

TECHNOLOGY DEVELOPMENT PROJECT FACT SHEET

RT014: Rooftop Systems

People are now able to generate their own electricity from the sun right at their home. The systems you see on these mock rooftops are available commercially today and are designed to generate about 10 kWh per day of AC electricity (more in the summer and less in the winter). This isn't enough to power a typical house here in the Valley, but it can help reduce the amount of energy the customer needs to buy and the utility needs to generate.

Roof 1 – The upper system is from Shell Solar (formerly Siemens Solar) and uses 32 Shell SP-75 solar panels rated at 75 watts dc each and a SMA America Sunnyboy SWR 1800U inverter and produces 1.8 kW AC peak power output. The lower system is from Astropower and uses 24 Astropower AP-120 panels and a SMA America Sunnyboy SWR 2500U inverter producing 2 kW AC peak.



Roof 2 (in the middle) – The upper system is from Kyocera Corporation (top) and uses 24 Kyocera KC-120 solar panels rated at 120 watts DC each and a Sunny Boy inverter and produces an estimated 2 kW AC peak power output. The lower system is from American Solar and uses 20 British Petroleum SX-120 solar panels, each rated at 120 watts DC, and a Xantrax Inverter and produces an estimated 2 kW AC peak power output.

Also notice the boxes and meters on the back of Roof 1 & 2. These are the electrical components required to connect the PV system to the grid. The largest box is the inverter. This is the key piece of electrical equipment that makes PV systems possible. The other switches and meters are for safety and monitoring purposes.



Roof 3 – One system is a mock-up of the solar parking canopy built at the ADEQ Building. This mock-up uses 12 BP-140 Modules and a Sunny Boy Inverter. The second system is an Independent Energy Solutions Solar Quilt Product which uses a patented foam product under the modules to reinforce the solar panels.