



Harness uninterrupted power

A homeowner's comprehensive guide to understanding energy storage.

A brighter future starts at home

Taking reusable bags to the grocery store. Swapping single-use plastics for refillable glass containers. Composting your biodegradable food scraps. There are so many ways to go greener at home. But if you're truly ready to live a more sustainable lifestyle, it's time to think about your home energy storage solution.

In 2023, the Federal Energy Regulatory Commission (FERC) cited solar as the fastest-growing electrical generation source within the United States.¹ According to the FERC, solar power installations in the U.S. grew by 14.7% in 2023—more than any other energy source. However, a top concern with going solar is power reliability. How can you power your home when the sun sets? Energy storage systems, also known as home batteries, are an effective and reliable answer.

An **energy storage system (ESS)** is designed to store and provide reliable backup power for your home. Whether you choose to charge the batteries from solar or the electrical grid, you can trust an ESS to provide opportunities to save on monthly utility costs, improve energy efficiency, and live a more eco-friendly life. All while securing the peace of mind that you'll have power when you need it.

At LG, we call that pure independence.



To learn more please visit [LG.com/ESS](https://www.lg.com/ESS)

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What is an energy storage system?

The primary purpose and function of an energy storage system (ESS) is in its name—to store energy for your home. Whether you frequently experience outages, pay top dollar for electricity, or simply want to achieve more energy independence, this system can be a great investment.

Similar to a generator, an ESS is designed to provide backup power to your home in the case of an outage or emergency. Unlike a generator, an energy storage system does not consume fuel (propane, diesel, or natural gas). Instead, it can charge from a renewable energy source such as solar or the electrical grid if needed.

Types of energy storage

While an ESS is an excellent option for storing usable energy, it's not the only way to harness power. In fact, energy can be stored in several ways² (including the five options below), with the promise of new technologies in the future.



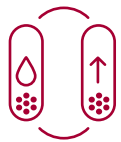
Battery energy storage system (BESS)

A large battery draws and stores home electricity until needed.



Pumped hydro

Electricity is generated by flowing reservoir-stored water through a turbine.



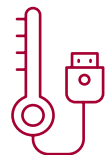
Compressed air

Air is compressed, stored, and released to generate electricity through a turbine.



Flywheels

The spinning force of a rotor is used to turn a generator and produce electricity from conserved kinetic energy.



