

A Word to the Wise

Your Guide to Home Energy Upgrades with the Inflation Reduction Act

Congratulations, you've made the decision to upgrade your home and prioritize clean and efficient energy! Now, what do you do? You may know little about solar energy, solar-plus-storage, heat pumps, insulation, or other kinds of energy or energy efficiency improvements for your home. How do you choose a contractor and make wise decisions along the way? To be as prepared as possible, you should become informed about products, designs, building practices, and contracting businesses. Educate yourself about the many incentives (tax credits, rebates, deductions, etc.) that might be available to you, whether that is from your electric utility, locality, state, or the federal government.

Review the tips below to help you avoid some of the painful mistakes made by those who have gone before you. Read about the financial incentives offered to you under the Inflation Reduction Act (IRA) which can help reduce the cost of purchasing and installing your chosen upgrades.

Best Practices for Choosing a Contractor

Follow the steps below to make an informed decision when searching for possible contractors:

- ☐ List the goals that you have for your chosen project, and if you have multiple projects, make sure to prioritize them in order of importance.
 - What are you hoping to fix and/or accomplish?
 - What is your budget?
 - Do you have a preferred project completion date, if so what/when is it?
- ☐ Ask around for contractor referrals from your friends, family, coworkers, and neighbors.
- ☐ Look up contractors by going online to find businesses in your area – be aware of customer reviews and check their website.
 - Use reputable, trusted sources to vet your contractor options.

Organizations that vet contractors include:

- **Better Business Bureau (BBB)**
 - Tracks complaints about previous work done, and allows you to review other businesses.
- **Angi** (formerly Angie's List)
- **Thumbtack**
- **Energy Sage**
 - Pre-screens contractors, so you can review the experiences of other users.
- Membership in general business associations like the **Chamber of Commerce**, or industry specific organizations like the **NC Sustainable Energy Association** (for solar projects) or the **Plumbing-Heating-Cooling Contractors Association North Carolina**
 - Membership indicates that a company is serious about its local community and participates in strengthening the local energy ecosystem.
 - Many of these groups also have their members agree to a code of conduct that helps to protect customers.

❑ Are they an accredited contractor?

Use the numbers and websites listed [here](#) to contact the North Carolina Board of Examiners (for electrical contractors and plumbing/HVAC contractors) and the North Carolina Licensing Board for General Contractors about a contractor's certification.

> If living outside of North Carolina, check your state for similar information.

The [North American Board of Certified Energy Practitioners \(NABCEP\)](#) also certifies organizations and professionals in the renewable energy industry. The NABCEP provides certification and credentials to those in the solar PV industry, among others. For a directory of certified professionals in your area, [click here](#).

❑ Do they use subcontractors? If so, what are their credentials?

❑ How long have they been a professional contractor?

❑ Does the company resonate with you, and are you comfortable with them completing your home improvement project?



❑ Ask for customer references.

Ask past customers what their experience was in terms of service performance and timeline/ budget of the project installation.

If you can, look at some of their previous projects.

If there are any, look at previous consumer complaints.

> Websites like [Angi](#) or [EnergySage](#) can be useful, but ask for references that you can directly reach out to and potentially speak with personally.

Ask for written and itemized quotes, and compare costs with other contractors.

> Remember, many contractors use high pressure sales tactics, so do not let anyone move you to sign a contract without comparing quotes.

> Collect at least 3 quotes and compare.

Check if the contractor has a long-standing history of doing business.

> Are they going to be around in the next 15+ years to help you with any warranty or system/technology issues?

Before Signing a Contract

Once you find a contractor, a written contract is a must for your protection. Some guidelines to consider include:

- Read and study the written contract to get a clear understanding of its contents before signing it. Make sure the pricing is transparent, and that fees and terms are clearly listed.
 - Keep a copy of the contract for your own records. Be mindful of the different clauses, including an arbitration or dispute clause.
 - Ask for a signed written proposal from your contractor before project installation starts, so that you have a list of project specifications to which the contractor is held.
 - Check and ask if the technology being installed has a specific warranty. Warranties are very important in ensuring that your home/system will be repaired if something should malfunction during the period of the warranty.
 - Check your Homeowners Association's (HOA) rules for potential solar panel, battery storage, or solar-plus-storage restrictions.

