Federal Sustainability Plan

Catalyzing America's Clean Energy Industries and Jobs

December 2021

THE WHITE HOUSE
WASHINGTON

TABLE OF CONTENTS

Letter from the President of the United States 5

Executive Summary 7

Federal Sustainability Plan Goals and Strategy Summary 11

Accelerating America's Clean Energy Economy through Federal Procurement 15

SECTION I: Primary Operating Goals 17

1. 100 Percent Carbon Pollution-Free Electricity on a Net Annual Basis by 2030, Including 50 Percent on a 24/7 Basis 17

2. 100 Percent Zero-Emission Vehicle Acquisitions by 2035, Including 100 Percent Light-Duty Acquisitions by 2027 21

3. Net-Zero Emissions Buildings by 2045, Including a 50 Percent Reduction by 2032 27

4. Net-Zero Emissions Procurement by 2050 33

5. Net-Zero Emissions Operations by 2050, Including a 65 Percent Reduction by 2030 37

6. Climate Resilient Infrastructure and Operations 41

SECTION II: Primary Enabling Goals 45

1. Develop a Climate- and Sustainability-Focused Workforce 45

2. Advance Environmental Justice and Equity 49

3. Accelerate Progress Through Domestic and International Partnerships 53

The Path Forward 57

Key Terms 59

End Notes 61

THE WHITE HOUSE
WASHINGTON

To the dedicated and hard-working employees of the Federal Government:

Today, I signed an Executive Order to help our nation create good-paying jobs and lead the world on clean energy by issuing the Federal Sustainability Plan. As public servants, we owe it to the American people to be good stewards of government resources—and each and every one of you has a critical role to play in that effort.

The Federal Sustainability Plan will help our country meet the challenge of the climate crisis in a way that grows good jobs and industries, and makes us more economically competitive. We will lead the world by example—transforming how we build, buy, and manage to help make our economy cleaner, more efficient, and more sustainable.

To accomplish our goals, we will transition our Federal infrastructure to zero-emission vehicles and energy efficient buildings, powered by carbon pollution-free electricity. We will improve the Federal Government's preparedness and resilience to the effects of our changing climate. And we will do so in ways that promote economic and environmental equity for all Americans.

This transition will help accelerate the development of the clean energy industries of the future—right here in America. That will mean more good-paying union jobs for American workers, and a strong foundation for American businesses to compete and win globally in the 21st century economy.

Extreme weather events, exacerbated by climate change, cost our nation $99 billion in economic damages last year—a record we are poised to break this year. The time is now to take bold action to make our entire nation more resilient and sustainable. Some of this work will be difficult—but I know that, together, we will be up to the task.

I invite you to read the Federal Sustainability Plan, and look forward to working alongside you to seize this once-in-a-generation opportunity to protect American communities, create good jobs, and build a strong economic foundation for years to come.

Sincerely,

President Joe Biden

EXECUTIVE SUMMARY

In December 2021, President Biden signed an Executive Order that directed the Federal Government to use its scale and procurement power to achieve the following five ambitious goals:

- 100 percent carbon pollution-free electricity (CFE) by 2030, at least half of which will be locally supplied clean energy to meet 24/7 demand;
- 100 percent zero-emission vehicle (ZEV) acquisitions by 2035, including 100 percent zero-emission light-duty vehicle acquisitions by 2027;
- Net-zero emissions from Federal procurement;
- A net-zero emissions building portfolio by 2045, including a 50 percent emissions reduction by 2032; and
- Net-zero emissions from overall Federal operations by 2050, including a 65 percent emissions reduction by 2030;

In addition to the five new commitments that form the pillars of the executive action, the President also directed the Federal Government to orient its procurement and operations efforts in line with the following principles and goals:

- Climate resilient infrastructure and operations;
- A climate- and sustainability-focused workforce;
- Advancing environmental justice and equity;
- Prioritizing the purchase of sustainable products, such as products without added perfluoroalkyl or polyfluoroalkyl substances (PFAS); and
- Accelerating progress through domestic and international partnerships.

This executive action is a part of the President's broader commitment to increasing investments in America's manufacturing industries and workers in order to Build Back Better.

By transforming how the Federal Government builds, buys, and manages its assets and operations, the Federal Government will support the growth of America's clean energy and clean technology industries, while accelerating America's progress toward achieving a carbon pollution-free electricity sector by 2035.

President Biden's executive order will create good-paying union jobs and provide a strong foundation for American businesses to compete and win globally in the clean energy economy. Today's executive action further reinforces the President's directive to Buy American and ensure that equity and environmental justice are key considerations in Federal operations planning and decision making.

Catalyzing America's Clean Energy Industries and Jobs through Federal Sustainability Executive Order

Through this Executive Order, the Federal Government will leverage its portfolio of 300,000 buildings, fleet of 600,000 cars and trucks, and annual purchasing power of $650 billion goods and services to:

1. Transition Federal infrastructure to zero-emission vehicles and buildings powered by carbon pollution-free electricity, which will reduce the Federal Government's greenhouse gas emissions by 65 percent by 2030.
2. Make Federal agencies more adaptive and resilient to the impacts of climate change, and increase the sustainability of Federal supply chains, achieving net-zero emissions from Federal procurement by 2050.
3. Mainstream sustainability within the Federal workforce, advance equity and environmental justice, and leverage partnerships to accelerate progress.

Transition Federal infrastructure to zero-emission vehicles and energy efficient buildings powered by carbon pollution-free electricity. These changes will enable the Federal Government to reduce its greenhouse gas emissions by 65 percent by 2030 and achieve net-zero emissions by 2050:

- A**chieve 100 percent carbon pollution-free electricity use by 2030, including 50 percent on a 24/7 basis.** The Federal Government will work with utilities, developers, technology firms, financiers and others to purchase electricity produced from resources that generate no carbon emissions, including solar and wind, for all its operations by 2030. Half of the Federal Government's 100 percent carbon pollution-free annual electricity demand will be procured on a 24/7 basis, meaning that the Federal Government's real-time demand for electricity will be met with clean energy every hour, every day, and produced within the same regional grid where the electricity is consumed. With the scope and scale of this electricity demand, the Federal Government expects it will catalyze the development of at least 10 gigawatts of new American clean electricity production by 2030, spurring the creation of new union jobs and moving the country closer to achieving a carbon pollution-free electricity sector by 2035.

- **Transition to 100 percent acquisition of zero-emission vehicles by 2035 for the Federal vehicle fleet, including 100 percent light duty vehicle acquisition by 2027.** The Federal Government will work with American vehicle, battery, and charging equipment manufacturers and installers to become the largest zero-emission vehicle fleet in the Nation, reaching 100 percent zero-emission vehicle acquisitions by 2035. This will accelerate the advancement of America's industrial capacity to supply zero-emission vehicles and electric vehicle batteries and create and sustain good union jobs in manufacturing, engineering, and skilled-trades.

- **Modernize the Federal buildings portfolio to reach net-zero emissions by 2045, including a 50 percent reduction in building emissions by 2032.** The Federal Government will work across existing real property and during new building construction and major renovations to increase water and energy efficiency, reduce waste, electrify systems, and promote sustainable locations for Federal facilities to strengthen the vitality and livability of the communities in which Federal facilities are located. Additionally, the Biden-Harris Administration will implement the first-ever Federal Building Performance Standard, and will use performance contracting to improve buildings with no up-front costs.

Make Federal agencies more adaptive and resilient to the impacts of climate change, and increase the sustainability of Federal supply chains, achieving net-zero emissions from Federal procurement by 2050.

- **Make Federal agencies more adaptive and resilient to the impacts of climate change.** The intensifying impacts of climate change

present physical, operational, and financial risks to Federal infrastructure, agency missions, and our services to the American people. Agencies will implement the actions identified through their October 7, 2021, Climate Adaptation and Resilience Plans and modernize Federal policy, programs, operations, and infrastructure to support climate resilience investment. By taking action now to better manage and mitigate climate risks, we will minimize future disruptions and destruction to Federal operations, assets and programs and ensure the Federal Government can continue providing critical services to the Nation.

- **Increase the sustainability of Federal supply chains, achieving net-zero emissions from Federal procurement by 2050.** The companies that supply the Federal Government are critical partners in achieving our climate goals and growing the economy and American jobs. Major Federal suppliers will be required to measure and disclose their greenhouse gas (GHG) emissions and set science-based GHG reduction targets. Cutting emissions from the Federal Government's procurement also means buying materials with a lower carbon footprint. The Federal Government will launch a "buy clean" initiative for low-carbon materials and prioritize the purchase of sustainable products, such as products without added perfluoroalkyl or polyfluoroalkyl substances (PFAS). Through these actions, the Federal Government will provide a large and stable signal to the market for sustainable and low-carbon goods made in America, advancing America's industrial capacity to supply the goods and materials of the future while growing good jobs for American workers.

Mainstreaming sustainability within the Federal workforce, advance equity and environmental justice, and leverage partnerships to accelerate progress.

- **Mainstream sustainability within the Federal workforce.** The Federal Government's 4.2 million employees are critical stakeholders and leaders in the shift to sustainable and resilient operations. The Federal Government will build capacity through engagement, education, and training so that Federal workers are ready to embed sustainability, climate adaptation, and environmental stewardship analysis and action in their jobs as we work to Build Back Better.

- **Advance equity and environmental justice.** The Federal Government will advance the goals of the Administration's Justice40 Initiative by ensuring that economic equity and environmental justice are key considerations in operations planning and decision making. A Federal environmental justice representative will serve on the newly-established Federal Chief Sustainability Officer Council. To incorporate equity, agencies will support the President's Executive Order on *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government,* which helps ensure that government contracting and procurement opportunities are available on an equal basis.

- **Leverage partnerships to accelerate progress.** Collaboration with leading American unions, businesses, States, Tribes, municipalities, and other countries will accelerate progress and catalyze greater climate action at home and abroad. The Federal Government will build upon its newly-launched Greening Government Initiative that convenes governments around the world in greening government operations. Further, the Administration will launch a Presidential Sustainability Executives Program, placing senior leaders from the private and non-profit sectors to serve across the Federal Government, bringing innovative perspectives and critical expertise to achieve these ambitious, and imperative, sustainability and climate preparedness goals.

