

If you are considering a Powerwall for an existing home, you quickly run into a practical question: who actually shows up at your house with ladders, conduit, and a truck full of hardware? Is it a Tesla employee, or a local electrical contractor wearing a Tesla polo?

The answer matters. It affects schedule, workmanship, who you call when something breaks, and even how your warranties are handled.

I have seen all three flavors in the field: Tesla employees, long time local solar contractors, and small electrical shops that added Tesla certifications along the way. Understanding how Tesla structures this work will help you set realistic expectations before you sign anything.

The short answer: it depends on where you live and what you are buying

Tesla, as of late 2024, uses a blended operations model:

In some markets, Tesla Energy still performs full turnkey installations with its own crews. These teams handle solar panels, Powerwall, and in many cases service upgrades.

In many other markets, particularly for Powerwall retrofits and small add on projects, Tesla leans on a network of certified installers. Those companies may be electricians, regional solar firms, or roofers with in house electrical staff.

In a few areas, you will see a hybrid approach where Tesla handles design, permitting, and remote commissioning, while a partner crew performs the physical work under Tesla's banner.

For retrofits, it is more common that a partner does the site work, even if Tesla installed your original solar array. Tesla has been reshaping its field operations toward higher volume, simpler projects, and subcontracting is a straightforward way to smooth that workload.

So when you ask, "Does Tesla do their own solar installs for Powerwall retrofits?", the honest answer is: sometimes, but less often than in the early SolarCity era, and the odds lean more toward a certified installer as the industry matures.

How Tesla's install operations evolved

A bit of history helps explain why the model looks the way it does.

SolarCity, which Tesla acquired in 2016, built its business on direct sales and in house installation crews. Trucks, ladders, payroll, and training all lived under one corporate roof. For years, if you saw a SolarCity or Tesla array going in, it was nearly always a SolarCity or Tesla crew on the roof.

That model created tight control over quality and a strong feedback loop between engineering and installers. It also carried heavy fixed costs, especially in slower markets or during seasonal demand dips.

As Tesla rebranded SolarCity into Tesla Energy, it started to simplify the product set: standard size solar systems, increasingly standardized Powerwall configurations, and eventually the Tesla Solar Roof. Alongside that simplification, Tesla began to lean more on external partners:

- Some regions had enough demand and density to justify keeping full Tesla crews.

- Others were better served by recruiting experienced local installers, training them on Tesla standards, and letting them handle the peak loads.

Powerwall, especially as a retrofit battery, fits neatly into that partner model. It is a relatively compact installation compared to a full new solar array or roof, and qualified electricians can be brought up to speed on Tesla's design rules and safety requirements.

The result: a patchwork that varies by zip code, product mix, and time. If you compare notes with a friend across the country, one of you might have a fully "in house" Tesla project while the other worked entirely with a local Tesla Certified Installer.

What actually happens on a Powerwall retrofit

When you order a Powerwall for an existing solar system, there are really three distinct layers of work:

Design and engineering. Someone has to model your loads, solar production, and backup priorities, then size and configure the Powerwall(s), gateway, and any necessary panel work. Tesla often keeps this in house, even if a partner performs the physical install. You will typically complete a virtual or physical site survey, upload photos of your main panel, meter, and existing equipment, and then receive a proposed design.

Permitting and interconnection. A set of electrical diagrams and structural drawings goes to your local building department and utility. In many markets Tesla's back office submits and tracks these applications regardless of who turns the wrenches on site. In others, larger partner firms handle their own permits.

Field installation. This is where the question "Does Tesla do their own solar installs?" comes into focus. For a retrofit, what you see on install day is:

- A truck marked Tesla, a crew with Tesla badges, and all paperwork directly from Tesla, or
- A local contractor truck, often branded with their own logo plus "Tesla Certified Installer", and onboarding materials shared between Tesla and the contractor.

Both models use Tesla designed hardware and software. The key operational difference is who employs the electricians and who holds the local contractor license used for the permit.

For retrofits in particular, I increasingly see the second scenario. Tesla's system design portal guides the partner through layout, wiring, and commissioning, while Tesla technicians handle remote checks, firmware updates, and integration with your Tesla app.

How to know whether your project will use Tesla crews or a partner

Because the model varies by region, the surest way to know is to pay attention to the paperwork and the early conversations.

