporate climate-related risk analysis into its information-sharing program and other public-private partnership efforts. OCCIP will also work with the financial sector and financial regulators to conduct exercises that highlight the operational risks associated with climate change and identify recommendations to reduce or mitigate those risks.

Additional Government Efforts to Support Resilient Communities

Beyond the implementation actions in E.O. 14030, the following are additional complementary actions across the United States Government to reduce climate-related financial risk:



NOAA Climate Resilience Toolkit: The U.S. Climate Resilience Toolkit is a website designed to help people find and use tools, information, and subject matter expertise to build climate resilience. The Toolkit offers information from all across the Federal Government in one easy-to-use location. The goal is to improve people's ability to understand and manage their climate-related risks and opportunities, and to help them make their communities and businesses more resilient to extreme events. This inter-agency initiative operates under the auspices of the United States Global Change Research Program and is managed by NOAA.

FEMA Hazard Mitigation Assistance Funding: FEMA delivers four funding opportunities to help states and communities prepare for major disasters that are costing lives and livelihoods and devastating local communities and businesses. These programs will allow communities to apply for nearly \$5 billion to increase their preparedness in advance of climate-related extreme weather events and other disasters and improve their ability to recover after these events.

The President recently announced \$1 billion in funding for the BRIC program for FY 2021. BRIC provides grants to states, local communities, Tribes, and territories to proactively reduce their vulnerability to natural hazard events before they occur, and make themselves and the nation more resilient. This year, the Biden Administration is doubling the program's funding, and FEMA is implementing a number of changes to enhance funding opportunities for Tribes and disadvantaged communities, including by changing program selection criteria and providing a larger allocation for Tribes.

The Biden-Harris Administration also made \$3.46 billion in funding available for the HMGP. The 59 states, Tribes, and territories that received a major disaster declaration in response to the COVID-19 pandemic will be eligible to receive 4 percent of the disaster costs related to their declaration to invest in mitigation projects that will help better prepare and protect communities from natural disasters and the impacts of climate change. The influx of funding will help communities prioritize mitigation needs for a more resilient future, including underserved communities that are often most vulnerable to the impacts of climate change. Also, FEMA provides funding for HMGP Post Fire, which helps communities implement hazard mitigation measures following the declaration of a Fire Management Assistance Grant (FMAG).

\$160 million in funding is available for FEMA's FMA grant program for FY 2021 to reduce or eliminate the risks of repetitive flood damage to homes and buildings insured by NFIP.

FEMA's Building Code Adoption Tracking: FEMA tracks current building code adoption status for state, local, Tribal, and territorial governments, reaching approximately 22,000 jurisdictions across the Nation. This effort evaluates several aspects of a community's natural hazard risks and building code adoption. This tool, in conjunction with funding from grant programs such as BRIC and HMGP, will result in communities that are more resilient to the effects of natural hazards and climate change and the rising costs associated with them.



FEMA Equitable Access to Insurance Pricing Methodology: FEMA is updating NFIP’s risk rating methodology through the implementation of a new pricing methodology called Risk Rating 2.0. The methodology leverages industry best practices and cutting-edge technology to enable FEMA to deliver rates that are actuarially sound, equitable, easier to understand and better reflect a property’s flood risk.

FEMA encouraging communities to Build Resilient to protect assets: On October 12, 2021, FEMA issued an RFI⁵² to receive the public’s input on revising the NFIP’s floodplain management standards for land management and use regulations to better align with the current understanding of flood risk and flood risk reduction approaches. Specifically, FEMA is seeking input from the public on the floodplain management standards that communities should adopt to result in safer, stronger, and more resilient communities.

Community Development Block Grants (CDBG): CDBG is both a flexible and widespread program, reaching over 1,200 local governments, states, and territories. The program’s scope and promotion of community-specific solutions make CDBG a powerful tool for climate resilience. As a condition for funding, CDBG grantees are required to submit a “Consolidated Plan” every three to five years. In 2016, HUD put out the rule “Modernizing HUD’s Consolidated Planning Process to Narrow the Digital Divide and Increase Resilience to Natural Hazards.”⁵³ This rule requires jurisdictions to consider incorporating resilience to natural hazard risks as well as a discussion of how climate change will increase those risks, specifically for low- and moderate-income residents, into their Consolidated Plan.