Thermal energy storage

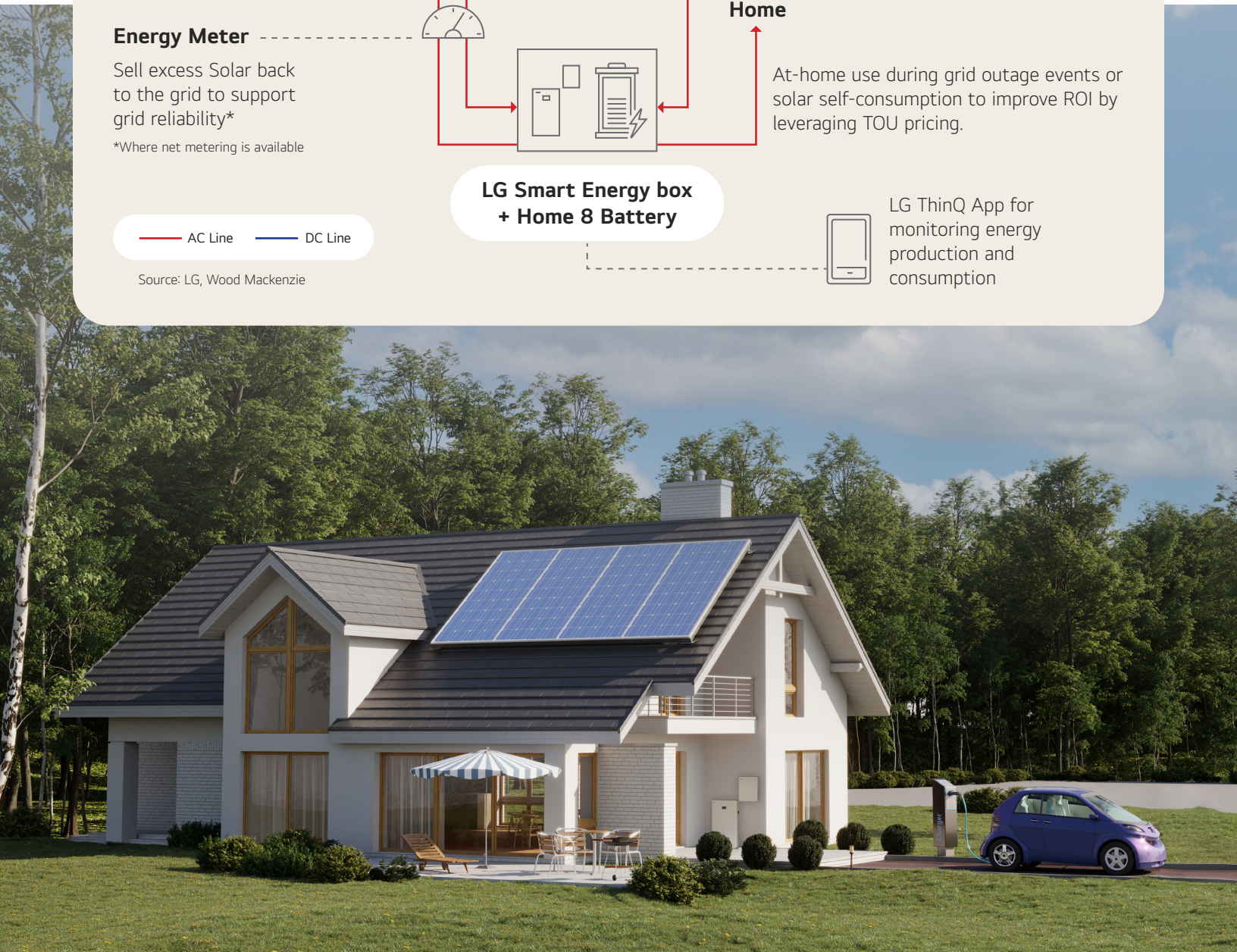
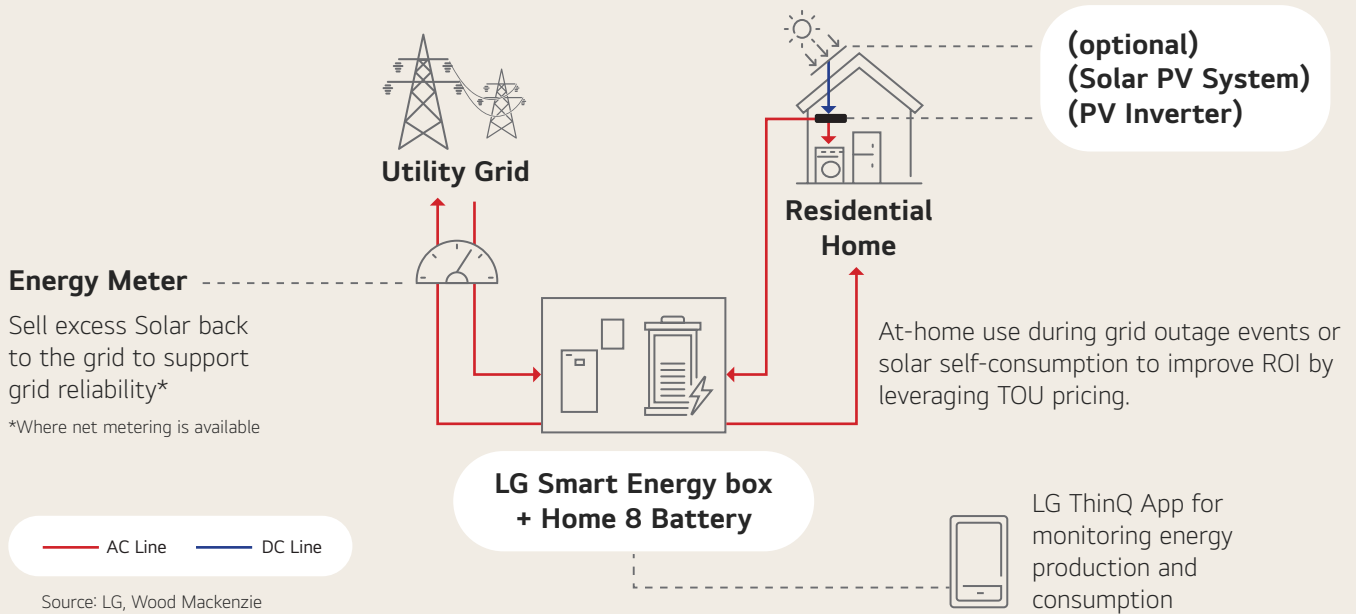
Electricity is used to produce thermal energy, which can be stored until needed.