FEDERAL SUSTAINABILITY PLAN ACTIONS AND TARGETS SUMMARY

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") sets out a range of ambitious goals to deliver an emissions reduction pathway consistent with President Biden's goal of reducing U.S. greenhouse gas emission by 50–52 percent from 2005 levels by 2030 and limiting global warming to 1.5 degrees Celsius, as the science demands. Through the Federal Sustainability Plan, the Federal Government will achieve the following:

100% Carbon Pollution-Free Electricity by 2030, including 50% on a 24/7 basis

100% Zero-Emission Vehicle Acquisitions by 2035, including 100% light-duty acquisitions by 2027

Net-Zero Emissions Buildings by 2045, including a 50% reduction by 2032

Net-Zero Emissions Procurement by 2050

Net-Zero Emissions Operations by 2050, including a 65% reduction by 2030

Climate Resilient Infrastructure and Operations

Develop a Climate- and Sustainability-Focused Workforce

Advance Environmental Justice and Equity-focused Operations

Accelerate Progress through Domestic and International Partnerships

FEDERAL SUSTAINABILITY PLAN STRATEGY MATRIX

		Actions	CFE	Fleet	Buildings	Procurement	Adaptation	Net-Zero Emmisions Operations by 2050
1	100% Carbon Pollution-Free Electricity (CFE) by 2030, including 50% on a 24/7 basis	Aggregate CFE purchases across regions and agencies	●	●	●	●	●	●
		Seek ways to pilot and accelerate promising CFE sources	●		●	●	●	●
		Develop public and private sector partnerships	●			●		●
		Establish the 100% 24/7 CFE Federal Leaders Working Group	●			●		●
2	100% Zero-Emission Vehicle (ZEV) Acquisitions by 2035, including 100% light-duty acquisitions by 2027	Optimize agency fleet management		●	●	●	●	●
		Align financial planning		●	●	●		●
		Expand vehicle charging infrastructure	●	●	●	●	●	●
		Improve workforce understanding and effect cultural change		●	●	●		●
		Provide State, Tribal, and local government fleets opportunities to benefit from Federal efforts		●		●		
		Establish the ZEV Fleets Federal Leaders Working Group		●				●
3	Net-Zero Emissions Buildings by 2045, including a 50% reduction by 2032	Build for net-zero emissions	●	●	●	●	●	●
		Implement the Federal Building Performance Standard	●		●	●		●
		Increase energy and water efficiency	●	●	●	●	●	●
		Reduce waste, minimize use of toxic materials, and drive markets for recycled products			●	●		●
		Achieve higher levels of sustainability in owned and leased buildings	●	●	●	●	●	●
		Leverage private sector investment	●	●	●	●	●	●
		Drive sustainable and equitable siting	●	●	●			
		Establish the Net-Zero Emissions Buildings Federal Leaders Working Group			●			●

		Actions	CFE	Fleet	Buildings	Procurement	Adaptation	Net-Zero Emmisions Operations by 2050
4	Net-Zero Emissions Procurement by 2050	Require major Federal suppliers to publicly disclose GHG emissions and climate risks, and set science-based targets to reduce emissions	●	●	●	●		●
		Launch a Buy Clean intiative for low-carbon materials		●	●	●		●
		Change Federal procurement rules to minimize the risk of climate change, including factoring in the social cost of GHG in to procurement decisions	●	●	●	●	●	●
		Maximize the procurement of sustainable products and services	●	●	●	●	●	●
		Establish the Net-Zero Emissions Procurement Federal Leaders Working Group, including a Buy Clean Task Force	●	●	●	●	●	●
5	Net-Zero Emissions Operations by 2050, including a 65% reduction by 2030	Use 100% CFE by 2030, including 50% on a 24/7 basis	●					●
		Achieve 100% ZEV Acquisitions by 2035		●				●
		Achieve Net-Zero Emissions Buildings by 2045			●			●
		Achieve Net-Zero Emissions Procurement by 2050				●		●
		Partner with public, private, and nonprofit sector leaders	●	●	●	●		●
6	Climate Resilient Infrastructure and Operations	Routinely assess climate vulnerabillities and risks	●	●	●	●	●	
		Modernize Federal policy, programs, operations, and infrastructure to support climate resilient investment	●	●	●	●	●	
		Establish the Climate Adaptation and Resilience Federal Leaders Working Group	●	●	●	●	●	

ACCELERATING AMERICA'S CLEAN ENERGY ECONOMY THROUGH FEDERAL PROCUREMENT

Federal procurement traditionally has played a strong role in stimulating and developing markets of the future. As the world's largest buyer of goods and services—with acquisitions totaling over $650 billion annually—the Federal Government plays a significant role in shaping markets, creating jobs, and bringing innovative technologies to market. For over 50 years, the Federal role in procurement has created and accelerated new markets for sustainable products and services—from spurring the market for recycled paper in the 1970s to making energy and water efficient products household names.

Federal procurement sends a clear and stable demand signal to the markets. Through our commitments, such as transitioning 600,000 vehicles to a 100 percent zero-emission fleet and electricity use to 100 percent carbon pollution-free electricity, we send a clear signal for market demand. This signal can catalyze direct market action from suppliers interested in selling to the Federal Government. Moreover, it has a signaling effect for other purchasers as they set their sustainability goals and strategies.

Federal procurement's role in clean energy industries can further innovation and help scale up commercialization and deployment. Innovations within the primary sectors in our Federal procurement strategy will define many of the most important industries for the decades to come and the jobs of the future. For example, progress on power generation technologies, such as solar and wind, have seen cost reductions of 70 to 90 percent over the past decade. Progress on clean energy technologies has led to further sector technological developments, and these developments have led to further cost reductions. Still, the clean energy technologies required to stabilize global temperatures and avoid the worsening threats of climate change have not been implemented at the scale needed or some have yet to be developed.

Federal procurement will help America compete globally. Countries are making bold attempts to foster new technologies and increase their own economic competitiveness. The European Union, the United Kingdom, and Canada have prepared their domestic industries and workers for the energy transition through industrial policy strategies. Furthermore, China's domestic industry support has made it the global clean energy manufacturing leader. Moreover, the United States has become reliant on other countries for procuring clean energy technologies of the future, including zero-emission vehicles and certain renewable energy technologies. Federal procurement of clean energy, transportation, and sustainable products, along with Buy American policies, will help us compete and improve our national security and resilience.

Federal procurement will help sustain existing jobs and create the jobs of the future. As clean industries and companies grow, so too will jobs in these sectors. Many of these jobs—spanning construction to engineering to skilled trades—will be steady, high quality, and well-paying jobs that offer the choice to join a union. These jobs include those like the 1,000 union and non-craft

labor jobs at Edwards Air Force Base, which were created to build 650 megawatts of solar generation and construct electric vehicle charging stations.

Equity and environmental justice. The energy transition will not proceed at a sufficient pace or scale to address the climate crisis through markets alone, and markets do not ensure equitable outcomes. The Federal Sustainability Plan will help American workers and communities who have been left behind by integrating equity and environmental justice into policies and approaches. Furthermore, the Plan will support high-quality employment strategies, which can: boost wages and productivity with high labor standards policies in place; guide incorporation of community conditions into Federal facility and operations planning; serve as a model for the private sector; and create opportunities for innovative actions that will support pollution reductions in environmental justice and disadvantaged communities.

SECTION I: PRIMARY OPERATING GOALS

1 100 PERCENT CARBON POLLUTION-FREE ELECTRICITY ON A NET ANNUAL BASIS BY 2030, INCLUDING 50 PERCENT ON A 24/7 BASIS

KEY ACTIONS

- Aggregate carbon pollution-free electricity (CFE) purchases across regions and agencies to:
  - Buy directly from utilities;
  - Enter into power purchase agreements; and
  - Develop onsite generation by leveraging Federal real property assets.
- Seek ways to pilot and accelerate promising CFE sources.
- Develop public and private sector partnerships.
- Establish the 100 Percent 24/7 Carbon Pollution-Free Electricity Federal Leaders Working Group to drive strategy and implementation.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to power Federal facilities with 100 percent carbon pollution-free electricity (CFE), including 50 percent on a 24-hour-a-day 7-days-a-week (24/7) basis. This plan will help accelerate a rapidly changing clean electricity sector and further increase well-paying union jobs. It adds Federal leadership to CFE commitments being made by public, private, and non-profit leaders across America and around the world. The Sustainability Plan's elements show how the U.S. Government can use the power of Federal procurement to create a more resilient, modern, and climate-ready electricity sector.

B. Defining Carbon Pollution-Free Electricity and 24/7 CFE

CFE means electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current, and thermal),

geothermal, hydroelectric, nuclear, renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon emissions meeting Environmental Protection Agency requirements.

24/7 CFE means CFE procured to match actual electricity consumption on an hourly basis and produced within the same regional grid where the energy is consumed.

C. Sector Highlights

i. The clean electricity sector is rapidly evolving. The U.S. clean electricity sector—utility companies, energy developers, service providers, equipment and technology manufacturers, and financiers—is rapidly expanding product and service lines, increasing its output, and adding energy storage.

- **The U.S. electricity generation market has shifted dramatically toward CFE for new generation sources,** reaching 28 gigawatts (GW), or 73 percent, of new electricity generation planned for 2021.[3]
- **U.S. utility-scale wind installations had a record year in 2020,** nearly doubling installations in 2019, with cumulative installed capacity up threefold over the past decade.[4]
- **2020 U.S. battery energy storage installations were up 200 percent over 2019** and exceeded all installations over the previous 6 years.[5]
- **CFE costs have decreased dramatically** and reflect the best value for taxpayer-funded Federal facilities. Over the past decade, utility-scale solar photovoltaic (PV) installation costs have declined 82 percent, and lithium-ion battery energy storage prices have dropped 89 percent.[6]
- **Clean energy remains the biggest job creator in America's energy sector.** In 2020, the clean energy sector (energy efficiency, renewable energy, clean energy vehicles, clean fuels, energy storage, and grid modernization) remained the biggest job creator in America's overall energy sector, employing about 3 million workers—nearly three times as many workers in fossil fuel extraction and generation industry.[7]

ii. Commitments to 100 percent CFE are increasing. Hundreds of American organizations, including states, municipalities, companies, and universities, have committed to 100 percent CFE. Multiple countries and multinational corporations have made these commitments too. A number of these organizations have already met their 100 percent goals.

- Google, having met its goal of 100 percent renewable electricity purchased on an annual basis, set a new goal of operating of 100 percent 24/7 CFE by 2030.[8]
- General Motors seeks to source 100 percent renewable electricity for U.S. operations by 2030, and 100 percent for global operations by 2035.[9]
- Amazon purchased more than three GWs of renewable electricity projects in 2020 alone.[10]

D. Current State of CFE in the Federal Government

In the United States, the Federal Government consumes electricity almost exclusively from the power grid, where CFE made up about 40 percent of electricity generated in 2020.[11]

- The Federal Government spent more than $4 billion on electricity in 2020.[12]
- It buys electricity broadly across the U.S. power grid, in all 50 states, the District of Columbia, and U.S. territories.
- In 2020, the sources of utility-scale electric power generation on the U.S. power grid were approximately 20 percent from renewable energy, 20 percent from nuclear energy, 40 percent from natural gas-fueled energy, 19 percent from coal-fueled energy, and 1 percent from petroleum-fueled energy.[13]

- In 2020, Federal facilities across 32 agencies consumed 48.6 terawatt-hours of grid-supplied or renewably generated electricity in the United States, or about 1.3 percent of the total U.S. electricity consumption,[14] with the Department of Defense (DOD) consuming 52 percent of domestic usage.[15]
- The Federal Government buys most of its electricity via contracts issued by the General Services Administration (GSA) and the Defense Logistics Agency.
- A state-by-state regulatory structure creates complexity for Federal electricity purchasing, but new options and market structures are evolving rapidly.

E. The CFE Plan's Elements

i. Goal

Power Federal facilities with 100 percent CFE on a net annual basis, including 50 percent matched on a 24/7 basis by 2030. The Federal Government will execute a whole-of-government approach to increase use, production, and facilitation of carbon pollution-free electricity and storage to achieve this goal.

ii. Outcomes

Achieving 100 percent CFE will support well-paying union jobs, increased demand for American products, continued electricity sector leadership, more prosperous and healthy communities, and greenhouse gas (GHG) emission reductions.

