

Here at Middle Tennessee Electric, we want to give you the information you need to make smarter decisions when you decide to use solar energy at your home or business. As with any rapidly growing and evolving industry, there is a lot of information about solar and batteries — but not all the companies creating this information has your best interest in mind. If you want to go solar, our experts are here to help you do it in the way that's best for you.

7 Common Terms You Should Know

Kilowatt – *A kilowatt (kW) is how you measure instantaneous power.*

Kilowatt Hour – *Kilowatt Hours (kWh) are you measure a kilowatt over time.*

PV – *A photovoltaic system (PV) is composed of one or more solar panels combined with an inverter and other hardware to generate electricity using the sun's energy.*

Generation – *Generation is the amount of kilowatt-hours produced by a solar system that is consumed or exported to the grid.*

Behind the Meter – *Behind the Meter (BTM) is a type of solar PV system installation with the generation going directly into the home, business, or battery system. This means no excess power is sold back onto the electrical grid.*

Dispersed Power Production – *Dispersed Power Production (DPP) is the same as a behind the meter system. However, any excess power is sold to TVA for roughly 2 cents per kilowatt-hour.*

Solar + Storage – *Battery storage is often added to a PV system to let you use solar power when the sun goes down at night.*

Planning & Research

Why do you want solar?

Prioritize why you want solar to determine how much those priorities are to you. Solar is a long-term investment that may not give you a return on your money.

Solar Basics

Solar PV systems are based on kilowatts. A typical PV system is 10kW system with several solar panels generating 300-400 watts per panel. These panels operate at about 80-90% efficiency in the best conditions after you account for energy loss during the conversion process.

Buy quality equipment. MTE recommends solar panels with a 25-year power production warranty and inverters with a 10-year warranty.

Questions to Ask Before Buying Solar

Can you insure the system through your homeowner's insurance?

What requirements are needed to get a state electrical inspection?

Who are professional companies I can trust in my area?

Site Selection

Avoid installations facing east or west. Southern facing systems generate 12-15% more energy.

Not every home or business can handle a PV system.

Never install solar on a roof that has less than 25 years of life left.

Inspect buildings for energy efficiency. Wasted energy leads to a larger PV system. Using less energy means you can buy a smaller solar system.

Additional costs to review

How much electricity can the breaker panel handle, and will it need to be replaced?

How far from the meter is your PV system, and is there enough space on the wall for another meter?

Are there any construction requirements needed to get power from the PV system to your breaker box or meter?

What is the total cost of maintenance for your PV system?

Contractors & Proposals

Selecting a Contractor

There are some shady players in the solar installation and sales landscape. There are also some very good ones. That's why I recommend getting quotes from 2-3 different contractors. If you don't already have some contractors in mind, contact MTE to see who we recommend.

7 Questions When Picking a Contractor

Are they licensed, insured, and bonded contractors?

Do they get permits and state inspections?

Are they familiar with products, interconnection standards, best mounting options, and SAFETY guidelines?

Do they have a certification from the North American Board of Certified Energy Practitioners (NABCEP)?

Will they use licensed electricians to perform certain parts of the installation?

Do they offer warranty claims on workmanship and materials?

What do they offer for maintenance calls down the road?

Financial Considerations

Solar systems cost around \$3 - \$4 per watt in Tennessee. That means a 10kW PV system costs around \$30,000 - \$40,000. This doesn't include all the construction costs depending on your home.

If you want battery storage, it costs around \$6 - \$9 per watt. For a 10kW PV system, it costs about \$60,000 - \$90,000 in addition to your solar system.

Review Proposals

Don't feel intimidated by the sales process or by the sticker shock. Take your time to review the proposals before you sign. If a salesperson is pressuring you, walk away from them. Quality contractors understand this is a big decision.

Items to Check Before Signing a Proposal

Quality contractors ask for hourly meter data — not monthly usage.

Check with MTE to make sure there are no equipment upgrade costs or fees.

Review estimated savings projections — ask how they are determined and how they calculated it. Many solar systems don't have a positive return depending on maintenance and electric rates.

Double-check with your homeowner's insurance provider to see if there is any extra cost.

Review the proposal with your tax professional to make sure you can claim the FULL tax credit amount.

Talk to an expert in Solar. Find the right thing for you.

We've got solar expertise on staff. Before joining MTE, Tim Suddoth spent over 6 years in the Solar Industry learning the ins and outs of sales, design, estimating, permitting, commissioning, and installing solar systems. He holds certifications from [NABCEP — the North America Board of Certified Energy Practitioners](#) — the gold standard for solar. If you have any questions, Tim is available to talk to at no charge.

Tim Suddoth

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