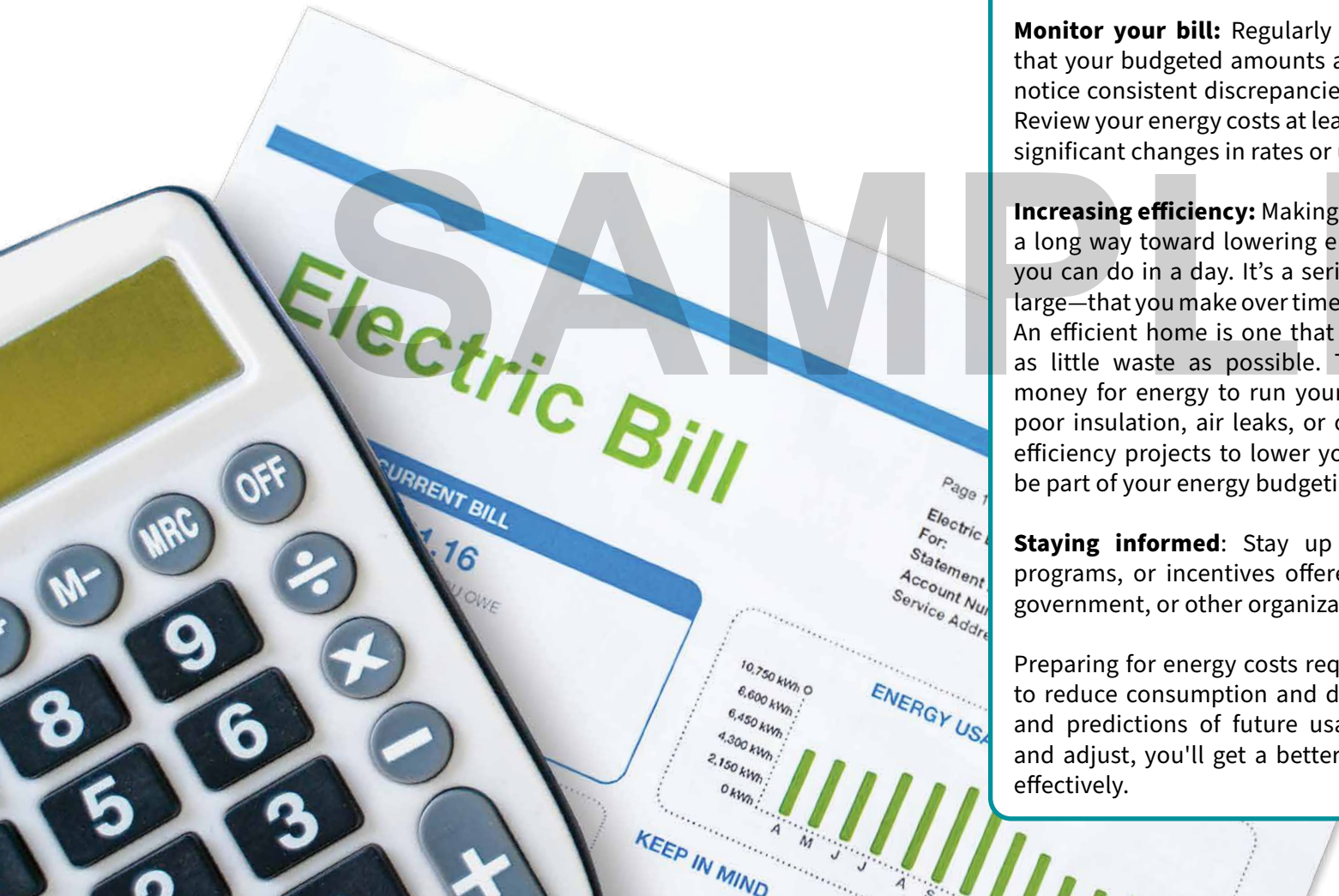
ENERGY BUDGETING

UNDERSTANDING AND MANAGING ENERGY EXPENSES

ENERGY AS A PART OF YOUR BUDGET

A home, whether you own it or rent it, requires a financial commitment. That commitment includes the bills you pay every month for the energy you consume at home. It also includes the energy systems in your home and their maintenance, repair, and improvement.

All of those have costs, whether they're for monthly utility service or one-time improvements that might lower your monthly bills over the long term. Understanding the different types of energy expenses and how they work together is key to budgeting effectively and ultimately saving money on energy.



