



The Useful Current

A practical guide to understanding energy, making wiser home choices, and taking part in change

Know what powers your life.

SHAD EDDIE MONGRUE

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Every statistic, study finding and documented example is numbered and listed in the Sources, with a link to the page it came from. Each was checked word for word against its source in October 2026. Stories marked "composite example" are illustrations drawn from common situations; their names and details are not real people. Stories marked "documented example" come from the cited sources.

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Contents

INTRO	An Invitation
CH. 1	The Wonder Behind the Switch
CH. 2	Follow the Power Home
CH. 3	Read Your Home's Clues
CH. 4	Comfort Is a System
CH. 5	Small Experiments, Useful Answers
CH. 6	Choose Before You Spend
CH. 7	Meet the Changing Grid
CH. 8	Make Room for Fairness
CH. 9	Spot the Detours
CH. 10	Keep Learning, Keep Choosing
RESEARCH	What the Evidence Says
PRACTICE	Your 30-Day Practice Plan
REFERENCE	Glossary
LETTER	Keep Going
BACK	Sources and Research Credits
BACK	About the Author

An Invitation

You meet energy before you have time to think about it. A room is warm when winter presses at the windows. A light comes on while you look for your keys. A familiar voice travels across a phone from somewhere far away. These moments can feel ordinary precisely because they work. But ordinary is not the same as unremarkable. Behind each one is a chain of choices, equipment, people, and shared systems that make daily life possible.

That chain is worth getting curious about—not because you need to become an engineer, and not because every household choice must carry a moral burden. Curiosity is useful on its own. It can help you notice why one room is drafty, what a bill is actually telling you, or why a proposed upgrade might suit one home and not another. You do not need a perfect house or a perfect plan to begin. You need a question you would like answered.

Energy costs also make the subject practical. In June 2026, the U.S. average residential electricity price was 18.34 cents per kilowatthour, compared with 17.47 cents in June 2025¹. That number describes an average, not your bill or your local rate. Still, it is a reminder that energy choices happen inside real budgets. Understanding more can help you ask better questions about what you use, what you pay, and which changes are worth considering.

The good news is that learning does not have to start with buying anything. You can begin by reading a bill, noticing when a room feels uncomfortable, or checking whether a change made the difference you expected. ENERGY STAR says a typical household can save about \$450 on energy bills each year by choosing ENERGY STAR². That is an estimate, not a promise about your home. The useful habit is to look for the conditions behind any savings claim before treating it as a forecast.

Energy also connects the private scale of a home to the public scale of a power system. In 2023, clean energy resources supplied about 41% of U.S. electricity, with wind and solar providing more than 16% of total generation³. Those figures can prompt worthwhile questions: how does electricity reach you, how does the mix vary, and what helps keep supply dependable? This book will approach those questions without pretending that one technology, one policy, or one household can answer them all.

The invitation is simple: learn enough to make your own decisions with more clarity, and to take part in conversations that affect the places you live. You will find practical ways to observe, compare, and check—not a test you can fail, and not a list of purchases you must make. Energy deserves your attention because it supports comfort, connection, and possibility. It deserves your love, too, in the grounded sense of caring enough to understand how it works and what you want it to do.

Reasons to fall in love with this subject

- **It makes comfort understandable** A comfortable home is not just a matter of turning a thermostat up or down. Air leaks, insulation, windows, heating and cooling equipment, and everyday routines can all shape how a room feels. Learning to see those pieces as a system gives you more possibilities than blaming yourself or reaching for the first product advertised. You can start by noticing what is happening, then decide which cause is worth investigating.
- **It rewards good questions** Energy can sound like a subject made of machinery and acronyms, but many of its best questions are familiar: What uses power here? Why does this room feel different? What would change if I adjusted one habit? Asking carefully is not a lesser version of expertise. It is how you build a useful picture of your own home and make room for evidence before opinions—or sales pitches—take over.
- **It connects small choices to shared systems** Your home is part of a larger network that moves electricity from generators across transmission and distribution lines. That wider system has to respond to changing supply and demand, while serving homes and communities in different places. Seeing the connection can make energy feel less like an invisible service and more like a shared achievement. It can also help you understand why local conditions matter when people discuss the grid.
- **It invites ingenuity without demanding novelty** Sometimes a useful answer is a new piece of equipment. Sometimes it is a repair, a better setting, a careful comparison, or deciding that a proposed change is not right for you. Practical ingenuity is not the same as collecting gadgets. It means matching an action to a real need, looking at trade-offs, and being willing to learn from what happens. That approach leaves room for both innovation and common sense.

