



solar panels are used in tandem with energy-conserving habits and products, a home is able to produce as much energy as it needs, thus zeroing itself, and electric bills, out.

## FROM TOP TO BOTTOM

While harnessing the sun's energy is not a new concept (in fact, the first solar power generators debuted as early as 1870), recent technological advances have allowed

for products that are smaller and more efficient than ever before. Solar shingles, for instance, are composed of powerful photovoltaic cells and constructed to seamlessly integrate with conventional asphalt roof shingles.

These and other thin-film solar-harnessing products are slowly replacing the clunkier panels of yesterday and make the first step toward creating an NZE home (literally) more attractive. However, steep price tags remain one of the major obstacles of energy-efficient homes. Jeremy Meek, sustainability programs manager at Scottsdale-based Desert Star Construction, cites high cost as one of two major misconceptions in the industry.

## DIGITAL EXCLUSIVE

### APPLYING NET-ZERO ENERGY AT HOME

You can achieve a net-zero energy rating in your home by taking these five easy steps suggested by Desert Star Construction's sustainability programs manager, Jeremy Meek.

- Change out HVAC filters regularly. It may sound simple, but replacing air filters on a routine basis can save a significant amount of energy and keep your home cooler during warmer months. Meek advises knowing your filters' minimum efficiency reporting value—a measurement that assesses a filter's effectiveness. If a filter's MERV rating is too high (and/or the filter is dirty), your home's cooling system will not run as efficiently as possible.
- Install a programmable thermostat. This is an easy way to achieve greater energy efficiency in the home. Today, there are many

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- **Install a programmable thermostat.** This is an easy way to achieve greater energy efficiency in the home. Today, there are many

programmable thermostats on the market that offer a variety of connectivity features with mobile devices. Basic programmable thermostats are relatively inexpensive and can provide quick paybacks when programmed in alignment with the on- and off-peak hours with your electric company.

- Use a water heater blanket or timer. As the summer winds down, consider purchasing a manufacturer-approved blanket for your water heater. Most water heaters are located in non-climate-controlled areas and lose quite a bit of heat in winter months. Some water heater manufacturers produce timers that can be installed on water heaters and offer preset intervals for on-demand hot water based on typical use periods in your home.

- Swap lighting. Replace incandescent lightbulbs with LED or

CFL bulbs. Additional lighting-related savings can be achieved by installing motion-activated switches at utility areas (such as closets or laundry rooms), where it can be easy to forget to turn off the lights when you leave the space. Also, consider installing timers for exterior lighting.

■ **Apply solar electric power.** Based on your home's orientation (with south-facing roofs being ideal), consider installing solar panels. Keep in mind that it's not all or nothing when it comes to offsetting your energy use. Sometimes, the quickest payback can be achieved by installing a relatively smaller system that helps level out your energy use during peak hours. Financing options to lease a solar system are also available. In lease and prepaid lease scenarios, the solar provider typically guarantees solar electric production and maintenance of the equipment.