To begin to understand energy's role in your budget, look at five key areas:

Past energy use: Obtain past utility bills, preferably from the last 12–24 months. This will give you a good idea of your monthly and seasonal use patterns. It will also give you a ballpark figure to set aside each month.

Forecasting: Account for changes that might affect your energy consumption. For example, if you've recently bought a new appliance or if someone has moved into or out of your home, your consumption may change. Keep an eye on energy rate announcements from your provider.

Monitor your bill: Regularly check your utility bills to ensure that your budgeted amounts align with your actual costs. If you notice consistent discrepancies, adjust your budget accordingly. Review your energy costs at least semiannually to account for any significant changes in rates or usage.

Increasing efficiency: Making your home energy efficient can go a long way toward lowering energy bills, but it's not something you can do in a day. It's a series of changes—some small, some large—that you make over time to increase your home's efficiency. An efficient home is one that uses the energy you pay for with as little waste as possible. This means you're not spending money for energy to run your home that leaks out because of poor insulation, air leaks, or other inefficiencies. Budgeting for efficiency projects to lower your expected monthly bills should be part of your energy budgeting.

Staying informed: Stay up to date on energy-saving tips, programs, or incentives offered by your local utility company, government, or other organizations.

Preparing for energy costs requires a mix of proactive measures to reduce consumption and diligent budgeting based on usage and predictions of future usage. As you consistently monitor and adjust, you'll get a better handle on managing these costs effectively.

PAYING YOUR BILL

Receiving and paying your utility bill is the most regular interaction you have with energy as a part of your household budget. The bill is a vital source of information about what you use and what it costs. How you pay your bill can save on fees and possibly make the monthly payments less of a burden.

- **Pay your bill on time:** Avoid late fees and the stress of payment notices by paying on time. If you can't pay on time, contact your utility to find out if payment plans or other programs exist and could help you. For more information on what to do if you're struggling to pay your bill, see page 19.

- **Read your bill:** Utility bills contain useful information about usage, rebates, and other utility programs. Understanding how your energy use changes by season can help inform decisions about household improvements. An unexpectedly high bill might be a warning sign that an appliance is on the wrong settings or malfunctioning.

- **Set up automatic payments:** Signing up for automatic payment will reduce the likelihood of a missed utility bill payment. Be sure to update your account if you change credit cards or bank account numbers. And even though payment is automatic, it's still important to read your bill.

- **Take note of processing fees:** When setting up online payments, look to see what fees, if any, are associated with different forms of online payment.

- **Avoid overdraft charges:** If you set up automatic payments with a bank account, ensure that your balance is sufficient to cover the bill so you won't have to pay overdraft charges.

BALANCED BILLING

Balanced billing, also known as budget billing or levelized billing, is a payment system offered by many utility companies to help customers manage their monthly bills. The objective is to smooth out payments over the course of the year and avoid high bills in winter or summer so customers can better budget their expenses. Here's how it generally works:

1. **Estimation of energy consumption:** The utility company estimates a customer's usage based on past consumption data, usually from the previous 12 months. The estimated annual consumption can be divided by 12 to get the monthly average.

2. **Consistent monthly payments:** Instead of paying for actual usage each month, the customer pays this calculated average. So, during months when consumption is below average, the customer will overpay, while in months when consumption is above average, the customer will underpay. But over the course of a year, these differences should roughly cancel out.

3. **Periodic review and adjustment:** Utility companies periodically review each customer's actual usage versus the usage paid for under balanced billing. This is typically done annually. If a customer has overpaid or underpaid relative to their actual usage, an adjustment is made. If the customer has overpaid, the excess might be credited to the account or deducted from future balanced bills. If the customer has underpaid, they owe the utility company the difference; this balance could be rolled into the next year's monthly average, or the utility might request a one-time payment.

4. **End of agreement or opt-out:** If a customer ends their balanced billing agreement or switches utility providers, any balance due or credit owed will typically be settled on the final bill.

5. **Potential disadvantages:** Customers might end up owing the utility company money if their actual usage far exceeds the estimate. It's important to plan for potential underpayment if they install new appliances or their energy use pattern changes. Additionally, because customers pay an average, they might not see the immediate cost-saving results of conservation efforts.

If you're using balanced billing, it's important to review your actual consumption and costs monthly to ensure you're not significantly overpaying or underpaying.

UNDERSTANDING WHAT IT COSTS TO RUN YOUR HOME

Your energy bill doesn't come with a tidy receipt listing how much energy each appliance in your home uses. It takes some work to find the biggest energy guzzlers in your home—and then more work to fix them. It helps to understand where your home uses the most energy.

