

# Home Energy Upgrade Incentives

## Programs in the Inflation Reduction Act and other recent federal laws

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### Introduction

The recent Inflation Reduction Act (IRA), along with the Infrastructure Investment and Jobs Act (IIJA) from last year, allocate more than \$25 billion for programs and tax incentives to improve the energy efficiency of, electrify, and reduce greenhouse gas (GHG) emissions from existing homes. Even larger broad GHG emission reduction programs under the IRA could be used for home efficiency. This policy brief summarizes programs that will or could provide significant resources for energy efficiency retrofits for *existing single-family and multifamily homes*. Other provisions (not discussed in this brief) provide opportunities to improve energy efficiency in new homes, commercial buildings, transportation, and industry, as well as important incentives for rooftop solar panels and other renewable generation.

### The Need for States, Cities, Utilities, and Others to Braid and Promote These Programs

The various federal programs can be confusing, with each having unique eligibility requirements and different incentive amounts. In addition, state and local governments, companies, and advocates will need to promote these programs locally. Local program administrators can perform a great service by helping their customers understand these programs and braid them together for maximum impact. In many cases existing programs may need to be modified to maintain their usefulness, accelerate market transformation under the federal programs, and address other needs not covered by those programs.

### The Major Programs

The remainder of this policy brief will briefly summarize the major programs, and then provide an overview of funding, how funds are distributed, who and what is eligible, and incentive amounts. Details on each program are in the tables at the end of this brief.

*Home energy performance-based whole-house (HOMES) rebates:* State energy offices will operate this \$4.3 billion Department of Energy (DOE) program to provide rebates for whole-home retrofit packages based on the reduction in home energy use. The program is available for all income levels and includes apartments. IRA provides two approaches: modeled and measured. For “modeled” savings a contractor will do an energy assessment of the home, design a retrofit package, and model the savings. Incentives for most households are \$2,000 for 20% energy savings and \$4,000 for 35% energy savings, but these are

doubled for households with income below 80% of the area median income (AMI).<sup>1</sup> For the “measured” savings approach, contractors could use different interventions, and the incentive will be prorated per kilowatt-hour saved with measurement of actual savings, likely from a large number of homes.

*High-Efficiency Electric Home Rebate Program:* This \$4.5 billion DOE program also will be administered by state energy offices to provide rebates to low- and moderate-income households to install heat pumps and other efficient electric equipment that does not replace the same kind of equipment (it cannot be used to replace an existing heat pump, but it can be used for new homes). It also includes insulation and air sealing and upgrading electric service and wires. There is an income cap of 150% of AMI. The program includes apartments. Rebates are up to 50% of the cost for households with income of 80–150% of AMI, and up to 100% of cost for those under 80% of AMI. There are maximum incentives for each type of equipment (see details in table 3) as well as a \$14,000 per household cap.

*Weatherization Assistance Program (WAP):* WAP provides grants to cover the cost of home weatherization, typically for families earning less than 200% of the federal poverty level (FPL).<sup>2</sup> A network of agencies across the country administer the program, and contractors or weatherization agency crews do the weatherization. Funding per house or apartment is typically capped at an average of about \$8,000. The program has operated for more than 40 years, with recent annual funding of about \$300 million from DOE and \$800 million from other sources. IIJA included \$3.5 billion for WAP to be spent over several years.

*Energy Efficiency and Climate Resilience in Affordable Housing:* This is a new \$1 billion grant and loan program for affordable apartments to improve energy and water efficiency, air quality and sustainability, and climate resilience, including with solar power, energy storage, and building electrification. The Department of Housing and Urban Development (HUD) will operate the program and provide grants and loans directly to HUD-assisted multifamily building owners, with details still to be determined (somewhat similar to HUD’s former Green and Resilient Retrofit Program). The program also includes funds for energy benchmarking and for technical assistance.