How does a home battery work?

An ESS connects to the grid or a solar PV system via a powerful battery—capable of storing enough energy to keep the lights on during an outage or emergency. Some systems, like the LG Home 8 Energy Storage System, feature an Automatic Transfer Switch so you don't even have to think about going outside to turn on your backup power. It's always working behind the scenes to provide your home with uninterrupted energy.

LG Home 8 Energy Storage System (ESS)



Why energy storage?

If you're not a solar installer or energy expert, all this stored power talk can be overwhelming. So, let's look at the big picture. How can an energy storage system benefit your lifestyle?

In a 2024 energy storage study commissioned by LG Electronics,³ about half of respondents cited lower energy costs and uninterrupted power supply as "very" or "extremely" appealing benefits of an ESS. Combined with the following, the potential savings and efficiency benefits of an ESS can make it a standout solution for homeowners:



ESS benefits

- Uninterrupted power to your home.*
- More reliable backup for your essential devices.
- Electric utility savings & better usage monitoring.
- More sustainable approach to home energy usage.

* 14.4 kWh per Home 8 unit, maximum four (4) units for up to 57.6 kWh



Harness uninterrupted power

Our 2024 energy storage study revealed that 67% of the United States homeowners surveyed had experienced a power outage in the previous year.³ An energy storage system allows you to keep your essential appliances and devices up and running, no matter what. Power outage? Rolling blackout? Energy price hike? These are all worries of the past with an ESS. By storing power from the grid or solar, you can rest assured in your home's energy, 24/7/365.

Get reliable backup

From the HVAC to the refrigerator, your home is filled with essential systems and appliances that require reliable power. If the grid goes down, an energy storage system can provide 14.4 kWh of power to keep your critical appliances running—helping you stay safe and comfortable.

Save on utilities

As electric utility prices rise, an energy storage system can help you monitor and manage usage to help keep your monthly bills lower. In our 2024 energy storage study, two-thirds of homeowner respondents defined their energy bills as "too high," leading 24% to install an ESS for their home.³ Outside of emergencies, you can lean on an ESS to provide stored energy during times of peak demand. And that means fewer high-cost hours on your monthly statement.

Boost sustainability at home

Want to live a more eco-friendly lifestyle? Pairing an energy storage system with solar enables you to use renewable energy to power your home. And by using renewable energy, you may be eligible for up to a 30% federal tax incentive, which we'll explore later in this guide.



Consider this: Solar benefits

While not required for an ESS, a solar PV system expands your long-term cost saving opportunities. Talk with your installer about a solar integration and the benefits of expanding your investment.

How to choose an ESS: Understanding home batteries

When we say, “home battery,” we’re not talking about the AA or AAA cells in the kitchen drawer. A home battery is the main component of an ESS, housed within a cabinet to hold power until you need it.