- **It helps you spot the difference between evidence and a promise** A claim about savings, comfort, or clean energy may leave out assumptions that matter. What home was compared? What costs were included? What does the claim mean by renewable? You do not need to become suspicious of every number. You can become more skilled at asking what it measures, where it comes from, and whether it applies to your situation. That is a calm, useful kind of confidence.
- **It keeps learning open-ended** Homes change. Budgets change. Equipment wears out, new options appear, and local power systems evolve. No single decision has to settle everything for good. A habit of noticing, checking, and choosing lets you adapt without starting from scratch each time. Energy becomes more lovable when it is not presented as a puzzle with one perfect answer, but as a continuing chance to understand your surroundings and make thoughtful choices.

BY THE END OF THIS BOOK, YOU WILL BE ABLE TO

- Read an energy bill as a record to investigate, not a grade on your household.
- Notice household clues that can help you locate when and where energy is being used.
- Understand how sources, generation, transmission, distribution, and homes connect.
- Look at comfort as a system of air, insulation, windows, equipment, and routines.
- Try a small change and keep a simple record of what happens afterward.
- Compare possible improvements by purpose, timing, cost, trade-offs, and fit.
- Ask what assumptions support a savings or environmental claim before relying on it.
- Use questions about affordability and fairness when considering wider energy choices.

How to use this book

You can read this book from beginning to end, or start with the question that is already on your mind. If a bill has you puzzled, begin with the chapters on reading your home's clues. If a room feels uncomfortable, start with the chapter on comfort as a system. The chapters build on one another, but they are meant to be useful companions, not gatekeepers. You do not need technical experience to follow along.

As you read, keep a note of what you observe and what you still want to know. Try changing one thing at a time when that makes sense, and write down what changed—including if nothing seemed to happen. A modest record can be more helpful than a strong hunch. When a decision involves a contractor, a large expense, or a claim that sounds unusually certain, pause and ask what evidence and assumptions are behind it. You are allowed to ask for a clearer explanation.

Some chapters point outward, from the home to the grid and to questions of fairness. You can use those chapters to build context without needing to choose a side on every debate. Keep returning to the cycle at the heart of the book: notice, ask, check, compare, and decide what matters next. You may finish with a project in mind, or with a well-supported decision to wait. Both can be signs of thoughtful learning.

HOW THIS BOOK HANDLES EVIDENCE

This book is educational, not personal professional advice, and it cannot tell you exactly what will work in your home. Results depend on the building, equipment, climate, rates, and the choices available to you. Numbered citations connect factual claims to the sources behind them; they are there so you can check the evidence and its limits. Documented examples use only the information given in their cited sources. Any composite example is illustrative, uses fictional people, and is not evidence about what will happen in every household. The aim is not to make energy sound simpler than it is, but to make it more understandable and easier to question.

The Wonder Behind the Switch

A COMPOSITE EXAMPLE · NAMES AND DETAILS ARE ILLUSTRATIVE

Mara comes in from a cold evening and shuts the door with her shoulder. The hallway light clicks on. In the kitchen, the kettle begins its low rumble; in the next room, a lamp makes a soft island of light beside an open book. Her phone, nearly empty, gets plugged in. The house seems to answer each small request without asking for applause.