- Federal demand for CFE is expected to catalyze over 10 GW of American clean electricity production by 2030—enough electricity to power more than 3 million homes.
- These clean energy infrastructure projects will create thousands of well-paying American jobs, including union jobs in the manufacturing, engineering, and skilled-trades sectors.
- With electricity generation currently the second-leading source of U.S. GHG emissions, this step will cut the nation's carbon pollution

and put the country on a path to achieving net-zero emissions by 2050.[16]

- The Federal Government will seek to align its clean energy infrastructure investments with the needs of communities that have suffered as a result of economic shifts and from pollution, delivering a more equitable clean energy future.
- By accelerating CFE development, the Federal Government also can enable the America's electrification of America's cars and truck, unlocking another key opportunity to dramatically reduce emissions.

iii. The Plan

Leverage Federal procurement to pursue opportunities for aggregating purchasing across regions and agencies. As part of a whole-of-government approach, agencies at the forefront of electricity procurement, including DOD and GSA, will help lead development and execution of innovative procurement strategies, in coordination with other agencies and consistent with applicable law, that leverage the size of the Federal Government's electricity consumption, unlock economies of scale, promote equity, and achieve cost-savings for taxpayers. The strategy will include ways that federally led efforts to expand CFE can benefit overburdened, underserved communities. The Federal Government will work with regulators, State and local energy policy officials, utilities, developers, technology firms, financiers, and other clean electricity buyers and use a range of strategies to achieve CFE goals, such as:

- **Buy directly from utilities.** Work with utility service providers to negotiate supply contracts that include CFE and energy storage for multiple Federal agencies in a service territory.
- **Enter into power purchase agreements.** Use physical power purchase agreements (PPAs) that provide for CFE and energy storage to promote 24/7 energy load profile matching, and pursue virtual power purchase agreements (VPPAs) to scale procurements to match aggregated purchasing of CFE and energy storage.
- **Develop onsite generation by leveraging Federal real property assets.** Leverage opportunities to use Federal real property assets for development of new CFE generation and energy storage.

Accelerate adoption, use, or expansion of promising CFE sources. Additionally, the Federal Government will seek ways to pilot and accelerate promising CFE sources such as green hydrogen, modular and advanced nuclear reactors, and other innovative approaches.

Develop public and private partnerships. The Federal Government will develop ways to increase its impact by working with non-Federal partners (e.g., States, Tribes, municipalities, electric co-operatives, consumers, and the private sector). The Federal Government will explore ways to use its supply chain to accelerate progress towards a cleaner grid more broadly.

Establish the 100 Percent 24/7 Carbon Pollution-Free Electricity Federal Leaders Working Group to drive strategy and implementation. Transitioning to CFE by 2030 and achieving agency targets will require coordination across agencies to streamline energy purchasing, and consolidate and aggregate procurement. The Working Group will also evaluate progress on equity. The Working Group will provide semiannual reports to the National Climate Task Force on actions, findings, and progress toward governmentwide goals.

2 100 PERCENT ZERO-EMISSION VEHICLE ACQUISITIONS BY 2035, INCLUDING 100 PERCENT LIGHT-DUTY ACQUISITIONS BY 2027

KEY ACTIONS

- Optimize agency fleet management to enhance efficiency.
- Align financial planning for effective fleet planning.
- Expand vehicle fleet charging infrastructure to support new zero-emission vehicles.
- Improve workforce understanding and effect cultural change.
- Seek State, Tribal, and local government fleets opportunities to benefit from Federal efforts.
- Establish the Zero-Emission Vehicle Fleets Federal Leaders Working Group to drive strategy and implementation efforts that meet agency-by-agency targets and deployment planning.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") sets the Federal fleet on a path to zero-emission vehicles (ZEVs). His plan will help further accelerate a rapidly changing transportation sector and further increase well-paying union jobs and support pollution emission reductions in overburdened communities. It establishes the Federal Government as a leader in clean transportation and builds upon commitments being made by public, private, and non-profit leaders across America and around the world. The Plan's elements show how the Federal Government can use the power of its procurement to continue U.S. climate leadership in the transportation sector.

B. Defining Zero-Emission Vehicles (ZEVs)

ZEVs are vehicles that operate while producing zero tailpipe exhaust emissions of any air pollutant, including greenhouse gases (GHGs), such as battery electric vehicles or fuel cell electric vehicles.

C. Sector Highlights

i. The transportation sector is rapidly changing. The growing demand for ZEVs has led auto manufacturers and supporting industries around the world to increasingly provide ZEV technologies, which are quickly advancing and expanding.

- **The U.S. ZEV sector is rapidly expanding product and service lines and increasing its output.** This sector includes auto, battery, and charging infrastructure manufacturers, service providers, and financiers. Today, the

sedan, passenger van, and bus categories have ZEV models available, with increasing availability in the sport utility vehicle and light truck categories expected in the next 2 to 3 years. Availability in the medium-duty and heavy-duty vehicle segments exists for some vehicle classes and is only a few years away for others.

- **Vehicle manufacturers are delivering a new and wider array of ZEV models.** Ford, General Motors, and Stellantis have pledged to invest over $100 billion in ZEVs and supporting technologies through 2025, with Stellantis planning for 40 percent of its U.S. sales to be either fully electric or plug-in hybrid within 4 years, GM committing to sell only ZEVs by 2035, and Ford planning to increase its EV production to 600,000 cars by 2023.[17] All 3 major U.S. automakers have announced goals of 40 to 50 percent ZEV sales by 2030.[18]

- **The growing demand for ZEVs also has led to tremendous growth among new vehicle manufacturers and infrastructure providers.** Startups are rapidly joining traditional vehicle manufacturers in promising to deliver dozens of new ZEV models across multiple vehicle categories.[19]

- **This growth in the sector and the natural accompanying competition among vehicle and infrastructure providers is expected to lead to steadily decreasing capital costs.** Life-cycle cost savings for certain classes of ZEVs are already being realized, and these savings are predicted to become a reality for even more vehicle classes as we approach 2027.[20] This is due primarily to rapid technological innovation that continues to drive down EV battery prices, achieving a nearly 90 percent cost decline in batteries over the past decade.[21]

- **Clean transportation can be a major jobs driver.** The ZEV transition, including charging infrastructure and new vehicle production, has the promise to generate new opportunities for American workers as the Biden-Harris Administration continues to push for even greater domestic content and assembly of these products.

- **Battery supply chain resiliency.** Ensuring a secure EV battery supply chain will require enhancements to raw materials procurement and processing as well as battery manufacturing and recycling. The Biden-Harris Administration is actively examining issues at each step of the supply chain.[22]

- **Reducing health impairing pollution of environmental justice communities.** Transportation contributes to air pollution and to poor air quality with negative impacts on the health of many communities. These include particulate matter (PM), nitrogen oxides (NO_x), and volatile organic compounds (VOCs). ZEVs are an important component of improving the health of communities overburdened by health-impairing transportation emissions.

ii. Commitments to ZEV fleets are expanding. Hundreds of American organizations, including States, municipalities, companies, and universities, have committed to transitioning to ZEVs. Many of these organizations are meeting their targeted goals and increasing their ambition. Multiple countries and multinational corporations have made similar commitments.

- Canada has committed to electrification of 80 percent of its national government's administrative fleet by 2030.[23]

- FedEx has established a goal for electrification of half of all medium-duty delivery vehicles by 2025 and 100 percent by 2030.[24]

- The State of New Jersey has committed to electrifying 100 percent of its light-duty fleet.[25]

- Walmart will electrify 100 percent of its fleet by 2040.[26]

D. Current State of ZEVs in the Federal Government

The Federal domestic fleet includes more than 600,000 non-tactical vehicles and less than 1 percent ZEVs (approximately 2,000 vehicles).[27]

- One-third (approximately 225,000 vehicles) is owned by the U.S. Postal Service (USPS), one-third is owned by other executive agencies, and the remaining third is leased by executive agencies from the General Services Administration (GSA).
- The Federal Government's largest fleets (owned and leased) outside of USPS are operated by the Department of Defense (approximately 180,000), the Department of Homeland Security (approximately 50,000), and the Department of Justice (approximately 50,000).
- Across executive agency fleets, more than 300,000 vehicles are light-duty, and approximately 100,000 are medium- or heavy-duty.
- There are approximately 700 charging stations located at Federal buildings and facilities across the country (some of which are designated for employee and visitor charging, and not exclusively for Federal fleet vehicles).[28]

E. The Zero-Emission Federal Fleet Plan

i. Goal

Achieve 100 percent acquisition of ZEVs for light-duty vehicles by 2027 and all vehicles by 2035. Each Federal agency will acquire ZEVs in all vehicle classes as vehicles come to market. Each Federal agency will acquire ZEVs for 100 percent of all light-duty vehicles by 2027 and all medium- and heavy-duty vehicles by 2035. Federal agencies will achieve the path to the acquisition targets through planning, coordination, and collaboration, informed by agency mission, ZEV model availability, and funding.

ii. Outcomes

The ZEV Federal Fleet Plan will help deliver well-paying union jobs, increased demand for American products, continued sector leadership, more prosperous and healthy communities, and GHG emissions reductions.

- **Jobs.** In transitioning a fleet of more than 600,000 cars and trucks, this procurement approach will accelerate the advancement of America's industrial capacity to supply domestically produced ZEVs, electric batteries, and charging infrastructure while creating well-paying jobs. These jobs will include union jobs in the manufacturing, engineering, and skilled-trades sectors for the manufacturing of vehicles, the production and deployment of re-fueling infrastructure, and the long-term maintenance of these vehicles and systems.
- **Market.** Significant additional demand for ZEV products is expected to drive down product costs, which in turn can fuel additional American consumer demand for ZEVs.
- **Equity.** Federal ZEV and ZEV-infrastructure procurements will align where possible with the communities that have suffered from issues like economic shifts.
- **GHG emissions reductions.** The transportation sector generates the largest share of U.S. GHG emissions. Transitioning to a zero-emission fleet will help cut the nation's carbon pollution and put the Federal Government on a path to achieving net-zero emissions economy-wide by 2050.[29]
- **Pollution reduction.** The transportation sector is responsible for over 55 percent of the NO_x emissions in the United States, and on average, people of color are exposed to 38 percent higher levels of nitrogen dioxide compared to white populations.[30] Transitioning to ZEVs can deliver a more equitable, healthier, and clean energy future.

iii. Plan Elements

Optimize agency fleet management to enhance efficiency. To achieve their targets, Federal agencies will improve fleet management by:

- Conducting a comprehensive assessment of agency site and fleet locations in order to plan for efficient deployment of necessary charging or refueling infrastructure, energy storage technologies, and ancillary services to support vehicle-to-grid technology.
- Determining an optimum fleet inventory, emphasizing elimination of unnecessary, non-essential, old, or inefficient vehicles from the agency's fleet inventory and increasing the proportion of the fleet composed of ZEVs.
- Acquiring ZEVs for all new vehicle acquisitions where the GSA offers one or more ZEV options for that vehicle class.
- Ensuring PHEVs are operated on electricity to the greatest extent practicable.
- Converting agency-owned vehicles to GSA's leasing program, where appropriate, to accelerate ZEV acquisition and deployment.
- Expanding use of vehicle telematics and using fleet operational data to inform fleet planning and vehicle acquisition strategies.
- Improving accounting and reporting of asset-level fleet data.

