When people price out a Tesla solar system for a new build, the first surprise is usually the installation logistics, not the equipment. You might order on Tesla's website, sign your documents with Tesla's name on them, and still never see a Tesla-branded van on site. For new construction, where work has to mesh with framers, roofers, electricians, and inspectors, the "who actually installs this?" question becomes critical.

I have worked on projects where Tesla handled almost everything directly, and others where a local crew did all the physical work while Tesla remained a name on the contract and the app. Understanding how that structure works will help you avoid delays, cost surprises, and finger-pointing if something goes sideways.

Let's unpack what really happens, especially for new construction, and address the related questions that come up around cost, Powerwall performance, maintenance, and the fine print on Tesla Solar Roof.

Does Tesla Do Their Own Solar Installs?

The short answer is: sometimes they do, sometimes they do not, and it depends heavily on your location and the specific product.

Tesla has two main pathways to get systems on roofs and walls.

First, in certain metropolitan areas, Tesla operates its own in-house installation teams. These are Tesla employees, driving Tesla-branded trucks, using Tesla job processes and scheduling software. They are more common in major markets where volumes are high.

Second, across a large part of North America and other regions, Tesla relies on certified third-party installers. These are independent contractors or regional solar companies that have gone through Tesla's training and onboarding program. Tesla often still controls the system design and permitting, but the physical installation is performed by these partners.

From the homeowner's perspective, you might:

- Sign paperwork with Tesla, get a design and a project manager with a Tesla email, but see a local company's logo on the crew that arrives to install panels, Powerwall, or your Tesla Solar Roof.

Behind the scenes, Tesla audits their work, requires certain standards, and controls what products can be offered. However, scheduling, on-site decisions, and post-install service can feel quite different when an independent contractor is involved.

New Construction: How Tesla Handles Solar on a New Build

New construction is not the same as a retrofit, and it is one of the biggest areas of confusion for people trying to use Tesla for a new home.

With a retrofit on an existing home, the process is fairly linear: site survey, design, permits, installation, inspection, activation. New construction adds several layers: coordinating with the builder's schedule, rough-in electrical work before drywall, roof sequencing, and sometimes changes to service panels or main feeds.

Tesla Panels vs Tesla Solar Roof on a New Build

For simple Tesla solar panels or solar shingles integrated with a standard asphalt or metal roof, Tesla or its partners can often treat the project similarly to a retrofit, with some coordination to get conduit and mounting in place around the time the roof is finished.

For a full Tesla Solar Roof, the roof itself is the solar product. That means the timing is far more sensitive. The builder's normal roofing contractor does not install the main roof surface. Instead, Tesla or a Tesla-certified roofing installer must coordinate tightly with the framing and dry-in schedule, because the Solar Roof is both the weatherproof layer and the solar array.

I have seen builds delayed weeks because the general contractor assumed Tesla would slot into the schedule like any traditional roofer, but Tesla's team was booked out or still waiting on a final structural review. If you are planning a Tesla Solar Roof on new construction, you want your builder, Tesla, and the local building department locked in with a clear schedule long before framing begins.

Does Tesla Install New Construction Systems Themselves?

For new construction, Tesla is more likely to rely on local partners unless you are in a major market where they maintain a dedicated construction team. Solar panels and Powerwall on a custom home are often handled by a Tesla-certified solar company that understands local codes and the realities of working alongside framers and electricians.

For Tesla Solar Roof on new construction, Tesla has a mix of internal crews and specialty roofing partners who are authorized to install the glass tiles and manage the underlayment and waterproofing details. It is rare to see a completely hands-off Tesla role with Solar Roof, because the product is both a structural and an electrical system.

The key point: if new construction is involved, do not assume that “ordered from Tesla” means “installed by Tesla employees.” Your contract and pre-construction meetings should clearly state who is responsible for what on site.

What a Tesla Solar Power Installer Actually Does

From the outside, a Tesla Solar Power Installer might look like any other solar electrician, but the work is a blend of roofing, electrical, networking, and customer education.

A typical Tesla solar installation team will:

1. Coordinate with your builder or existing roof to ensure rafters or trusses can take the weight of panels or Solar Roof tiles, often referencing structural engineering documents for new builds.
2. Install mounting hardware, flashing, and wiring paths that meet Tesla’s standards, which are sometimes stricter than the local minimum code.
3. Set panels or Solar Roof tiles, connect strings, run conduit, and land conductors in a Tesla-approved inverter or the Tesla Gateway.
4. Configure your system in the Tesla app, commission Powerwall if included, and verify communication with your home’s network and with Tesla’s servers.
5. Prepare for inspection and utility interconnection, which may require coordination around meter location, main service upgrades, or special disconnects for the local utility.