Then Mara notices the draft by the window. She shifts her chair, pulls on a sweater, and wonders whether the room is chilly because of the glass, the heating setting, or the gap she can feel near the frame. The question changes the evening. Instead of blaming herself for wanting comfort, or rushing to buy a device, she gets curious. She watches where the curtain moves. She checks whether the room feels different with the door closed. She makes a note to look at the next energy bill.

Nothing dramatic happens. The kettle still steams; the book still waits. But the ordinary scene has become a small invitation: What is energy doing here, and how does it get the chance to do it? That is a good place to begin.

Notice the service, not just the switch

Energy is easy to overlook when it is doing its job. You notice the cold room, but not the chain of systems that helps warm it. You notice a charged phone, not the electricity behind the outlet. The switch is visible; the work it represents is mostly out of sight. Try naming the service you want before thinking about the energy. You might want a comfortable place to sleep, enough light to prepare dinner, hot water for a shower, or a reliable way to contact someone. Those are human purposes. A particular appliance or setting is only one way of serving them.

That distinction is useful because it keeps the conversation grounded. If a room feels uncomfortable, the goal is not to own a particular gadget. The goal

is to understand what is making the room uncomfortable and what options might help. If you need better light at a desk, the first question is not whether you have the newest bulb. It is whether the light reaches the work you are doing.

Energy also links private routines to shared systems. The light in your kitchen depends on more than your hand at the switch: electricity must be produced and delivered, and equipment in your home must turn it into the service you want. You do not need to master every part of that system to appreciate the connection. Start by noticing how many small parts of an ordinary day depend on energy working in the background.

Comfort is a conversation with your home

A home is not a row of separate appliances. It is a collection of rooms, materials, equipment, openings, and habits that affect one another. A room may feel chilly near a window while another part of the same home feels fine. Turning up the heat might change the temperature, but it may not answer why that corner feels different.

You can begin with observation rather than diagnosis. Where do you feel comfortable? Where do you not? Does the feeling change when a door is open or closed, or when the sun moves off a window? Does the discomfort happen at a particular time of day? These questions do not prove a cause. They help you decide what to check next.

This kind of noticing is not a test of whether you are a good homeowner. Comfort matters, and households have different needs. A person working from home, a family moving through several rooms, and someone who spends most of the day in one chair may reasonably make different choices. The useful question is not, “Am I using energy perfectly?” It is, “What do I need this space to do, and what would help it do that?”

Curiosity beats guilt and gadget fever

Guilt is a poor measuring tool. It can make every warm shower or bright room feel like a confession, without helping you understand what is happening. Gadget enthusiasm can be just as distracting: a clever device may be useful, but buying something is not the same as solving a problem.

A calmer approach is to make one question smaller. Instead of asking, “How do I fix my whole energy use?” ask, “What do I know about this one room?” You

might compare how it feels at different times, look at the heating controls, or notice whether the same discomfort returns. You can stop when you have learned enough to make the next decision—or when the question is no longer worth your time.

There are tools that can help you choose efficient products. ENERGY STAR says a typical household can save about \$450 on energy bills each year by choosing ENERGY STAR products, while still enjoying expected quality and performance². Treat that as a broad estimate, not a personal promise: your choices and results depend on what you replace and how you use it. The point is not to shop your way into virtue. It is to have a source of information when a purchase is already on your mind.

The program's longer record gives another reason to see efficiency as practical ingenuity rather than a fad. ENERGY STAR and its partners report more than \$500 billion in energy-cost savings for American families and businesses since 1992². That figure describes a broad, accumulated contribution; it does not tell you what one product will save in your home. A sensible next step is still to match the choice to your needs.

Your home is ordinary—and worth understanding

You do not need a technical background to learn something useful about your home. You already have evidence: what feels comfortable, what routines repeat, which rooms get used, and what appears on a bill. No single clue tells the whole story, but several clues together can make a question clearer.

A bill is not a grade on your character. It records charges and usage according to the terms of your service; by itself, it cannot explain every reason behind them. A household observation is not a laboratory result either. But each can point toward a practical question. If a bill changes, you might check whether your routines changed too. If a room feels uncomfortable, you might look for a pattern before choosing a fix.

