

Electric Appliance Guide

Introduction guide to Inflation Reduction Act (IRA) eligible electric household appliances

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What are the IRA-eligible, free or low-cost energy-efficient, bill-saving machines?

- (1) "Rewiring America Go Electric Digital Guide." Rewiring America, www.rewiringamerica.org/IRAGuide. Accessed 14 Nov. 2023.
(2) <https://app.wildgridhome.com/dashboard>
(3) <https://www.edmunds.com/chevrolet/bolt-ev/>
(4) <https://www.wired.com/review/span-smart-electrical-panel/>
(5) <https://www.fixmyhome.com/what-is-a-240-volt-outlet/>

What are heat pumps?

Heat pumps are 3-5 times more efficient than most fossil-fuel based heating/cooling appliances, which may translate to savings on your energy bill. (1)

"A heat pump is a single electric appliance that can replace both your traditional air conditioner and home heating system (like a furnace or boiler).



Ductless heat pump (2)

At the simplest level, heat pumps use electricity to move heat from one place to another... How can something move heat from the outside air when it's 20 degrees outside? [Heat] is just energy, and there's energy in the air all the way down to absolute zero, which is -465°F. Heat pumps designed for cold climates can keep your home warm — without a backup heating source — even when outside temperatures are below -20°F" (1). It is important to consult with installers with choose the right technology for you, as certain heat pumps may not perform as well in colder



In-window heat pump (2)

climates (2). Depending on the type, heat pumps can cost between \$500-40,000 (incl. installation costs), meaning in some cases they may be fully covered by upcoming rebates (2).

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This same heat-transfer concept is also applied in heat pump water heaters, heat pump clothes dryers, and geothermal heat pumps.



Geothermal heat pump (2)



Heat pump water heater



Heat pump clothes dryer



Ducted heat pump (2)

What are electric stoves/induction stoves?

"Neither induction nor electric resistance stoves burn fossil fuels, though both are more energy-efficient. They also don't require gas hookups, which often leak methane — a potent greenhouse gas" (1). Electric resistance stoves heat the cooktop similar to a toaster, while electric induction stoves heat cooking pans directly through a magnetic field (1).



Induction stove

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What electric vehicles qualify?

Many all electric, plug-in hybrid, and fuel-cell electric vehicles, as well as EV chargers, are eligible for tax credits or upcoming rebates. “Most EVs on the market today have a range of more than 200 miles on a single charge, which means most people can satisfy all of their daily driving needs by charging their EV overnight at home,” (1) at an EV charging station, or workplace.



**Eligible 2023
Chevrolet Bolt (3)**

“Electric vehicles are much cheaper to operate than gas-powered vehicles. As gas prices get higher and more volatile,

electric cars are now three to six times cheaper to drive than gas vehicles, which translates to hundreds of dollars a year in savings. EVs also typically cost half as much to maintain because they have fewer moving parts and don’t require oil changes.” EVs don’t produce tailpipe emissions, and “Even without clean electricity, EVs are more climate friendly than gas vehicles because they are so much more efficient.”

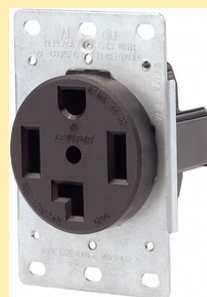
See all eligible vehicles at
<https://fueleconomy.gov/feg/tax2023.shtml>



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What are electric panels/wiring?

Your home's electricity comes from the grid and is distributed through the electrical panel. It's like water flowing through a pipe, measured in Amperes. Older homes handle 60A or 100A, newer ones 200A or more. To electrify fully, you might need an upgrade based on your home size and needs. Panels are vital for whole-home electrification. Upgrading might need a utility service upgrade. Smart panels, using software, enable full electrification without this upgrade. Choosing between a smart panel or a 200A upgrade depends on your home, plan, and household needs (1).



Electrical wiring, alongside the panel, is crucial for whole-home electrification. Some appliances need 240V outlets instead of the standard 120V. Upgrading your panel or working on one project is an excellent opportunity to add dedicated circuits and outlets for future electrification. This prepares you for future appliance upgrades, saving time and money by avoiding additional electrician visits (1).

