

## Solar Farm Industry

### Arizona Western College Solar Array Installation

Between March and December of 2010, AWC and PPA Partners will install a solar array second to none in the United States on the main campus of Arizona Western College. Primarily designed as a testing and educational array, the installation will allow AWC to harness the area's climatologically unique features to generate its own energy.

AWC is poised to become a leader in renewable energy technology and education, with support from corporate partners.

**Get ready to turn the page on history in the sunniest place on earth: Yuma, Arizona\*.**

### AWC Solar Array

- 5 megawatts makes this the single biggest solar installation at a U.S. college or university
  - 4.995 megawatts—new installation
  - 105.6 kilowatts—existing rooftop array at AWC
- Will test 5 different photovoltaic technologies
- No water consumption requirement
- Most participating technologies boast small cradle to grave footprint – 97% recyclable components
- Most participating technologies use existing materials, no toxic or rare items making manufacture both economically supportable and sustainable
- 3rd Party Solar Monitoring will control data feed
- Planned deployment: eastern and southern areas of main campus

### Green Clean Renewable Energy

- Will cover 100% of the college's daytime energy needs, reducing district costs

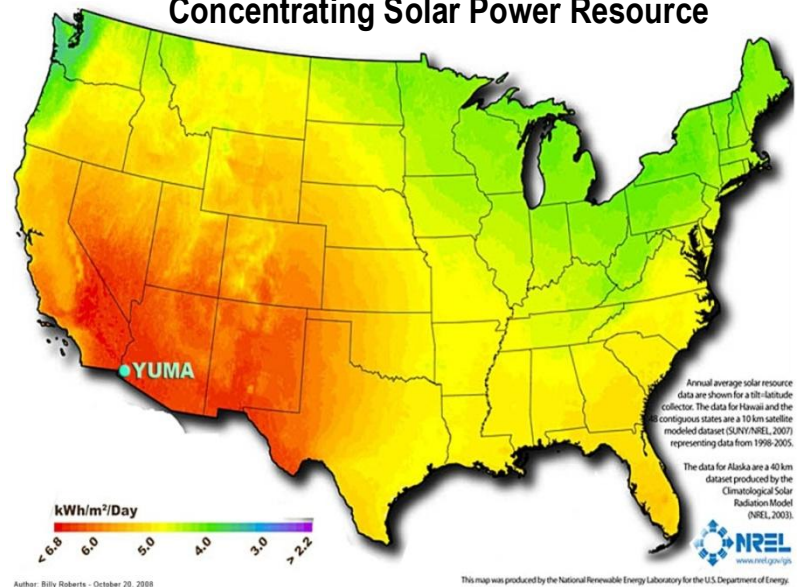
### State-of-the-Art Workforce Development and Curriculum

- Student and faculty access to cutting-edge technologies
- Curriculum in development, including
  - Occupational certificate
  - Workforce training
  - Associate's of Applied Science
  - University Partnerships for articulated Bachelor, Master's

### Powerful Partnerships Nationally and Globally

- Arizona Public Service is supporting the installation
- Interested companies include
  - Signet Solar
  - SKYLINE Solar
  - SolFocus
  - Satcon
  - Canadian Solar
  - DelSolar
  - Ray Tracker

## Concentrating Solar Power Resource



Author: Billy Roberts - October 20, 2008

This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy.

### Why Yuma for Solar Farms?

Some of the major advantages for business in Yuma:

- Yuma typically has an annual Direct Normal Solar Radiation of 7.0 to 7.5 kWh/m<sup>2</sup>/day.
- New state incentives significantly reduce upfront capital cost burden
- Arizona Western College has instituted a "Renewable Energy" curriculum
- 308 sunny days per year
- On the border of California's high electric rates and aggressive RPS goal
- Ready-to-go, inexpensive sites close to grid

### Market Conditions

- Arizona's Renewable Portfolio Standard (RPS) has set a goal to require 15% of their energy from renewable energy sources by 2025
- California's Renewable Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country (33% by 2020)
- Arizona, which has the most aggressive Distributive Generation in the United States, requires 30% of the RPS to come from it.