Align financial planning for effective fleet planning. To ensure effective planning for ZEV acquisition and deployment and installation of necessary charging infrastructure, agencies will establish internal processes for cost allocation and capital planning on an agency-wide basis, and appropriately account for fuel and vehicle maintenance savings achieved via ZEVs. Agencies will build cross-functional teams with staff from fleet management, operations, facilities, finance, and acquisition departments to identify and plan for the investments necessary for rapid ZEV deployment.

Expand vehicle fleet charging infrastructure to support new ZEVs. Access to electric vehicle supply equipment (EVSE) and hydrogen stations is critical for effective ZEV deployment. Currently, there are only about 700 Federal charging stations, including some designated for the use of employees and visitors.[31] Installing sufficient charging infrastructure to support rapid vehicle deployment to meet the ZEV targets will be a significant challenge that requires an integrated, agency-level strategy and long-term view that includes:

- Engaging with the private sector, including utilities, to identify and achieve cost-efficiencies;
- Collaborating with personnel across facilities, including fleet, building, facility and site energy managers to plan for future EVSE sufficient to ensure a 100 percent ZEV fleet, including when building or renovating existing Federal facilities and parking areas; and
- Sharing charging infrastructure, including workplace charging, across agencies and where possible with State, Tribal, and local government fleets and communities.

Improve workforce understanding and effect cultural change to maximize adoption and optimize ZEV use. As with any new technologies, lack of knowledge and experience can hamper adoption. Training of Federal agency personnel will be necessary and critical to success, including highlighting the excellent real-world experiences of ZEV users and fostering inter-agency cooperation and peer-to-peer learnings based on successful ZEV deployment in Federal fleets. Fleet and facility managers will collaborate to manage the overall charging load, leading to the integrated operation and coordinated management of building systems and vehicles.

Seek opportunities for State, Tribal, and local governments and underserved communities to benefit from Federal efforts. The Federal Government will seek ways for State, Tribal, and local government fleets to benefit from the reach and scale of Federal procurement as well as from the fleet planning and analysis tools developed to support Federal deployment. This will include sharing lessons learned, case studies, and technical resources. The effort will include strategies to identify and address how ZEV fleets can support pollution reduction in overburdened communities.

Establish the Zero-Emission Vehicle Fleets Federal Leaders Working Group to drive strategy and implementation efforts that meet agency-by-agency targets and deployment planning. The Working Group will provide semiannual reports to the National Climate Task Force on actions, findings, and progress toward governmentwide goals.

An artist rendering of the re-imagined Department of Transportation John A. Volpe National Transportation Systems Center. This project collapses 6 separate Federal buildings and surface parking lots into a new state-of-the-art, low-emissions building. With an anticipated completion date of March 2023, the building will host solar photovoltaic panels and charging stations for Federal fleet and employee zero emission vehicles and climate resilience features such as above-grade back-up generators and an above-grade data center. Credit: SOM.

3 NET-ZERO EMISSIONS BUILDINGS BY 2045, INCLUDING A 50 PERCENT REDUCTION BY 2032

KEY ACTIONS

- Build for net-zero emissions.
- Implement the Federal Building Performance Standard to drive emission reductions in existing buildings.
- Increase energy and water efficiency.
- Reduce waste, minimize use of toxic and hazardous chemicals, and drive markets for recycled products.
- Achieve higher levels of sustainability in owned and leased buildings.
- Leverage private sector investment.
- Address equity.
- Drive sustainable and equitable siting.
- Establish the Net-Zero Emissions Buildings Federal Leaders Working Group to drive strategy and implementation.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") establishes an ambitious path to achieve a net-zero emissions buildings goal by 2045. The Federal Government will work across new building construction, major renovations, and existing real property to electrify systems, decrease energy use, reduce water consumption and cut waste. Federal agencies will set ambitious, data-driven 2030 goals and annual targets for energy and water reductions, based on leading performance benchmarks for building type categories and the composition of the agency's building portfolio. As part of this strategy, the Federal Government will use performance contracting to reduce emissions, improve efficiency, and modernize facilities while delivering financial savings.

B. Defining Net-Zero Emissions Buildings

"Net-zero emissions" means reducing greenhouse gas (GHG) emissions to as close to zero as possible by increasing energy and water efficiency and reducing waste and pollution, and then balancing remaining emissions with an equivalent amount of emission removal, through natural carbon sinks, carbon capture and storage, direct air capture, or other methods. In the immediate term, agencies will prioritize improvement of energy efficiency and the elimination of onsite fossil fuel use.

C. Sector Highlights

i. The sustainable building sector continues to grow and mature. The demand for sustainable design and construction—along with supporting industries like sustainable materials; energy and water efficient products and services; and waste management and minimization—continues to grow. For example, the number of U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) registrations in the United States doubled from 32,000 in 2010 to 69,000 in 2019.[32] The U.S. green building market is expected to experience continued growth due to high demand.[33]

ii. The energy efficiency sector continues to add jobs to the U.S. economy. From 2016 to 2019, the energy efficiency sector added nearly 200,000 new U.S. jobs. These included: jobs in manufacturing, such as making ENERGY STAR appliances; construction, such as retrofitting buildings, offices, and schools; and heating, ventilation, and, air conditioning (HVAC) building upgrades and installation.[34]

iii. Sustainable buildings are good for the environment and good for business. Organizations are able to cut utility bills, reduce environmental impacts, and provide healthier places for people to live, work, and socialize by designing to higher standards, maintaining building performance, and continuously improving efficiency and sustainability through new technologies and streamlined operations. For example, between 2008 and 2015 the General Services Administration (GSA) saved $340 million in energy and water costs from building efficiency improvements.[35]

iv. Buildings are critical to achieving GHG emission reduction targets. Commercial buildings consume more than a third of the electricity used in the nation, largely due to the energy demands for lighting, heating, and cooling.[36] Efficient building design, construction, and operation are now seen as foundational elements for city, state, and national climate mitigation plans. For example, in order to achieve its 80 percent GHG reduction goal by 2050, New York City plans to accelerate efforts to make its buildings more energy efficient, replace many of its fossil fuel-based heating and hot water systems in buildings with renewable or high-efficiency electric systems, and pursue holistic energy performance design for new and renovated buildings.[37]

v. Cities, countries, and private sector organizations have announced increasingly ambitious goals to reduce their energy and water footprints:

- The City of Los Angeles has pledged that all buildings within the city will be net-zero carbon emissions by 2050 and all newly constructed buildings will be net-zero carbon emissions by 2030. The City also aims to recycle 100 percent of its wastewater by 2025 and reduce 25 percent of its potable water use per capita by 2035.[38]
- The Government of Canada has announced that new national government buildings will be built to achieve net-zero emissions. The Government aims to reduce embodied carbon in construction projects by 30 percent starting in 2025 and ensure that 75 percent of domestic office floor space for new leases and lease renewals will be in net-zero carbon, climate resilient buildings starting in 2030.[39]
- Microsoft has committed to achieving zero waste and becoming water positive (replenishing water beyond the amount used in operations) by 2030.[40]

D. Current state of Net-Zero Emissions Buildings in the Federal Government

The Federal Government owns or leases more than 318,000 buildings domestically, covering 3 billion square feet. Net-zero emissions buildings make up a small but growing portion of this portfolio.

- The Federal Government has almost 3,000 sustainable buildings in its portfolio.[41]
- In 2020, Federal buildings consumed 309 trillion British thermal units of energy (a 26 percent decrease since 2003), and 120 billion gallons of water (a 28 percent decrease from 2007).[42] Approximately 43 percent of Federal GHG emissions are attributable to Federal buildings.
- Net-zero emissions buildings include the Department of Energy's National Renewable Energy Laboratory Research Support Facility in Golden, Colorado. This building is 360,000-square feet, employs deep efficiency, and features a 2.5-megawatt solar photovoltaic array and innovative thermal storage.
- A growing number of military installations are striving to achieve net-zero energy status, including Marine Corps Logistics Base Albany in Georgia.[43]
- Across the Federal Government, agencies are pursuing strategies to reduce solid waste streams, including increasing recycling rates and establishing composting programs.

E. The Net-Zero Emissions Buildings Plan

i. Goal

Reduce building emissions by 50 percent by 2032 and achieve net-zero emissions buildings, campuses, and installations by 2045. The Federal Government will work across its portfolio of owned and leased buildings to increase water and energy efficiency; reduce waste; drive decarbonization of Federal buildings; and achieve net-zero emissions across the Federal portfolio of buildings, campuses, and installations by 2045.

- New Federal building construction and major modernization projects greater than 25,000 gross square feet (GSF) will be designed and operated to be net-zero emissions by 2030, and net-zero water and waste where feasible.
- Federal agencies will complete deep energy retrofits in at least 30 percent of covered facilities by 2030.
- Agencies will develop, based on benchmarked buildings by type, 2030 energy use intensity and water use intensity goals and annual interim targets for their building, campus, and installation portfolios.
- New Federal building construction and major modernization projects greater than 25,000 GSF entering planning after September 30, 2021, will be designed, constructed, and maintained to meet sustainable design principles.
- New and renewed leases of at least 25,000 rentable square feet (RSF) where the Federal Government occupies 75 percent or more of rentable space and that are entered into after September 30, 2023, will be green leases and require the lessor to report energy and water consumption and waste generation. New leases of at least 25,000 RSF that are entered into after September 30, 2030, will be in net-zero emissions buildings.
- Agencies will divert 50 percent of non-hazardous solid waste, including food and compostable material, and construction and demolition waste and debris by 2025, and 75 percent by 2030.

ii. Outcomes

Advancing net-zero emissions buildings will greatly reduce the Federal Government's climate footprint; make Federal facilities healthier, more resilient, and more economical to operate; and create well-paying union jobs through the advancement and manufacturing of building technologies.

- **GHG Emission Reductions:** Achieving net-zero emissions Federal buildings will make a substantial contribution towards net-zero emissions Federal operations.
- **Healthy, Efficient, and Resilient:** Net-zero emissions buildings will require incredible

efficiency that will reduce the cost to operate buildings. Efficiency combined with onsite storage, generation, and decarbonization will make Federal buildings more resilient to disruptions in power or fuel supply.

- **Jobs:** The Federal Government's "Buy American" policy will support domestic industrial capacity to innovate and produce smarter, cleaner, and more efficient building technologies. These well-paying union jobs will bring new opportunities.
- **Equity:** Coupled with the Biden-Harris Administration's commitment to workforce training and workforce development to facilitate a green job pipeline, the Federal Government can serve as a model for supporting an inclusive green workforce that is inclusive of people who have been left out of the labor force.

iii. Plan Elements

Build for net-zero emissions. The Federal Government will ensure that when it builds, it builds better. All new construction and major modernization projects larger than 25,000 GSF entering the planning stage will be designed, constructed, and operated to be net-zero emissions by 2030, and where feasible, net-zero water and waste. Agencies' capital planning and retrofit projects will consider and prioritize:

- Building electrification and replacement of fossil-fuel consuming equipment with technologies that use carbon pollution-free electricity.
- On-site generation of carbon pollution-free energy and energy storage.
- Technologies that reduce GHG emissions from building, campus, or installation operations.
- Use of ongoing data analytics for system diagnostics and persistence of savings.

