

What the IRA Means for Heat Pump Manufacturers



The Inflation Reduction Act (IRA), signed into law in August 2022, has the potential to reshape the HVAC economy through manufacturing investments, demand-side incentives, and innovative low-cost financing. These programs can be leveraged to support an influx of [hundreds of billions of dollars](#) into the clean energy economy and create over [670,000 new clean manufacturing jobs and 900,000 new contractor jobs](#).

The IRA revives the \$10-billion 48C clean energy manufacturing tax credit, which will drive down the overall cost of domestic clean manufacturing — including heat pump manufacturing — by cutting capital costs. The IRA also appropriates \$500 million to the Defense Production Act, to fund domestic heat pump manufacturing and critical mineral processing. At the same time, the IRA utilizes innovative financing mechanisms to lower the financed cost of heat pump manufacturing, deployment, and adoption: \$3.6 billion for DOE’s Loan Programs Office and \$27 billion for the Greenhouse Gas Reduction Fund, both of which can leverage private capital at up to a 10:1 ratio. And finally, the IRA ensures tens of billions of dollars (at least) in demand for heat pumps (HPs) and heat pump water heaters (HPWHs) through consumer-facing rebates and tax credits, as well as commercial tax credits.

Taken together, these investments represent a game-changing opportunity for heat pump manufacturers to lead the United States toward a clean, healthy, and energy secure future. It’s a win-win-win for manufacturers, American workers, consumers, and the planet.

	Name of incentive	Type	Details
Manufacturer investments	48C Advanced Energy Project Tax Credit	Tax credit	\$10B for projects that reequip, expand, or establish clean energy manufacturing facilities
	Defense Production Act	Grants	\$500M for direct grants to support manufacturing facilities and advanced market commitments
Low-cost financing	DOE’s Loan Programs Office	Financing	\$40B in government-backed loan authority to lower manufacturer financing costs
	Greenhouse Gas Reduction Fund	Financing	\$27B to capitalize green banks, which can lower deployment/adoption financing costs
Consumer/ commercial heat pump incentives	High-Efficiency Electric Home Rebates (HEEHR)	Rebates	Up-front discounts for qualified LMI electrification projects, up to \$14K per household, including \$8K for HPs and \$1,750 for HPWHs
	Home Owner Managing Energy Savings Rebates (HOMES)	Rebates	Rebates for modeled/measured energy savings (including HP/HPWH installations) up to \$8K for LMI households and \$4K otherwise
	25C Residential Energy Efficiency Tax Credit	Tax credit	Capped 30% tax credit for select upgrades, including up to \$2K annually for HPs or HPWHs
	25D Clean Energy Tax Credit	Tax credit	Uncapped 30% tax credit for geothermal heat pumps, rooftop solar, and battery storage
	45L New Energy Efficient Home Credit	Tax credit	For new construction or major retrofits, up to \$5K for homes that meet DOE’s Zero Energy Ready Home program and up to \$2.5K for homes that meet EPA’s ENERGY STAR certification
	179D Energy Efficient Commercial Buildings Deduction	Tax deduction	For reductions in energy costs or energy use intensity, up to \$5/SF

Manufacturer Investments

48C Advanced Energy Project Tax Credit

Funding: \$10 billion (with \$4 billion reserved for projects in legacy energy communities)

Administration: IRS

Timing: 48C applications will be accepted in 2023

Eligible Recipients: Manufacturers

Program details: The 30 percent 48C credit incentivizes projects that reequip, expand, or establish clean energy manufacturing facilities through competitively-allocated credit awards. Eligible projects include “property designed to produce energy conservation technologies (including residential, commercial, and industrial applications),” including heat pump manufacturing. 48C’s base rate is 6 percent, with the 30 percent credit rate allowed for projects meeting prevailing wage and registered apprenticeship requirements.

The IRS will have 180 days from the date of enactment of the Act to establish a program to consider and award certifications for qualified investments, then applicants will have two years from the date of certification by the IRS to provide evidence that the requirements of the certification have been met and that the project has been placed in service. Once awarded, the IRS will publicly disclose the identity of the applicant and the amount of credit awarded.

