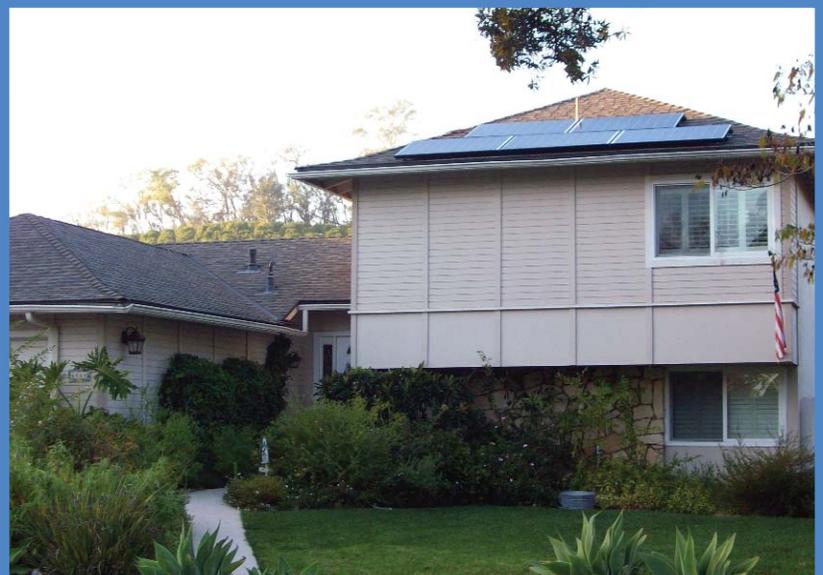


The Kushnerov Family's Home Energy Upgrade



The Kushnerov family's first step to making home energy upgrades was to assess before they invested. They started out by attending a homeowner workshop hosted by the **emPowerSBC** program so they could gather information on available financing, incentives and meet contractors.

"We were interested in making our home more energy efficient. After getting information at the workshop and having our home energy assessment, we decided that it was a good long-term investment. The timing just made sense with the available rebates and tax credits." said Valerie Kushnerov, homeowner.



HOME PROFILE

Location: Eastern Goleta Valley

Year Home Built: 1965

Square Footage: 2,279

Energy Upgrade and California Solar Initiative Rebates: \$3,096.00

30% Federal Tax Credit: \$5,325.00

Project Costs Offset by Incentives: 18%

Total Modeled Energy Savings: 90%

ENERGY IMPROVEMENTS COMPLETED:

1. Whole House Air Sealing
2. Attic Insulation to R38
3. New Sealed and Insulated Duct System
4. Energy Efficient Furnace
5. Energy Efficient Hot Water Heater
6. Insulation of Water Pipes
7. 3.92kW Solar Electric System

PARTNERS:

emPowerSBC, Building Performance Specialists,
A Division of Allen Associates, Inc.,
Community Environmental Council and REC Solar

"Since the upgrade, our house has been much more comfortable. In the summer it was much cooler and now that the winter weather has arrived, we're finding our house is cozy and warm. Plus, Paul and I expect to reduce our energy bills by about 90%. Our family loves knowing we're doing our part to help sustain our environment." Valerie Kushnerov, homeowner

Steps to the Kushnerov Family's Upgrade



1. Energy Assessment

The Kushnerovs worked with Allen Associates to conduct a "whole-house" assessment. This type of assessment uses diagnostic tools like a blower door to help pinpoint areas for improvement and identify safety issues like gas leaks or equipment that isn't operating properly. The

results of the assessment were also used to determine which upgrade measures were most cost effective.



4. Heating and Air Conditioning

Older furnaces can lose up to 35% of the energy they burn in exhaust up their flues. Newer furnaces are much more efficient. The efficiency of furnaces is measured by "annual fuel utilization efficiency" (AFUE). Furnaces with an AFUE of 92% or higher are the most energy

efficient. This home was retrofitted with a furnace that has an AFUE of 96%.



2. Air Sealing

Did you know that if you added up all the little cracks and crevices in your house it likely adds up to a hole the size of a hula-hoop? It's no wonder that a typical homeowner could save 20% on their heating and cooling costs just by sealing

up those holes and ducts. Sealing is one of the least expensive upgrades that you can make to improve comfort and efficiency.



5. Hot Water Heater

The energy efficiency of hot water heaters has improved greatly over the last few years. That's good news considering that hot water heater usage accounts for 25% of each energy dollar spent. When comparing water heaters look for the "Energy Factor." The higher the "Energy Factor" the more efficient the water heater. Gas water heaters have energy factors between 0.5 to around 0.7.

Electric models range from 0.75 to 0.95. This home has a gas fired water heater with an Energy Factor of .670.



3. Insulation

Proper insulation is key to a comfortable and efficient home. Poorly installed or lack of insulation can result in drafts and loss of home heating and cooling energy.

Many homes built prior to 1960 and 1970 have little or no insulation at all. By adding R38 insulation to the attic and insulating their ducts, the Kushnerovs were able to save energy, keep more comfortable and reduce noise from outside.



6. Solar Photovoltaic System

The Kushnerovs were smart. They completed energy efficiency upgrades like insulation and air sealing before they considered generating their own energy through a solar

photovoltaic system. This reduced the size of the system they needed and therefore their overall costs. They participated in the Community Environmental Council's Solarize Santa Barbara program and worked with REC to install a 3.9kW system.