Implement the Federal Building Performance Standard to drive emission reductions in existing buildings. The Council on Environmental Quality (CEQ) will develop and issue the first-ever Federal Building Performance Standards to drive greater efficiency and decarbonization.

Increase energy and water efficiency. Under the President's Federal Sustainability Plan, Federal agencies will set ambitious, data-driven 2030 goals and annual targets for energy and water reductions based on leading performance benchmarks for building type categories and the composition of the agency's building portfolio. As part of achieving this target, agencies will also:

The Research Support Facility, a net-zero emissions building at the National Renewable Energy Laboratory in Golden, Colorado.

- Complete deep energy retrofits and whole building commissioning on a minimum of 30 percent of covered facilities by 2030, with priority placed on high energy consuming facilities.
- Implement space utilization and optimization.
- Deploy strategies to maximize demand flexibility through smart, grid-integrated controls, equipment, and devices.
- Improve energy efficiency of onsite data centers.

Reduce waste, minimize use of toxic and hazardous chemicals, and drive markets for recycled products. Agencies will annually divert 50 percent of building non-hazardous waste and construction and demolition debris by 2025 and 75 percent by 2030. Federal agencies will also pursue net-zero waste buildings, campuses, and installations where feasible. In addition, agencies will reduce or minimize the use of toxic and hazardous chemicals and materials, particularly where such reduction will assist the agency in reducing their GHG emissions.

Achieve higher levels of sustainability in owned and leased buildings. New construction and major modernization projects larger than 25,000 GSF entering the planning stage after September 30, 2021, will be designed and constructed to leading sustainable design standards. At a minimum, these construction projects must meet the sustainable design requirements as defined by CEQ's *Guiding Principles for Sustainable Federal Buildings* wherever technically feasible and practicable.[44]

The Federal Government also will leverage its footprint of leased space to drive greater sustainability in the building sector. All new and renewed leases over 25,000 RSF, where the Federal Government occupies at least 75 percent of the building, and that are entered into after September 30, 2023, will be green leases, as defined by GSA. They will require the lessor to report to the agency lessee annual data on facility GHG emissions, energy and water consumption, and waste generation. By 2030, all leases greater than 25,000 RSF will be net-zero emissions buildings.

Leverage private sector investment. In accordance with the Energy Act of 2020, which requires agencies to complete at least 50 percent of all identified lifecycle cost effective energy and water savings measures through performance contracting, agencies will expand use of performance contracting to: improve efficiency; achieve energy, water, and GHG emission reductions; expand use of carbon pollution-free electricity, increase infrastructure resilience; modernize buildings; and, support achievement of net-zero goals.[45]

Address equity. Integrate equity into planning, evaluation, and assessment of investment benefits for underserved communities through Federal efforts taken to achieve the goal of reaching net-zero emissions buildings by 2045.

Drive sustainable and equitable siting. CEQ will issue guidance to promote sustainable locations for Federal facilities and strengthen the vitality and livability of the communities in which Federal facilities are located. The guidance may address topics such as strategically locating Federal workplaces to promote efficient use of local infrastructure; expanding public transportation use and access; and aligning Federal real estate investment with local or regional planning, sustainability, and equitable economic development goals. Agencies must consider this guidance in their siting of Federal facilities.

Establish the Net-Zero Emissions Buildings Federal Leaders Working Group to drive strategy and implementation. The Working Group will provide semiannual reports to the National Climate Task Force on actions, findings, and progress toward governmentwide goals.

4 NET-ZERO EMISSIONS PROCUREMENT BY 2050

KEY ACTIONS

- Require major Federal suppliers to publicly disclose emissions and set reduction targets.
- Launch a Buy Clean initiative for low-carbon materials.
- Change Federal procurement rules to minimize the risk of climate change, including factoring in the social cost of GHG (SC-GHG) in procurement decisions.
- Maximize the procurement of sustainable products and services.
- Establish the Net-Zero Emissions Procurement Federal Leaders Working Group, including a Buy Clean Task Force, to drive strategy and implementation.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to achieve net-zero emissions from Federal procurement by 2050 while increasing the sustainability of Federal supply chains. These supply chain initiatives include major contractor greenhouse gas (GHG) emission disclosures paired with science-based targets, a "buy clean" initiative for low-carbon materials, and a sustainable products policy. These programs will advance America's industrial competitiveness to supply the low-carbon and sustainable goods of the future while creating well-paying union jobs.

B. Defining Net-Zero Procurement

"Net-zero procurement" means reducing the carbon footprint of all purchased products and services to zero. As such, it is a long-term goal that encompasses improved measurement of the carbon footprint of procurement, while using purchasing preferences to drive investment in low-carbon and zero-carbon products and services.

C. Sector Highlights

i. Sustainable procurement is advancing. Sustainable procurement is rapidly evolving, with public and private sector organizations implementing new ways of procuring goods and services that reduce climate-related risk and promote environmental stewardship.

- **Major public and private sector organizations have been strengthening supply chain efforts by focusing on supplier emissions.** Many organizations are requiring climate action and commitments from suppliers and committing to quantitative supply chain GHG reductions.[46] In 2020, 154 corporations, including dozens of Federal Government contractors, participated in CDP's Supply Chain program, asking their suppliers to disclose and commit to climate action.[47]
- **Commitments to transparency and emissions reductions are increasing:** As of 2021, over

1,500 companies have committed to setting third-party-verified, science-based GHG targets—all in the last 5 years[48]—while 1 in 5 of the world's 2,000 largest public companies had committed to net-zero emissions targets.[49]

- **States and cities are also focused on developing markets for low-carbon goods.** Multiple state and local governments are focusing on initiatives to reduce GHG emissions from the production of products, and establishing "buy clean" initiatives that promote the purchasing of lower-carbon materials for construction projects.[50]
- **Organizations are requiring the purchase of sustainable products.** More organizations are requiring the purchase of third-party validated sustainable products, such as ENERGY STAR.
- **Building equity.** Corporate sustainability efforts are advancing innovative initiatives that build opportunities to address historic barriers for entry into the sustainable supply-chain sector. Examples include Apple's Impact Accelerator initiative that supports equity and opportunity in the environmental sector.

ii. Commitments to sustainable procurement are rising. Public, private, and non-profit organizations are meeting sustainability goals by transforming their procurement strategies.

- The Government of Canada recently announced its intent to reach zero-carbon procurement by 2050 as part of its overall 2050 net-zero initiative.[51]
- The Government of the United Kingdom will require businesses to commit to net-zero emissions by 2050 before they can bid for major government contracts.[52]
- Microsoft requires top suppliers to participate in third-party environmental, social, and governance ratings and disclose climate impacts and sustainability performance.[53]
- Salesforce announced that future contracts will require suppliers to make climate commitments. These commitments include setting science-based emission reduction targets, creating a plan for reducing emissions, and delivering products and services that are carbon neutral.[54]

D. Current State of Net-Zero Procurement and Supply Chains in the Federal Government

The Federal Government is the world's largest buyer of goods and services, and its operations include a number of sustainable procurement initiatives.

- The Federal Government awarded over $650 billion in contracts in fiscal year 2020.[55]
- Over 100,000 companies, representing over 35 percent of U.S. gross domestic product in total sales, received direct Federal contracts in the last year, and many more received subcontracts.
- Federal supply chain GHG emissions are estimated to be around twice as large as emissions from all Federal Government buildings and vehicles.[56]
- Since 2016, Federal suppliers have been asked to report whether or not they disclose GHG emissions and have a reduction target.[57]

E. The Net-Zero Procurement Plan

i. Goal

Achieve Net-Zero Emissions Procurement by 2050. The Federal Government will leverage the power of its procurement to catalyze action by Federal suppliers, with the goal of achieving net-zero procurement by 2050 and more sustainable supply chains.

ii. Outcomes

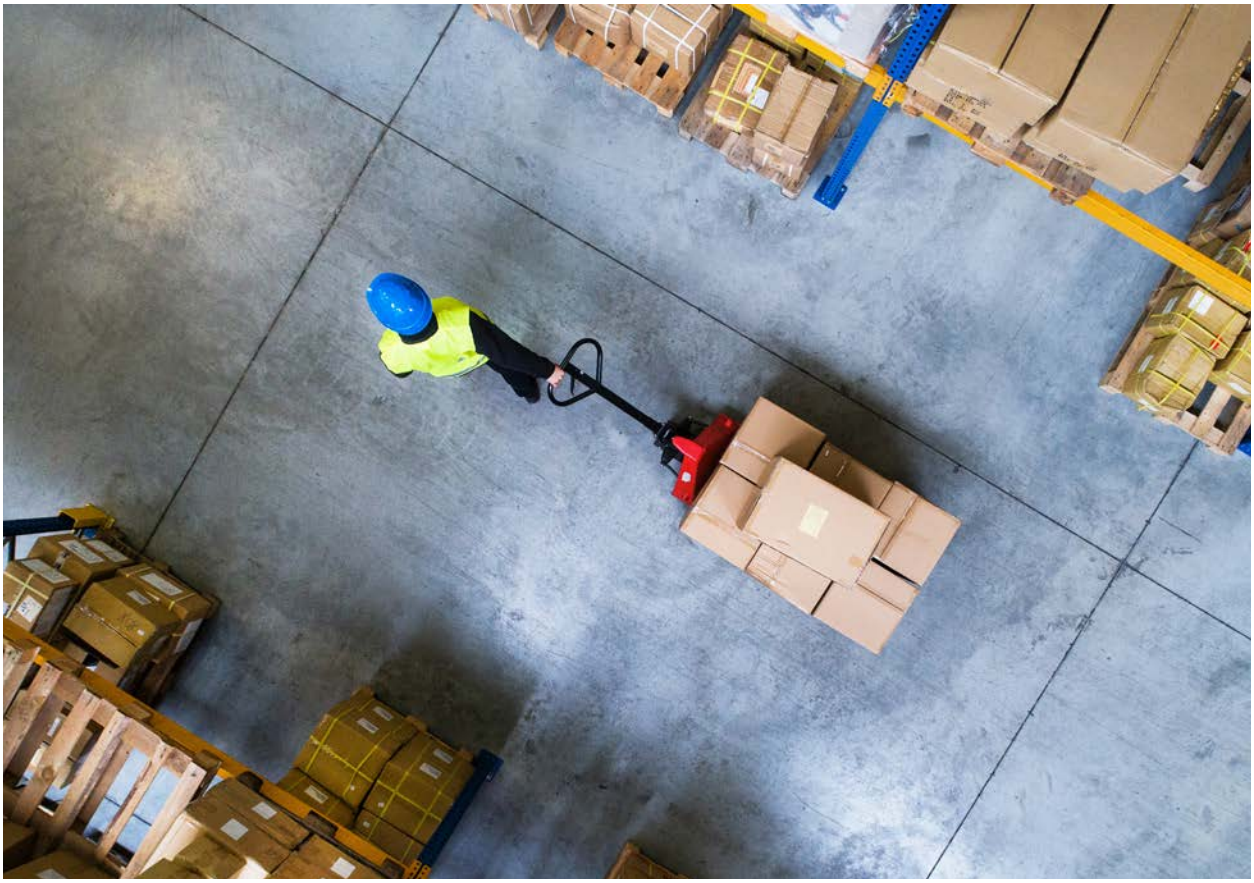
New sustainable procurement policies can drive sound environmental stewardship for Federal

buyers and taxpayers while reducing the risks that ecological degradation and climate change poses to Federal missions and supply chains.