North Carolina's solar access law prohibits an HOA from explicitly banning solar panels, but does allow for placement restrictions. However, adding any restrictions would require a vote by homeowners.
 - Check for any possible financial incentives that your contractor can offer you and are responsible for administering, and ask if they know of any.
 - Consider the cost along with other factors, such as including specifications with the brand names and size of the materials. Look over your contractor's method of payment, how much it is and how they want to collect it. Do not pay a large fee in advance, as that may be a sign that the contractor is in a bad financial state.
 - Be aware of the type of insurance that you need and verify the contractor's insurance policy.
 - Be aware if your contractor has a contract bond, which is a guarantee that the terms of a contract are fulfilled, and what the bond includes.
 - Learn what the different types of contracts are and what they mean.
 - Don't be pressured into signing a contract—take your time to consider what responsibilities and liabilities you will assume if you sign.
 - Only sign a contract if all blanks have been filled in completely, and it has been signed by the other party.
- If you are purchasing a solar system, battery storage system, or both through a solar-plus-storage system, here are some important questions to ask your contractor/installer(s):**
- Who is qualified in my area to design, build, or install a solar and/or battery storage system? Are they a local or national business/developer?

Local businesses/developers have a relatively closer presence to local communities, markets, and policies.

National businesses/developers have relatively more projects associated with different markets and policies due to operations in different states and multiple locales.

Be aware of the differences between national and local businesses/developers when comparing quotes and references.
 - Do they have full time local installers? Who will actually be doing the work (i.e. preparing the design or installing the solar and/or battery storage system)? What subcontractors will be used, and how long have they been working with the contractor/installer? Do they have a track record of over-promising and under-delivering based on references and ratings?

- ❑ How much will the solar and/or battery storage features cost me? What will be the expected energy cost savings? What assumptions about inflation in energy prices are incorporated into these estimates? Are those assumptions in line with past realities on cost escalation? What is the solar production estimate (kilowatt-hour (kWh)) of the solar system? What is the battery storage capacity (kWh) of the energy storage system?
Be aware of overpricing and talk to multiple solar installers for multiple quotes to make sure that the proposed pricing and details are in line with the local market in North Carolina – or whichever state you live in.
- ❑ What information do I use to determine which solar and/or battery storage features are best for me?
- ❑ How do I determine whether my present or future home is a good candidate to use solar and/or battery storage? Has a roofer or solar professional assessed if your rooftop is a practical location for solar? Is there sufficient room to accommodate the collectors and storage for an active solar and/or battery storage system?
- ❑ What modifications need to be done to my house to use this system?
- ❑ How long will the system last? How long do most solar and/or battery storage systems last?
- ❑ Who is responsible for obtaining and paying for any necessary local permits?
- ❑ Will the solar and/or battery storage features be covered by my home insurance policy?
- ❑ Are there any tasks that I must perform to make the solar and/or battery storage features operate properly? Who is responsible for maintaining the system? What are my responsibilities? Are parts easily available? Is the contractor/company going to be around in the next 15+ years to help provide assistance?
- ❑ Will the system operate without interfering with the operation, replacement, and maintenance of existing equipment? Will the performance of the house or system be monitored? What equipment or techniques will be used for the monitoring?
- ❑ Will the solar and/or battery storage system comply with any utility requirements in my service territory? Will it comply with the state's building code requirements?
In North Carolina, residential solar systems must be 20 kW or less.



During and After Project Installation

- What modifications need to be done to my house to use this system?
- Check to be sure the materials are exactly as you ordered or specified. Do not accept them otherwise.
- When the installation of a solar or solar-plus-storage system is complete, have the installer test the system for malfunctions.
- With regard to solar systems, HVAC, and other equipment, have the installer review the system so that you understand its operation and what, if anything, is required by you for its operation and maintenance.
- Ask for instructions on how to correct problems. This way, you can make sure you understand how the equipment or system is supposed to operate.
- Be aware of any construction changes and completion deadline delays.