*25C Energy Efficient Home Improvement Credit:* This is a long-standing federal tax credit for home energy improvements such as insulation, windows, heat pumps, and furnaces. Starting in 2023, IRA increases the credit to 30% of cost, with an annual cap of \$1,200 and with smaller limits for most items (detailed in table 3), but it allows up to \$2,000 for a heat pump or a wood stove. (In 2022 the credit is under the old rules, with lower amounts and a lifetime cap of \$500.) The credit is taken on tax returns and thus is only useful for households that

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<sup>1</sup>While the income level varies locally, and DOE or states will need to set rules, on a national average basis, 80% of median income as used for affordable housing programs is about \$72,000 for a family of four in 2022. For multifamily buildings half the units need to meet the qualification.

<sup>2</sup> 200% of FPL is around 60% of AMI, and is \$55,500 in 2022 for a family of four in the continental United States.

pay taxes and that can afford to front the cost of improvements until they can claim the tax credit. It also is only available to homeowners (for their principal residence).

*179D Energy Efficient Commercial Building Deduction:* This is another long-standing federal tax provision that IRA made more generous. IRA provides tax deductions of \$0.50–5.00 per square foot (/sf) of floor area to owners of new and improved energy-saving commercial buildings depending on the percentage of energy savings and whether the contractor pays prevailing wages. We list it here because it includes improvements to mid-rise and high-rise multifamily buildings that reduce energy use by at least 25%. Unlike a credit, the deduction reduces taxable income, which results in a smaller decrease in taxes paid—for a business in a 20% tax bracket, each \$1/sf deduction will be worth \$0.20/sf (before considering depreciation).

*Greenhouse Gas Reduction Fund:* This is a \$27 billion set of programs to be run by the Environmental Protection Agency (EPA). The programs will provide competitive grants to states, tribes, cities, and nonprofit organizations who in turn provide financial and technical assistance for projects to reduce or avoid GHG emissions and other forms of air pollution. Most of the funds are for use in low-income and disadvantaged communities. The program was inspired in part by “green banks” that finance a wide variety of projects in some states and cities. EPA also has funding for Climate Pollution Reduction Grants to states and cities and for Environmental and Climate Justice Block Grants for community-based organizations.

In addition to these programs, IJA also provided direct funding to states and municipalities under the State Energy Program (SEP) and Energy Efficiency and Conservation Block Grants (EECBG). Cities and states also received federal funds as part of the American Rescue Plan Act (ARPA) that can be used for some energy efficiency measures among many other purposes; at least \$100 billion appears to remain unallocated. In addition, IRA contains expanded tax credits for solar and battery systems that can complement energy efficiency investments in existing homes and buildings.

These provisions will often interact. For example, a moderate-income family that installs a heat pump may be eligible for the Electric Home Rebate, the 25C tax credit, and, if part of a larger project, the HOMES Rebate. If the rebate only covers 50% of the cost, they may be able to take the 25C 30% tax credit on the rest of the cost (and potentially state or local rebates or credits). However, a household cannot take both the HOMES rebate and the Electric Home Rebate (or other federal grants) for the same upgrade. Likewise, an organization, city, or state may be able to apply for financing from the HUD and EPA programs noted above to leverage the HOMES or Electric Home Rebate programs.

## Overview of Programs

In the following paragraphs we provide an overview of this combined set of programs on several criteria, with details on each individual program provided in the tables at the end.

*Funding:* Total funding across these programs is approximately \$25 billion for home retrofits and tens of billions of dollars for broad programs that could include retrofits.

*How are funds distributed?* Some of the funds will be distributed by state energy offices, some by the Internal Revenue Service as tax credits and deductions, and some by established local programs (i.e., the WAP funds). The HUD and EPA programs will be largely competitive grants to be awarded to local groups, state and local governments, and building owners.

*Timing:* The revised tax incentives begin on January 1, 2023, and the agency programs will roll out over the next year or more. Most of the funding needs to be spent within 10 years, but for some programs funds are likely to be fully spent over a shorter period of time.