- Expanding low-carbon procurement represents an important opportunity to dramatically cut GHG emissions that result from the Federal Government's purchase of goods and services.
- By providing a large and stable signal to the market for sustainable and low-carbon goods and services made in America, the Federal Government can spur domestic economic growth.
- These policies also drive and expand diverse Federal contractors, who benefit from public dollars, to act as good climate stewards by assessing climate risks, reducing emissions, and researching and investing in low-carbon technologies.
- Low carbon supply chains can also reduce other co-pollutants associated with the production, generation, and disposal of materials. Reducing these pollution emissions, especially in communities that experience disproportionately higher cumulative environmental risks and harms will promote a more equitable economy.

iii. Plan Elements

Require major Federal suppliers to publicly disclose GHG emissions and climate risks, and set science-based targets to reduce emissions. Major Federal contractors will publicly report their annual corporate-level GHG emissions and set targets to reduce them. Major contractors will also disclose climate risks and vulnerabilities that may affect their future economic stability or their ability to deliver goods and services that are critical to Federal agency missions. These requirements



will improve the resilience of Federal supply chains to increasing climate risks, strengthen the competitive position of American companies, and help to reduce contract costs through increased efficiency.

Launch a Buy Clean initiative for low-carbon materials. Production of high-volume materials associated with the construction of buildings and infrastructure, especially concrete and steel, is a major source of global GHG emissions. Reducing these emissions, referred to as "embodied" emissions because they are emitted during the manufacture of purchased products, is a critical piece of reducing emissions in the Federal supply chain.

Change Federal procurement rules to minimize the risk of climate change, including factoring in the social cost of GHG (SC-GHG) in procurement decisions. Agencies are already required to consider the lifecycle cost of alternatives in procurement decisions. Strengthening lifecycle cost approaches, where feasible and applicable, to include the SC-GHG—the incremental future economic damages caused by each ton of carbon pollution—can be a valuable tool to guide agencies toward investments that are compatible with the low-carbon economy of the future. Calculating and applying SC-GHG in procurements is an emerging field, which the Biden-Harris Administration will advance through an iterative, whole-of-government approach that includes agency-level pilots.

Maximize the procurement of sustainable products and services. The Federal Government will maximize procurement of sustainable products and services, including ENERGY STAR rated equipment; products that are bio-based, made from recycled content, water-efficient, fuel-efficient, made with safer chemical ingredients, and non-ozone-depleting; and products that have earned third-party ecolabels reviewed and recommended by the Environmental Protection Agency. Additionally, agencies should avoid the procurement of products containing perfluoroalkyl or polyfluoroalkyl substances (PFAS).

Establish the Net-Zero Emissions Procurement Federal Leaders Working Group, including a Buy Clean Task Force, to drive strategy and implementation. The Working Group will provide semiannual reports to the National Climate Task Force on actions, findings, and progress toward governmentwide goals.

5 NET-ZERO EMISSIONS OPERATIONS BY 2050, INCLUDING A 65 PERCENT REDUCTION BY 2030

KEY ACTIONS

- Use 100 percent carbon pollution-free electricity by 2030.
- Achieve 100 percent zero-emission vehicle acquisitions by 2035.
- Achieve net-zero emissions buildings by 2045.
- Achieve net-zero emissions procurement by 2050.
- Partner with public, private, and nonprofit sector leaders.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to achieve net-zero emissions across Federal operations by 2050. To achieve this goal, the Federal Government will transition its infrastructure to zero-emission vehicles (ZEVs) and buildings, powered by carbon pollution-free electricity (CFE). It also will transform its operations to develop a net-zero supply chain, require Federal agencies to set goals to reduce greenhouse gas (GHG) emissions, and partner with leading domestic and international organizations to accelerate progress. By leveraging its power of procurement, the Federal Government will accelerate the country's transition to a clean energy economy and create well-paying union jobs during the process.

B. Defining Net-Zero Emissions

Net-zero emissions means reducing GHG emissions to as close to zero as possible, and balancing remaining emissions with an equivalent amount of emission removal, through natural carbon sinks, carbon capture and storage, direct air capture, or other methods.

C. Sector Highlights

i. Countries, cities, and private companies have established and are working toward net-zero emissions goals.

- **A number of countries have set ambitious goals at national and subnational levels.** In 2020, the Government of Canada set a net-zero emissions by 2050 goal.[58] New Zealand has a target for public sector operations to be carbon-neutral by 2025.[59] Towns and regions in Australia, Peru, Portugal, the United Kingdom, Spain, Sweden, and other countries have also committed to lead through action by decarbonizing local government operations.[60]
- **Domestically, a growing number of U.S. cities and states are working towards net-zero emissions goals.** New York City, Los Angeles, and Miami have set net-zero targets.[61] Massachusetts and Louisiana also have established 2050 net-zero emissions goals.[62]

- **Leading corporations have also established net-zero goals.** At least one-fifth of the world's 2,000 largest public companies are committed to net-zero targets. This includes dozens of companies headquartered in the United States, such as Apple, American Airlines, Ford Motor Company, General Motors, Google, Microsoft, PepsiCo, Proctor & Gamble, Verizon, and others.[63]

D. Current State of Emissions in the Federal Government

In 2020, scope 1 and 2 emissions from standard Federal operations totaled 34.9 million metric tons of carbon dioxide (MTCO2e), which represents a 32 percent reduction in emissions since 2008.

- Fifty-one percent of the Federal operations emissions came from "standard operations," which result from the operation of Federal buildings and fleet vehicles, and the other 49 percent from "non-standard operations," which are primarily military and law enforcement operations. In 2020, scope 1 and 2 emissions from non-standard operations totaled 33.7 million MTCO2e.
- Since 2008, Federal agencies have focused their efforts on reducing standard operations emissions, largely by becoming more energy efficient and using more renewable electricity.
- The highest GHG emission categories for standard operations in 2020 include 20 million MTCO2e of purchased electricity for Federal facilities (scope 2), 8.6 million MTCO2e of onsite fuel consumption at Federal facilities (scope 1), and 2.7 million MTCO2e of mobile source emissions from passenger fleet vehicles (scope 1).
- The largest share of emissions due to significant building and vehicle energy use, include the

Department of Defense (56 percent of total Federal Government emissions in 2020), the Department of Veterans Affairs (7 percent), and the Department of Energy (6 percent). The United States Postal Service (11 percent) is also one of the highest emitting agencies, with 67 percent of total Federal passenger fleet vehicle emissions.

- **In 2017, scope 3 emissions from Federal operations were 14.8 million MTCO2 operations.** Scope 3 emissions reporting was ended that year and will be re-started for 2021.

E. The Federal Government Net-Zero Emissions Plan

i. Goal

We plan to achieve net-zero emissions from standard Federal operations by 2050. To do so, the Federal Government is executing a whole-of-government approach to transform the way it builds, buys, and manages its electricity, vehicles, buildings, and other operations.

ii. Outcomes

By achieving net-zero emissions by 2050, the Federal Government will accelerate the advancement of America's industrial capacity to supply domestic clean energy, buildings, vehicles, and other products and materials.

- Other leading organizations will use the Federal Government's purchasing protocols as models to follow, thereby catalyzing additional demand and private sector investments.
- Through efforts like the Greening Government Initiative, other nations' participation will reinforce and accelerate our overall progress.
- By becoming a cleaner, smarter, and more efficient enterprise, the Federal Government will shrink its environmental footprint and save taxpayer dollars.
- By shrinking its environmental footprint and focusing on equity, the Federal Government will serve as a leader both domestically and internationally in addressing climate and environmental inequality.

iii. Plan Elements

Achieve 100 percent CFE on a net annual basis by 2030, including 50 percent on a 24-hour-a-day 7-days-a-week (24/7) basis. The Federal Government will execute a whole-of-government approach to increase use, production, and facilitation of carbon pollution-free electricity and storage to achieve this goal.

Achieve 100 percent ZEV acquisitions by 2035. Each Federal agency will acquire ZEVs in all vehicle classes as vehicles come to market. Each Federal agency will acquire ZEVs for 100 percent of all light-duty vehicles by 2027 and all medium- and heavy-duty vehicles by 2035. Federal agencies will achieve the path to the acquisition targets through planning, coordination, and collaboration, informed by agency mission, ZEV model availability, and funding.

Achieve net-zero emissions buildings by 2045. The Federal Government will work across its portfolio of owned and leased buildings to increase water and energy efficiency; reduce waste; drive decarbonization of Federal buildings; and achieve net-zero emissions across the Federal portfolio of buildings, campuses, and installations by 2045.

Achieve net-zero emissions procurement by 2050. In order to achieve net-zero procurement by 2050, while increasing the sustainability of Federal supply chains, the Federal Government will leverage the power of its procurement to catalyze action by Federal suppliers. These supply chain initiatives include major contractor GHG emission disclosures paired with science-based targets, a "buy clean" intiative for low-carbon materials, and a sustainable products policy.

Partner with public, private, and nonprofit sector leaders. The Federal Government cannot achieve its net-zero emissions goal by working alone. We will engage with domestic and international leaders to learn best practices for addressing more challenging or complex emissions reduction opportunities. We will place senior leaders from the private and non-profit sectors into limited-term appointments to bring innovative perspectives and expertise to assist Federal agencies with sustainability and climate preparedness efforts. We have also launched the first-ever Greening Government Initiative, through which the United States and Canada are convening countries from around the world who are interested in greening their national government operations.

The General Services Administration (GSA) is at the forefront of net-zero energy building design. In 2010, GSA achieved the nation's first net-zero energy historic building with the Wayne Aspinall Federal Building and Courthouse in Grand Junction, Colorado. GSA used geothermal heating and cooling, a solar panel array, state-of-the-art light fixtures that respond to natural light levels, and solar control window film to achieve net-zero energy.

6 CLIMATE RESILIENT INFRASTRUCTURE AND OPERATIONS

KEY ACTIONS

- Routinely assess climate vulnerabilities and risks.
- Modernize Federal policy, programs, operations, and infrastructure to support climate resilient investment.
- Establish the Climate Adaptation and Resilience Federal Leaders Working Group.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to prepare Federal agency policy, programs, operations, and infrastructure to adopt adaptive and resilient strategies for future climate impacts. Federal agencies will develop climate adaptation and resilience plans that evaluate the most significant climate-related risks and vulnerabilities for agency operations and missions, and identify action to manage those risks and vulnerabilities. The President's Federal Sustainability Plan also establishes the Climate Adaptation and Resilience Federal Leaders Working Group, which will advance agency coordination, continual learning, and implementation in areas such as climate data and tools, infrastructure adaptation, and adaptation metrics and evaluation. This approach will minimize disruptions and destruction of Federal infrastructure, programs, and services.