AN ENERGY AUDIT

Getting an energy audit is the best way to understand how your home uses energy and where inefficiencies are so you can improve your home and save money on energy. Utility and government energy audit programs exist—check to see if you qualify for a subsidized or free audit.

So, what happens during an energy audit? An energy auditor searches your entire home for escaping energy. Using advanced equipment and techniques, they search inside and out for inefficiencies and safety concerns. Then they provide a customized, detailed, written account of your home's energy efficiency that shows where the most energy escapes and what repairs can be made to maximize savings. When you discuss the results with your auditor, they help you make plans to complete the work and show you ways to improve efficiency on your own.

A thorough energy audit will help you understand which energy improvements will pay for themselves and where the biggest issues are. In the end, you'll know exactly where energy is escaping and what you can do to fix it. This will save you money, improve comfort and safety, and increase the overall value of your home, all while reducing your energy footprint.

COMMON AREAS FOR IMPROVEMENT

Air leaks due to cracks, crevasses, and bypasses: Air leaks are the most common cause of energy inefficiency. They are usually found near and around doors, windows, corners, joints, connections to home additions, electric outlets, vents, or recessed lighting. Your auditor will help you find all significant leaks and include a detailed list on the final report. The goal is to get your home as airtight as possible while still allowing controlled and gradual air exchange with the outside.

Insulation: Ineffective or insufficient insulation is another very common problem. The auditor will check the insulation of the attic, walls, floor, basement, and crawl space. For homes in cold areas, the attic is likely the most important area of focus. Since heat rises, this is where most energy escapes during the winter. For the attic to be sufficiently insulated, a thick and even layer of insulation is needed in every spot. If insulation is too thin, damaged, or missing in some areas, heat will escape.

Venting system: All homes have venting systems that remove moisture and maintain a healthy cycle of air. This controlled air exchange is crucial not only to your comfort but also to your safety. Blocked or damaged venting systems can lead to moisture problems, mold, and even the buildup of dangerous toxins. The opposite is also a problem: a vent that allows too much air to leak in can cause energy wastage and moisture problems. During the inspection, the auditor will check your home to make sure neither is happening.

PLANNING MAINTENANCE

In most instances, it's more expensive to replace energy-using appliances in an emergency than after thoughtful planning. The contractor may not have the most efficient and affordable appliances on hand. It might take a few days to get approval for the best financing option. However, if your furnace goes out in the middle of winter, you may not have a choice about replacing it right away.

- **Ensure that major appliances are maintained:** Schedule regular maintenance with a licensed contractor. This will increase efficiency and the life of your appliance.

- **Track the age of your appliances:** Make a list of each piece of HVAC equipment and your hot water heater, refrigerator, and other major appliances. Note the year they were installed and their maintenance schedule. As they near the end of their useful life, begin planning for their replacement. Look for utility and government programs that will subsidize energy-efficient upgrades.

- **Take note of energy usage:** Some older appliances use significantly more energy than newer versions. Others don't and should be replaced only when necessary. Calculate whether a new model would pay for itself.

DEMAND-RESPONSE PROGRAMS

Everyone wants to use large amounts of electricity at the same time, especially when it's hot outside and air conditioners are running full blast. To ensure enough power for everyone, utilities have introduced demand-response programs that incentivize customers to use less electricity during peak times. There are various ways to save on electricity bills as part of demand-response programs. Some places create incentives to use electricity at night when demand is lower. Others have programs where consumers can sign up to have utilities turn down their air conditioner or cycle hot water heaters powered by smart plugs and thermostats. Participating in these programs can reduce energy bills or provide other financial incentives.

EVALUATING SAVINGS

Average savings might not apply to your situation. Understanding how you use energy and whether you will realize the advertised savings is important in determining what makes sense for your home. In some cases, you might find you have additional savings. Here are a few key areas to look at when determining what your actual savings will be:

- **Calculating average savings:** How did the company calculate average savings? Does that method apply to your climate or energy prices?

- **Your energy usage:** Do you use enough energy to realize the average savings? If the answer is no, is that because the cost of energy causes you to heat or cool less of the home? Would a more efficient appliance produce greater comfort even if energy prices are the same?

- **Differential costs:** Are the savings calculated on the basis of replacing an existing unit or, alternatively, buying a less-efficient model versus a more-efficient model? Some of the savings that make financial sense if the calculation would be done regardless of existing equipment don't make sense if the existing equipment still works.