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Can this help with weatherization?

“Weatherization refers to a series of steps you can take to reduce the amount of energy required to heat and cool your home. Weatherization may involve air sealing, insulation, door and window upgrades, and ventilation improvements” (1). An energy audit is typically the first step! See our “Weatherization Assistance” pamphlet for more weatherization programs beyond the IRA!

Solar & Battery Storage

“Rooftop solar provides zero-carbon, no-cost electricity once it’s installed and paid for” (1). See our “How to Go Solar” pamphlet for more information!

Learn more!



<https://www.rewiringamerica.org/IRAguide>

**Rewiring America's
Go Electric Guide**



<https://app.wildgridhome.com/dashboard>

Wildgrid Webapp

Be sure to check if your desired appliance meets efficiency rating qualifications, and search for rebate programs with your local utility companies to see if they offer any additional electric appliance incentives!

Go electric!

(now!)

Introduction guide to Inflation Reduction Act (IRA) tax credits and rebates



How can I get free or low-cost energy-efficient, bill-saving machines?

(1) "Rewiring America Go Electric Digital Guide." Rewiring America, www.rewiringamerica.org/IRAGuide. Accessed 14 Nov. 2023.

(2) Briscoe, Sage, et al. "IRA Home Energy Rebates Guidance." IRA Home Energy Rebates Guidance Webinar. IRA Home Energy Rebates Guidance Webinar, 28 Aug. 2023. Federal Electrification Policy Coalition National Building Electrification Network

What are the available and upcoming IRA incentives?

Available now:

Name	Type of Program	Technologies	Target Population	Maximum \$ per Household
25C Electrification/Efficiency Tax Credits	Tax credits	Heat pumps, heat pump water heaters, weatherization, panels FAQ	Everyone who owes taxes	30%, up to \$3,200 per year
25D Solar/Storage Tax Credits	Tax credits	Solar, storage, geothermal FAQ	Everyone who owes taxes	30%
25E/30D EV Tax Credits	Tax credits/rebates	New EVs (30D)/Used EVs (25E) Models that qualify , IRS website	Non-high income households	\$7,500 (new) \$4,000 (used)
30C EV Charging Tax Credit	Tax credit	EV chargers More info available here	Rural or low-income census tracts	30%, up to \$1,000

Upcoming (2024):

Home Efficiency Rebates (aka HOMES)

Energy Savings	Single-Family Homes	Multifamily Buildings	LMI Home or Dwelling Unit
> 15% Measured	\$1000 per 10% energy savings Or 50% of project costs	\$1000 per 10% energy savings per DU Or 50% of project costs	\$2000 per 10% energy savings Or 80% of project costs
20% to 35% Modeled	\$2000 or 50% of project costs	\$2000 per DU Max \$200,000 per building	\$4000 or 80% of project costs
> 35% Modeled	\$4000 or 50% of project costs	\$4000 per DU Max \$400,000 per building	\$8000 or 80% of project costs

Home Electrification and Appliance Rebates (aka HEEHRA)

- \$8,000 for heat pumps
- \$1,750 for heat pump water heaters
- \$840 for heat pump clothes dryers
- \$840 for electric or induction stoves
- \$4,000 for electrical panel upgrades
- \$2,500 for rewiring
- \$1,600 for basic weatherization

100% for households <80% AMI, 50% for households 80-150% AMI, Multifamily buildings also qualify if ≥50% of occupants are LMI (2)

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What is electrification?

“To electrify everything, you’ll need to replace any machine that currently burns fossil fuels — your gas-powered car, furnace, water heater, kitchen stove and dryer. You might also install some new electric machines, like solar panels, a home storage battery and an upgraded electrical panel and wiring. You don’t have to do this all at once — you can wait until the next time your car or air conditioning needs to be replaced.” (1)

How can this save me money?

