



# The Power of Partnership

Celebrating 30 Years of Climate Partnership Programs at EPA



## Letter from the Administrator



Thirty years ago, the U.S. Environmental Protection Agency (EPA) launched Green Lights, a first-of-its-kind partnership program that helped companies overcome market barriers to energy efficiency.

Now, three decades later, EPA's suite of climate partnership programs has expanded to include household names like ENERGY STAR and to encompass tens of thousands of organizations who have partnered with EPA

to reduce greenhouse gas pollution from nearly every sector of our economy.

The results speak to the power of these partnerships: More than 6 billion metric tons of greenhouse gas emissions avoided and billions of dollars invested by the private sector over the past three decades. \$500 billion in energy savings. In 2019, ENERGY STAR alone generated \$7 billion in public health benefits and supported hundreds of thousands of high-paying, fast-growing jobs.

As we celebrate EPA's many past accomplishments, we also look to the future. President Biden has adopted a "whole-of-government" approach to tackling climate change, recognizing that solving the climate crisis will require commitment and action from every level of government and every sector of the economy. EPA has a critical role to play, and its Climate Partnership Programs—with their 30-year track record of results, their strong relationships with the private sector, and their unique role supporting state, local, and Tribal action—will play a critical role alongside the agency's regulatory programs.

EPA will be relying on its Climate Partnership Programs to continue delivering emissions reductions, while simultaneously creating jobs in energy efficiency and clean energy, driving billions of additional dollars in private sector investment, and ensuring the equitable distribution of environmental, health, and economic benefits across communities

We believe that all Americans, regardless of the money in their pocket, color of their skin, or community they live in, deserve protection from environmental hazard and harm, as well as equitable access to environmental benefits. That's why EPA's Climate Partnership Programs will continue to prioritize equity and inclusion, seeking to make the path to decarbonization just, affordable, inclusive, and equitable.

We look forward to continued partnership and achieving a healthier environment for all people.

Michael Regan  
Administrator, U.S. Environmental Protection Agency



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# 30 Years of Climate Partnership at EPA



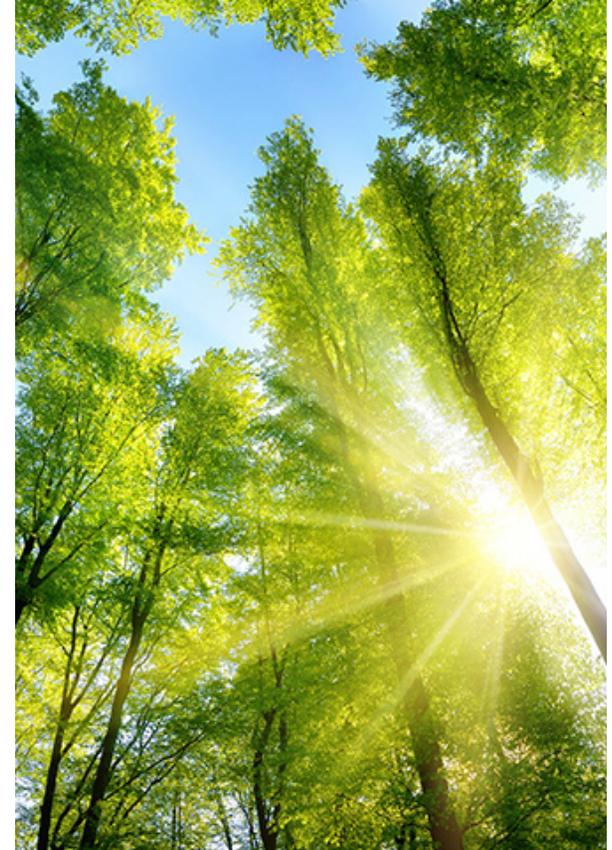
Cover photo: Samsung Semiconductor US Headquarters, San Jose, California. Courtesy of Samsung.

# EPA's Climate Partnership Programs: Accelerating climate action

In the early 1990s, an innovative idea took hold with the advent of the U.S. Environmental Protection Agency's (EPA's) Climate Partnership Programs. These voluntary programs were designed to broaden and diversify the agency's climate approach—working hand-in-hand with the private sector and others to

achieve more than would be possible through federal regulations alone.

These programs seek out and overcome market barriers, drive policy at the state and local level, and capture and channel marketplace ingenuity towards climate action. The interplay of government, business, and



## CUMULATIVE IMPACTS OF EPA'S CLIMATE PARTNERSHIP PROGRAMS



TOTAL  
EMISSIONS  
PREVENTED

More than

**6 billion**

metric tons of carbon dioxide equivalent



TOTAL  
COST  
SAVINGS

More than

**\$500 billion**

market forces brought together through EPA has literally changed history. Now, 30 years later, the success of these climate protection programs demonstrates the ongoing power of partnership.



In 2019, program reductions were equivalent to 8 percent of total U.S. emissions.

From popular programs like ENERGY STAR to tightly focused industry partnerships, these programs have delivered significant environmental and financial benefits: EPA's Climate Partnership Programs have helped Americans save more than \$500 billion and achieve more than 6 billion metric tons of greenhouse gas emissions reductions.

The programs drive private sector investment in energy efficiency, clean energy, and new technologies—

An isometric illustration of a modern factory with workers, conveyor belts, and machinery.

More than 800,000 Americans are employed in manufacturing or installing ENERGY STAR certified equipment and make up roughly 35% of all energy efficiency jobs.

An illustration of a hand holding a stack of green banknotes.

More than half of U.S. households knowingly purchased an ENERGY STAR certified product in 2019.

An illustration of a green base with solar panels and wind turbines.

Green Power Partners account for 14% of all non-hydro renewable electricity generation.

An illustration of three shopping carts filled with cardboard boxes.

On average, Americans purchase 800,000 ENERGY STAR certified products every day.

The ENERGY STAR logo, featuring a blue star with the word "energy" in a script font and "ENERGY STAR" in a blue box below it.

More than 90% of American households recognize the ENERGY STAR.

An illustration of a white house with a dark roof and a small sign in the front yard that says "Energy STAR".

More than 2.2 million families live in homes that have earned ENERGY STAR certification.

**Thousands of organizations—including 40% of the Fortune 500 and 33 industrial sectors— have partnered with EPA to help advance energy efficiency and the adoption of clean energy.**



More than 270,000 buildings — comprising more than a **quarter of all commercial floor space**— work with ENERGY STAR to measure, track, and improve their energy performance.



Within the freight sector, more than **3,700 companies** have partnered with SmartWay to save 312 million barrels of oil.



More than **30% of all supermarkets** partner with GreenChill to reduce refrigerant emissions.



More than 840 utilities—which, when combined, reach **97% of American households**—leverage ENERGY STAR in their efficiency programs.



Nearly **100 companies** work with Natural Gas STAR and Methane Challenge to reduce methane emissions and improve the operational efficiency of oil and gas systems.



More than **1,000 organizations** partner with the Landfill Methane Outreach Program to reduce emissions from their manufacturing processes by replacing fossil fuels with landfill gas.

investments that help strengthen the economy and create jobs.

In fact, more than 40% of all energy sector jobs relate to clean energy. Of those, energy efficiency employs the most, with 2.4 million jobs as of 2019. The ENERGY STAR program alone accounts for 35% of energy efficiency jobs: In 2019, more than 800,000 Americans were employed in manufacturing or installing ENERGY STAR certified equipment.

As EPA prepares for the next phase in the fight against climate change, these partnership programs will continue to play an integral part of EPA's toolkit. With decades of expertise, cross-sector coalitions of stakeholders, and a set of nationally recognized frameworks, EPA's climate partnership programs are poised to hit the ground running to deliver emissions reductions and economic benefits in the commercial, residential, manufacturing, transportation, and power sectors.

This report explains why these programs work, key accomplishments and impacts, and the critical role they will play in achieving EPA's long-term goals for protecting our climate through deep reductions in emissions.