HUD Community Resilience Toolkit: The HUD Community Resilience Toolkit is a user-friendly guide to help Community Planning and Development (CPD) recipients learn how current and future natural hazard risks may impact their community and how to reduce these risks. HUD plans to create additional resources and guidance around this rule to help grantees better incorporate climate change adaptation into their regular planning process. For example, HUD will publish implementation guides to help local governments with limited capacity design and launch climate programs, focused on low- and moderate-income neighborhoods. This may include cool roofs, single-family retrofits, community-led climate migration, and heat island mitigation strategies.

Disaster Recovery and Resilience: Building resilient communities that can withstand more intense natural disasters is critical to the fiscal health of the nation. With \$67 billion in active grants, HUD’s disaster recovery portfolio is one of the federal government’s largest investments in activities for disaster recovery and resilience—focused specifically on benefiting low-to-moderate-income communities. HUD is working to improve long-term community resilience for disaster-stricken communities via its Community Development Block Grants for Disaster Recovery (CDBG-DR) grants. To expedite community recovery, HUD will publish the Universal Notice, a notice that describes the processes, procedures,

⁵² [Federal Register :: Request for Information on the National Flood Insurance Program's Floodplain Management Standards for Land Management and Use, and an Assessment of the Program's Impact on Threatened and Endangered Species and Their Habitats](#)

⁵³ 81 FR 90997 (Dec. 16, 2016).



timelines, waivers, and alternative requirements that HUD may establish after a presidential disaster declaration and allocation of CDBG-DR assistance. Once published, the Universal Notice will inform CDBG-DR grantees of prospective requirements to incorporate disaster mitigation measures into all recovery activities involving construction. By incorporating resilience planning into recovery activities, CDBG-DR grantees can strengthen their community's resilience to future climate impacts. When implementing recovery efforts, CDBG-DR grantees are generally required to spend 70 percent of the funds on activities that benefit low- and moderate-income persons. In addition, HUD has dedicated \$16 billion of these funds specifically for building long-term resilience, primarily to benefit low- and moderate-income persons. These grants are driving innovation and elevating the importance of a proactive approach to equitable climate resilience and adaptation.

Flood resilience: HUD has implemented program-specific policies to increase climate resilience, particularly related to flooding. For example, new residential construction and improvements located in the 100-year floodplain and funded with CDBG-DR assistance are now required to elevate two feet above base flood elevation. Similarly, the Federal Housing Administration (FHA) Office of Multifamily Housing (MF) recently updated its standards to require new construction projects in 100-year floodplains to elevate two feet above base flood elevation. FHA MF has extended the same limitations that apply in Coastal High Hazard Areas (V Zones) to all areas within the Limit of Moderate Wave Action (LiMWA) for new construction and substantial rehabilitation, with lesser but still significant limitations on existing properties. HUD will continue this effort by assessing and initiating a modernization of its floodplain management regulations, potentially extending increased flood protection across all HUD programs.

Building Codes and Standards: Several of HUD's housing programs either require or incentivize above-code construction standards. While focused on energy efficiency, these programs (e.g. LEED, Enterprise Green Communities) often incorporate resilient building construction methods as well. For example, multifamily buildings with tighter building envelopes will remain "passively survivable" longer in the event of a power outage. All new construction and substantial rehabilitation assisted with CDBG-DR funds must meet one of these above standards. In addition, Choice Neighborhoods and multifamily financing through the Mortgage Insurance Premium reduction incentivize above-code construction.