“Running electric appliances and driving EVs were already becoming cheaper than fossil-fueled machines [due to superior efficiency], but the IRA incentives make this financial choice even more compelling by bringing down the upfront costs of electric machines themselves. Households will save on average \$1,800 a year by going electric. You’ll also no longer be beholden to the volatility of oil (yo-yoing gas prices!). In the coming years, electric appliances will become cheaper and cheaper to buy and run. For low-income households, the IRA’s up-front discounts will unlock lower energy bills year over year.” (1)

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What are tax credits and rebates?

Nonrefundable tax credits are reductions in tax liability that cannot result in a refund exceeding the total tax owed. They lower the amount of taxes owed but don't provide a refund if the credit exceeds the tax liability. Rebates, typically cash payments, are incentives provided by the government to stimulate spending or support specific activities, offering more immediate financial relief than tax credits.

What am I eligible for?

For a personalized eligibility check, visit Rewiring America’s eligibility calculator at

www.rewiringamerica.org/app/ira-calculator



General eligibility can be found on page 4

- LMI = Low median income, < 120% of AMI
- AMI = Area median income (ex. \$114,400 in zip code 19104)

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What is the IRA?

The Inflation Reduction Act marks America's major clean energy investment, delivering upfront discounts, tax credits, and affordable financing to aid households in transitioning to clean energy and electrifying their essential machines.

How can I get started?

- Check your eligibility with the Rewiring America Calculator!
- Read “Guide to Electric Appliances” and learn more at Wildgrid Home!
- Read our “Local Rebates” for rebates available now!
- Get familiar with eligible energy-efficient machines and find contractors before the rush when rebates are out!
- Consider getting an [energy audit](#)
- Stay tuned for upcoming community workshops and events by joining our newsletter [X]

How do I apply?

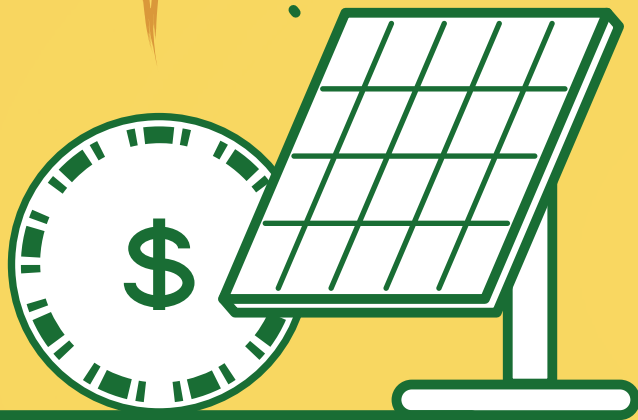
Applications for tax credits are through IRS form 5695.

Learn more: <https://www.irs.gov/forms-pubs/about-form-5695>

Stay tuned for rebate application info.

“We have to install 14,000,000 more electrified machines than the current rate of adoption over the next three years to meet our climate goals. It’s extraordinarily ambitious and absolutely possible.” - Rewiring America

How to Go Solar



Introduction guide to going solar in Scranton, saving on energy bills and lowering emissions

What is rooftop solar?

“Rooftop solar uses solar photovoltaic (PV) panels to turn sunlight into electricity. PV panels can be installed on your roof or even in your yard. When sunlight shines onto a PV panel — even on a cloudy day — your solar system will generate clean, renewable energy. **Rooftop solar provides zero-carbon, no-cost electricity** once it’s installed and paid for. Depending on your situation, it might make sense to buy your rooftop solar outright or finance your purchase over a number of years” (1). “It will be easiest to go solar if you live in a single-family house that



Rooftop solar (2)

you own. If you live in a condo, you may need approval from your HOA before installing solar on your property unless you have explicit roof rights. Similarly, your landlord must provide authorization before you go solar in an apartment” (3).

Other solar options:



Solar tiles (2)



Ground Mounted Solar (2)

How can it save me money?

“The higher your electricity bills, the more you'll save with solar” (3). “Depending on how it’s purchased or financed, rooftop solar can save you hundreds of dollars a year. That’s because the electricity produced by rooftop solar is completely free! As you electrify your home and your electricity needs grow, rooftop solar may deliver even bigger savings... Rooftop solar produces no carbon emissions! In many cases, this carbon-free electricity will flow back into the utility grid, where it will directly decrease the amount of fossil fuels burned by your utility company” (1). Solar energy can even be sold as Solar Renewable Energy Credits (SRECs) in PA.