- **Health benefits:** Does someone in your household have a medical condition that would benefit from an energy improvement? For example, backup power for someone in a vulnerable population who requires a medical device or better heating might not save on the energy bill, but it might instead reduce the number of hospital visits.

- **Moving:** How long are you planning to live in your home? Ensuring that improvements have payback periods that align with your plans is important.

FINANCING HOME IMPROVEMENTS

Some energy improvements are expensive enough that you may need to or choose to finance them. In an emergency, such as a furnace needing to be replaced in winter, there isn't a lot of time to evaluate options. Understanding what's out there and what the financing means for your budget can save you money over the long term.

GRANTS, INCENTIVES, AND OTHER PROGRAMS

Many programs to support energy upgrades are available. On page 12, this tip book discusses how to look for them.

SECURED VS. UNSECURED

A loan is either secured or unsecured. "Secured" means that if you default on the loan, the lending institution has the right to seize the asset you purchased with the loan proceeds. "Unsecured" means that the lender can't seize the asset immediately if you default, but there can still be consequences for your credit rating and ability to get loans in the future. In addition, the lender can go to court to seek a judgment against you and seek to garnish wages, seize assets, or put a lien against your home.

OVERALL COST

Financing offered on energy upgrades can be structured in many ways. It's important to understand the up-front payments, periodic payments, and payments at the end of the loan. A loan with a low initial payment might have increasingly higher subsequent payments compared to one with even payments across the term of the loan. Be sure you understand whether, during the term of the loan, the interest rate will step up to a higher rate. In general, assess the effect of financing terms on the overall cost of the improvement.

SPECIAL FINANCING PROGRAMS

Some programs are designed to allow you to creatively pay for energy improvements with less impact on your budget. For example, on-bill finance is a program where the utility arranges financing for energy improvements and you pay the loan back through your utility bill. For more information on these financing programs, see page 15.

CREDIT CARDS

It might seem easiest to put an emergency energy improvement on a credit card. But if you can't pay off the balance at the end of the month, you'll probably pay more, because the interest rate is likely higher than on many of the other finance options available. Evaluate your credit card interest rates compared to the options and incentives available.

STORE CREDIT CARDS

Appliance stores often offer dedicated credit cards with attractive rates if balances are paid off in a designated amount of time. With any credit card option, it's important to know the costs if you pay off the cost of the improvement on schedule and the penalties or higher interest rates if you don't.

CREDIT REPORT

With any financing option, the potential creditor will likely pull your credit report to check your FICO score.

FINDING INCENTIVES AND GRANTS

Investigating energy rebates and incentives can result in significant savings for consumers when they make energy-efficient improvements to their homes. Here's a step-by-step guide to help you search for incentives:

- **Start with your utility company:** Most utility companies offer rebates or discounts for energy-efficient appliances, home audits, or other energy-saving measures. Check their website or contact their customer service department for information on current offers.
- **State and local government programs:** Many states and local governments have programs or incentives designed to reduce energy consumption. Check the websites of your state's energy department, your city or county, and local energy nonprofits.
- **Low-income programs:** The federal government has created two programs, the Low Income Home Energy Assistance Program to assist in paying energy bills and the Weatherization Assistance Program to make energy-efficient improvements accessible. Check to find out if you qualify for either program (more information on page 18).
- **Visit retailers that sell energy-related appliances:** Sometimes, retailers that sell energy-efficient appliances or products have information on current rebates or incentives. They may even offer in-store promotions.
- **Consult an energy auditor:** Consider having a professional energy audit of your home. An auditor can identify areas where energy efficiency can be improved and may be aware of specific rebates or incentives that apply to recommended upgrades.
- **Stay up to date:** Energy rebates and incentives can change annually, so it's important to stay up to date. Set a reminder to check annually or biannually.
- **Understand the application process:** Once you identify a rebate or incentive, make sure you understand the application process. There might be forms to fill out, proof of purchase required, and specific deadlines to meet. Some rebates or incentives might require preapproval before the purchase or installation of a product.

- **Life-supporting and lifesaving equipment:** If you have medical equipment that requires power, there may be grants and incentives for energy upgrades and especially the installation of backup power sources in your home.

Remember, while rebates and incentives can reduce the up-front cost of energy-efficient upgrades, the real savings come over time in the form of lower utility bills. Ensure you're considering both the immediate and long-term benefits as you evaluate potential projects for your home.

DOING YOUR DUE DILIGENCE

In addition to doing the math on incentives and financing upgrades, you need to do your homework on the work being done, the equipment being installed, and how it will affect your energy budget. A poorly installed energy-efficiency upgrade might not generate the same savings as one installed properly.