The best Tesla Solar Power Installers are usually the ones who know their local inspectors and utilities by name and can anticipate which details will cause rejections or delays.

How Much Does It Cost to Install a Tesla Solar System?

Pricing shifts with time, incentives, and local labor markets, but some realistic ranges can help set expectations.

For Tesla solar panels on a typical home, you often see total installed prices (before incentives) in the range of 2.2 to 3.2 dollars per watt in the United States, depending on roof complexity, electrical upgrades, and market. A 7 kW system might therefore land somewhere around 15,000 to 22,000 dollars before tax credits.

A Tesla Solar Roof is a different animal. You are replacing the entire roof, not simply adding panels. Costs depend heavily on roof complexity and the ratio of active (solar) tiles to non-solar tiles. For a relatively simple, 2000 square foot house, real world invoices I have seen for Tesla Solar Roof often land in the 45,000 to 80,000 dollar range before incentives. Steep pitches, hips, valleys, dormers, and intricate layouts push costs toward the higher end or above.

When people ask, “How much is a Tesla roof on a 2000 sq ft house?” they often forget that two very similar square footages can have very different roof shapes. A clean, simple gable roof costs dramatically less than a complex architectural design with multiple levels and penetrations.

If you bolt Powerwall onto the project, each unit commonly adds 8,000 to 11,000 dollars installed, again depending on market rates and whether service upgrades are needed. Multiple Powerwalls do not scale linearly on cost, because some labor and components are shared.

The federal clean energy tax credit in the United States can usually be applied to Tesla solar systems and Powerwall, as long as the battery is charged primarily from solar. That credit has been around 30 percent in recent years, but always check current policy and your own tax situation with a professional.

What Are the Disadvantages of a Tesla Solar Roof?

Tesla Solar Roof has genuine appeal: clean aesthetics, integrated design, and a roof that quietly generates power. There are real trade-offs, though, and they matter more on new construction where you have more options.

Cost is the most obvious disadvantage. A Tesla Solar Roof almost always costs more upfront than a quality conventional roof plus a traditional solar panel array with similar energy output. While some homeowners are comfortable paying that premium for aesthetics and integration, it is a material difference.

Complex installs take longer and are more sensitive to Tesla's schedule. You are not just waiting on your local roofer, you are waiting on specialized crews and proprietary materials. If your area does not have an experienced Solar Roof partner, delays can compound.

Repair logistics are different. If a future roofer needs to work on a portion of your roof, they are dealing with a proprietary system with wiring and electronics embedded. You do not want someone unfamiliar prying up tiles or cutting into underlayment without understanding how the system is wired.

On resale, some buyers love the idea of a Tesla Solar Roof, while others see it as a risk or a maintenance unknown. That can cut both ways. In markets where Tesla Solar Roof is rare, appraisers and buyers may not know how to value it properly.

What Happens to a Tesla Solar Roof During a Power Outage?

Functionally, a Tesla Solar Roof behaves like a conventional solar array in an outage, controlled Tesla Powerwall Installer Southern California by the Tesla Gateway. If you have Solar Roof without Powerwall, your system will shut down when the grid goes out. That is required by safety codes to protect lineworkers.

If you pair Solar Roof with one or more Powerwalls, the Gateway will isolate your home from the grid when an outage is detected. Solar tiles continue generating, feeding the Powerwalls and your home circuits, as long as there is daylight and your Powerwalls are not already full.

From the homeowner's perspective, when the grid fails, lights may flicker briefly and then stabilize while the Tesla system islands your home. The Solar Roof and Powerwall combination turns into a microgrid. During long outages, your Powerwalls cycle up and down during the day as the roof charges them, then they discharge overnight.

How Long Will a Powerwall 3 Run a House?

Tesla Powerwall 3 is specified with roughly 13.5 kWh of usable energy, similar to Powerwall 2, but with improved power output and integrated inverter. How long it will run your house depends entirely on how much you are consuming.

If your home draws an average of 1 kW, which is a fairly typical off-peak baseline for a modern, efficient house, a single Powerwall can comfortably supply power for around 12 to 13 hours. If you are running air conditioning, electric ovens, and pool pumps, your load could jump to 5 kW or more, which pulls that runtime down to a few hours.