Equitable Recovery Resources for Impacted Communities: On January 20, 2021, President Biden signed E.O. 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, instructing the Federal Government to pursue, "a comprehensive approach to advancing equity for all, including people of color and others who have been underserved, marginalized, and adversely affected by persistent poverty and inequality". This applies to programs addressing response and resilient recovery from disaster, and requires a systematic approach on behalf of departments and agencies working together to address inequities in policies and programs and remove barriers facing underserved communities. To that end, the National Security Council's Resilience and Response Directorate established and co-chaired with the Domestic Policy Council a group to address equity issues in disasters.



Financial Literacy and Education Commission: UST will work with the interagency Financial Literacy and Education Commission (FLEC), which the Secretary of Treasury chairs, to understand and map household and community financial resiliency, in order to develop proposals to protect and empower households and communities in responding to climate change. The FLEC will analyze the risks to the finances of households and communities, especially disadvantaged communities, identify factors for household and community resilience, and develop resources and strategies to support that resilience.

Build Back Better Resilience Investments: The Build Back Better Agenda will strengthen resilience by investing \$50 billion—the largest-ever investment in the resilience of physical and natural systems—including funding for protection against droughts and floods as well as investing in weatherization. The Build Back Better Agenda will also support significant investments in green and climate resilient homes for vulnerable and low- and moderate-income owners and renters.



Conclusion

This report has aimed to achieve three main objectives. First, the report provides a framework for thinking about the different dimensions of climate risk across the U.S. economy and the places where the Federal Government must play an increased role. The framework seeks to provide structure to what is a uniquely complex and pervasive challenge that requires significant action across multiple fronts: protecting the U.S. financial system, protecting the U.S. Government's fiscal health, protecting disadvantaged communities, and redirecting capital toward the transition to a carbon neutral economy. Second, it provides a national strategy for achieving the goals of the President's May 2021 E.O. on Climate-Related Financial Risks. This includes both strategic actions actively being taken across the Federal Government as well as strategic actions that are still necessary or slated to occur moving forward. Lastly, the report highlights a near-term roadmap of specific milestones that will be critical in the coming months to achieve the underlying ambitions that motivate this work.

These steps will help safeguard the life savings of workers and families, spur the creation of good-paying jobs, and ensure the long-term sustainability of U.S. economic prosperity in the decades to come. Together, they will help usher in a new era where climate-related financial risks are thoroughly understood—where they are measured, disclosed, managed, and mitigated across the economy to the benefit of American workers, families, and businesses.



Appendix

Executive Order on Climate-Related Financial Risk

MAY 20, 2021
PRESIDENTIAL ACTIONS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy. The intensifying impacts of climate change present physical risk to assets, publicly traded securities, private investments, and companies — such as increased extreme weather risk leading to supply chain disruptions. In addition, the global shift away from carbon-intensive energy sources and industrial processes presents transition risk to many companies, communities, and workers. At the same time, this global shift presents generational opportunities to enhance U.S. competitiveness and economic growth, while also creating well-paying job opportunities for workers. The failure of financial institutions to appropriately and adequately account for and measure these physical and transition risks threatens the competitiveness of U.S. companies and markets, the life savings and pensions of U.S. workers and families, and the ability of U.S. financial institutions to serve communities. In this effort, the Federal Government should lead by example by appropriately prioritizing Federal investments and conducting prudent fiscal management.

It is therefore the policy of my Administration to advance consistent, clear, intelligible, comparable, and accurate disclosure of climate-related financial risk (consistent with Executive Order 13707 of September 15, 2015 (Using Behavioral Science Insights to Better Serve the American People)), including both physical and transition risks; act to mitigate that risk and its drivers, while accounting for and addressing disparate impacts on disadvantaged communities and communities of color (consistent with Executive Order 13985 of January 20, 2021 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government)) and spurring the creation of well-paying jobs; and achieve our target of a net-zero emissions economy by no later than 2050. This policy will marshal the creativity, courage, and capital of the United States necessary to bolster the resilience of our rural and urban communities, States, Tribes, territories, and financial institutions in the face of the climate crisis, rather than exacerbate its causes, and position the United States to lead the global economy to a more prosperous and sustainable future.