# Then and Now: The Growth of EPA's Climate Partnership Programs



30 Years of Climate  
Partnership at EPA

## Celebrating the 30th Anniversary of EPA's Climate Partnership Programs

In a corner of the Smithsonian's National Museum of American History, behind a glass case, sits a 1991 brochure for an early EPA program called Green Lights. It's easy to miss alongside Thomas Edison's light bulb and a vintage "electric Bar-B-Q marshmallow toaster." But its placement among other artifacts of American innovation is due to the substantial role that Green Lights played in fostering the modern energy efficiency movement. But the Green Lights program was more than that. It was, in and of itself, a testament to a different kind of innovation.



### Dawn of the EPA Partnership Program

The 1990s marked an important shift in the United States toward greater collaboration on pollution prevention.

It was a time when both business leaders and environmentalists recognized that economic growth and environmental protection can, and must, go hand-in-hand.

With the launch of the Green Lights program in 1991, EPA applied the spirit of collaboration to the monumental problem of our warming planet. The success of Green Lights ushered in a new era at EPA by proving that if the government empowered businesses to protect the environment at a profit, it would find a powerful partner in the fight against climate change. Indeed, since the early days of Green Lights, when more than 600 companies signed on to voluntarily audit and improve their lighting systems, EPA has increasingly teamed up with the private sector to accelerate transformations that would not have been possible through regulations alone.

Now, 30 years later, EPA's climate partnership programs

have grown to encompass tens of thousands of organizations, plus state, local, and tribal governments, who have partnered with the government to reduce greenhouse gas emissions from nearly every sector of our economy. Among them is ENERGY STAR, a wildly successful program with more than 90% consumer awareness.

Within such diverse sectors as agriculture, manufacturing, utilities, freight transportation, commercial real estate, and waste management, EPA works to identify and dismantle the unique market barriers that prevent progress, and to provide the information and stability that private markets need to thrive.

The environmental impacts are staggering, and a testament to the power of partnership: The avoidance of more than 6 billion metric tons of greenhouse gas emissions since Green Lights began, billions of dollars of private sector investment, and millions of high-paying, fast-growing jobs.

## Then and Now: The Growth of EPA's Climate Partnership Programs

**1991:** EPA launches the Green Lights program with 2 staff members and a budget of \$1.4 million.



**1993:** EPA launches the Natural Gas STAR program to reduce methane emissions from the natural gas industry. By 2020, industry partners have eliminated more than 1.6 trillion cubic feet (Tcf) of methane emissions.



**1994:** EPA launches Climate Wise, a voluntary program that helps industrial companies document cost savings, productivity benefits, and emissions reductions as a result of investments in energy efficiency.



**1992:** EPA launches the ENERGY STAR program, which quickly introduces the first ENERGY STAR qualified computers and monitors. By 2020, more than 7 billion ENERGY STAR qualified products across more than 75 different categories have been purchased.



**1993:** The National Climate Change Action Plan recognizes the importance of EPA's climate partnerships with state and local governments, evolving into what became the State and Local Climate and Energy Program.

## Green Lights

By the early 1990s, energy-efficient commercial lighting was widely available, but not widely adopted. Building owners and managers lacked objective information, assessment tools, and an understanding of the economic benefits of adopting new lighting systems. Through Green Lights, EPA provided tools and resources to overcome these barriers to both greater energy efficiency and higher profitability.



The Green Lights Program began with only 2 full-time staff members and a budget of \$1.4 million. Within the first year, completed upgrades accounted for annual energy savings of more than 100 GWh. Partner companies saved nearly \$7 million and cut their total lighting usage by 52%, on average. In 1995, the Green Lights program merged with ENERGY STAR to form the ENERGY STAR Program for Commercial Buildings.

# Then and Now: The Growth of EPA's Climate Partnership Programs

**1994:** EPA launches the Landfill Methane Outreach Program, encouraging the recovery and beneficial use of biogas generated from organic municipal solid waste. By 2019, partners have implemented nearly 700 landfill gas energy projects across the country.



**1994:** EPA launches the AgSTAR program to reduce methane emissions from livestock waste. By 2020, more than 270 anaerobic digesters are operating at commercial livestock farms in the United States



**1994:** EPA launches the Coalbed Methane Outreach Program, working with the coal mining industry to reduce methane emissions. By 2019, industry partners have reduced emissions by more than 210 million metric tons.

**1995:** The ENERGY STAR program begins certifying energy-efficient new homes. By 2020, the number of ENERGY STAR certified new homes climbed to more than 2.2 million.



**1995:** Green Lights and ENERGY STAR merge to form the ENERGY STAR Program for Commercial Buildings, expanding to focus on whole-building energy efficiency.



**1996:** EPA partners with the Department of Energy (DOE) to deliver the ENERGY STAR program, leveraging DOE investments in appliance and lighting technology development.



**1996:** Appliances become eligible for the ENERGY STAR label, drawing the attention of leading national retailers.

# Then and Now: The Growth of EPA's Climate Partnership Programs

**1999:** EPA launches the Heat Island Reduction Program, working with local officials, community groups and researchers on heat island mitigation policies and projects.



**1997:** The ENERGY STAR program begins certifying lighting, labeling products that are 75% more efficient than their incandescent counterparts. By 2019, Americans are purchasing more than 300 million ENERGY STAR certified LEDs every year, and the price has fallen to \$1 per bulb in some stores.

**1999:** EPA launches the SF6 Reduction Partnership for Electric Power Systems, a collaborative effort between EPA and the electric power industry to reduce sulfur hexafluoride (SF6) emissions.



**1999:** EPA introduces a first-of-its-kind 1 – 100 ENERGY STAR score for buildings, paving the way for comparisons between similar buildings and ENERGY STAR recognition for top performers. By 2020, nearly 38,000 commercial buildings have earned ENERGY STAR certification.



**2000:** Climate Wise and ENERGY STAR merge to form the ENERGY STAR Program for Industrial Plants. By 2020, 33 different industrial sectors work with ENERGY STAR to manage their energy use.



**2000:** EPA introduces the ENERGY STAR Portfolio Manager tool, allowing building owners and managers to measure and track their energy use and greenhouse gas emissions. By 2020, more than a quarter of all commercial floorspace has voluntarily benchmarked in Portfolio Manager.



**2000:** First National Awareness Survey showed 40% of Americans recognize the ENERGY STAR label. By 2020, awareness grows to more than 90%.



# Then and Now: The Growth of EPA's Climate Partnership Programs

**2001:** EPA launches the Green Power Partnership, providing organizations with information about purchasing green power and recognition for those that do. By 2020, the program's partners are responsible for 14% of all non-hydro renewable electricity generated in the United States.



**2002:** EPA begins working with companies to develop long-term comprehensive climate change strategies, offering an early standard for tracking and reducing greenhouse gas emissions. By 2020, the Center for Corporate Climate Leadership serves as a knowledge base for all organizations, from small businesses to Fortune 500 companies.



**2006:** For the first time, EPA awards ENERGY STAR certification to 17 industrial plants whose energy performance ranks among the top 25% of similar plants nationwide. By 2020, more than 230 plants have earned this distinction.



**2007:** EPA offers a new SmartWay designation for new freight trucks and trailers that demonstrate superior energy efficiency. By 2020, every major class 8 truck and box trailer manufacturer offers one or more SmartWay-designated models.



**2001:** EPA launches the Combined Heat and Power (CHP) partnership, a knowledge base for impartial tools, policy information, and other resources to help companies understand and deploy CHP. By 2020, 350 organizations across all sectors have joined the program.

**2004:** EPA launches SmartWay, a voluntary green freight program, pioneering carbon accounting and emission reduction strategies for the freight trucking industry. By 2020, more than 3,700 companies spanning seven industry sectors participate in SmartWay.

**2006:** EPA launches the Responsible Appliance Disposal (RAD) Program to collect old refrigerated appliances and prevent emissions harmful to the ozone layer and climate system. By 2020, Partners have responsibly disposed of over 9 million refrigerators and freezers.