Battery storage

“A battery storage system lets you store energy from the power grid or from rooftop solar. Battery storage systems are most effective when paired with rooftop solar, because the pairing enables households to store no-cost solar electricity generated during the day for use around the clock” (1).

What is a solar co-op?

“A solar co-op is a group of property owners who use their combined buying power to save money going solar” (4).



Join: SolarUnit
edNeighbors.org

(1) “Rewiring America Go Electric Digital Guide,” Rewiring America, www.rewiringamerica.org/IRAguide. Accessed 14 Nov. 2023.

(2) <https://www.wildgridhome.com/>

(3) <https://www.energysage.com/solar/how-to-go-solar/>

(4) <https://www.solarunitneighbors.org/the-ultimate-solar-co-op-guide/co-op-guide-whats-a-solar-co-op/>

(5) <https://ratedpower.com/blog/lifecycle-analysis-pv-plant/>

(6) <https://www.energy.gov/energysaver/benefits-residential-solar-electricity>

How do I go solar in Scranton?

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(1) Find a contractor

Contractors can be found on websites such as www.energysage.com, www.solarreviews.com, or searching online (ex. Yelp) for local installers. The City of Scranton requires contractors to be licensed by the city and insured. When searching for a contractor, look for the following:



- Price - How does the price compare to other installers? (www.energysage.com offers quote comparisons). Be aware of hidden costs such as “panel upgrades,” or “steep roof fees.”
- Payment schedule - What are the payment terms by deposit, delivery, and inspection? Note that PA law limits deposits over \$5,000 for home improvement projects.
- Installation timeline - How does this compare across contractors? Is this a reasonable timeline for your area?
- Familiarity with local codes
- Technology and performance

- Reviews - Look for trusted companies with good reviews and customer service. www.solarreviews.com lists company reviews by county under their PA guide.

(2) Apply for the Electric Permit

Electrical Permits are official approval to do electrical work in the City of Scranton. Physical prints must still be submitted to City Hall (340 N Washington, Scranton, PA 18503). Simple drawings for decks may be uploaded, but all commercial jobs, renovations, solar systems, sprinkler systems, etc. must still be submitted physically. Commercial jobs require (3) copies stamped and signed by the architect/engineer. Residential jobs require (2) copies.



Apply for the Electric Permit at
<https://scrantonpa.viewpointcloud.com/categories/1079/record-types/6352>

Solar Fact Sheet

(1) How long do solar panels last?

“As a general rule, the life expectancy of solar panels is about 25-30 years... [After], energy production has declined by what manufacturers consider to be a significant amount” (3)

(2) How much do solar panels cost?

On average, solar costs \$3.01/W before incentives, or around \$22,027 for a 10.5 kW system. The 30% IRA tax credit for solar will

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become a 30% rebate when incentives roll out. Note that solar is not eligible for the HOMES efficiency rebates.

(3) How long will it take to break even with solar?

It typically takes around 8-9 years to break even on the initial investment. Solar can save a household \$20,000-\$97,000 over the course of the panels' lifetime (3).

(4) How must solar be disposed of?

Depending on the manufacturer, solar can be recycled, although solar recycling infrastructure still needs significant development. Localities may be contacted for disposal instructions if your panels are considered “hazardous waste.”

(5) What are net emissions during the life cycle of solar?

“Even when the full life cycle... is taken into account, the total CO2 emissions produced by renewable and nuclear generation technologies are much lower than those produced by oil, coal, and gas plants. Among renewable technologies, solar PV panels have a slightly larger carbon footprint than nuclear plants or wind turbines” (5).

(6) Can solar increase the value of my home?