Typically, an ESS will come equipped with one of three types of lithium-ion battery chemistries—nickel manganese cobalt oxide (NMC), lithium iron phosphate (LFP), or lithium titanate (LTO).⁴ Talk with your installer to explore the available ESS battery options.

Battery chemistry

	NMC	LFP
Price point	\$	\$\$
Residential popularity	High	Moderate
Energy density	High	Moderate
Charge speed	Moderate	Low

Source: Energy Sage

AC vs. DC connections

We mentioned previously in this guide that an ESS can be paired with either an AC-coupled solar PV inverter or the electrical grid to harness backup power. Let’s dive a little deeper into what that means.

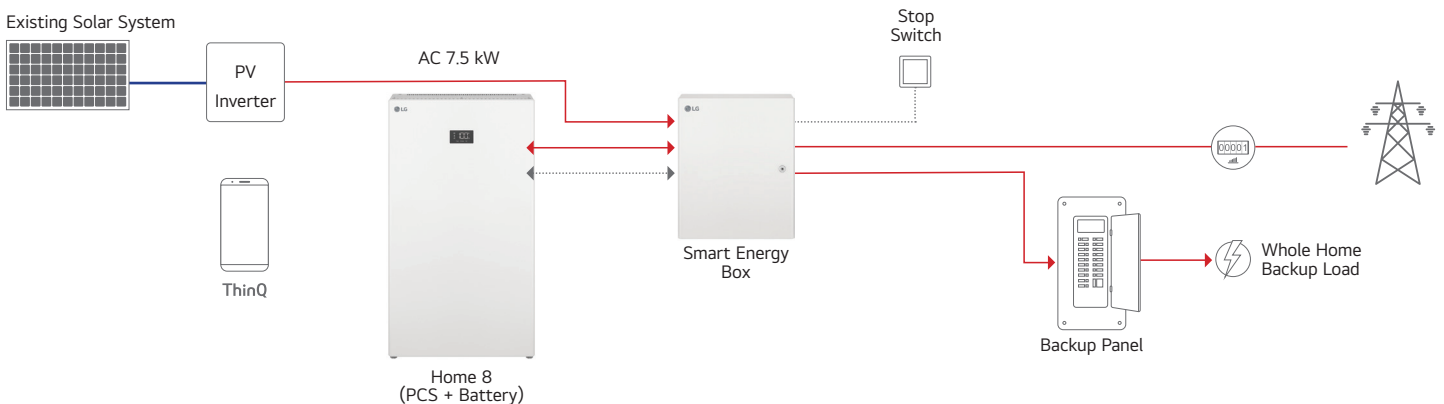
The electrical grid system in the United States uses alternating current (AC) electricity to power homes. However, solar-generated energy consists of variable direct current (DC) electricity. And that means a solar PV system must use inverters to convert DC into AC electricity for household use.

Therefore, the main difference between these coupling options lies in when the energy is converted to AC power—before or after being stored in the battery. Below is an example of how your home energy is converted from DC to AC power.

Battery capacity guidance

How much backup power do you need? The answer depends on several factors, including the size of your home and the number of people living in it. Your local specialist, like an independent third-party LG Pro installer, can help you determine the right level of backup power for your home and budget.

Whole Home Backup



Go cleaner and greener: Smart home integration

From recycling plastics to installing an ESS, there are plenty of ways to go greener at home. But when you're ready to take the next big step on your sustainability journey, consider home electrification.



Flip the switch to electric

Switching to electric appliances and adding ESS or Solar can help reduce your overall energy costs, reduce your reliance on the grid, and boost your home's eco-friendliness. And if you choose to pursue home electrification with LG, you'll have the added benefit of smart home integration using our ThinQ® app.

Home electrification

['hōm i-,lek-trə-fə-'kā-shən] • **Life's Good.**

The process of transitioning to more eco-friendly appliances and electric HVAC systems.