*Who is eligible?* Many of the programs are targeted to benefit low- and moderate-income (LMI) households and disadvantaged communities, including much of the HOMES and the Electric Home Rebates, WAP, and the HUD and EPA programs. The tax incentives will primarily benefit middle-class households and businesses that pay taxes and can front the money until they file their taxes. Rental units generally qualify except for the 25C tax credit (and the HUD program is only for affordable rentals).

*What is eligible?* Across the various programs, funds are provided for home energy improvements such as insulation, sealing, and improved heating and cooling systems. Some focus on whole-home retrofits and some on specific measures. The Electric Home Rebates are only for electric equipment, while other programs favor efficient electric systems (higher credits under 25C) but also include gas- and oil-fired equipment; both the Electric Home Rebate and 25C tax credit include electric upgrades needed to switch to heat pumps.

*Incentive amounts:* Incentive amounts per home can range from a few hundred dollars to as much as \$14,000 under the Electric Home Rebate program, and amounts vary widely by program. Incentives for multifamily buildings can be significantly larger as funds are per apartment or per square foot of floor area. In some cases owners can braid multiple incentives.

**Table 1. Summary of retrofit incentives for single-family houses and multifamily buildings in recent federal legislation**

Program	Funding	How distributed?	When?	Who is eligible?	What is eligible?	For how much?
HOMES Rebate (DOE)	\$4.3 billion and \$0.2 billion for training	Rebates via SEOs	After DOE guidance and state plans	Homeowners and landlords, all income levels (or aggregators)	Whole-home retrofit projects that reduce energy use at least 15%	Typically \$2,000 to \$4,000, doubled for households below 80% of AMI
High-Efficiency Electric Home Rebate (DOE)	\$4.5 billion (includes \$0.225 billion for tribes)	Rebates via SEOs and tribes (may be point of sale)	After DOE guidance and state plans	Residents, building owners, or contractors, for households below 150% of AMI	Electrical equipment and insulation. For new construction, to replace non-electric, or first-time purchase.	50% of project cost (100% for households below 80% of AMI) up to \$14,000 total with subcaps
WAP (DOE)	\$3.5 billion in IJJA	Direct install via WAP agencies	50% when state plans approved	Homeowners and landlords, generally household income under 200% of FPL	Whole-home retrofit projects	Typically cost up to about \$8,000 per home
25C tax credit	\$12.5 billion CBO “score” through 2031	Via tax returns	2023–2032 (under old rules in 2022)	Homeowners (for their principal residence)	Efficient equipment and components, energy audits.	30% of cost up to \$1,200/year (\$2,000 for heat pumps and wood stoves), with subcaps
179D tax deduction (retrofit portion)	No separate estimate	Via tax returns	2023–2032 (under old rules in 2022)	Owners of multifamily buildings over three stories (nonprofits and governments may transfer the deduction)	Retrofit projects that reduce building energy use at least 25%	\$0.50–5 per sq. ft. of floor area based on energy savings and labor standards
Energy efficiency in affordable housing (HUD)	\$1 billion	Grants or loans and technical assist	After HUD request for proposals to 2028	Owners of HUD-assisted affordable housing	Measures to improve energy and water efficiency, air quality, and resilience and energy benchmarking	TBD
Greenhouse Gas Reduction Fund (EPA)	\$27 billion (total—portion for housing unknown)	Grants, loans, other financial assistance, and technical assist	To distributing orgs. 2022–2024	Unspecified, but much of it for low-income and disadvantaged communities; distributed via states, tribes, cities, and nonprofit orgs.	Zero emission technologies and projects to reduce or avoid GHG emissions and other forms of air pollution	TBD

**AMI=area median income; CBO=Congressional Budget Office; DOE=Department of Energy; EPA=Environmental Protection Agency; FPL=federal poverty level; HUD=Department of Housing and Urban Development; IJJA=Infrastructure Investment and Jobs Act; SEO=state energy office; WAP=Weatherization Assistance Program. Funding is in the Inflation Reduction Act unless otherwise indicated. The three DOE programs allocate funds to states by formulas; the HUD and EPA programs are competitive. EPA also has \$5 billion for Climate Pollution Reduction Grants and \$3 billion for Environmental and Climate Justice Block Grants.**