# Then and Now: The Growth of EPA's Climate Partnership Programs

**2007:** EPA launches the GreenChill Advanced Refrigeration Partnership, working with food retailers to reduce refrigerant emissions. By 2020, GreenChill partners account for more than 30% of U.S. supermarkets.



**2011:** EPA offers a new "ENERGY STAR Most Efficient" recognition for products that deliver cutting-edge energy efficiency along with the latest in technological innovation. In 2020, more than 3,600 product models from more than 280 manufacturers were recognized as "ENERGY STAR Most Efficient."



**2009:** ENERGY STAR Portfolio Manager is selected by New York City as the platform to implement the Greener, Greater Buildings Plan, which requires large buildings to benchmark and disclose their energy performance. By 2020, three states and more than 30 local governments rely on Portfolio Manager as the foundation of their benchmarking and transparency policies.



**2015:** SmartWay adds a new "SmartWay Designated Elite" level for highly efficient commercial truck trailers.



**2016:** EPA's Natural Gas STAR program launches the Methane Challenge, recognizing companies that make specific and transparent commitments to reduce methane emissions from the natural gas industry.

**2020:** EPA launches ENERGY STAR Tenant Space, a new recognition program for commercial office tenants who meet strict energy design criteria.



**2020:** The lights at the top of the Empire State Building turn blue to celebrate more than 20 years of ENERGY STAR certified buildings and plants.



# Meet EPA's Climate Partnership Programs



## ENERGY STAR

ENERGY STAR® is the symbol for energy efficiency, providing simple, credible, and unbiased information that consumers and businesses rely on to make well-informed decisions. Thousands of organizations—including nearly 40% of the Fortune 500®—partner with the program to deliver cost-saving energy efficiency solutions that improve air quality and protect the climate. Since 1992, ENERGY STAR and its partners have helped American families and businesses save 5 trillion kilowatt-hours of electricity, avoid more than \$450 billion in energy costs, and achieve 4 billion metric tons of greenhouse gas reductions. Learn more at [energystar.gov](http://energystar.gov).



## STATE AND LOCAL CLIMATE AND ENERGY PROGRAM

EPA's State and Local Climate and Energy Program offers free tools, data, and technical expertise to help state, local, and tribal governments achieve their environmental, energy, equity, and economic objectives. The program helps stakeholders develop emissions inventories, discover best practices for emissions reductions and heat island mitigation, and analyze the emissions and health benefits of energy strategies. Learn more at [epa.gov/statelocalenergy](http://epa.gov/statelocalenergy)



## GREEN POWER PARTNERSHIP

EPA's Green Power Partnership drives voluntary participation in the green power market. The program provides information, technical assistance, and recognition to companies that use green power. In return, the companies commit to using green power for all, or a portion, of their annual electricity consumption. Current partners' green power use represents nearly 40% of the U.S. voluntary green power market (excluding hydropower). Since 2001, the program has helped prevent nearly 280 million metric tons of greenhouse gas emissions. Learn more at [epa.gov/greenpower](http://epa.gov/greenpower).



## SMARTWAY TRANSPORT PARTNERSHIP

SmartWay works with more than 3,700 freight shippers, carriers, and logistics providers to accelerate the adoption of advanced fuel-saving technologies and strategies. Industry-leading companies in manufacturing, retail, grocery, pharmaceuticals, and other key sectors use SmartWay in their core business operations. Since 2004, SmartWay and its partners have prevented more than 130 million metric tons of greenhouse gas emissions and achieved cost savings of nearly \$42 billion. Learn more at [epa.gov/smartway](http://epa.gov/smartway).



### **FLUORINATED GAS EMISSION REDUCTION PARTNERSHIP PROGRAMS**

EPA's Fluorinated Gas Emissions Reduction Partnership Programs work with industry to reduce emissions of fluorinated greenhouse gases from the electric power industry, appliance manufacturers, retailers, and supermarkets. The programs include the GreenChill Advanced Refrigeration Partnership, SF6 Reduction Partnership for Electric Power Systems (EPS), and the Responsible Appliance Disposal Program (RAD). Together, these programs have prevented more than 200 million metric tons of greenhouse gas emissions. Learn more at [epa.gov/f-gas-partnership-programs](https://epa.gov/f-gas-partnership-programs).



### **COMBINED HEAT AND POWER PARTNERSHIP**

The Combined Heat and Power Partnership serves as a knowledge base for impartial tools, policy information, and other resources to help promote environmentally beneficial combined heat and power. Currently, a diverse set of 350 partners are working alongside EPA to promote CHP's role in providing affordable, reliable, and low emission energy. Learn more at [epa.gov/chp](https://epa.gov/chp).



### **CENTER FOR CORPORATE CLIMATE LEADERSHIP**

EPA's Center for Corporate Climate Leadership offers resources to help organizations measure and manage their greenhouse gas emissions, including guidance for conducting greenhouse gas inventories, setting targets, and developing and implementing supply chain strategies.

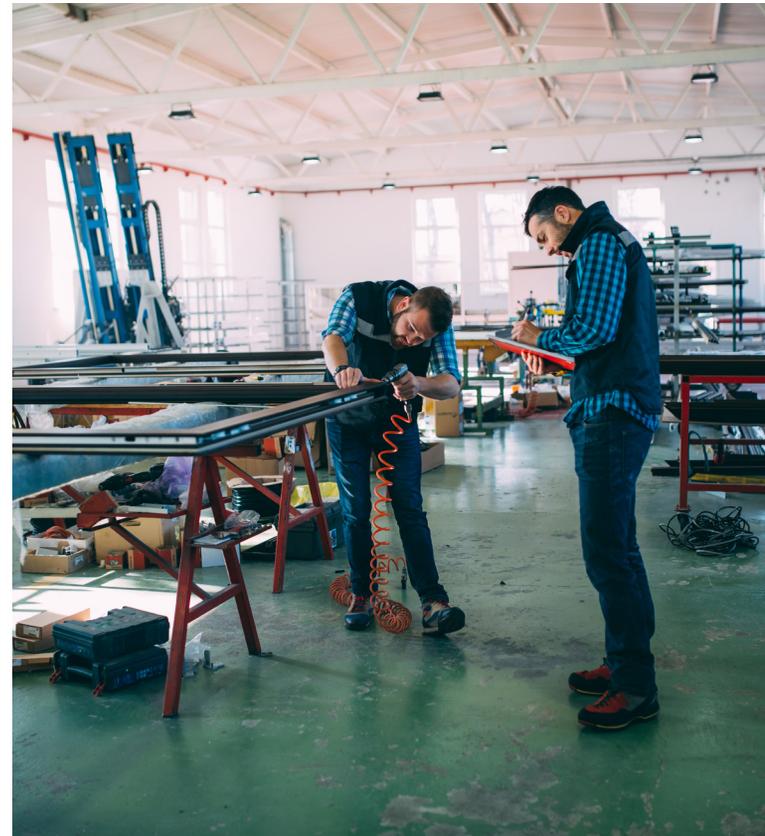
Learn more at [epa.gov/climateleadership](https://epa.gov/climateleadership).



### **METHANE EMISSION REDUCTION PARTNERSHIP PROGRAMS**

EPA's Methane Emissions Reduction Partnership Programs promote the cost-effective recovery and use of methane from key sectors, including agriculture (AgSTAR), coal mining (Coalbed Methane Outreach Program), municipal solid waste (Landfill Methane Outreach Program), and the oil and gas industry (Natural Gas STAR and Methane Challenge). Together, these programs have prevented nearly 1.6 billion metric tons of greenhouse gas emissions and led to nearly \$10 billion in cost savings. Learn more at [epa.gov/energy/clean-energy-programs](https://epa.gov/energy/clean-energy-programs), [epa.gov/natural-gas-star-program](https://epa.gov/natural-gas-star-program), and [epa.gov/cmop](https://epa.gov/cmop).