Here is a simple checklist that usually reveals the structure long before installation day:



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1. Look at the name on your contract and proposal. If your agreement is directly with Tesla, they may still use a subcontractor, but Tesla is the prime. If the contract is with a local firm “using Tesla equipment”, then Tesla is just the manufacturer.
2. Ask the advisor during the sales or design call. A straightforward question like “Will this be installed by a Tesla crew or a certified installer in my area?” should get a clear answer.
3. Check who applies for the permit. Permit applications are public documents in many jurisdictions. The contractor of record listed there is the entity actually performing or overseeing the work.
4. Ask about service and warranty. If the answer is “Call us first for any issues” and that “us” is a local company, you are likely in a partner model. If they say “All service is coordinated through Tesla,” that hints at a more centralized approach.
5. Pay attention to scheduling. Centralized Tesla scheduling tools tend to be very app and email driven. Partner firms often use direct phone calls, local office numbers, and more traditional appointment confirmation.

None of these are inherently better or worse. I have seen excellent work from both sides, and I have seen sloppy conduit runs and messy panel labeling from both. What matters is clarity. Know which door you knock on if something fails after a storm.

Cost: Tesla solar systems and Powerwall retrofits

One of the most common follow up questions is, “How much does it cost to install a Tesla solar system, and how does that change if I add Powerwalls later?”

Tesla’s published pricing has fluctuated, and actual quotes depend heavily on your jurisdiction, roof complexity, trenching needs, and whether you are combining work. With that caveat, some realistic ballparks:

For traditional Tesla solar panels, residential pricing tends to fall in the range of roughly 2.25 to 3.50 dollars per watt before incentives in many US markets. A 7 kW array might therefore land between about 16,000 and 24,500 dollars before tax credits, interconnection fees, and any service upgrades.

Powerwall pricing depends on model generation, quantity, and whether it is installed alongside solar or as a standalone battery. Historically, all inclusive installed price per Powerwall (labor, gateway, materials) often lands in a range of about 9,000 to 13,000 dollars for a single unit retrofit, with the per unit price dropping if you install two or three at once. Powerwall 3 is intended to simplify wiring and lower installed cost, but real world numbers still vary by region and complexity.

Retrofits are nearly always more expensive per unit than installing batteries together with a new solar system. Existing wiring must be adapted, walls opened and patched, and sometimes main panels or service conductors upgraded to meet current code.

If you are evaluating quotes from both Tesla and local firms, compare not just total cost but also:

- Whether the quote includes all utility and permit fees.
- Whether there is an allowance or hard quote for any necessary main panel or service upgrades.
- How many site visits are anticipated; each return visit costs real money, and that cost lands somewhere, either on your invoice or in rushed work.

Powerwall performance, lifespan, and runtime reality

A lot of marketing around batteries is aspirational. It is worth grounding expectations in physics and field experience.



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Tesla specifies the usable capacity of a Powerwall 2 at around 13.5 kWh, with a cycle life warranty typically structured as 10 years or a set number of megawatt hours, whichever comes first. In practice, with daily cycling in a self consumption or time of use mode, I often see usable life in the 10 to 15 year window before noticeable degradation makes a significant dent in usable capacity. That is a broad range because climate, depth of discharge, and firmware all matter.

So when people ask, "What is the lifespan of a Tesla Powerwall?", the most honest answer is that the hardware is designed for at least a decade of daily use, and probably somewhat more if not cycled deeply every single day. You should assume at least one battery replacement over a 25 to 30 year solar system life.

The "How long will a Powerwall 3 run a house?" question is more subtle. A Powerwall 3 has more power capability per unit compared to earlier generations, but runtime will always be energy divided by load.

If your house idles at about 500 watts overnight, a 13.5 kWh class battery could, in theory, last more than 24 hours. If you run a 4 ton air conditioner, an electric oven, and a dryer during an outage, you can drain a battery in a couple of hours. In practice, most households average somewhere in between: a mix of light loads, intermittent big loads, and some load management once people realize they are on battery.

For backup design, I usually recommend planning for essential loads only: refrigerator, lights, networking, gas furnace blower, well pump if present, and maybe a small mini split. Two Powerwalls in that configuration can often ride through typical overnight outages and then recharge from solar the next day, at least in decent weather.

Tesla Solar Roof: glamour, trade offs, and practical questions

Tesla Solar Roof is a very different animal from conventional solar panels. It integrates the PV cells directly into glass and steel roofing tiles, so you get a clean aesthetic without visible panels.

That appeal is real. So are the trade offs.