What should you do if you hire a BAD contractor?

Going through the process of hiring a contractor can be a stressful and risky task. Sometimes your contractor does not do the job you paid for, and you are left with damages and bad quality. Below you will find a number of steps to take if this happens to you:

- Talk to your contractor. Address any of your concerns regarding the quality of the job/project and give your feedback to fix any problems or damages.

Be sure to make copies of all signed paperwork related to the project.

Take pictures of bad quality work and

damages.

Take notes on the discussion and any concerns that you have with your contractor. Make sure to write down any specific statements that you feel are important.

- If there was a breach in any agreement by your contractor, communicate with them a set deadline to fix the problem.

Make it clear that they will be fired if they fail to fix the problem.

Be sure to keep your communication as specific as possible and to choose your words wisely, as they may be used in a court of law.

Document any communication received and sent to your contractor.

Firing a contractor will not necessarily mean that you will receive a refund for payments already made.

Remember that firing of a contractor could be challenged in a court of law, so be sure to detail and document in your communication the breach of contract.

- If communicating with your contractor does not fix the problem, file a claim or complaint. This depends on whether your contractor has a bond policy in place and if they are licensed.

If there is a bond policy, get a copy of it and file a bond claim.

- > If approved, you will be paid for your losses through a reimbursement.

If there is no bond policy, but they are licensed, you can [file a complaint](#) with your state's licensing board.

- > The board will verify the problem, and will go through the complaint process.
- > The contractor may have their license revoked if problems aren't resolved, which could produce a refund.

- If a licensing board does not take up your complaint or if you have hired an unlicensed contractor, and your contract has an arbitration or dispute clause, you can request an arbitration or mediation.

Whether you choose to go through an

arbitration or mediation depends on the dispute and your contractor.

The Better Business Bureau offers services for [dispute resolution](#), including mediation.

- If your contract does not have an arbitration or dispute clause, you can go to small claims court.

Go to your local municipal building to fill out paperwork regarding your dispute and to go through the claims process.

- > You can also go to your municipality's website for other options.

The maximum amount that you can claim will vary depending on which state you live in.

- > In [North Carolina](#), the small claims court handles disputes involving less than \$10,000 in cash/property.

- If you are claiming a more significant amount, you will have to hire a lawyer.

Overall, the tips and guidelines listed above are intended to help you become a better educated consumer. Such preparation will help you obtain quality products and services at a fair price, while also preparing you for the maintenance and operating requirements that will be necessary to ensure your home and equipment run efficiently. A happy homeowner or renter is one whose living space operates smoothly and efficiently. This is an achievable goal if you are willing to prepare yourself for the process that lies ahead. Don't let unfamiliar terms and equipment scare you. Take your time and do your research.

Note: If you would like to file a complaint about any business or product, contact the Consumer Protection Section of the North Carolina Attorney General's Office at 1-877-5-NO-SCAM or go to their [website for more information](#). To find all other state consumer protection offices, [click here](#). Consult a legal expert/professional about any questions you may have and what steps you should take regarding damages/disputes/claims.

Incentives

While going through the process of finding a contractor, it is important to keep in mind the financial incentives available to you in order to decrease costs. The Inflation Reduction Act (IRA) gives residential customers multiple opportunities to lessen the cost of energy and energy efficiency upgrades, from tax credits to rebates; as well as a tax deduction for owners of multifamily buildings over three stories. You can even layer different incentives from your electric utility, municipality, state, or the federal government – unless stated otherwise. Additionally, if you are a renter make sure to talk to your landlord/building owner about any projects and/or upgrades you want to make (i.e. solar panels, storage, insulation, etc.); check your rental contract, and look over the incentives' eligibility requirements to determine if you or the owner are responsible for receiving the credit, rebate, and/or deduction.