# The Power of Partnership

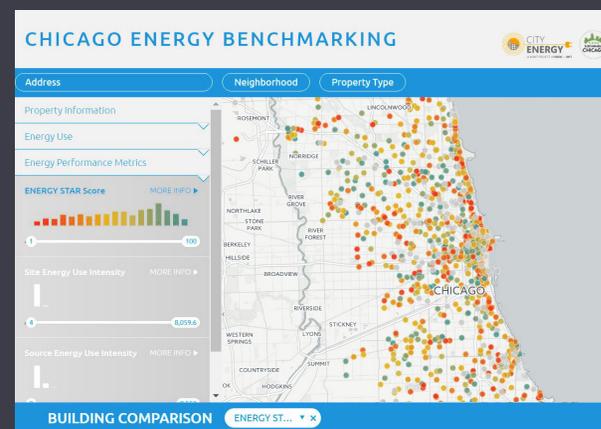


30 Years of Climate  
Partnership at EPA

## EPA's climate partnerships enable a full policy portfolio

Combating the climate crisis requires bold action that unites the full capacity of the federal government with efforts from every corner of our nation, every level of government, and every sector of our economy. These actions will require some combination of an inclusive transition to a clean, renewable grid; energy efficiency across our nation's homes, buildings, industrial plants, and transportation sector; and the electrification of fossil fuel-using equipment and vehicles. This is nothing short of market transformation. To minimize disruption and accelerate change, approaches should be harmonized from the top down, from federal legislation to state, local, and tribal government policies and utility program design. EPA's climate partnership programs can fuel this transition with unbiased information, performance specifications, and national platforms that drive sub-national action across a full climate portfolio. States, cities, and tribes with expertise on policy and implementation often have limited access to funding and

### PORTFOLIO MANAGER POWERS LOCAL BUILDING BENCHMARKING ORDINANCES



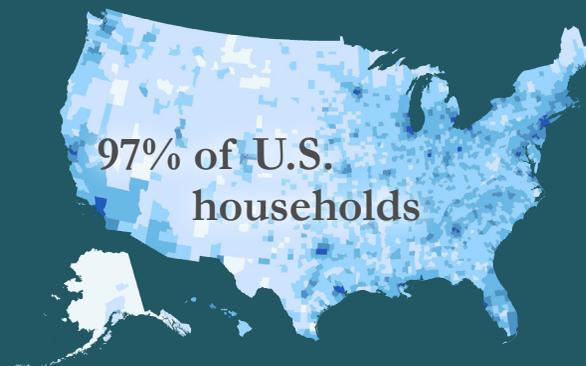
Commercial buildings are responsible for the majority of emissions within a city. A growing number of cities and states now require these buildings to measure and disclose their energy performance. All of them—covering 100,000 buildings and 11 billion sq. ft.—have elected to use EPA's ENERGY STAR

Portfolio Manager tool, a cost-free, industry-standard platform, collectively saving the governments tens of millions of dollars in IT costs they'd otherwise have to spend creating or buying another software tool—and saving building owners the costs of complying with mandates using different systems.

## ENERGY STAR PROVIDES THE PLATFORM FOR MORE THAN 840 UTILITY ENERGY EFFICIENCY PROGRAMS

With hundreds of disparate utilities scattered around the country, ENERGY STAR plays a critical unifying role to guide their energy efficiency programs. ENERGY STAR enables utilities to leverage a common national platform, avoiding the creation of hundreds of independent utility programs across the nation, which could fragment the market and stall innovation. More than 840 utilities partner with ENERGY STAR, providing

consistency and uniformity to the private market and saving ratepayers through reduced program costs. ENERGY STAR defines efficiency in a credible way for state and utility regulators, makes it easy for customers to identify products that are eligible for rebates, and ensures availability of supply through a vast network of partners. Last year alone, utilities invested \$8.4 billion in market-ready energy efficiency programs.



*More than 840 utilities leverage ENERGY STAR to help design and market their efficiency programs. Together, these programs, unified under a common framework, reach 97% of American households.*

other resources, making it challenging to develop and implement climate policies. To help, EPA's partnership programs provide a suite of off-the-shelf tools and policy guidance that these governments can use to cost-effectively develop and implement policies that are based on widely adopted tools and approaches.

To date, 24 states and the District of Columbia have committed to reduce greenhouse gas emissions by adopting specific targets in legislation or executive action. More than 470 U.S. mayors have also committed to reducing their greenhouse gas emissions. In jurisdictions that have mandated energy benchmarking and transparency to help achieve these reductions, EPA provides guidance and training on ENERGY STAR Portfolio Manager and the selection of efficiency metrics.

The ENERGY STAR platform also helps utilities do their part. Utilities have enormous potential to shape consumer and business behavior, but they also have competing priorities and limited resources. EPA works directly with utilities to provide expertise on energy efficiency program design and marketing, as well as product efficiency specifications.

**EPA maintains a suite of tools to help state, local, and tribal governments inventory their greenhouse gas emissions and quantify the energy, economic, emissions, and health impacts of various climate solutions.**

## **GREENHOUSE GAS INVENTORY TOOLS ENABLE CRITICAL FIRST STEPS**

Last year, EPA's State Greenhouse Gas Inventory and Projection Tool was downloaded by more than 250 state officials, academics, and NGOs representing 46 states and D.C. In addition, more than 600 people



*The State of Arkansas recently used EPA's AVERT tool to quantify their emissions reductions as part of their state implementation plans.*

accessed EPA's free Local and Tribal Greenhouse Gas Inventory Tools. Both tools allow users to customize their own inventories of greenhouse gas emissions, which is a critical first step in climate action.

## **AVERT: GUIDING STATE PLANS**

EPA's Avoided Emissions and Generation Tool (AVERT) evaluates how energy efficiency and renewable energy policies affect harmful air emissions at a county, state, or regional level. Arkansas and Clark County, Nevada, recently used the tool to quantify their emissions reductions as part of their state implementation plans.

## **COBRA: QUANTIFYING CO-BENEFITS**

EPA's CO-Benefits Risk Assessment (COBRA) Health Impacts Tool quantifies the health benefits of various efficiency and renewable energy policies. The New York State Offshore Wind Master Plan used COBRA to estimate that installing 2,400 MW of offshore wind would save \$73-165 million in health-related costs across the Northeast.



*New York State used EPA's COBRA tool to estimate that 2,400 MW of offshore wind would save \$73-165 million in health-related costs across the Northeast.*

## **INNOVATIVE APPROACH QUANTIFIES THE HEALTH BENEFITS OF EACH KILOWATT HOUR**

EPA's health benefits per kilowatt-hour (BPK) values monetize the health benefits of energy efficiency and renewable energy, specifically from reductions in fine particulate matter (PM<sub>2.5</sub>). The values are peer-reviewed and easy to use, saving government officials significant time and money and helping them with their planning.

## EPA's climate partnerships drive **private sector leadership** beyond compliance

America's private sector is unrivaled in its ability to innovate. As EPA battles the climate crisis, the private sector can—and must—play a significant role. But regulations alone won't lead to the breadth and scale of innovation, investment, and leadership required.

EPA's Climate Partnership Programs have spent 30 years moving the private sector beyond compliance, creating

allies who work alongside EPA to push the envelope, lower costs, generate economic growth, and ease the path to compliance for others.

Each program provides a standardized framework, actionable information, and recognition for market leaders.

Together, these elements can break down market barriers and unleash the full power of the private sector.



### **DID YOU KNOW?**

*More than 1,000 companies are setting Science-Based Targets and net-zero goals.*

### **HOW TO MOVE THE PRIVATE SECTOR BEYOND COMPLIANCE**

Each program adheres to three strict principles that, when taken together, clear a path for private sector companies to innovate and lead their industries.