- **Get quotes:** Get multiple quotes to find the best price for your energy improvement.
- **Research your contractor:** The person installing energy appliances might do work that affects your electrical system, your plumbing, and the air flow in your home. Ensure they're licensed to do the work and research reviews of their work. You might also consider calling their references.
- **Consumer protections:** Every state has consumer protection laws. It's important to research yours and understand what your contractor, installer, or finance partner is required to do.
- **Read the fine print:** What warranties are being made on the work or appliances? Is a service plan included, or will service be an expense you'll incur in the future?
- **Equipment:** Is the energy equipment being installed easy to have repaired with multiple contractors able to bid on the work, or does it require special parts that need to be ordered?
- **Moving:** If the work or appliance is being financed, what happens if you move? What are your cancellation rights?

WHAT TO DO IF THERE IS A PROBLEM

Licensed contractors install, maintain, and repair the systems that allow us to lead our daily lives. They do incredibly important work, and most jobs go well. But what happens when something goes wrong or you're the target of misleading claims?

- **Contact the contractor:** Repairs may be covered under the warranty, their insurance, or simply their desire to maintain their reputation in the community.
- **Contact the Better Business Bureau (BBB):** The BBB maintains a database of companies across the country and handles complaints on behalf of consumers.
- **If you've been scammed:** look into filing a complaint with your state Attorney General's office.
- **Warranty of habitability:** If you're a renter, your landlord may be required to provide a safe, clean living space under what's called a warranty of habitability. Research the rules in your state.

OTHER TYPES OF ENERGY FINANCING

There are many types of financing designed to make energy efficiency and renewable energy installation affordable for homeowners. With any of them, it's important to do the following:

- Compare all costs over the term of any agreement or loan.
- Understand potential tax implications or benefits.
- Consider potential future scenarios, such as selling your home.
- Consult with a financial advisor or tax professional.
- Look into local and federal tax credits, rebates, and incentives, which can significantly reduce the effective cost of the system.

ON-BILL FINANCING

- **How it works:** The loan for the improvements is tied directly to the property's utility bill. Ideally, the monetary savings realized from energy efficiency will equal or exceed the monthly loan repayment amount, resulting in net savings or a net-zero cost for the homeowner.
- **Benefits:** With on-bill financing, the loan repayment for the energy improvements appears as a separate line item on the homeowner's regular utility bill. The loan is often tied to the property meter, not the individual. This means that if the property is sold, the loan can sometimes stay with the utility meter and be passed on to the next owner.
- **Considerations:** It's important to be sure that savings will be enough to cover the costs of the loan or, if they're not, budget for the extra expense.

SOLAR LOANS

- **How they work:** Like other home improvement loans, solar loans can be secured or unsecured. The homeowner borrows money to pay for the solar system and repays the loan over time with interest.
- **Benefits:** The owner of the system may be entitled to tax credits and other incentives. Many solar loans have competitive interest rates.
- **Considerations:** It's crucial to review and compare loan terms, interest rates, and monthly payments to ensure you're getting a good deal.

SOLAR POWER PURCHASE AGREEMENTS (PPAS)

- **How they work:** A third party installs, owns, and maintains the solar system on the homeowner's property. The homeowner agrees to purchase the electricity generated by the system at a set rate, which is typically lower than the utility's rate.
- **Benefits:** There are no up-front costs, and maintenance is the responsibility of the third party.
- **Considerations:** The homeowner doesn't own the system, and contracts are typically long-term (15–25 years).

SOLAR LEASE

- **How it works:** The homeowner leases solar equipment from a third-party provider for a monthly fee. A solar lease is similar to a PPA, but the homeowner pays for the equipment use, not the electricity produced.
- **Benefits:** Often, there's little to no up-front cost. Electricity rates are lower, and maintenance is typically covered by the leasing company.
- **Considerations:** The homeowner doesn't own the system and may need to sign a long-term contract. This option might not be as financially beneficial as others in the long run.

PROPERTY ASSESSED CLEAN ENERGY (PACE) FINANCING

- **How it works:** The cost of the solar system is added to the homeowner's property tax bill and paid off over time. The debt is tied to the property, not the individual.
- **Benefits:** There are no up-front costs or long repayment terms, and sometimes interest is tax dedictible.
- **Considerations:** PACE financing is not available everywhere. It increases the property tax bill, and if the improvements don't create enough savings to pay for themselves, the property tax bill could be burdensome. Property tax delinquency can lead to foreclosure on a home, so be sure any increase is one you can afford, even if the system doesn't produce the anticipated savings.