B. Defining Climate Adaptation and Climate Resilience

Climate adaptation refers to "actions taken at the individual, local, regional, and national levels to reduce risks from even today's changed climate conditions and to prepare for impacts from additional changes projected for the future."[64]

Climate resilience means "a capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment."[65] Resilience means improving capacity, and doing more than "respond and recover."

C. Sector Highlights

i. Climate risk management is becoming mainstream. Leading public and private sector entities are changing how they plan, buy, build, and adapt their enterprises to manage climate-related risks and costs. Nearly 60 percent of the world's 100 largest public companies are integrating climate information into their strategic, financial, operational, and reputational management systems.[66] As a result, these companies are:

- Improving their business continuity plans in the face of climate-related physical risks;

- Adding methods, such as scenario planning, to identify and address vulnerabilities;
- Addressing the underinvestment of some communities that create inequitable resiliency capabilities; and
- Strengthening institutional capacity by training their workforces.

ii. Commitments to adaptation and resilience

- More than 20 states and 40 local and regional entities in the United States have developed climate adaptation or response plans.[67] Countries, including the United Kingdom, Canada, and Japan, have prioritized climate adaptation, developed national climate adaptation plans, and advanced their methods to monitor and evaluate their adaptation actions.[68]
- Many state, regional, and local governments are addressing the vulnerabilities of underserved and disadvantaged communities in their climate adaptation and resiliency plans. This includes ensuring effective and responsible engagement and participation by affected communities.
- Credit rating agencies, such as Moody's Investors Service, and actuarial entities have integrated climate information into their research and ratings processes.[69]

D. Current State of Climate Adaptation and Resilience Planning in the Federal Government

The Federal Government is building back better when it comes to climate adaptation and resilience operations. This capability matured over the last decade (between 2009-2017) before being largely halted over the past four years. This pause resulted in a loss of systems, structures, and human capital with adaptation expertise. Key adaptation efforts over this time period include the following:

- Governmentwide climate adaptation planning initially began under Executive Order (E.O.) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,* issued in 2009.[70] The E.O. directed agencies to assess their risks and vulnerabilities and prepare climate adaptation plans. Agencies prepared and publicly posted climate change adaptation plans with an initial focus on internal operations and priorities. Interagency working groups were established to support a cycle of continuous improvement.
- E.O. 13653, *Preparing the United States for the Impacts of Climate Change,* issued in 2013, called for enhanced climate adaptation planning.[71] Federal agency climate adaptation planning was leading private sector efforts and continued to advance and mature. In 2017, E.O. 13653 was revoked, leading to a pause on most agency climate adaptation and resilience activities.
- In E.O. 14008, *Tackling the Climate Crisis at Home and Abroad,* issued on January 27, 2021, President Biden reestablished climate adaptation as a priority in the Federal government, directing agencies to develop climate action plans focused on bolstering adaptation and increasing resilience to the impacts of climate change.
- Since 2019, the Government Accountability Office has placed climate risk on its Federal Government "High-Risk list," noting that "to reduce its fiscal exposure to climate change, the federal government needs a cohesive, strategic approach with strong leadership and the authority to manage risks across the entire range of related federal activities."[72]

E. The Climate Adaptation and Resilience Plan

i. Goal

Federal agencies will implement climate adaptation actions to strengthen the climate resilience

Firefighters digging a fire line at Fort Carson, Colorado, during a training exercise. Stop lines are fire control measures designed to cut off a wildfire before it spreads.

across their missions, policies, programs, operations, and infrastructure for observed and expected climate impacts.

ii. Outcomes

By strengthening its climate resilience, the Federal Government will enhance the overall resilience of Federal agency operations and ensure the ability of Federal agencies to meet their missions through climate adaptation actions. Other outcomes include:

- Driving cost savings for Federal agencies and taxpayers while reducing the risks that climate change poses to Federal infrastructure.
- Demonstrating successful adaptation projects, driving codes and standards, and creating new business ecosystems.
- Avoiding or reducing near term disaster response and recovery costs, and reducing significant cumulative costs to U.S. coastal properties, roads, and rail systems.[73]
- Reducing risks and improving public health and safety for low income, minority, and disadvantaged populations.[74]
- Enhancing the adaptation and resilience of ecosystems and harnessing nature-based solutions to the climate challenge.

iii. Plan Elements

Routinely assess climate risk vulnerabilities. Agencies will develop climate adaptation and resilience plans that evaluate the most significant climate change related risks and vulnerabilities

in agency missions and operations, and identify actions to manage and mitigate those risks and vulnerabilities. Agencies will provide annual updates to these plans. At a minimum, major updates will occur after every National Climate Assessment and every four years. Agencies also will assess and report on implementation activities and progress annually. The Council on Environmental Quality (CEQ) and Office of Management and Budget will review, evaluate, and monitor these reports, in coordination with agency officials, as part of a robust process to continually improve the effectiveness of agency planning and implementation.

Modernize Federal policy, programs, operations, and infrastructure to support climate resilient investment. Federal agencies will advance climate operations by:

- Developing or revising polices, programs, and processes to promote climate resilient investment that advances adaptation to climate change and protects public health and the environment.
- Conducting climate adaptation analysis and planning for climate-informed financial and management decisions and program implementation.
- Reforming agency policies and funding programs that are maladaptive to climate change and increase the vulnerability of communities, natural or built systems, economic sectors, natural resources, or related risks.
- Developing and enhancing tools that assess climate change impacts, and support climate adaptation planning and implementation.
- Maintaining awareness of best available science as new climate research, projections, and scenarios better constrain likely future climate risks.

Establish the Climate Adaptation and Resilience Federal Leaders Working Group. The Chair of CEQ will charter and designate the chair or co-chairs for this Working Group to advance agency coordination, continual learning, and implementation in areas such as climate data and tools, equity metrics and evaluation, financial analysis, and supply chains.

SECTION II: PRIMARY ENABLING GOALS

1 DEVELOP A CLIMATE- AND SUSTAINABILITY-FOCUSED WORKFORCE

KEY ACTIONS

- Foster a culture of sustainability and climate action throughout the Federal workforce.
- Identify human capital requirements for effective implementation of the Federal Sustainability Plan's goals and objectives.
- Incorporate sustainability and climate preparedness content in Federal trainings.
- Require employee engagement and training as part of annual agency sustainability plans and climate adaptation and resilience plans.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to mainstream sustainability within the Federal workforce. The Plan's elements build internal capacity through engagement, education, and training on Federal sustainability, climate adaptation, and environmental stewardship. Federal agencies also will incorporate sustainability and climate adaptation into their human capital planning, including optimal staffing, training, and associated resources.

B. Sector Highlights

i. Leading organizations are embedding sustainability into their work and workforce. Sustainability has become a core part of public, private, and non-profit operational and workforce development practices. Within the workforce, organizations have incorporated sustainability into the roles of all employees and created sustainability-focused roles, teams, and divisions to address sustainability goals and objectives. Through operational changes, organizations have built sustainability into their day-to-day practices. Examples include:

- Salesforce mainstreamed sustainability into its mission and the role of all employees.[75]

- Google created an energy division that set and achieved its goal of 100 percent carbon pollution-free electricity (CFE) in 2017. The company is now seeking to move the company to 100 percent twenty-four hours a day, seven days a week (24/7) CFE by 2030.[76]
- Procter & Gamble engages employees across all levels to ensure they are aware of business sustainability plans and how to contribute to those plans. It has implemented a program recognizing employees who have made significant contributions to advancing sustainability and communicates environmental progress to employees on a routine basis.[77]

C. Current State of Sustainability and Climate Human Capital and Employee Engagement Efforts within the Federal Government

Sustainability has not been embedded into the Federal workforce, although significant strides have been made on which we can build upon.

- There are deep pockets of sustainability and climate adaptation expertise and experience within the Federal Government. Notably, the Department of Defense (DOD), the General Services Administration (GSA), and the Department of Energy's Federal Energy Management Program (DOE-FEMP) have or are developing robust and resilient capacity to manage climate change risks and secure Federal real property and supply chain investment.
- DOD, DOE, and GSA are also leaders within the Federal Government for their expertise in executing sustainability efforts including procuring CFE and implementing energy and water efficiency projects and green building design.
- The Federal Government has developed many high-quality resources to assist Federal facility managers who are implementing or coordinating internal sustainability or climate preparedness efforts. These resources can be found on www.sustainability.gov and www.fedcenter.gov.

- Many Federal organizations use Earth Day to communicate about internal sustainability efforts. Some agencies have internal-facing websites about internal greening efforts, including the Environmental Protection Agency and DOD.[78]
- Agencies such as DOD and the Department of Homeland Security have established internal sustainability award programs, and DOE-FEMP recognizes standout Federal projects, teams, and employees through its annual Energy and Water Management Awards and FEDS Spotlight.

D. The Engaging, Educating, and Training the Workforce Plan

i. Goal

Engage, educate, and train the Federal workforce. The Federal Government will execute a whole-of-government approach to mainstream sustainability and build capacity within its workforce through engagement, education, and training on Federal sustainability, climate adaptation, and environmental stewardship.

ii. Outcomes

By embedding sustainability within the Federal workforce as leading private and public organizations do, the Federal Government will enable the transformation of how it builds, buys, and manages its electricity, vehicles, buildings, and other operations.

- By creating opportunities for Federal employees to contribute to agency sustainability and climate preparedness efforts, the Federal Government can build upon existing programs and initiatives and achieve results faster.
- Federal employees can in turn apply this information and take action in their homes and communities, achieving greater benefits.

iii. Plan Elements

Foster a culture of sustainability and climate action throughout the workforce. Federal agencies will foster a culture of sustainability and climate action across all disciplines and functions and encourage outstanding performance, including incorporation of sustainability objectives in the performance plans of agency executives, managers, and staffs, where appropriate.

Identify human capital requirements for effective implementation of the Federal Sustainability Plan's goals and objectives. Federal agencies will integrate achievement of sustainability goals and climate adaptation and resilience into agency human capital planning to ensure they have the staff, training, and resources to effectively meet Federal Sustainability Plan goals.

Incorporate sustainability and climate action training content into existing Federal trainings. The Office of Personnel Management (OPM) will identify opportunities for including or expanding environmental sustainability and climate adaptation training content in existing Federal training programs, including OPM leadership training programs, as well as strategies for incorporating sustainability into performance plans.

Require employee engagement and training as part of annual agency sustainability plans and climate adaptation and resilience plans. Agencies will develop strategies, identify relevant programs, and outline actions to bolster employee engagement and training to meet goals. Training will include the subject of equity in climate resiliency and sustainability.

The Edith Green-Wendell Wyatt Federal Building in Portland, Oregon, underwent a major renovation between 2009 and 2013 and was transformed into an exemplar of environmental performance. For example, its rooftop canopy provides shade to the uppermost part of the tower while its embedded 180-kilowatt photovoltaic array supplies 4 percent of the building's total energy. During storms, the canopy channels rainfall into its basement, which has been converted into a 165,000-gallon cistern; captured stormwater is used for flushing toilets, cooling mechanicals, and irrigation.