For outage planning, I usually advise clients to think in tiers. Critical loads like refrigeration, Wi-Fi, some lighting, and a gas furnace blower use relatively little power. If you put only those on the backed-up circuits, a single Powerwall can carry many homes through an overnight outage without issue. Once you add heavy loads like whole-house AC or electric resistance heating, you want multiple Powerwalls and realistic expectations.

For long outages measured in days, the combination of daytime solar production and Powerwall storage becomes the key. On a sunny day, it is entirely possible for a well-sized array and Powerwall bank to keep critical loads powered indefinitely, but that assumes some discipline around usage during cloudy stretches.

What Is the Lifespan of a Tesla Powerwall?

Tesla warrants Powerwall for 10 years, typically with an energy retention guarantee around 70 percent of original capacity at the end of that period, under normal use. In practice, lithium batteries often continue to function beyond their warranty window, though with reduced capacity.

Realistic expectations for lifespan are in the 10 to 15 year range for meaningful performance, assuming typical cycling patterns and reasonable temperatures. Heavy daily cycling in very hot environments, or prolonged exposure to extreme cold without proper placement, can shorten effective life.

Unlike simple equipment like a breaker panel, batteries are consumable devices. If you design your system around daily time-of-use arbitrage, you are asking more from the battery than a system that only cycles heavily during occasional outages.

How Much Do Tesla Powerwall Installers Make?

Compensation varies by region, experience, and whether someone is a direct Tesla employee or works for an independent contractor. To anchor expectations, in many U.S. Markets:

Entry level installers or apprentices working on Powerwall crews often see hourly wages in the 20 to 28 dollar range.

Experienced lead installers or licensed electricians responsible for Powerwall and solar interconnections might earn the equivalent of 30 to 45 dollars an hour, or salaries in the 70,000 to 100,000 dollar range, sometimes higher in high-cost coastal cities.

Project managers and inspectors sometimes fall into similar salary bands, with bonuses tied to project completion metrics.

These numbers move with labor markets and regional demands, but they give a general sense of what “How much do Tesla Powerwall installers make?” looks like in the field.

How Do I Become a Tesla Powerwall Installer?

If you are an individual tradesperson, you typically join an existing Tesla-certified company rather than becoming a direct Tesla Powerwall installer on your own. If you run a contracting or solar business, you can go through Tesla’s partner application process.

For an individual, the path usually looks like this:

1. Gain electrical and construction experience, often through an apprenticeship with a licensed electrician or a solar company, and obtain any required state journeyman or master electrician license.
2. Get hired by a Tesla-certified installer or by Tesla itself if they are staffing crews in your region, and complete Tesla’s product and safety training modules.
3. Work under experienced crew leads on early projects, learning Tesla-specific wiring schemes, commissioning steps, and Gateway configuration.

4. Build familiarity with local codes, permitting processes, and utility interconnection requirements for storage systems, which often differ from simple solar installs.
5. Progress to lead roles where you supervise installations, interface with inspectors, and troubleshoot networking, backup behavior, and customer training.

For contractors, Tesla looks for properly licensed companies with a history of code-compliant work, solid inspection records, and the capacity to handle both solar and energy storage projects. Their onboarding process typically includes design standards, installation checklists, and periodic audits.

What Is the 33% Rule in Solar Panels?

The phrase “33% rule in solar panels” gets tossed around in different contexts, and it is worth clarifying, because people sometimes mix it up with other electrical rules.

In some utility and design contexts, the 33 percent figure refers to a limit on how much distributed generation (like rooftop solar) a given transformer or feeder segment can host before studies or upgrades are required. In those cases, a utility may say that total solar generation on a circuit should not exceed roughly one-third of the local load without further analysis.

There is also informal guidance in some design circles that suggests not covering more than about a third of certain roof types or structural areas without a more detailed engineering review, especially on older structures, though that is not a universal code rule.

Most actual electrical code limits around interconnection use the 120 percent rule in the National Electrical Code, which says that the sum of the main breaker rating plus the solar backfeed breaker rating must not exceed 120

percent of the busbar rating in the panel. That is often the number your installer is juggling when deciding whether a service upgrade is needed.

If someone cites a “33% rule” to justify a specific limit on your project, ask them which code or utility guideline they are referring to and get a clear explanation. You want traceable rules, not folklore.

Why Is My Tesla Solar Bill So High?