Create a  
Standardized  
Framework



Provide  
Actionable  
Information



Motivate  
Market Leaders  
with Recognition



## Create a Standardized Framework

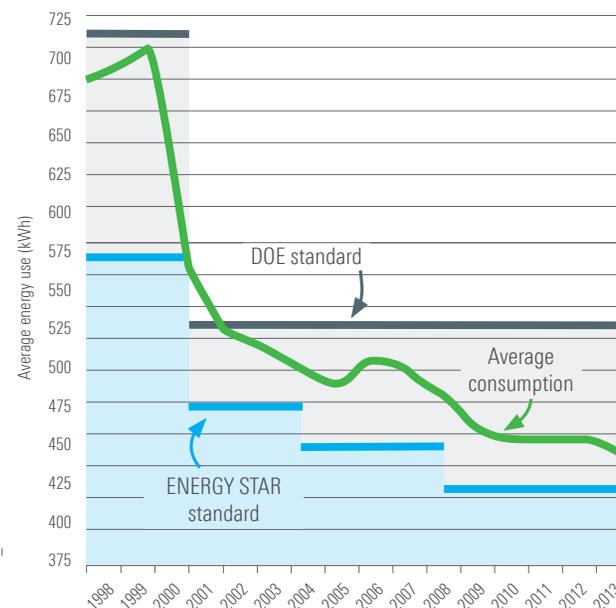
Each program starts by developing a framework that has widespread industry consensus. The framework can be built around technical specifications, a certain methodology for measurement, or even a certain set of actions. What matters most is that the framework is transparent, rigorous, and agreeable to all stakeholders—effectively mimicking a competitive marketplace.



### ENERGY STAR INSPIRES MANUFACTURERS TO ACCELERATE ADVANCES IN PRODUCT EFFICIENCY

Through ENERGY STAR, EPA partners with product manufacturers to continually advance product efficiency. What starts as a leadership-level of energy savings gets replicated throughout the market. Consumer demand for ENERGY STAR labeled products brings these savings into the mainstream until an even higher level of performance sets the stage for new ENERGY STAR requirements. As improved efficiency becomes the norm, the Federal government responds with minimum efficiency standards, locking in the floor for a market transformed toward greater and greater efficiency.

Average refrigerator energy consumption, 2001 – 2013





## SMARTWAY WORKS WITH THE FREIGHT SECTOR TO DRIVE EMISSION REDUCTIONS AND COST SAVINGS

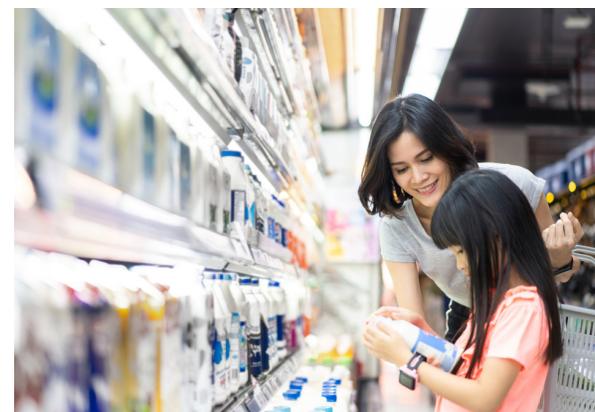
SmartWay drives demand for cleaner, more efficient freight services. SmartWay-verified technologies provide freight carriers with the assurance they need that upgrading their equipment will lead to fuel savings. In turn, shippers and logistics companies choose to ship their products and merchandise using higher-performing SmartWay carriers, which reduces their own



carbon footprint. Manufacturers have also embraced this program and now produce and market SmartWay-designated tractors and trailers.

## GREENCHILL LEADS THE WAY FOR 30% OF ALL SUPERMARKETS

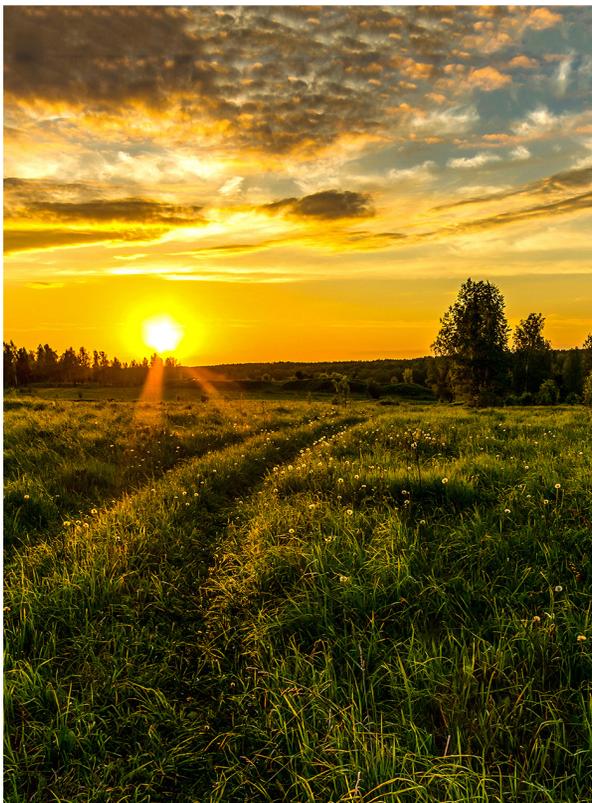
Every year, supermarkets leak an estimated 34 million pounds of refrigerants that can be as much as 4,000 times more potent than CO<sub>2</sub>. Through GreenChill, EPA works with food retailers to manage refrigerant emissions using advanced technologies and practices, and transition to environmentally friendlier alternatives. In 2019, GreenChill Partners achieved a collective emissions rate that is 43% lower than the industry average.





## Provide Actionable Information

Once the marketplace is defined, EPA supplies the information that its private sector partners need to compete. This is where most day-to-day activity takes place within the programs, as they continually assess market needs and provide helpful tools, resources, and guidance.



### PROMOTING LANDFILL GAS ENERGY PROJECTS

Landfill Gas Energy Projects can make beneficial use of the biogas generated from landfills — beyond what is required through regulations. Through the Landfill Methane Outreach Program, EPA helps landfill owners run feasibility assessments to determine potential emission reductions, project costs, jobs created, and economic benefits — enabling them to confidently choose from 12 different landfill gas energy project options.



Over the past 24 years, EPA has assisted with nearly 700 Landfill Gas Energy projects, which have collectively reduced and avoided more than 540 MMTCO<sub>2</sub>e.

### PROMOTING ANAEROBIC DIGESTER SYSTEMS TO REDUCE METHANE EMISSIONS

EPA's AgSTAR program works with farmers to educate them on the use of anaerobic digester systems to reduce methane emissions from manure. Technologies and practices supported by AgSTAR have cut greenhouse gas emissions by nearly 17 MMTCO<sub>2</sub>e since 1994.





## TRANSLATING ENERGY SAVINGS INTO BUSINESS SPEAK

EPA observed that ENERGY STAR industrial partners saved more energy when they applied a strategic energy program based on continuous improvement, so the program began guiding its partners to adopt a comprehensive approach, right from the start. But this marked a big shift from the prevailing mindset of sporadic energy audits and projects, and plant managers had a hard time securing buy-in (and funding) from corporate executives. To help, EPA translated the effects of successful corporate-wide energy management programs



into “financial speak,” enabling facility managers to better communicate the corporate benefits of comprehensive programs. To date, more than 850 industrial companies are working with ENERGY STAR to develop strategic energy management programs.

## REDUCING EMISSIONS WITH RAD

Federal regulations require the proper disposal of refrigerants. The Responsible Appliance Disposal (RAD) Program is helping move the market beyond these requirements. EPA's RAD Partners dispose of old refrigerated appliances using the best environmental practices available. In addition to recovering refrigerant and appliance foam, this means complying with regulations on the recovery of used oil, mercury, and PCBs;

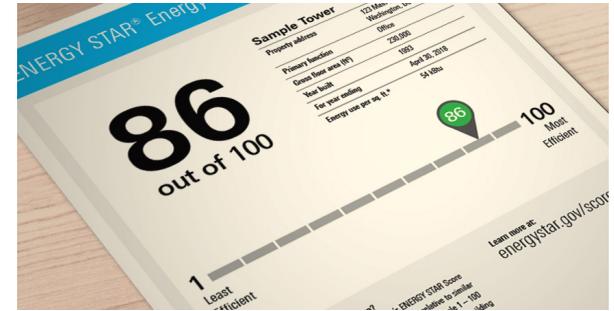


promoting recycling of all durable goods; and promoting the retirement of old, inefficient appliances. Since 2007, RAD partners have recycled nearly 9 million used refrigerators or freezers and disposed of them the RAD way.



