



markets. The program pairs an SEI technical adviser with a community nonprofit looking to grow the local solar market. The nonprofit receives a year of technical advising on solar initiatives, including a toolkit of resources developed by industry professionals.

As many rural communities in Colorado transition from coal-dependent economies, there is a critical need for these communities to build sustainable solutions for the future. A solar market has the potential to create jobs, insulate against rising energy costs from wholesale electricity suppliers, and create local energy resilience. For more information, see www.solarenergy.org/solar-forward.

On the Horizon

One of SEI's main goals is to continue to make its trainings more accessible (cost, language, and technology) to the

world to advance the mission. Opening additional international campuses—including in Latin America and the MENA region—and expanding the Paonia, Colorado, campus is part of the overall strategy. SEI also continues to enhance the services to current students and alumni by formalizing employer partnerships to ensure job placement.

SEI strives to stay up-to-date on cutting-edge industry technology, and is working to develop industry-leading technical training with a focus on energy storage; system operations and maintenance; and other areas in the solar industry.

Growing a Global Presence

This year, SEI reached two milestones toward its mission of “a world powered by renewable energy” by launching a solar training center in Costa Rica and a PV lab-based training experience in Oman.

SEI's solar training center in Costa Rica.



Courtesy Solar Energy International (2)

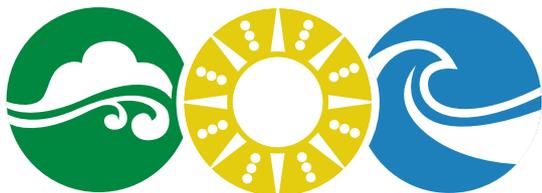
Solar Energy International

solarenergy.org

Founded in 1991, Solar Energy International (SEI) has provided industry-leading technical training and expertise in renewable energy to empower people, communities, and businesses worldwide for almost three decades. SEI is an educational nonprofit specializing in online and in-person hands-on solar-electric trainings, ranging from small-scale systems to complex microgrids. SEI has trained more than 65,000 students in the solar industry, and its students have installed approximately 4,000 MW of PV capacity throughout the world.

Recent Programs & Projects

SEI's newest program, Solar Forward, powers rural Colorado communities into the future by starting or supporting solar



**SOLAR ENERGY
INTERNATIONAL**



Omani students get hands-on experience with solar electricity.

Costa Rica. SEI opened its first International Solar Training Center in Costa Rica through a partnership with CFIA (Federated College of Engineers and Architects of Costa Rica) and CIEMI (College of Electrical, Mechanical, and Industrial Engineers). Since the beginning of SEI's Spanish program in 2013, SEI has trained more than 9,000 Spanish-speaking educators, empowering Latin Americans with solar education and increasing renewable energy access for their communities.

The Solar Training Center SEI-CFIA is located in the province of Cartago, Costa Rica, inside the facilities of CFIA's Integral Training Center Uxarrací. The center is equipped with modern tools to construct, commission, and test solar-electric arrays. Three on-site PV systems are configured in compliance with the U.S. *National Electrical Code (NEC)*, allowing students to learn about stringent design and safety parameters. Students are able to design and wire PV arrays from the roof up, using modern technologies and popular products available internationally. The center is constructed in compliance with OSHA regulations to model a safe working environment for the students' learning experience.

Muscat, Oman. This past spring, SEI and Shams Global Solutions (SGS), an Omani company, partnered to launch Oman's first certified PV training program. The program's first course, "PV101: Solar Electric Design and Installation

Students at the Costa Rica campus receive expert training on modern PV system technologies.



Courtesy Solar Energy International (2)

Project Details

Project: Centro de Capacitación en Energía Solar de SEI-CFIA

System type: Batteryless grid-tied PV

Installer: SEI

Date commissioned: April 2018

Location: Ujarras, Costa Rica

Latitude: 9.8°N

Average daily peak sun-hours: 4.5

System* capacity: 9.84 STC kW

Estimated annual production: 14,791 AC kWh

Equipment Specifications

Number of PV modules: 28

PV manufacturers & models: Trina Solar TallMax TSM-PE14; Trina Solar Honey TSM-PD05; Yingli Solar YL320P-35B

Module ratings: Trina Solar TallMax, 320 W STC; Trina Solar Honey, 270 W STC; Yingli Solar, 320 W STC

Inverters: Fronius Primo 3.8; SolarEdge 3800 with P370 optimizers; Enphase IQ 6 Micro microinverters with IQ Envoy communication gateway

Inverter rated output: Fronius, 3.8 kW; SolarEdge 3.8 kW; Enphase 0.28 kW per microinverter

Array installation: Fronius array: Schletter FS System ground-mount; SolarEdge array: SnapNrack 100 Roof Mount System; Enphase array: SnapNrack 100 Roof Mount System

Array azimuth: 180°

Tilt angle: 15°

*These three PV systems are tied to a single production meter.

(Grid-Direct)" was certified by Oman's Distribution Code Review Panel (DCRP) and supports applications to become a DCRP-approved Solar Professional. This DCRP certification is required for individuals who want to work as consultants or contractors for grid-connected PV systems in Oman's growing solar industry.

Since the first class in March 2018, 77 students from the energy industry, electrical utilities, and academia have completed the PV101 coursework, which introduces the core concepts of the design and installation of grid-tied PV systems, including solar site analysis, PV system components, mounting structures, system wiring, interface protection, and safety. The program plans to train up to 75 additional students before the end of the year.

This fall, for the first time, SEI's industry-leading "lab-yard" experience will be available in Oman, offering its first hands-on PV training in November. By the end of 2018, SEI's Middle East and Africa program will have offered trainings in Oman, UAE, Israel, Kuwait, and Egypt, through a combination of public and private courses. Plans are to expand training opportunities to Saudi Arabia.