



# Building High Performance Homes with PV

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# Focus: Affordable High Performance Homes with Lower Total Cost of Ownership

- **90,000** ENERGY STAR Certified Homes; **19,000 in CA**
- **3,800** Solar Homes; **3,700 in CA**
- **13** Net-Zero Energy Homes; **4 in CA** located in Lake Forest; San Marcos; Lancaster & El Dorado Hills



High energy bills? The power to own is yours!

**KB HOME**

*NEW CONSTRUCTION  
+ ENERGY EFFICIENCY  
+ INNOVATIVE DESIGNS  
+ QUALITY CHOICES*

**LOWER BILLS**

ENERGY STAR® qualified. Energy efficient options included at no added cost. Your Built to Order home is technologically innovative and good for your wallet.

**Higher Performance, Healthier Homes Built For Saving Money, Energy & Water**



**KB Home Fiora, El Dorado Hills, CA** 2612 sq.ft.

• **Certifications:**

- DOE Zero Energy Ready Home
- ENERGY STAR
- WaterSense
- Indoor airPLUS
- 3<sup>rd</sup> party verification & tests

• **HERS Index Score:**

- 64 w/o solar PV system (standard ENERGY STAR home)
- “Load reductions” reduced score to 45 w/o solar PV system
- 7 kW solar PV system reduced the score to Zero
- Estimated \$4,000+ in annual energy & water cost savings versus resale home

• **ZeroHouse “Reduce Before You Produce” components:**

- HPA - boxed netting under deck insulation; no vents
- Ducts and A/C in “conditioned space”
- Improved wall insulation (R-15 in 2 x 4 with R-4.2)
- Improved air sealing at select locations
- Higher performance windows (R-5)
- Higher efficiency A/C (19 SEER two-stage heat pump, coupled with the variable speed fan coil)
- Energy recovery ventilation (ERV)
- 100% LED lights (garage & outdoors use CFL)
- Smart appliances and induction cooktop



**Cost of a HERS Point (before incentives)**

- **19 “load reduction” points cost \$1,000/pt.**
- **45 Solar PV points cost \$550/pt.**

# PV Credit

## A Powerful Multiplier of Benefits for California, Builders and Homebuyers

- Market transformation towards Net-Zero
  - Building science solutions need to be tested & scaled (reduce risk & costs)
  - Knowledge base (internal & external) takes time to mature
  - Consumer adoption of solar
  - Healthy solar industry
  - ZNE will need both advanced envelop and renewable generation
- Builders have prudently used the tradeoff option in CA T-24 ever since 1983
  - Flexibility & Affordability
  - Innovations & Competition
- PV Credit in ACM-Residential
  - Minimums maintained from 2013 code
  - Solar credit needs to be proportional to system size (let PV calculator determine kWh savings)
  - Eventually remove PV credit limit – energy efficiency and renewables should compete for homebuyer’s dollars