48C was first created in the American Recovery and Reinvestment Act, in which a \$2.3 billion investment supported funding for 183 manufacturing facilities and created 17,000 direct jobs. Out of those 183 credits, two dozen supported buildings-related manufacturing, including several awards for heat pump manufacturing specifically. The average credit was \$12.5 million.

Defense Production Act

Funding: \$500 million

Administration: DOE

Timing: Public requests for information (RFIs) released in October 2022

Eligible Recipients: Manufacturers

Program details: The Defense Production Act (DPA) was invoked by President Biden on June 6, 2022 to boost the domestic production capacity of critical clean energy technologies, including heat pumps. Specifically, the DPA authority allows DOE to make direct purchases (advanced market commitments) of domestically made (and/or assembled) heat pumps and provide grants to stand up/expand domestic heat pump manufacturing facilities. Grant funding may also be able to be used for workforce development so long as it furthers the “development of production capabilities.”

In addition, DOE can and should ultimately utilize priority orders to streamline supply chain operations and accelerate domestic heat pump deployment. Priority orders will mitigate supply chain disruptions insofar as heat pump manufacturers that receive priority orders can subsequently issue their own priority orders across relevant supply chains.

Low-cost financing

DOE's Loan Programs Office

Funding: \$3.6 billion, with loan authority up to \$40 billion

Administration: DOE

Timing: Immediately

Eligible Recipients: Manufacturers

Program details: The Loan Programs Office's (LPO) new funding and loan authority will guarantee loans for projects that avoid, reduce, or sequester air pollutants or anthropogenic greenhouse gas emissions, including heat pump manufacturing and deployment. LPO is structured to spur additional private investment at up to a 10:1 ratio. And as loans are repaid, additional projects can be funded, increasing the economic multiplier of the legislation.

LPO loans have traditionally been limited to projects that employ new or innovative technology. Domestic heat pump manufacturing and deployment as part of a virtual power plant (VPP) project may meet the "innovative" requirement, but the bipartisan Infrastructure Investment and Jobs Act (IIJA) of 2021 removed the "innovative" requirement if projects also receive funding from a state energy financing institution. Since the IRA includes significant funding for these state institutions through the Greenhouse Gas Reduction Fund (see below), it is likely that manufacturers will be able to leverage state financing and LPO loans for investing in domestic heat pump manufacturing.

Greenhouse Gas Reduction Fund

Funding: \$27 billion

Administration: Funding distributed by EPA: \$7 billion to state, local, and Tribal governments, as well as nonprofit financing entities, to deploy zero-emission technologies in low-income and disadvantaged communities; \$20 billion to nonprofit financing entities (i.e., green banks) to rapidly deploy low- and zero-emission technologies, 40 percent of which will be directed to low-income and disadvantaged communities

Timing: EPA is mandated to begin distributing funds within 180 days and to distribute all funds within two years

Eligible Recipients: Contractors, consumers, financial institutions, etc.

Program details: The Greenhouse Gas Reduction Fund empowers the EPA to fund state and local green banks and nonprofit organizations designed to finance the rapid deployment of low- and zero-emissions products, including heat pumps, particularly in disadvantaged communities. Green banks spur additional private investment at up to a 10:1 ratio. And like LPO, additional projects can be funded as loans are repaid, increasing the economic multiplier of the legislation. Whereas LPO has traditionally focused on innovative technologies, the

Greenhouse Gas Reduction Fund will likely target proven technologies that face up-front cost barriers, like heat pumps.

The Fund will lower the up-front cost of heat pump deployment and adoption by providing tailored, low-cost financing where it's needed most. For example, in November 2021, NY Green Bank (NYGB) provided a \$2.6 million predevelopment loan to support the development of an all-electric multifamily building planned for construction in Brooklyn's Broadway Triangle, which will provide 140 units of housing to low-income New Yorkers.