Sec. 2. Climate-Related Financial Risk Strategy. The Assistant to the President for Economic Policy and Director of the National Economic Council (Director of the National Economic Council) and the Assistant to the President and National Climate Advisor (National Climate Advisor), in coordination with the Secretary of the Treasury and the Director of the Office of Management and Budget (OMB), shall develop, within 120 days of the date of this order, a comprehensive, Government-wide strategy regarding:

- (a) the measurement, assessment, mitigation, and disclosure of climate-related financial risk to Federal Government programs, assets, and liabilities in order to increase the long-term stability of Federal operations;
- (b) financing needs associated with achieving net-zero greenhouse gas emissions for the U.S. economy by no later than 2050, limiting global average temperature rise to 1.5 degrees Celsius, and adapting to the acute and chronic impacts of climate change; and
- (c) areas in which private and public investments can play complementary roles in meeting these financing needs — while advancing economic opportunity, worker empowerment, and environmental mitigation, especially in disadvantaged communities and communities of color.



Sec. 3. Assessment of Climate-Related Financial Risk by Financial Regulators. In furtherance of the policy set forth in section 1 of this order and consistent with applicable law and subject to the availability of appropriations:

(a) The Secretary of the Treasury, as the Chair of the Financial Stability Oversight Council (FSOC), shall engage with FSOC members to consider the following actions by the FSOC:

(i) assessing, in a detailed and comprehensive manner, the climate-related financial risk, including both physical and transition risks, to the financial stability of the Federal Government and the stability of the U.S. financial system;

(ii) facilitating the sharing of climate-related financial risk data and information among FSOC member agencies and other executive departments and agencies (agencies) as appropriate;

(iii) issuing a report to the President within 180 days of the date of this order on any efforts by FSOC member agencies to integrate consideration of climate-related financial risk in their policies and programs, including a discussion of:

(A) the necessity of any actions to enhance climate-related disclosures by regulated entities to mitigate climate-related financial risk to the financial system or assets and a recommended implementation plan for taking those actions;

(B) any current approaches to incorporating the consideration of climate-related financial risk into their respective regulatory and supervisory activities and any impediments they faced in adopting those approaches;

(C) recommended processes to identify climate-related financial risk to the financial stability of the United States; and

(D) any other recommendations on how identified climate-related financial risk can be mitigated, including through new or revised regulatory standards as appropriate; and

(iv) including an assessment of climate-related financial risk in the FSOC's annual report to the Congress.

(b) The Secretary of the Treasury shall:

(i) direct the Federal Insurance Office to assess climate-related issues or gaps in the supervision and regulation of insurers, including as part of the FSOC's analysis of financial stability, and to further assess, in consultation with States, the potential for major disruptions of private insurance coverage in regions of the country particularly vulnerable to climate change impacts; and

(ii) direct the Office of Financial Research to assist the Secretary of the Treasury and the FSOC in assessing and identifying climate-related financial risk to financial stability, including the collection of data, as appropriate, and the development of research on climate-related financial risk to the U.S. financial system.

Sec. 4. Resilience of Life Savings and Pensions. In furtherance of the policy set forth in section 1 of this order and consistent with applicable law and subject to the availability of appropriations, the Secretary of Labor shall:

(a) identify agency actions that can be taken under the Employee Retirement Income Security Act of 1974 (Public Law 93-406), the Federal Employees' Retirement System Act of 1986 (Public Law 99-335), and any other relevant laws to protect the life savings and pensions of United States workers and families from the threats of climate-related financial risk;

(b) consider publishing, by September 2021, for notice and comment a proposed rule to suspend, revise, or rescind "Financial Factors in Selecting Plan Investments," 85 Fed. Reg. 72846 (November 13, 2020), and "Fiduciary Duties Regarding Proxy Voting and Shareholder Rights," 85 Fed. Reg. 81658 (December 16, 2020);

(c) assess — consistent with the Secretary of Labor's oversight responsibilities under the Federal Employees' Retirement System Act of 1986 and in consultation with the Director of the National Economic Council and the National Climate Advisor — how the Federal Retirement Thrift Investment Board has taken environmental, social, and governance factors, including climate-related financial risk, into account; and

(d) within 180 days of the date of this order, submit to the President, through the Director of the National Economic Council and the National Climate Advisor, a report on the actions taken pursuant to subsections (a), (b), and (c) of this section.