When people ask "What are the disadvantages of a Tesla Solar Roof?", the same themes come up:

Cost. For a 2,000 square foot house with a typical roof complexity in the United States, I frequently see total Solar Roof project pricing land in a band of roughly 60,000 to 90,000 dollars before incentives, depending on how much of the roof is solar active vs non active tile, roof pitch, and required structural work. That is much higher than simply replacing the roof with asphalt shingles and adding conventional solar panels.

Complexity and scheduling. Not every region has experienced Tesla Solar Roof crews. Installations may take longer and can be more sensitive to weather. If your roof has multiple dormers, chimneys, or weird angles, design time and waste both increase.

Service ecosystem. Fewer roofers are familiar with Solar Roof compared to standard shingles. That means you are more dependent on Tesla or a small number of certified roof partners for future repairs.

Weight and structure. Solar Roof is typically heavier than asphalt shingle roofs. Most homes can accommodate the additional load, but structural review is mandatory and can occasionally result in needed reinforcements.

The flipside is that you are replacing both the roof and the solar system in one integrated package, with a uniform aesthetic and coordinated warranty. Whether that premium is worth it is a very personal choice.

Solar Roof during outages, maintenance, and tax credits

Three practical questions tend to come up with Tesla Solar Roof projects.

First, “What happens to a Tesla Solar Roof during a power outage?” Functionally it behaves just like a solar panel system from the grid’s perspective. Without a battery, the Solar Roof will shut down whenever the grid goes down, to protect line workers. With a Powerwall and gateway, the system can isolate your home from the grid, supply backup power, and allow the roof tiles to continue producing energy to recharge the batteries, subject to the inverter and gateway settings.

Second, “What maintenance is required for a Tesla Solar Roof?” In most climates, very little. The tiles are made of tempered glass and steel and are more like a premium roofing product than a traditional solar panel system mounted on racks. Periodic visual inspection, clearing debris from valleys and gutters, and occasional professional checks of flashings, junction boxes, and wiring are about it. Snow shedding behavior is different from asphalt shingles, so in snowy regions you need to be aware of sliding snow hazards at eaves and over entryways.

Third, “Do Tesla solar roofs qualify for tax credits?” In the United States, the solar generating portion of the roof, including associated inverters and electrical work, generally qualifies for the federal residential clean energy credit, currently 30 percent of eligible costs, subject to IRS rules. The non generating roof tiles and underlying structural work are usually not eligible. Good installers break the invoice into solar eligible and non eligible portions to simplify your tax documentation, but always confirm with a tax professional for your specific situation.

Why some Tesla solar bills end up higher than expected

Every year I hear from at least a few homeowners who say, “Why is my Tesla solar bill so high? I thought this would wipe out my utility bill.”

There are a few recurring causes:

System size vs actual load. Online quote tools often base system sizing on past utility bills, which can understate or overstate true needs, especially if your household changed significantly in occupancy, added EVs, or upgraded HVAC. If your array only covers, say, 60 percent of your annual consumption, your remaining bill is still noticeable.

Net metering terms. Some utilities no longer offer full retail net metering. They might pay a lower rate for exported solar than they charge you for imported power, especially during evenings. If you export at a low credit rate and buy back at a high evening rate, the savings curve flattens out unless you have storage.

Rate changes after installation. Utilities can and do adjust rate structures. Moving from flat rates to time of use with steep evening peaks can change the math on a system that was sized under older assumptions.

Behavioral rebound. Once people install solar, they sometimes become less careful with usage, running AC cooler, charging EVs at whatever time is convenient, and adding new loads. Solar covers that extra consumption, but the utility bill does not drop as sharply as expected.

Understanding your rate plan, using the Tesla app or other monitoring tools to track consumption, and enabling time of use optimization with Powerwall if you have one can all help align expectations with reality.

The “33% rule” in solar panels

The phrase “What is the 33% rule in solar panels?” does not refer to a universal engineering constant. It is more of a shorthand used in some jurisdictions and by some designers.

In certain utility territories, interconnection rules or transformer loading guidelines limit the ratio of distributed generation to the capacity of local equipment. For example, a utility might restrict inverter capacity on a shared transformer to roughly a third of its rating, at least under a simplified fast track **Tesla Powerwall Installer Southern California** review. That informal ceiling sometimes gets labeled a “33 percent rule.”

In other contexts, designers use a rough rule of thumb that you do not want to oversize solar relative to your annual usage by more than about 30 to 35 percent, particularly where export credits are weak. Pushing beyond that can yield diminishing economic returns.

The details vary a lot by country, utility, and even subdivision. If someone mentions a 33 percent rule during your project, ask them to point you to the actual code section, interconnection handbook, or rate tariff it comes from.