Consumer/commercial heat pump incentives

High-Efficiency Electric Home Rebates (HEEHR)

Funding: \$4.5 billion

Administration: Funding distributed by DOE; rebate programs administered by State Energy Offices (SEOs) and Tribes

Timing: Funding available to DOE immediately, likely allocated to SEOs and Tribes in 2023 (depending on the timing of DOE guidance and SEO implementation plans)

Eligible Recipients: LMI households and majority-LMI multifamily building owners

Program details: HEEHR provides up-front consumer discounts to enable LMI households to electrify their homes. For households that are below 80% of Area Median Income (AMI), HEEHR covers 100% of electrification project costs (both purchase and installation) up to \$14,000. For households that are 80-150% of AMI, HEEHR covers 50% of electrification project costs up to \$14,000. HEEHR discounts per appliance include \$8,000 for heat pumps and \$1,750 for heat pump water heaters, as well as discounts for heat pump clothes dryers, electric stoves, panel upgrades, rewiring, and weatherization. For majority-LMI buildings, HEEHR rebates aggregate per eligible unit. Appliances must be ENERGY STAR certified, where such certification categories exist. HEEHR also includes a \$500 contractor incentive per project.

Home Owner Managing Energy Savings Rebates (HOMES)

Funding: \$4.3 billion

Administration: Funding distributed by DOE; rebate programs administered by State Energy Offices (SEOs)

Timing: Funding available to DOE immediately, likely allocated to SEOs in 2023 (depending on the timing of DOE guidance and SEO implementation plans)

Eligible Recipients: All households and multifamily building owners, as well as project aggregators

Program details: HOMES rewards modeled or measured energy reductions of at least 15%, with rebates of up to \$4,000 or 50% of project costs for non-LMI households and \$8,000 or 80% of project costs for LMI households. High-efficiency retrofits are likely to include HPs and/or HPWHs. For multifamily buildings, HOMES rebates aggregate per eligible unit. HOMES also includes a \$200 contractor incentive per project.

25C Residential Energy Efficiency Tax Credit

Administration: IRS

Timing: Prior version of 25C retroactive to all of 2022; new version of 25C starts in 2023

Eligible Recipients: All taxpayers who pursue a qualified project and have adequate tax liability to offset

Program details: 25C incentivizes household electrification by lowering the total cost of qualified electrification upgrades. 25C provides a 30 percent tax credit for the purchase and installation costs of heat pumps and heat pump water heaters up to \$2,000 annually and eligible panel upgrades up to \$600¹. 25C is applicable only to air source heat pumps and HPWHs that meet the Consortium for Energy Efficiency's highest non-advanced tier, at minimum. It's nonrefundable, so households must have adequate tax liability to offset.

25D Clean Energy Credit

Administration: IRS

Timing: New version of 25D retroactive to all of 2022

Eligible Recipients: All taxpayers who pursue a qualified project and have adequate tax liability to offset

Program details: 25D provides an uncapped 30 percent tax credit for geothermal heat pumps, rooftop solar, and battery storage (for the first time). IRS has also allowed 25D to be applied to an electrical panel upgrade as long as it's installed in conjunction with and enables another eligible energy installation. 25D is applicable only to geothermal heat pumps that meet ENERGY STAR certification. It's nonrefundable, so households must have adequate tax liability to offset.

45L New Energy Efficient Home Credit

Administration: IRS

Timing: Prior version of 45L retroactive to all of 2022; new version of 45L starts in 2023

Eligible Recipients: Contractors who build and sell qualifying energy-efficient new homes or perform major renovations

Program details: 45L rewards new homes and deep retrofits that meet energy-efficiency certifications, incentivizing HP/HPWH installations. Homes that meet EPA's ENERGY STAR certification are eligible for tax credits of up to \$2,500 per unit, and homes that meet DOE's Zero Energy Ready Homes certification are eligible for tax credits of up to \$5,000 per unit. 45L can be utilized without a basis adjustment to LIHTC, which will encourage energy efficient affordable housing construction.

¹ 25C also includes credits for panel upgrades, select weatherization measures, energy audits, and more.

179D Energy Efficient Commercial Buildings Deduction

Administration: IRS

Timing: New version of 179D starts in 2023

Eligible Recipients: Building owners or contractors who design a retrofit plan on behalf of a non-taxable entity

Program details: 179D incentives retrofits of commercial buildings, including traditional commercial spaces and large apartment buildings as well as buildings owned by non-taxable entities like governments, schools, and houses of worship. Specifically, 179D rewards reductions of at least 25% in total annual energy and power costs or energy use intensity (EUI) with a tax deduction of up to \$5/SF. High-efficiency retrofits are likely to include HPs and/or HPWHs.