Sec. 5. Federal Lending, Underwriting, and Procurement. In furtherance of the policy set forth in section 1 of this order and consistent with applicable law and subject to the availability of appropriations:

(a) The Director of OMB and the Director of the National Economic Council, in consultation with the Secretary of the Treasury, shall develop recommendations for the National Climate Task Force on approaches related to the integration of



climate-related financial risk into Federal financial management and financial reporting, especially as that risk relates to Federal lending programs. The recommendations should evaluate options to enhance accounting standards for Federal financial reporting where appropriate and should identify any opportunities to further encourage market adoption of such standards.

(b) The Federal Acquisition Regulatory Council, in consultation with the Chair of the Council on Environmental Quality and the heads of other agencies as appropriate, shall consider amending the Federal Acquisition Regulation (FAR) to:

(i) require major Federal suppliers to publicly disclose greenhouse gas emissions and climate-related financial risk and to set science-based reduction targets; and

(ii) ensure that major Federal agency procurements minimize the risk of climate change, including requiring the social cost of greenhouse gas emissions to be considered in procurement decisions and, where appropriate and feasible, give preference to bids and proposals from suppliers with a lower social cost of greenhouse gas emissions.

(c) The Secretary of Agriculture, the Secretary of Housing and Urban Development, and the Secretary of Veterans Affairs shall consider approaches to better integrate climate-related financial risk into underwriting standards, loan terms and conditions, and asset management and servicing procedures, as related to their Federal lending policies and programs.

(d) As part of the agency Climate Action Plans required by section 211 of Executive Order 14008 of January 27, 2021 (Tackling the Climate Crisis at Home and Abroad), and consistent with the interim instructions for the Climate Action Plans issued by the Federal Chief Sustainability Officer, heads of agencies must submit to the Director of OMB, the National Climate Task Force, and the Federal Chief Sustainability Officer actions to integrate climate-related financial risk into their respective agency's procurement process (subject to any changes to the FAR arising out of the Federal Acquisition Regulatory Council's review pursuant to subsection (b) of this section). The Director of OMB and the Federal Chief Sustainability Officer shall provide guidance to agencies on existing voluntary standards for use in agencies' plans.

(e) In Executive Order 13690 of January 30, 2015 (Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input), a Federal Flood Risk Management Standard (FFRMS) was established to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended. Subsequently, the order was revoked by Executive Order 13807 of August 15, 2017 (Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects). Executive Order 13690 is hereby reinstated, thereby reestablishing the FFRMS. The "Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input" of October 8, 2015, were never revoked and thus remain in effect.

Sec. 6. Long-Term Budget Outlook. The Federal Government has broad exposure to increased costs and lost revenue as a result of the impacts of unmitigated climate change. In furtherance of the policy set forth in section 1 of this order and consistent with applicable law and subject to the availability of appropriations:

(a) The Director of OMB, in consultation with the Secretary of the Treasury, the Chair of the Council of Economic Advisers, the Director of the National Economic Council, and the National Climate Advisor, shall identify the primary sources of Federal climate-related financial risk exposure and develop methodologies to quantify climate risk within the economic assumptions and the long-term budget projections of the President's Budget;

(b) The Director of OMB and the Chair of the Council of Economic Advisers, in consultation with the Director of the National Economic Council, the National Climate Advisor, and the heads of other agencies as appropriate, shall develop and publish annually, within the President's Budget, an assessment of the Federal Government's climate risk exposure; and

(c) The Director of OMB shall improve the accounting of climate-related Federal expenditures, where appropriate, and reduce the Federal Government's long-term fiscal exposure to climate-related financial risk through formulation of the President's Budget and oversight of budget execution.

Sec. 7. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or



legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations .

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

JOSEPH R. BIDEN JR.
THE WHITE HOUSE,
May 20, 2021.