**Table 2. Rebate and credit specifications and amounts for specific measures**

High-efficiency electric home rebate			25C tax credit	
	Requirement	Rebate caps	Requirement	Credit caps
Overall	Household <150% AMI	\$14,000	Pay taxes (not refundable)	\$1,200 per year (except per below)
Overall % of measure cost		50% except 100% for households <80% AMI		30% (includes labor to install equipment but not for components)
<b>Equipment</b>				
Heat pumps	ENERGY STAR electric	\$8,000	Highest CEE Tier	\$2,000 <sup>3</sup>
Heat pump water heaters	ENERGY STAR electric	\$1,750	Highest CEE Tier	\$2,000
Central air conditioner, water heater, furnace, or boiler			Highest CEE Tier	\$600
Stove, cooktop, range, or oven		\$840		
Heat pump clothes dryer	ENERGY STAR electric	\$840		
Biomass (wood) stove or boiler			>75% HHV efficiency	\$2,000
<b>Components</b>				
Insulation and air sealing	ENERGY STAR	\$1,600 <sup>4</sup>	IECC (of two years before)	\$1,200
Windows and skylights			ENERGY STAR Most Efficient	\$600 (total)
Doors			ENERGY STAR	\$500 (\$250 per door)
Electric panels/load service centers		\$4,000	Enables qualifying equipment	\$600 <sup>5</sup>
Electric wiring		\$2,500		
<b>Measures</b>				
Energy audit			IRS to specify	\$150

**HHV=higher heating value. Highest Consortium for Energy Efficiency (CEE) Tier does not include an “advanced tier.” For multifamily buildings, half of households must meet Area Median Income (AMI) requirements. States may be able to set lower caps or more stringent requirements for the Electric Home Rebate.**

<sup>3</sup> ENERGY STAR ground source heat pumps are instead eligible for an unlimited 30% credit under the 25D tax provision.

<sup>4</sup> Also includes material to improve ventilation

<sup>5</sup> Also includes branch circuits, feeders

**Table 3. Rebate and credit specifications and amounts for whole-home retrofits**

	HOMES Rebate			179D Tax deduction
	Modeled savings >80% AMI	Modeled for <80% AMI	Measured savings	<i>Applies to multifamily buildings over three stories</i>
<b>Energy savings requirement</b>				
Minimum energy savings	20%	Same	15%	25%
Energy metric	Calibrated using BPI 2400 standard	Same	Weather-normalized—use open-source software	Energy use index (e.g., as in ENERGY STAR portfolio manager)
<b>Maximum rebate or deduction amount</b>				<i>Note the below amounts are deductions, not credits—value is roughly 1/5–1/4 of these amounts</i>
% of project cost	50% <sup>6</sup>	80%	Same	100%
Minimum savings level	\$2,000/home for 20% savings, up to \$200,000/building	\$4,000/home for 20% savings	Per kilowatt-hour-equivalent savings for each state—based on 20% savings amount for average home	\$2.50/sf for 25% savings if work follows labor standards, \$0.50/sf otherwise
Higher savings	\$4,000/home for 35% savings, up to \$400,000/building	\$8,000/home for 35% savings	No cap	Prorated up to \$5/sf for 50% savings if work follows labor standards, \$1/sf otherwise
Contractor rebate	\$200 for each home in a disadvantaged community			

sf=square foot. The Building Performance Institute’s ANSI/BPI-2400-S-2015 standard specifies a process for “whole-house energy savings predictions by calibration to energy use history.” For the larger HOMES Rebate for multifamily buildings, half of households must meet the Area Median Income (AMI) requirement. States may be able to set lower caps or more stringent requirements for the HOMES Rebate. For the 179D deduction the energy metric is for the alternative deduction for retrofits.

Specifics are not yet determined for the HUD affordable housing program.

WAP covers 100% of cost for measures that meet a cost-effectiveness test, up to an average of about \$8,000 per home.

<sup>6</sup> No percentage cost cap given for multifamily buildings, but that appears to be a drafting error.