ThinQ® helps life happen

A smart home platform for your LG appliances and devices, the LG ThinQ® app helps homeowners keep saying, "Life's Good." It puts control and convenience at your fingertips—so you can simplify each day and enjoy the comforts of home.

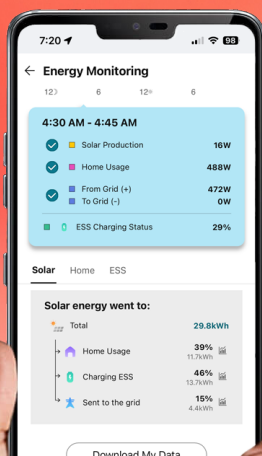
Smart energy management

The ThinQ app seamlessly connects with LG's Home 8 Energy Storage System—allowing you to track and optimize energy usage across your home. Access real-time usage data, proactively detect potential issues, and get recommendations to help you make the most of your connected LG appliances.



Take control with ThinQ®

- Optimize energy usage.
- Tailor power consumption.
- Access power metrics remotely.
- Monitor energy usage in real-time.



Real-time monitoring and control

Manage all your connected LG appliances from the palm of your hand. With the ThinQ app, you can easily track the status of a laundry cycle, assess when your refrigerator's water filters need to be replaced, and even send cooking instructions to your oven.

To learn more please visit [LG.com/ESS](https://www.lg.com/ESS)

Understanding your investment: Costs, incentives, and financing

The cost of a new energy storage system (ESS) will depend on several factors, which your installer will explore with you. Consult with them and rely on their expertise to help you understand what's possible for your home. Here are a few specifics you may want to discuss:



IRA clean energy federal tax credits

In August 2022, the Inflation Reduction Act of 2022⁵ was signed into law. Under the IRA, homeowners investing in cleaner energy such as solar power and energy storage systems for their primary residence may be eligible for up to a 30% federal tax credit.*

Also referred to as an Investment Tax Credit, this incentive is expected to remain at its increased rate for residential solar power systems through 2032. **Learn more about clean energy tax incentives*.**



Net metering (where accessible)

Many states have enacted a solar energy policy called “net metering.” Under this plan, homeowners generating solar power can receive credit from their utility company for excess electricity sent to the grid.

For example, if your solar PV system generates more energy than your home consumes in a day, the excess energy can be fed back to the grid. At the end of your billing cycle, you'll only be billed for your “net” energy consumption. Depending on the balance, your electric utility bills could be significantly reduced.²



Payback period

There is excellent opportunity for long-term cost savings with an energy storage system—especially when connected to solar. By storing solar-generated energy, you can draw from your home battery during times of demand or participate in utility time of use (ToU) rates. This allows you to save money on electric utilities and power your home more sustainably.



Financing options

When you're ready to purchase an energy storage system, with or without solar, you may be able to finance the investment. Often, homeowners redraw on their mortgage for financing or Home Equity Finance., such as those from banks and government incentives.



Make the most of your investment

Installing an energy storage system is a great step towards achieving energy independence. But to truly maximize that freedom and future cost saving opportunities, consider pairing your ESS with a solar PV system.



Step towards energy independence

Are you ready to harness the power of an energy storage system? Here's what happens next:

Step 1

Contact an installer

The first step is to contact an independent third-party LG Pro installer to express your interest in an energy storage system and/or a solar PV system. Be sure to ask the installer about any available incentives and what to expect from the installation process.

Step 2

Discuss your needs

Discuss the right option for your home and budget with your LG Pro installer. A reputable third-party installer will have a clear understanding of current codes and utility requirements and should provide advice on the best configuration for your needs and location.

Step 3

Schedule your installation

Work with your LG Pro installer to schedule your installation day. Unless otherwise discussed, you can expect a solar PV system to be installed on your roof. Energy storage systems are installed on the ground, usually in a garage or on the side of your home.