## RATING BUILDINGS FROM 1–100

In 1999, EPA transformed how we look at the energy use of commercial buildings. Prior to that, there was no way to assess or compare the energy performance of one building to another. A building that cut its energy use by 50% could still be more of an energy hog than a similar one that only cut it by 3%. The 1–100 ENERGY STAR score solved that problem, accounting for differences in building attributes, operating characteristics, and weather variables to deliver a single, easy-to-understand percentile ranking. A score of 50 is average; 75



means you outperform 75 percent of similar buildings nationwide. The simplicity, transparency, and accessibility of this metric facilitates the energy programs of entire cities, states, energy services companies, and utilities.

## ENSURING TRUST IN NUMBERS



Trustworthy information is critical to an efficient private market. Guided by a set of well-tested principles, EPA sets objective criteria that are central to all aspects of the ENERGY STAR program. The performance and attributes behind every ENERGY STAR certification are independently verified, whether for a product, a home, a building, or a

manufacturing plant. For example, in 2019, EPA oversaw robust third-party certification of ENERGY STAR products, administered by more than 20 independent certification bodies and more than 500 labs. EPA also requires that a sample of products be tested directly off retailers' shelves. Last year, nearly 2,000 products were tested; 94% passed, affirming consumer confidence in the label.



## Motivate Market Leaders with Recognition

Companies who lead the way for their industries earn coveted EPA recognition. Thanks to each program's rigorous framework and methodologies, EPA can effectively measure and validate performance in a way that can be trusted in the market. EPA can also define leadership, rewarding companies that excel and demonstrate successful approaches with coveted recognition.

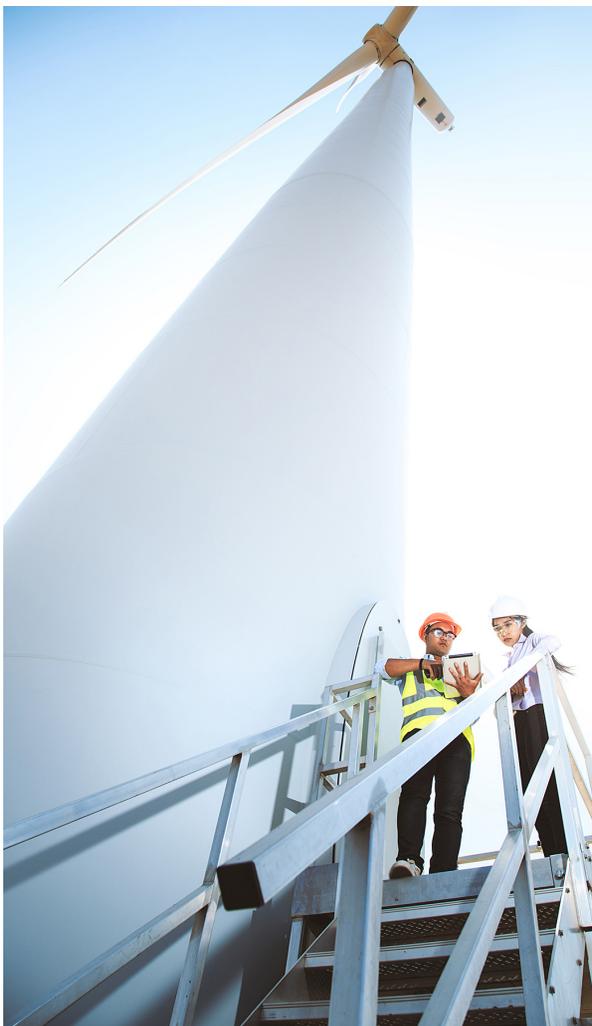


### ENERGY STAR RECOGNIZES TECHNOLOGICAL INNOVATION

To prime the market for efficiency improvements—which will ultimately allow for more stringent ENERGY STAR product specifications—EPA rewards innovation through ENERGY STAR. To pull promising new technologies into the market, EPA offers the ENERGY STAR Emerging Technology Award. To connect early adopters with cutting-edge efficiency, EPA offers ENERGY STAR Most Efficient, an annual distinction recognizing the best-of-the-best of ENERGY STAR in select categories. More broadly, EPA has leveraged ENERGY STAR specifications to advance innovations such as connect-



ed functionality, climate-friendly refrigerants, variable speed motors, and advanced diagnostics in heating and cooling equipment.



## GREEN POWER PARTNERS VIE FOR THE SPOTLIGHT

Every quarter, EPA's Green Power Partnership program ranks its partners according to their green power use (above and beyond what's required by renewable portfolio standards). Earning a spot on this list confers brand-enhancing bona fides to organizations as diverse as Google and the Northeast Ohio Regional Sewer District. While renewable portfolio standards were responsible for 189 billion kWh of new, non-hydro renewable



electricity demand in 2019, EPA's highly competitive Green Power partners generated an additional 61 billion kWh.

## CHALLENGING THE OIL AND GAS INDUSTRY TO GO ABOVE AND BEYOND

EPA's Methane Challenge Program encourages companies to make rigorous commitments to reduce methane emissions — beyond what is required by regulations. In 2019 alone, these companies replaced 1,200 miles of cast iron pipelines and more than 1,800 miles of unprotected steel pipelines. Participants also reduced methane emissions from nearly 600 planned transmission pipeline blowdowns.



## EPA's climate partnerships prove that climate solutions can support **economic growth**

For 30 years, EPA's climate partnership programs have helped facilitate investments in energy efficiency and renewable electricity, which has also led to growth in U.S. jobs. In 2018, \$42 billion was invested in energy efficiency in the U.S. These investments have helped America's economy grow even as energy use has declined. In addition, clean energy now accounts for 40% of all energy sector jobs.

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**A single 3-megawatt landfill-gas-to-reciprocating-engine project can create six jobs and \$1.85 million in spending.**

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Significant investments in energy efficiency have led to a boom in job growth, and EPA's ENERGY STAR program has been a central player. In fact, more than 800,000 Americans are employed in manufacturing or installing ENERGY STAR certified equipment—roughly 35% of all energy efficiency jobs in 2019.

### JOB CREATION AND ECONOMIC BENEFITS OF ENERGY STAR



**\$100 billion**

The estimated annual market value of ENERGY STAR product sales is more than \$100 billion.

**800,000 jobs**

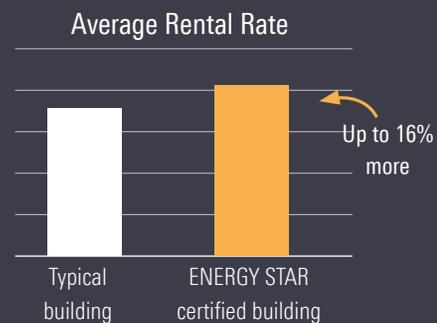
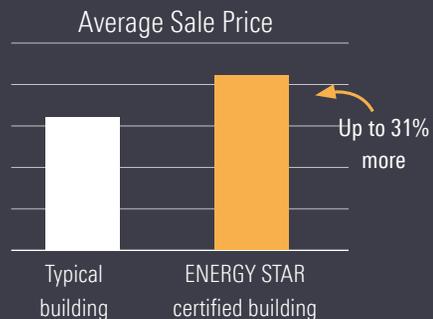
More than 800,000 Americans are employed in manufacturing or installing ENERGY STAR certified equipment—roughly 35% of all energy efficiency jobs in 2019.