People are often surprised by their post-install electric bills, even when the system is performing correctly. Common reasons include:

Net metering or billing structures that are not intuitive. Time-of-use rates can make cheap midday energy and expensive evening energy look confusing on statements.

System sizing that does not fully cover your actual usage. If your lifestyle, appliances, or electric vehicles use more power than expected, your remaining grid purchases can still be substantial.

Changes in behavior after going solar. It is extremely common for people to add electric cars, hot tubs, or other loads once they feel they have “free” energy. The system they sized for pre-solar usage cannot keep up.

Seasonal swings. Short winter days, snow coverage on roofs, or long stretches of clouds will reduce solar production, so winter bills can still be high even with a good system.

If your Tesla app and your utility meter disagree dramatically, or if bills are much higher than what your installer modeled, it is worth pulling 12 months of utility data and comparing it to your actual post-solar production and consumption. Sometimes the installation is fine and the assumptions were not. Other times, small configuration issues, like a CT clamp installed backward or a misconfigured net meter, can hide generation or misreport flows.

What Maintenance Is Required for a Tesla Solar Roof?

Compared to many roofing systems, Tesla Solar Roof is fairly low maintenance, but “maintenance free” is an overstatement.

Homeowners should expect to:

Visually inspect the roof periodically, especially after major storms, for cracked tiles, debris buildup in valleys, or anything that looks out of place. Drones or binoculars can help on steep roofs.

Keep tree branches trimmed back so they do not shade or physically contact the roof, which protects both production and the glass tiles.

Rinse obvious dust or pollen buildup in dusty climates if production appears significantly reduced and rainfall is rare for extended periods, though the angled glass surface sheds most debris naturally.

Check the Tesla app regularly for alerts, production trends, or error messages that might indicate a failed string, inverter issue, or communication fault.

Schedule professional inspections if you notice leaks, broken tiles, or unexplained production drops. Because it is a combined roof and electrical system, you want someone trained on Solar Roof rather than a generic roofer guessing their way through it.

No routine user-serviceable parts need replacement on a set schedule, but like any smart system, software updates and occasional hardware issues are part of the long term ownership experience.

Do Tesla Solar Roofs Qualify for Tax Credits?

In many jurisdictions, the solar-producing portion of a Tesla Solar Roof qualifies for the same clean energy tax credits as conventional solar panels. In the United States, that usually means you can apply the federal tax credit to the portion of the invoice attributable to solar generation and necessary supporting equipment, including inverters and relevant electrical work.

What often requires careful accounting is how to separate the “roofing” portion of the cost from the “solar energy” portion. Tesla’s documentation and final invoice usually break this down in a way that tax professionals can use. Some states also offer additional incentives or property tax treatments, which may treat Solar Roof similarly to rooftop panels.

You should always confirm eligibility and apportionment with a tax advisor, because the specifics can change with policy and local interpretations.

How Do I Get a Free Tesla Powerwall?

Requests for a “free Tesla Powerwall” typically stem from two places: promotional offers and incentive programs.

Occasionally, Tesla or utility partners have run promotions where customers signing up for certain programs, like virtual power plants or demand response programs, receive a heavily discounted or, in rare cases, effectively free Powerwall in exchange for allowing the utility or Tesla to use some of the battery capacity for grid services. These offers are limited in time and geography, and they come with strings attached, such as control over when the battery charges or discharges.

In some regions, especially California in the past, incentive programs like the Self-Generation Incentive Program (SGIP) have offered substantial rebates on energy storage that, when combined with federal tax credits, can push out-of-pocket costs very close to zero for certain customers, especially low-income or medically vulnerable households.

Outside of those special programs, Powerwalls are not free. If you see offers that sound too good to be true, read the fine print. Many “free battery” deals bury the cost in long term financing or utility bill riders.

Bringing It Back to Your New Construction Project

If you are planning Tesla solar on a new build, the smartest move is to treat the installer question as central, not an afterthought. Clarify whether Tesla, a Tesla-certified partner, or a mix of both will be involved. Understand how that team will mesh with your general contractor’s schedule, your electrical plans, and your roofing timeline.

From there, make decisions with clear eyes about cost, aesthetics, and performance. Know what a Tesla Solar Roof will really cost compared to panels. Have realistic expectations about how long a Powerwall 3 will run your home, what maintenance looks like over a decade, and how incentives and tax credits apply to your specific build.

The technology is impressive, but the day-to-day experience you have for the next 20 years depends far more on the people and processes that install and support it. That is where knowing who actually installs your system, and how they work, matters most.