ENERGY-EFFICIENT MORTGAGES (EEMS)

- **How they work:** An EEM allows homeowners to include energy-efficient improvements, such as solar installations, in their mortgage.
- **Benefits:** EEMs offer the opportunity to finance a solar system as part of a home purchase or refinance.
- **Considerations:** Qualifying might be subject to specific requirements or conditions.

COMMUNITY SOLAR

- **How it works:** A solar power installation is used by multiple people to receive credits on their electricity bills. It allows homeowners who might not have the means, suitable location, or desire to install solar panels on their own property to benefit from solar power.
- **Benefits:** Participants receive credits on their utility bills corresponding to the amount of solar power their share of the project has produced. This process is often referred to as virtual net metering. Essentially, even though the solar panels aren't on the homeowner's property, the homeowner benefits from the electricity those panels produce.
- **Considerations:** Most community solar subscriptions or purchase agreements have a set duration, often ranging from 10 to 25 years. It's essential to understand the terms and any early-exit fees or conditions.

ENERGY SERVICE AGREEMENTS

- **How they work:** The energy service company will put together an energy retrofit package and finance the work in exchange for a long-term service agreement. In most cases, you will pay that company for your utility service and it will earn its money back through the savings.
- **Benefits:** You can finance improvements without a loan or lease.
- **Considerations:** Service agreements can be as long as 20 years. You need to understand what will happen if you move before the end of the agreement.

ENERGY ASSISTANCE

Energy bills can be a burden on families during the coldest months of winter and the hottest months of summer. Turning off the heat or air conditioning can create real health and safety risks. To help people get through the toughest months of the year, two federal programs provide assistance with home energy costs: the Low Income Home Energy Assistance Program (LIHEAP) and the Weatherization Assistance Program (WAP).

LIHEAP is a federal program known by different names in different states, such as LIEAP, LEAP, HEAP, or EAP. If you qualify, LIHEAP can help you pay your heating and, in some cases, cooling bill. All fuel sources are eligible, including electricity, natural gas, heating oil, kerosene, propane, wood, coal, and sometimes renewable energy such as wind, hydroelectric, and solar.

Congress created LIHEAP in 1981 to help low-income families pay their home heating bills after the Iran–Iraq war caused oil prices to spike. The program now serves more than six million households a year.

WAP helps by repairing or replacing heating and cooling systems, improving the home's ability to retain energy, and improving the health and safety of home energy systems.

The two programs often work together and help families weather the extremes of winter and summer. In most states, the easiest way to apply is to contact your local community action agency. If you don't know the name of the agency, you can call the National Energy Assistance Referral hotline (1-866-674-6327) and ask for the contact information of your local agency.

IF YOU'RE STRUGGLING TO PAY YOUR UTILITY BILL

If you're struggling to pay your utility bill, you should take proactive steps to address the situation and seek assistance.

Contact your utility provider: Reach out to your utility company as soon as you anticipate difficulty in making a payment. They may offer extended payment plans or other arrangements to help ease the burden. Some utility companies have programs specifically designed for those facing financial hardships, especially during extreme-weather months when energy usage is high.

Review your energy consumption: Reducing energy use can help lower your bills. Consider conducting a home energy audit (either yourself or by hiring a professional) to identify areas of energy wastage.

Seek financial counseling: Local nonprofit agencies often offer free or low-cost financial counseling. They can assist in creating a budget, managing debt, and finding resources to help pay bills.

Negotiate a payment plan: If you can't pay the full amount, ask your utility provider if it will accept smaller payments over time. It may prefer this arrangement to no payment at all.

Stay informed: Be aware of your rights as a consumer. Many places have specific rules regarding utility shutoffs, especially during extreme weather conditions or when vulnerable people (such as children or the elderly) are in the home.

Seek assistance programs: In addition to LIHEAP and WAP, there may be other local funds designed to help with utility bills in an emergency. Ask your utility and local community energy programs about any other assistance programs in your area.

RESOURCES

Visit these sites for additional information:

LOW INCOME ENERGY ASSISTANCE PROGRAM (LIHEAP)

liheapch.acf.hhs.gov/search-tool/

WEATHERIZATION ASSISTANCE PROGRAM

energy.gov/scep/wap/how-apply-weatherization-assistance

US DEPARTMENT OF ENERGY

energy.gov/save

ENERGY STAR

energystar.gov