“Solar panels are viewed as upgrades, like a renovated kitchen or a finished basement, so purchasing a solar energy system will likely increase your home's value. Studies show that homeowners pay a premium for a solar home; one study by Lawrence Berkeley National Laboratory showed that on average, solar increased the value of a home by about \$15,000” (6)

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Weatherization Assistance

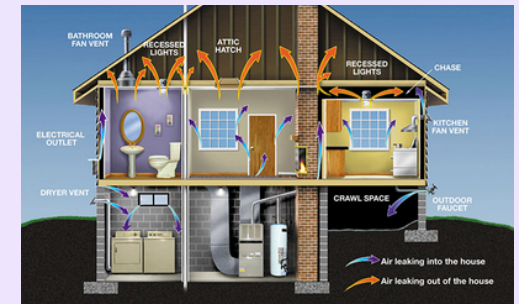
Introduction guide to local and federal Weatherization programs, including the IRA

What is weatherization?

Weatherization encompasses a series of measures aimed at minimizing the energy needed to regulate the temperature of your home. These measures may include sealing air leaks, adding insulation, upgrading doors and windows, and



enhancing ventilation. The initial step for many individuals in the weatherization process is obtaining an energy audit. During this service, a trained professional conducts tests at your residence to identify areas that may be causing energy inefficiencies. Local electric utilities often offer energy audits at minimal or no cost. Weatherization has the potential to yield significant savings, reducing energy expenses by hundreds of dollars annually. Additionally, by curbing energy waste, weatherization contributes to a decrease in carbon emissions from your home.



What does the IRA offer for weatherization?

The IRA offers a 30% of cost tax credit capped at \$1,200 reset yearly, and an upcoming income-limited rebate covering up to \$1,600 of weatherization costs, part of the Electrification Rebates (capped at \$14,000). The tax credit does not cover installation costs.

Tax credit caps (30% of item cost):

- Air sealing and insulation: \$1,200
- Doors: \$250 per door, \$500 total
- Energy audits: \$150
- Windows: \$600

The rebates and tax credits may be combined if they are used to cover different items purchased. The weatherization rebates cover

Overpaying on your energy bill? Need insulation or ventilation upgrades?

(1) "Rewiring America Go Electric Digital Guide." Rewiring America, www.rewiringamerica.org/IRAGuide. Language paraphrased

(2) <https://dced.pa.gov/housing-and-development/weatherization/income-eligibility/>

(3) www.huduser.gov/portal/datasets/il.html#year2023

(4) <https://www.dhs.pa.gov/Services/Assistance/Pages/LIHEAP.aspx>

ventilation, insulation, and air sealing. (AMI = Area median income)

- 80% AMI = 100% up to \$1,600
- 80-150% AMI = 50% coverage

Calculate Your Area Median Income using the Department of Housing and Urban Development's Online Tool!

www.huduser.gov/portal/datasets/il.html#year2023



What is the federal Weatherization Assistance Program (WAP)?

The WAP is a federally funded, state-run program where recipients receive an energy audit and weatherization services including but not limited to ventilation, door upgrades, heating and cooling optimization insulation improvement, and health and safety measures.



Eligibility by area median income breakdown

The program is eligible for those with an income that is at or below 200% of the Federal Poverty Income Level, as outlined by the U.S. Department of Health and Human Services.

- Single household = \$29,160
- 2-Person household = \$39,440
- 3- Person household = \$49,720

Learn more about eligibility and find your local weatherization assistance provider to begin your application:



<https://dced.pa.gov/housing-and-development/weatherization/income-eligibility/>

Lackawanna County Whole Homes Repair Program

This program provides funding to address habitability and safety concerns, provide measures to improve energy or water efficiency

and make units accessible for individuals with disabilities. It is eligible to those at & below 80% AMI.

www.nwnepa.org/programs/aip/whole-home-repair.html



Service utility assistance

The majority of electric, gas, water, phone, and internet service providers provide assistance programs. Learn more:

<https://www.puc.pa.gov/about-the-puc/consumer-education/utility-assistance-programs>



Local community organizations offering help with utilities can be found on www.findhelp.org

LIHEAP

The Low-Income Home Energy Assistance Program (LIHEAP) grants \$300-\$1,000 to help low-income families pay for heating. Learn more:

<https://www.dhs.pa.gov/Services/Assistance/Pages/LIHEAP.aspx>