**\$300 billion**

The private sector has invested \$300 billion within a framework that EPA's ENERGY STAR program created nearly 30 years ago.

## PREMIUMS FOR ENERGY STAR CERTIFIED BUILDINGS DRIVE INVESTMENTS



Compared to typical buildings, energy-efficient buildings sell for up to 31% more and charge rents up to 16% greater. Premiums like these are helping drive investment in energy efficiency.

The ENERGY STAR program has provided strong incentives for building owners and managers to invest in energy efficiency. By providing a framework to precisely define and measure energy efficiency, the ENERGY STAR program has enabled businesses and consumers to make informed investments. Identifying and recognizing top performers has also encouraged a thriving, competitive dynamic in the market.

The effects of the ENERGY STAR program's information transparency are evident in the commercial building market. Compared to typical buildings, energy-efficient buildings sell for up to 31% more and charge rents up to 16% greater. Premiums like these are helping drive investment in energy efficiency.

## EPA'S GREEN POWER PARTNERSHIP PROGRAM ACCELERATES INVESTMENTS IN RENEWABLES



While new, non-hydropower renewable electricity demand from renewable portfolio standards was 189 billion kWh in 2019, the voluntary market drove an additional 164 billion kWh. Of that, EPA's highly competitive Green Power partners were responsible for 37%, or 61 billion kWh. In fact, these companies account for 14% of all non-hydro renewable electricity generated in the U.S.

## EPA's climate partnerships drive billions of dollars in **private sector investment**

Each year, thousands of private sector organizations leverage EPA's investment to deliver compounded savings to Americans. Last year, EPA's modest investment in its Climate Partnership Programs was joined by far greater investments from the private sector. These programs are designed to leverage EPA's public dollars with investment from the private sector.

ENERGY STAR exemplifies this approach. The program provides and promotes a simple informational framework. But this framework has seeded the economic system with incentives and created a highly competitive marketplace where utilities and the private sector now invest tens of billions of dollars in energy efficiency every year.

For every \$1 of EPA investment in ENERGY STAR, American individuals and businesses save over \$350, while sharply reducing U.S. greenhouse gas emissions. In fact, the 390 million metric tons of avoided greenhouse gas emissions that ENERGY STAR delivered in 2019 represents about 5% of total annual U.S. greenhouse gas emissions.

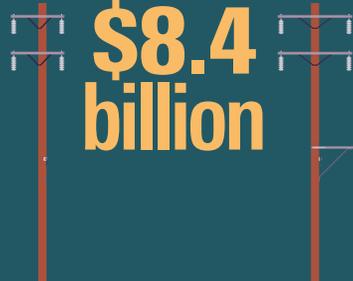
Partnership in Action: ENERGY STAR leverages private sector investment to deliver 350 times more savings than what EPA spends.

For every \$1 EPA has spent on the ENERGY STAR program, the private sector has added \$250 of its own investment.\*



**\$8.4 billion**

Nationwide, utilities invested \$8.4 billion in energy efficiency programs in 2019.



ENERGY STAR has leveraged roughly \$300 billion in private sector investment over the life of the program.



For every \$1 of EPA investment, American individuals and businesses save over \$350.\*

*\*Over the lifetime of the ENERGY STAR program*

# EPA's climate partnership programs prioritize equity and inclusion

All Americans, regardless of income, race, and other characteristics, deserve protection from environmental hazards and access to environmental benefits. Climate change is expected, in general, to disproportionately affect environmental justice communities — generally



*For products that may be cost-prohibitive, such as replacement windows, alternatives are sought. EPA recently added storm windows as a new ENERGY STAR product category, thereby providing consumers with a lower-cost option that is easier to install.*

those who are the least responsible and have the lowest capacity to protect themselves from its impacts. As the effects of climate change mount, so does the urgency of addressing equity and environmental justice. EPA's Climate Partnership Programs' focus on energy efficiency and renewable energy will help make the path to decarbonization affordable, inclusive, and achievable at the scale required. Last year, the ENERGY STAR program's annual electricity savings helped reduce nearly 470,000 tons of power plant air pollutants that are of concern to environmental justice communities.

The ENERGY STAR program prioritizes outreach to underserved populations for products that have the greatest opportunity to save them energy and money. Paired with bilingual messaging, utility-sponsored rebates, and audience-segmented digital advertising to encourage purchases, ENERGY STAR certified products can deliver significant cost savings for underserved families.

EPA's Responsible Appliance Disposal (RAD) Program's

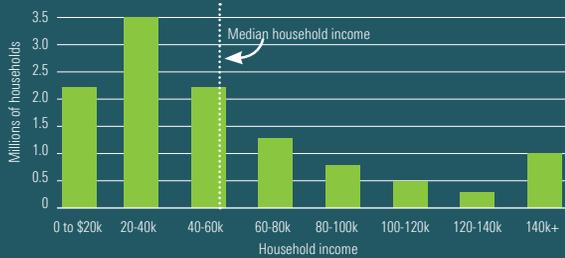


*550 Habitat for Humanity affiliates have constructed more than 18,000 ENERGY STAR certified homes.*

utility partners work with underserved communities and organizations such as Habitat for Humanity, providing new appliances and properly recycling their old ones. RAD has also recently partnered with Re-Source York, which collects and re-sells donated appliances and offers vocational training featuring RAD best practices.

ENERGY STAR is also focused on increasing the energy

## OLDER REFRIGERATOR OWNERSHIP, BY INCOME



*Refrigerators, in particular, present an opportunity for reducing energy burden among lower-income populations. The majority of older, inefficient refrigerators (15+ years old) are in households that earn less than \$40,000 per year.*



*ENERGY STAR has helped reduce emissions that are of concern to environmental justice communities. The program's 2019 electricity savings helped reduce 470,000 short tons of air pollutants (SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>).*

efficiency of affordable homes across all sectors. Roughly 20% of ENERGY STAR builder partners build affordable housing, including nearly 600 Habitat for Humanity affiliates who have constructed more than 18,000 ENERGY STAR certified homes. The ENERGY STAR program also partners with 100 manufactured housing plants. Together, these plants have built more than 120,000 ENERGY STAR certified manufactured homes.

Within the multifamily sector, more than 75% of ENERGY STAR multifamily high-rise projects are identified as affordable housing. In addition, ENERGY STAR home certification is used as criteria by more than 30 state government housing finance programs that provide low-income housing tax credits.



*ENERGY STAR partners with 100 manufactured housing plants. To date, they have built more than 120,000 ENERGY STAR certified manufactured homes.*

State, local, and tribal governments have increased prioritization of equity and inclusion in their climate and clean energy policies. Policy action is needed to create a just transition to a clean energy future. Through its State and Local Climate and Energy Program, EPA highlights the best examples across the country on how to deliver inclusive climate programs and provides resources to help governments deliver energy efficiency and renewable energy to low-income communities. Through guidebooks, case studies, and webinars, the program demonstrates how to overcome barriers and shares best practices and emerging trends in implementing programs.



*Recent ENERGY STAR product promotions have included lighting, refrigerators, and room air conditioners.*

# Impacts At-a-Glance



30 Years of Climate  
Partnership at EPA

## 30 Years of Impact

EPA's climate partnership programs have prevented more than 6 billion metric tons of greenhouse gas emissions from entering our atmosphere, while helping American consumers and businesses save more than \$500 billion.



**TOTAL EMISSIONS PREVENTED**

More than

**6 billion**

metric tons of carbon dioxide equivalent



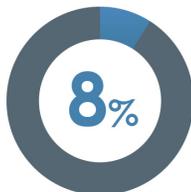
**TOTAL COST SAVINGS**

More than

**\$500 billion**

### 2019 PROGRAM REDUCTIONS

In 2019 alone, EPA's climate partnership programs helped Americans save \$44 billion and prevented 530 MMTCO<sub>2</sub>e of greenhouse gas emissions from entering our atmosphere. These savings are roughly equivalent to 8% of total U.S. greenhouse gas emissions in 2019.