Take charge of your energy future



If the power goes out, everything is going to continue as it's supposed to in the house. And it's okay that I'm not home.

Maryland homeowner and LG ESS customer



LG Home 8 Energy Storage System

Harness the power of the **LG Electronics Home 8 Energy Storage System (ESS)**—an efficient, reliable, and more eco-friendly backup power solution to energize your LG appliances.



Offset energy costs

- Store power during off-peak hours. Use the battery and PV energy during the day to reduce energy consumption.
- Use the battery and PV energy during the day to reduce energy consumption.
- Access that stored power when you need it most.
- Stress less about extreme weather and energy price hikes.



Maintain home appliance efficiency

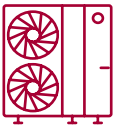
- Access a stable power supply that allows you to manage energy fluctuations.
- Ensure consistent, reliable power to your connected LG Electronics appliances.*
- Connect with LG's ThinQ® App to track energy usage and optimize your home.

* 14.4 kWh per Home 8 unit, maximum four (4) units for up to 57.6 kWh



Harness renewable energy

- Make the most of solar energy by charging the battery and offset total home energy use.
- Store energy generated from your solar PV system for when the sun isn't shining.
- Power select LG Electronics appliances with cleaner energy.



Access backup power and support the grid

- Connect a cleaner, more reliable backup power source (compared to a fueled generator) to your home.
- Keep essential appliances running during an outage.



Control and monitor with ease

- Manage energy usage from a mobile device with LG's ThinQ® app.
- Optimize consumption by directing stored energy to specific appliances or HVAC units.
- Improve energy efficiency to maximize cost saving opportunities.

Find your LG Pro installer

Choosing your installer is a key part of the energy storage system process. But how can you be sure you're making the right choice?

A trusted installer will be happy to answer any questions and walk you through what fits your home and budget. They should never pressure you to make an immediate decision, and should respect if you decide to get a second opinion.

It is an excellent idea to consider what you are looking for before your appointment with an installer. Take note of any details to share with them, such as:

- How much energy storage you need
- The approximate budget for your project.
- Whether you are considering adding a solar PV system.

You should feel comfortable talking to an installer on the phone and raising any questions or concerns you may have. The right installer will be happy to share their expert knowledge and provide references, should you request them.






When you're ready to talk energy storage for your home, find an installer near you at [LG.com/ESS](https://www.lg.com/ESS).





Getting ready: 5 ways to prep your home

Once the paperwork is signed and it's time to get your new system installed, here are some things you can do to keep the day running smoothly—for you and your installer. Depending on your product selection and chosen installation location, you may want to consider some or all of the following. Use this checklist to make sure you're ready to go:

-  Plan to be home during the installation in case questions arise.
-  Consider how the noise might impact your daily routine and plan accordingly.
-  Remove large outdoor decorations or potential obstructions from work areas.
-  Make room in your yard and driveway for crews to park close.
-  Place pets in a secure location away from designated work areas.

Connect with an installer today

Visit [LGHome8.com](https://www.lghome8.com) to learn more about our solution and get in touch with your local independent LG Pro installer.



¹ Solar Power World. "More new solar installed in 2023 than any other electricity source." January 2024.

² United States Environmental Protection Agency. "Electricity Storage." October 2023.

³ 2024 Energy storage study of 1,579 U.S. homeowners. Commissioned on behalf of LG Electronics.

⁴ Energy Sage. "The complete buyer's guide to home backup batteries in 2023." December 2023.

⁵ The White House. "Inflation Reduction Act Guidebook." 2022.

*Criteria subject to change. The tax credit information contained herein is provided for informational purposes only. This summary should not be considered tax or legal advice, and homeowners should consult their tax advisor for complete and up to date guidance.

2024 Energy Storage study commissioned on behalf of LG Electronics comprised of 1,579 homeowners in the US.

Life's Good.

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