The LEED Silver–certified Oshman Family Jewish Community Center (OFJCC) is host to one of the largest PV installations in Palo Alto, California, and one of the largest projects to utilize Trina Solar’s Trinasmart dc-optimized modules. The 397.5 kWdc PV array spreads across 12 rooftops. The installation is also one of the first to use Unirac’s RM Roof Mount ballasted system, which accommodates the different layouts, variable surfaces and obstacles that each of the roofs presents. The OFJCC project has strong economic fundamentals. Its developer, THiNKnrg, worked with Conergy and its owner, Kawa Capital Management, to structure a PPA that would supply the OFJCC with solar energy for $0.04/kWh, the lowest cost for PV-generated energy on public record in California.

The Trinasmart module junction boxes fully integrate Tigo Energy’s optimization technology. The combined solution features module-level MPP tracking for optimal energy yield and design flexibility, as well as module-level monitoring and disconnect. While Cobalt Power Systems installed the system under NEC Overview

DEVELOPER: THiNKnrg, thinknrg.net
DESIGN & INSTALLATION FIRM: Cobalt Power Systems, cobaltpower.com
DATE COMMISSIONED: April 2014
INSTALLATION TIME FRAME: Four months
LOCATION: Palo Alto, CA, 37.4°N
SOLAR RESOURCE: 5.4 kWh/m²/day
ASHRAE DESIGN TEMPERATURES: 90°F 2% avg. high, 32°F extreme min.
ARRAY CAPACITY: 397.5 kWdc
ANNUAL AC PRODUCTION: 633,000 kWh
Equipment Specifications

MODULES: 1,590 Trina Solar Trinasmart DC TSM-250-PA05.002, 250 W STC, +3/-0%, 8.27 Imp, 30.3 Vmp, 9.5 Isc, 32.5 Voc (limited by module-integrated dc optimizers)

INVERTERS: 3-phase 480/277 Vac service, six KACO new energy 32.0 TL3 (32 kW, 600 Vdc maximum input, 310–550 Vdc MPPT range), five KACO new energy 40.0 TL3 (40 kW, 1,000 Vdc maximum input, 390–850 Vdc MPPT range)

ARRAY: 18 modules per source circuit (4,500 W, 8.27 Imp, 545.4 Vmp, 9.5 Isc, 585 Voc) or 17 modules per source circuit (4,250 W, 8.27 Imp, 515.1 Vmp, 9.5 Isc, 552.5 Voc); seven source circuits per 32 kW inverter, nine source circuits per 40 kW inverter; 397.5 kWdc array capacity total

ARRAY INSTALLATION: Low-slope roof mount, TPO membrane, Unirac RM Roof Mount, ballasted, 180° azimuth, 10° tilt


SYSTEM MONITORING: Module-level monitoring, five Tigo Energy Module Management Units (MMUs), 27 Tigo Energy Gateways, Trinasmart/Tigo Energy monitoring service