2019 program reductions equivalent to 8% of total 2019 U.S. emissions

### IMPACTS ON HARMFUL POLLUTANTS



In 2019, savings from the SmartWay program led to reductions of 234,000 short tons of nitrogen oxides and 10,000 short tons of fine particulate matter (PM<sub>2.5</sub>).



Since 2007, the Responsible Appliance Disposal program partners properly disposed of 209,000 mercury containing components and 321,000 polychlorinated biphenyl capacitors.



In 2019, savings from the ENERGY STAR program led to reductions of 220,000 short tons of sulfur dioxide, 220,000 short tons of nitrogen oxides, and 27,000 short tons of fine particulate matter (PM<sub>2.5</sub>).

### PUBLIC HEALTH BENEFITS



In 2019, avoided air pollution due to ENERGY STAR was responsible for an estimated \$7 billion in public health benefits.

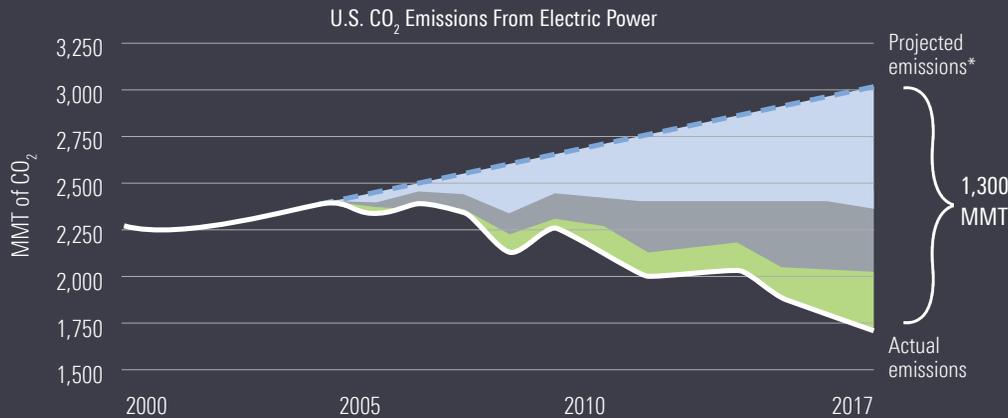
# Impacts At-a-Glance

In 2019 alone, EPA's Climate Partnership Programs delivered 390 MMT of greenhouse gas emissions reductions within the power sector.

Let's put that in context.

## How much have emissions been reduced, in general?

Actual carbon dioxide emissions in the power sector were 1,744 MMT in 2017. If demand growth had remained near 2% and carbon intensity fixed at 2005 levels, emissions would have been 3,043 MMT in 2017. That's a reduction of nearly 1,300 MMT.



## What drove down emissions from electric power in 2017?

Lower demand growth  
654 MMT

Switching among fossil fuels  
329 MMT

Adding noncarbon sources  
316 MMT

1,300 MMT

## How did EPA's Climate Partnership Programs reduce power sector emissions in 2019?

ENERGY STAR  
350 MMT

Green Power Partnership  
40 MMT

390 MMT

# Market and Economic Impacts

EPA's Climate Partnership Programs have built a nationwide coalition across sectors, and the pace of expansion continues to grow.

## ECONOMIC IMPACTS



### \$100 billion

The estimated annual market value of ENERGY STAR product sales is more than \$100 billion.



### \$300 billion

The private sector has invested \$300 billion within a framework that EPA's ENERGY STAR program created nearly 30 years ago.



### 800,000 jobs

More than 800,000 Americans are employed in manufacturing or installing ENERGY STAR certified equipment—roughly 35% of all energy efficiency jobs in 2019.

## STRONG FRAMEWORKS ENABLE MARKETS

Thousands of utilities, state and local governments, and businesses have built programs and product lines around ENERGY STAR and depend on it as a national framework for energy efficiency progress, relying on it in their product designs, energy management programs, building efficiency initiatives, and manufacturing practices.

Similarly, the SmartWay program has become a trusted information nexus on fuel-saving equipment and vehicles. More than 3,700 companies from the freight, retail, manufacturing, grocery, pharma, and other key sectors work together through SmartWay's framework of certified carriers, emissions benchmarking, and reporting.

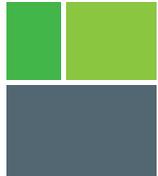
## MARKET SHARE

**40%** of the Fortune 500 partner with EPA's climate programs

**33 industrial sectors** partner with ENERGY STAR, from integrated steel mills and petroleum refineries to bakeries and pharmaceutical plants



Voluntary green power (Green Power Partners)

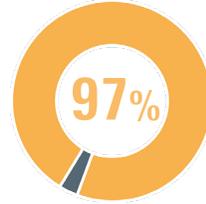


Voluntary green power (everyone else)

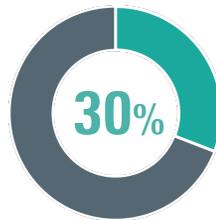
Renewable portfolio standards\*

EPA's Green Power Partners account for nearly **40%** of the total voluntary green power market, which itself was nearly as large in 2019 as new, non-hydro demand from renewable portfolio standards.

**More than 840 utilities**, reaching 97% of American households, leverage ENERGY STAR.



More than 270,000 commercial buildings are actively benchmarking energy use in Portfolio Manager. These buildings represent more than **one-quarter of all commercial floor space**.



**More than 30% of all supermarkets** partner with GreenChill to reduce refrigerant emissions



**100%**

**100% of the nation's 20 largest homebuilders** build ENERGY STAR certified homes. And one in 12 new single-family homes built in America are ENERGY STAR certified.

Every day, Americans purchase

**800,000**



ENERGY STAR certified products\*

And **more than half of U.S. households** knowingly purchased an ENERGY STAR product last year.

*\*on average, plus 800,000 certified light bulbs*



Nearly **100 energy companies** work with Natural Gas STAR to reduce methane emissions

# The Future of EPA's Climate Partnership Programs

The unfolding climate crisis has the potential to impact every sector of our economy and every corner of our nation, and it requires a nationwide response from every level of government and every sector of the economy to achieve rapid market transformation. EPA will need to deploy every tool in its toolbox to help achieve this monumental task.

The agency's Climate Partnership Programs — with their 30-year track record of results, their strong alliances with the private sector, and their unique role supporting state, local, and tribal action — will play a critical role alongside the agency's regulatory programs.

In the coming years, these nimble programs will be well positioned to deliver on-the-ground action in support of our nation's climate goals, such as upgrading homes, buildings, and schools; achieving a carbon-free power sector; and accelerating low-carbon manufacturing.

In addition, these programs will be focused on evolving and adapting to new technologies and priorities, such as electrification of appliances, homes, and buildings; energy performance standards for buildings; and managing electricity demand.

Finally, these programs will work to ensure that all sec-

tors of society benefit from and participate in the clean energy economy.

After 30 years, EPA's climate partnership programs have grown to encompass tens of thousands of organizations and governments, who have partnered with EPA to reduce more than 6 billion metric tons of greenhouse gas emissions from nearly every sector of our economy. These partners have voluntarily invested billions of dollars, created thousands of high-paying, fast-growing jobs, and delivered \$7 billion in public health benefits in 2019 alone. That's the power of partnership. That's the power of EPA.



## CREATING AMERICAN JOBS

EPA's Climate Partnership Programs have built a nationwide coalition across sectors, comprising thousands of private sector organizations who leverage EPA's Climate Partnership Programs to deliver compounded savings to Americans. Together, they have invested more than \$300 billion in energy efficiency, renewable energy, efficient freight transportation, and other emissions reduction technologies. These investments and costs savings drive

job creation across the U.S. economy from home building to manufacturing to reinvestment in communities. In fact, jobs in clean energy make up 40% of all energy sector jobs — and they are growing faster than any other segment. More than 800,000 Americans are employed in manufacturing or installing ENERGY STAR certified equipment alone — roughly 35% of all energy efficiency jobs in 2019.