2 ADVANCE ENVIRONMENTAL JUSTICE AND EQUITY

KEY ACTIONS

- Target investments in environmental justice communities.
- Include a Federal environmental justice representative on the Federal Chief Sustainability Officer Council.
- Incorporate environmental justice into agency sustainability plans and climate adaptation and resilience plans.
- Reinforce equity in Federal contracting and operations.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to create a more equitable future for America by incorporating environmental justice and equity into Federal sustainability. Federal agencies will consider the goals of the Justice40 Initiative when making decisions related to Federal facilities, fleets, and operations. Agencies will also address actions taken to advance environmental justice within their annual sustainability plans and climate adaptation and resilience plans. Additionally, a Federal environmental justice representative will serve on the newly established Federal Chief Sustainability Council. To incorporate equity, agencies will support Executive Order 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government,* which helps ensure that Government contracting and procurement opportunities are available on an equal basis.

B. Current State of Advancing Environmental Justice in the Federal Government

While Federal efforts are increasing, incorporation of environmental justice into sustainability operations is a new concept for Federal sustainability.

- Guided by the 1994 Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,*[79] Federal agencies have coordinated efforts to collectively advance environmental justice across the Federal Government.
- In Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad,* the Biden-Harris Administration declared environmental justice a key consideration in governing and has already made significant strides, including establishing a White House Environmental Justice Advisory

Council (WHEJAC), which is tasked with advising and providing recommendations on how to increase the Federal Government's efforts to address environmental injustice. The first public meeting of the WHEJAC was on March 30, 2021.

- The Biden-Harris Administration also established the White House Environmental Justice Interagency Council (IAC), which met for the first time on April 6, 2021. The IAC is responsible for developing a strategy to address current and historic environmental justice by consulting with the WHEJAC and local environmental justice leaders.
- Through Executive Order 14008, President Biden created the Justice40 Initiative, a critical part of the Administration's whole-of-government approach to advancing environmental justice. The Justice40 Initiative directs 40 percent of the overall benefits from relevant Federal investments to disadvantaged communities and tracks performance toward that goal through the establishment of an Environmental Justice Scorecard.
- The Biden-Harris Administration has also reinstated and strengthened the Environmental Protection Agency's Toxics Release Inventory reporting and goal-setting for Federal contractors.[80]

C. The Advancing Environmental Justice and Equity Plan

i. Goal

Incorporate environmental justice and equity into Federal operations planning and decision making.

ii. Outcomes

By incorporating environmental justice and equity into Federal operations planning and decision making, the Federal Government can create a more equitable future. Executive Order 14008 states that "agencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts." In the transformational work of building a clean economy, we seek to build healthier, more prosperous communities, and address the factors that have resulted in communities overburdened by pollution and experiencing historic underinvestment.

iii. Plan Elements

Include a Federal expert on environmental justice on the Federal Chief Sustainability Officer Council. The Federal Chief Sustainability Officer (CSO) Council, chaired by the Federal Chief Sustainability Officer and composed of Chief Sustainability Officers of principal agencies, advises the Director of the Office of Management and Budget and the Chair of the Council on Environmental Quality (CEQ) on implementation of the President's Federal Sustainability Plan. CEQ will appoint a Federal expert on environmental justice to the Council.

Incorporate environmental justice efforts in annual agency sustainability plans and climate adaptation and resilience plans. Agencies will incorporate actions taken to advance environmental justice as part of sustainable operations within their annual sustainability plans and climate adaptation and resilience plans.

Target investments in environmental justice communities. Agencies will consider incorporating the goals of the Justice40 Initiative into operational planning and decision making regarding Federal facilities, fleets, and operations. Specifically, they will consider how certain Federal investments might be made toward the goal that

40 percent of the overall benefits flow to disadvantaged communities.

Reinforce equity in Federal contracting and operations. We will work together to implement equity, including through Executive Order 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government,* which directs action to ensure that Government contracting and procurement opportunities are available on an equal basis.

3 ACCELERATE PROGRESS THROUGH DOMESTIC AND INTERNATIONAL PARTNERSHIPS

KEY ACTIONS

- Launch a Presidential Sustainability Executives Program.
- Co-lead an international Greening Government Initiative.
- Partner with State, Tribal, and local governments to accelerate progress.

A. Introduction

President Biden's Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability and accompanying Federal Sustainability Plan (collectively referred to as "The Federal Sustainability Plan") outlines an ambitious path to leverage domestic and international partnerships to accelerate progress and catalyze greater action at home and abroad. We will place senior leaders from the private and non-profit sectors into limited-term appointments to bring innovative perspectives and expertise to assist Federal agencies with sustainability and climate preparedness efforts. We have also launched the Greening Government Initiative, a first-of-its kind forum for engaging governments around the world in greening government operations.

B. Current State of Federal Partnerships to Advance Sustainability

The Federal Government has a long history of successful collaboration and partnerships with the public, private, and non-profit sectors, especially around the environment. These collaborations have taken many different forms:

- **Recognition.** Some focus on recognition of private sector leadership such as the Environmental Protection Agency's (EPA's) WasteWise program or the joint EPA-Department of Energy (DOE) ENERGY STAR Program.
- **Technical Assistance and Peer Exchange.** Programs such as EPA's Center for Corporate Climate Leadership providing tools for GHG measurement; the Suppliers Partnership for the Environment, which facilitates circular economy structuring between EPA, auto manufacturers, and their suppliers; and EPA's Green Power Partnership, which represents nearly 40 percent of the U.S. voluntary green power market and provides opportunities for information sharing.[81]
- **Advisory.** Federal advisory committees such as the General Services Agency's (GSA) Green Building Advisory Committee and science advisory boards at various agencies provide a fresh perspective and critical advice to the Federal Government.
- **Co-development.** Finally, others focus on co-development such as the National Oceanic and Atmospheric Administration's relationship

with the commercial weather industry and Federal agency research and development partnerships with the private sector for basic research and commercialization.

C. The Plan to Accelerate Progress through Domestic and Global Partnerships

i. Goal

As the Federal Government refocuses to take a whole-of-government approach in this Federal Sustainability Plan, it also will take an all-in approach by actively engaging external stakeholders. In doing so, the Federal Government will apply existing solutions to our own approaches, innovate together to create new ones, and motivate more participants toward greater climate action.

ii. Outcomes

- The Federal Government will leverage private and non-profit sector expertise to help Federal agencies go further and faster to achieve the Federal Sustainability Plan.
- Concurrently, the Federal Government will look for opportunities to partner with domestic and international partners to achieve common goals.
- The Federal Government will also lead by example to accelerate progress and inspire all partners to take more action.

iii. Plan's Elements

Launch the Presidential Sustainability Executives Program. In coordination with the Council on Environmental Quality, the Office of Personnel Management will support agencies in placing senior leaders from the private and non-profit sectors

into limited-term appointments to bring innovative perspectives and expertise to Federal agencies and support efforts related to climate action and sustainability.

- The executives will serve as advisors in their particular areas of executive expertise to the Federal leadership teams with whom they are engaged, allowing the Federal Government to implement transformational solutions to Federal operations.
- The Presidential Sustainability Executives, in turn, will learn about leadership in the public sector through developmental experiences.

Co-lead an international Greening Government Initiative. In April 2021, the Biden-Harris Administration announced the United States will co-lead a new initiative—the Greening Government Initiative—to promote international exchange and cooperation to advance greening government operations around the world.[82]

- In this initiative, the Federal Government will lead by example in bringing collaboration and cooperation to the forefront of the international effort to green government operations. Countries will be encouraged to share information and best practices so that all nations are better equipped to improve sustainability and climate adaptation within their own government operations, thereby supporting achievement of their national sustainability and climate commitments.

GREENING GOVERNMENT INITIATIVE

Partner with State, Tribal, and local governments to accelerate progress. The Federal Government will partner with State, Tribal, and local green governments to enable information and best practice sharing to accelerate sustainability initiatives at every level of government.

American-made zero emission vehicles are parked on the South Lawn Driveway of the White House for an event announcing an Executive Order that set a goal for half of all new vehicles sold by 2030 to be zero emissions.

THE PATH FORWARD

Federal agencies are moving expeditiously to revitalize sustainability, and climate adaptation and resilience efforts. On October 7, 2021, the Biden-Harris Administration released plans developed by more than 20 Federal agencies that outline the steps each agency will take to ensure their facilities and operations adapt to and are increasingly resilient to climate change impacts. These plans will inform the next steps agencies will take under the Federal Sustainability Plan and Executive Order on catalyzing American clean energy industries and jobs through Federal sustainability. Some of these actions will take a matter of months; others will require years of dedicated effort as the agencies work to build back better.

The Office of the Federal Chief Sustainability Officer within the Council on Environmental Quality is putting the structure and organization in place now so that agencies across the Federal Government can deliver on the long-term goals of the Federal Sustainability Plan and Executive Order. The Biden-Harris Administration is committed to keeping the public informed of its climate adaptation and sustainability progress through annual reports and will continue to report on key performance indicators through www.sustainability.gov.

The Biden-Harris Administration looks forward to continued engagement on its Plan and making enduring progress toward a more prosperous, equitable, and sustainable economy for America's families and our future.

KEY TERMS

24/7 carbon pollution-free electricity: carbon pollution-free electricity procured to match actual electricity consumption on an hourly basis and produced within the same regional grid where the energy is consumed.

Buy clean: a policy to promote the purchase of construction materials with lower embodied emissions, taking into account the life-cycle emissions associated with the production of those materials.

Carbon pollution-free electricity (CFE): electrical energy produced from resources that generate no carbon emissions, including marine energy, solar, wind, hydrokinetic (including tidal, wave, current, and thermal), geothermal, hydroelectric, nuclear, renewably sourced hydrogen, and electrical energy generation from fossil resources to the extent there is active capture and storage of carbon emissions that meets the Environmental Protection Agency's requirements.

Embodied emissions: the quantity of emissions, accounting for all stages of production including upstream processing and extraction of fuels and feedstocks, emitted to the atmosphere due to the production of a product per unit of such product.

National Climate Task Force: the National Climate Task Force established pursuant to section 203 of Executive Order 14008.

Net-zero emissions: reducing greenhouse gas (GHG) emissions to as close to zero as possible, and balancing remaining emissions with an equivalent amount of emission removal, through natural carbon sinks, carbon capture and storage, direct air capture, or other methods.

Net-zero emissions building: a building that reduces its GHG emissions to as close to zero as possible, and balances remaining emissions with an equivalent amount of emission removal, through natural carbon sinks, carbon capture and storage, direct air capture, or other methods.

Principal agencies: the Departments of State, the Treasury, Defense (including the U.S. Army Corps of Engineers), Justice, the Interior, Agriculture, Commerce, Labor, Health and Human Services, Housing and Urban Development, Transportation, Energy, Education, Veterans Affairs, and Homeland Security; the Environmental Protection Agency; Small Business Administration; Social Security Administration; National Aeronautics and Space Administration; Office of Personnel Management; General Services Administration; and National Archives and Records Administration.

Scope 1: direct greenhouse gas emissions from sources that are owned or controlled by the agency.

Scope 2: indirect greenhouse emissions resulting from the generation of electricity, heat, or steam purchased by an agency.

Scope 3: greenhouse gas emissions from sources not owned or directly controlled by an agency but related to agency activities such as vendor supply chains, delivery and transportation services, and employee travel and commuting.

Zero-emission vehicle (ZEV): a vehicle that when operating produces zero tailpipe exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas.

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