Tax Credits

The IRA offers tax credits for qualified upgrades and purchases, from solar panels and battery storage to heat pumps and insulation. A [tax credit](#) is used to deduct the total amount of taxes that you have to pay for an individual tax year. Available for you, these updated and new credits (i.e. battery storage, electric panel/circuit upgrades, etc.) give you more cost-cutting assistance. You can claim a tax credit every year for newly purchased technology/equipment. However, there are certain limits. For example, a number of heating/cooling and energy efficiency upgrades are capped together at \$1,200 annually. In addition, technology/equipment in the heating/cooling and additional energy efficiency categories are eligible for credits if purchased and installed in 2023 through 2032 – unless stated otherwise. Renters can take advantage of the credits, however, check your renter's contract and confirm with your landlord or building owner before making an upgrade or starting a project. The credits cover the cost of the technology/system, including any applicable labor/installation costs. Depending on where you live, certain projects might be limited due to a lack of available contractors/markets.



Below, you will find federal tax credits for the **2023 to 2032** tax years:

Clean Energy Technology/Equipment ³	Credit Amount
Battery Storage (3 kWh or Greater)	30% of cost
Fuel Cells	30% of cost; up to \$500/half-kW of capacity
Geothermal Heat Pumps	30% of cost
Small Wind Turbine	30% of cost
Solar (Electricity)	30% of cost
Solar (Water Heating)	30% of cost

³*Tax credits for clean energy are expected to decrease to 26%, 22%, and then 0% for the 2033, 2034, and 2035 tax years, respectively; **projects are eligible for a credit based on the year they are placed in service**; unused credit amounts can be carried forward into next year if tax bill is lower than credit.*

Heating/Cooling Technology/ Equipment & Upgrades	Credit Amount
Heat Pumps	30% of cost; up to \$2,000 annually
Heat Pump Water Heater	30% of cost; up to \$2,000 annually
Biomass Stove/Boiler	30% of cost; up to \$2,000 annually
Energy Efficient Air Conditioners ⁴	30% of cost; up to \$600
Energy Efficient Heating Equipment ⁴	30% of cost; up to \$600
Energy Efficient Water Heating Equipment ⁴	30% of cost; up to \$600

⁴ *Subject to a \$1,200 total annual cap, does not include EV charging credit*

Additional Energy Efficiency Technology/Equipment & Upgrades ⁴	Credit Amount
Electric Panel/Circuit Upgrades & New Electric Equipment ⁵	30% of cost; up to \$600
Exterior Doors ⁶	30% of cost; up to \$250/door and up to a max of \$500 total
Home Energy Audit ⁵	30% of cost; up to \$150
Insulation ⁶	30% of cost
Windows (Includes Skylights ⁶)	30% of cost; up to \$600
EV Charging Station ⁷	30% of cost; up to \$1,000/unit

⁴Subject to a \$1,200 total annual cap, does not include EV charging credit

⁵Only applicable if upgrading in conjunction with another credited upgrade (i.e. heat pumps, solar, etc.)

⁶Not eligible for renters

⁷EV charging credit is only for those living in low-income or rural communities

You can find more information from the U.S. Department of Energy on how to apply for a credit and where to find eligible products, [click here](#). For more information on the EV charging station credit and how to apply for it, [click here](#).

Rebates - AVAILABLE SOON

Besides tax credits, there are also rebates for upgrades and projects supported by the IRA through the Home Energy Performance-Based, Whole-House Rebates (HOMES) and High-Efficiency Electric Homes (HEEH) programs. A [rebate](#) is a sum of money that is credited to you after a purchase transaction.

These programs are administered through State Energy Offices (SEO) and Indian Tribes (HEEH only), and will be **AVAILABLE SOON**. If you are eligible for both the HOMES and HEEH programs, you are not allowed to combine them. States/Tribes have until August 16, 2024 to have their programs approved, or risk losing program funding. Once the rebate programs begin, you have until September 30, 2031 to take advantage of them.

