



“Net Zero” by 2020 for California Homes

BY KURT KRUEGER

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The California Energy Commission has mandated that by 2020 all new homes will be required to be net zero energy buildings. To be classified as net zero, a home must not use more energy than it “makes.” Solar panels are an important part of the production of energy for a home, which is why the commission has ruled that by 2020,

with very limited exceptions, solar panels will be required on all new homes. This is one of several actions that have taken place in the state over the last decade to move us toward sustainability. As you can imagine, there are already a number of questions:

What will this mean for my new house project?

Consider if the solar panels will be put on the home, secondary building or another part of the property. The amount of electricity you need to generate determines the size of the system and therefore the placement options. Site planning is key to maximizing the system’s output. Consider the orientation of the sun (tilt and azimuth angles) and if natural or man-made features may impede the system’s operation. Hint: ask your architect for solar and shade studies to en-

sure proper placement.

In addition to where you’ll place the panels, it is also important to think through how the wiring will be routed back to the inverter (which converts the DC current from the sun to AC current to be used in the home) and the placement of all necessary equipment including the net energy meter (which allows you to sell excess energy back to the electricity company). For homes built prior to 2020, space for solar panels is supposed to be allocated, though the homeowner will not be required to install them. But leaving space for the panels will then allow future owners to add them.

Is reinforcement needed to install solar panels?

Solar panels are fairly lightweight. No special engineering is needed in the roofing system to support the installation. The weight of the panels is only a consideration if you plan to have a heavy roofing system such as clay tile, in which case additional support structures would be required anyway. However, installation of the panels does require penetrating the roof membrane in most instances, so extra care is necessary to ensure that the roof will not leak.



What if my property is shaded?

Even though the 2020 mandate is for all new residential buildings of three stories or less, there are exemptions built into the law if the property is shaded by buildings or trees.

Will solar panels ruin the look of my house?

There are many ways to hide solar panels on a new home. An easy solution is to have the solar array on the side of the house. On sloped roofs, additional roof structure can be added to obscure the panels. On flat roofs, a low level wall or barrier can be built to hide the grid. But the panels can also become part of the design and be integrated so that they are flush. There are many new solar products on the market that are quite beautiful, including roof tiles that come in a variety of styles, from a texture slate look to a Spanish clay tile.

Each home and project is different, requiring thought on the best way to install the panels and system. With proper planning, solar and net zero can be easily incorporated into the design of your new home.

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