Learning about household energy is also a way to take part in a larger conversation. Researchers need to understand how homes use energy; families need choices that fit their circumstances; communities need systems that serve people. Your curiosity does not have to become a project or a political identity. It can begin with a lamp, a draft, or the question of why one room is the place everyone avoids.

RESEARCH SPOTLIGHT

Research spotlight

The U.S. Energy Information Administration's 2024 Residential Energy Consumption Survey, or RECS, is designed to describe a very large and varied set of homes. It provides household characteristics and energy-use indicators for an estimated 132.5 million U.S. homes occupied as primary residences in 2024⁴. The survey collected responses from nearly 17,000 households across all 50 states and the District of Columbia⁴. EIA combines household information with supplier data to estimate energy costs and use across heating, cooling, appliances, and other end uses⁵. What does that offer you? A way to see household energy as something that can be studied across many kinds of homes, not just guessed at from one example. What does it not offer? A diagnosis of your particular home, or proof that one change will work for you. Broad patterns can guide good questions; your own circumstances still matter.

A life example

A COMPOSITE EXAMPLE · NAMES AND DETAILS ARE ILLUSTRATIVE

A question before a purchase

Suppose Lena notices that the back bedroom feels uncomfortable in the evening. Her first thought is to order a small heater. Before she does, she spends a few days paying attention. The room is pleasant earlier in the day, then feels chilly after sunset. The door is often left open, and the curtain sometimes moves near one edge of the window.

Lena does not yet know which detail matters most. She tries closing the door for a while, checks whether the draft is strongest near the window, and asks the people who use the room when it feels worst. One evening, the room is still uncomfortable. That is useful too: a quick check has not solved the problem, and she has not proved a single cause.

She writes down what she observed and decides to ask a qualified person about the window before buying equipment. The advice may lead to a repair, a different routine, or another plan. Lena's progress is not that she found a perfect answer on the first try. It is that she turned a vague discomfort

into a question she can investigate. The next choice can be based on the room's actual needs rather than a guess made in a hurry.

TRY THIS

Take a small energy noticing walk

Choose one room and spend a little time observing what energy helps you do there before deciding whether anything needs to change.

1. Name the service you want from the room: comfort, light, hot water, or something else.
2. Notice where and when the room feels useful, comfortable, or uncomfortable.
3. Look for one pattern, such as a time of day, an open door, or a spot near a window.
4. Write down what you noticed without treating it as proof of a cause.
5. Choose one next question to check, or decide that no change is needed right now.

Myths and honest truths

- **Myth:** If you care about energy, you should feel guilty about ordinary comfort. **Truth:** Comfort is a real household need. Curiosity helps you understand choices; guilt rarely tells you what would work.
- **Myth:** A new device is the obvious first step when something feels wrong. **Truth:** A device might help, but first identify the service you need and the problem you are trying to solve.
- **Myth:** One household's experience proves what will happen in every home. **Truth:** Homes and routines differ. Use broad information to ask better questions, then consider your own circumstances.

KEY TAKEAWAYS

- Start with the service you want, not the gadget you might buy.
- Everyday observations can help you form useful questions, even when they do not prove a cause.
- A bill is evidence to investigate, not a verdict on how well you live.
- Broad savings estimates are not personal guarantees.
- Curiosity makes energy easier to understand without turning it into a test of character.

REFLECT

- 1. What everyday comfort or convenience in your home do you most take for granted?*
- 2. Is there one room or routine you would like to understand better?*
- 3. What question could you ask before choosing a fix or making a purchase?*

Nine more chapters are waiting

You've read the Introduction and Chapter 1. The full 92-page book continues with:

- CH. 2 Follow the Power Home
- CH. 3 Read Your Home's Clues
- CH. 4 Comfort Is a System
- CH. 5 Small Experiments, Useful Answers
- CH. 6 Choose Before You Spend
- CH. 7 Meet the Changing Grid
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Sources for these chapters

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