In North Carolina, the [SEO](#) announced that the rebate programs will be available in late 2023/early 2024, and are currently asking for

public input on how to make the rebates more accessible. Check your state's SEO for updates on program availability by [clicking here](#).

Below you will find descriptions of each rebate program to help you plan for upgrades and projects once they are made available. If you are a renter, talk to your landlord/building owner as they are also eligible for these rebates.

Home Energy Performance-Based, Whole-House Rebates (HOMES) Program

The HOMES program offers homeowners rebates dependent on the energy savings of your whole-home retrofit. For those making above 80% of the median income in your area, total rebates range from up to \$2,000 (for 20% energy savings) to \$4,000 (for 35% energy savings). The rebates are also available for owners of multifamily units on a per-unit basis, ranging from up to \$200,000/building (for 20% energy savings) to a max of \$400,000 (for 35% energy savings).



If you make up to 80% of the median income in your area, your total rebate is doubled to \$4,000 (for 20% energy savings) and up to a max of \$8,000 (for 35% energy savings). Use the [online tool](#) from the U.S. Department of Housing and Urban Development to access individual income limits areas and find out whether your income qualifies.

High-Efficiency Electric Homes (HEEH) Program

The HEEH program was created to help low-to-moderate income families be able to purchase and install energy-efficient appliances. Homeowners and landlords/building owners can take advantage of this incentive through purchase of technology/equipment such as heat pumps, electric cooking appliances, wiring upgrades, electrical panels, insulation, and air

sealing, among others. The rebate is a point-of-sale incentive, meaning you receive the rebate once you purchase the technology/equipment. The total received rebates per household may not exceed \$14,000. If you are low-income (less than 80% of area median income) you are eligible for 100% cost coverage, and if you are moderate-income (between 80-150% of area median income) you are eligible for 50% cost coverage. Multifamily buildings in which 50% of residents are low-to-moderate income are eligible too.

Use the [online tool](#) from the U.S. Department of Housing and Urban Development to access individual income limits areas and find out whether your income qualifies. Below, you will find a list of the max rebate amounts that your state may offer, to help you with project planning:

Technology/Equipment	Credit Amount
Air Sealing	Up to \$1,600
Breaker Box	Up to \$4,000
Electric Stove/Cooktop	Up to \$840
Electric Wiring	Up to \$2,400
Heat Pumps	Up to \$8,000
Heat Pump Clothes Dryer	Up to \$840
Heat Pump Water Heater	Up to \$1,750
Insulation	Up to \$1,600
Ventilation	Up to \$1,600

Tax Deduction

Also, available through the IRA are tax deductions for energy efficiency upgrades. A [tax deduction](#) reduces the amount of taxes owed by allowing certain expenses to be subtracted from your taxable income. For those living in a four-story or higher multifamily building, you may also be able to upgrade the energy efficiency of your space through your building owner. Talk to your building owner and let them know about the [Energy Efficient Commercial Building Tax Deduction \(179D\)](#) to see if they are eligible. Eligible energy efficiency upgrades include construction/improvements to walls, floors, roofs, doors, windows, HVAC systems, and lights. The deduction may be used every three years for taxable entities and every four years when used for tax-exempt entities. The deduction is based on the energy efficiency gains and energy savings from projects/upgrades, which you will find below:

Energy Savings and Energy Efficiency Gain ⁸	Credit Amount
25% (Min.)	50 cents/sq. ft.
30%	60 cents/sq. ft.
35%	70 cents/sq. ft.
40%	80 cents/sq. ft.
50% (Max.)	\$1.00/sq. ft.

⁸Base deduction amount is multiplied by five if labor requirements are met. Only projects that start construction after January 30, 2023, are required to meet labor requirements. Projects with start times before January 30, 2023, are eligible for the multiplier but do not have to meet labor requirements.

For more information on additional incentives from your electric utility, municipality, state, and further federal programs, visit the [Database of State Incentives for Renewables & Efficiency](#).

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Last updated: June 2023.