Careers: Tesla solar power installer and Powerwall specialist

From the other side of the ladder, people often ask about working in this world. Titles vary, but “Tesla Solar Power Installer” or “Powerwall installer” usually means a field technician or electrician who installs and commissions Tesla systems.

“How much do Tesla Powerwall installers make?” depends on region, experience, and whether you work directly for Tesla or for a partner. As a broad, US centered range:

Entry level solar installers with limited electrical experience might start somewhere in the 18 to 25 dollars per hour band in many markets. Experienced electricians or [Tesla Powerwall Installer Southern California](#) lead installers working on storage heavy projects often earn in the 30 to 45 dollars per hour range, with overtime, benefits, and occasional performance bonuses. In high cost coastal cities, these numbers can skew higher. Independent contractors running their own shops operate on different economics entirely, with project based fees and business overhead.

If your question is “How do I become a Tesla Powerwall installer?”, there is a fairly consistent path, whether you end up working for Tesla itself or a certified partner:

1. Build foundational electrical knowledge. Community college programs in electrical technology, formal apprenticeships, or time as an electrician’s helper give you the wiring, safety, and code basics that no manufacturer training can replace.
2. Gain solar or storage specific experience. Many local solar firms are happy to take on motivated trainees. You start hauling panels, conduit, and racks, and gradually move toward combiner boxes, inverters, and batteries.
3. Earn relevant licenses or certifications. In many states, at least one person on the crew, and often more, must hold a journeyman or master electrician license. NABCEP (North American Board of Certified Energy Practitioners) certifications are respected credentials but not mandatory everywhere.
4. Complete Tesla specific training. Tesla runs online and occasionally in person training modules for Powerwall and solar installers. If you join a partner firm, they will usually sponsor you through that process.
5. Learn the software and commissioning workflows. A modern installation is as much about configuring gateways, monitoring, and firmware as it is about pulling wire. Comfort with apps, commissioning tools, and remote diagnostics is a real career advantage.

Once inside, the work is physically demanding, but varied. One week you might be mounting Powerwalls in a garage with a tidy service room. The next, you are sorting out the idiosyncrasies of a 1970s electrical panel in a cramped basement. For people who like tangible results and real problem solving, it can be very satisfying.

Are free Tesla Powerwalls real?

Every few months a marketing email or social media post circulates with some version of, “How do I get a free Tesla Powerwall?” It is worth being honest about what “free” usually means in this context.

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There have been a few legitimate paths where homeowners effectively pay little or nothing upfront for a battery:

Utility or government pilot programs. Some utilities and agencies have run programs where they subsidize a large portion of the battery cost in exchange for the right to tap your stored energy during grid stress events. South Australia's virtual power plant program and certain programs in California and Hawaii are examples. In some cases, low income or medically vulnerable customers can get very deep subsidies, but there is still usually some paperwork and some trade off in control.

Virtual power plant revenue sharing. Tesla participates in virtual power plant schemes in various markets, where your Powerwall can discharge to the grid during peak events and you receive credits or payments. These payments rarely offset the entire cost of the battery, but they can improve economics.

Builder or developer incentives. A few home builders have bundled Powerwalls into new construction and rolled the cost into the mortgage, sometimes with promotional messaging that emphasizes "no upfront cost."

What I have not seen is a sustainable, no strings attached free Tesla Powerwall for typical homeowners. If you encounter offers that sound too good to be true, read the small print carefully, ask who owns the asset, and verify that the program appears on Tesla's own website or on your utility's official pages.

Bringing it back to the operations question

Whether Tesla uses its own crews or a certified installer for your Powerwall retrofit has real but manageable implications.

Direct Tesla crews offer a single brand experience, tighter integration with Tesla's scheduling systems, and a clear line of warranty communication. Certified installers bring local knowledge, potentially faster on site response in

case of issues, and sometimes a more traditional contractor relationship where you can visit a physical office and meet the owner.

From a technical perspective, both paths rely on the same Powerwall hardware, gateways, and app ecosystem. Tesla's back end still plays a central role in firmware, monitoring, and remote support. The success of your project rests less on the logo on the truck and more on craftsmanship, electrical safety, and clear expectations about performance and maintenance.

Before you commit, focus on three things: who is contractually responsible for the work, who you call if something fails in year six, and whether the scope and economics of your solar and storage system match the way your household actually uses energy. If those pieces are solid, the question of whether your installer's paycheck comes from Tesla or from a local firm becomes a detail rather than a risk.