## Wage Comparison Solar Farm Occupations

U.S. Cities	Yuma	Phoenix	Tucson	Los Angeles
First-Line Supervisors	\$17.77	\$22.35	\$22.89	\$24.11
Assemblers & Fabricators	\$9.42	\$11.52	\$10.42	\$10.63
Electrical/Electronic Equipment Assemblers	\$9.05	\$16.64	\$14.17	\$11.14
Welders	\$16.26	\$14.99	\$15.44	\$14.73
Production Workers	\$9.36	\$9.75	\$8.51	\$9.55

Source: BLS, May 2008



**Solar Farm Industry**

**Case Study: Nextlight 'Aqua Caliente' Solar Farm**

NextLight Renewable Power, LLC is a renewable energy company focused on developing, acquiring, owning, managing, and operating utility-scale solar plants in the western U.S. They have developed, permitted and constructed over 8,000 MW of renewable energy in the west

The company acquired an option to convert agricultural land for solar development in the Yuma region. At their request, GYEDC stepped in to address community concerns about environmental hazards and taking agricultural land out of production. In addition to these public relations efforts, GYEDC prepared an economic comparative analysis highlighting the advantages and disadvantages of agriculture versus solar.

NextLight is now working to ascertain permitting and financing and they plan to be operational in the Yuma area by 2013.

**Increasing Power Capacity**

Arizona Public Service will be increasing transmission capabilities with these key projects to better serve users with large scale utility requirements.

➤ **Palo Verde® Hub to North Gila 500kV Transmission Line Project**

The North Gila 500-kilovolt (500kV) will be a new transmission line between the Palo Verde Hub and the Yuma Area. APS' Palo Verde Hub to North Gila 500kV Transmission Project will provide the electrical transmission infrastructure to import additional generation resources from the power plants in and around the Palo Verde Hub into our high-growth area. The project will also improve the reliability of the APS electric system in the Yuma area by providing an additional high-voltage transmission source to the region.

➤ **North Gila to TS-8 Substation 230kV Transmission Line Project -**

This project is required to serve the increasing need for electric energy in the city of Yuma. APS' North Gila to TS-8 Transmission Project will improve the reliability of the APS electric system in the Yuma area by providing a high-voltage transmission source to the central Yuma area to support the current 69kV distribution system. The TS-8 Substation will be constructed as a 69 kV substation in 2010 and will be expanded to a 230kV/69kV substation.

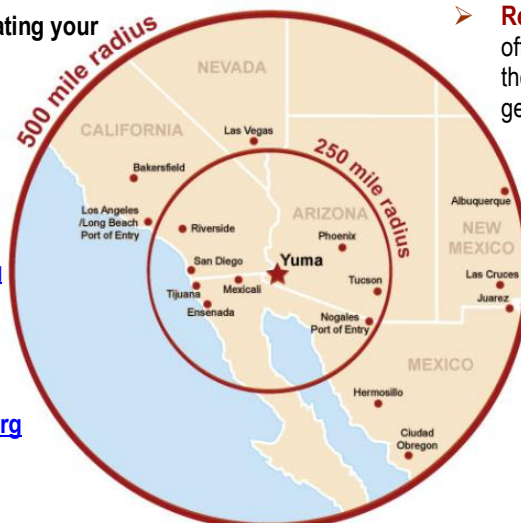
**Site Location Assistance**

For more information about locating your business in Yuma, Arizona please contact:

**Greater Yuma Economic Development Corporation**

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**Incentives**

**Enterprise Zone**—All of Yuma County is an Enterprise Zone. The program offers two types of benefits: income or premium tax credits and property tax reduction. Companies who are qualified are eligible for up to \$3,000 in tax credits per each employee and an approximate reduction in property taxes of 80% for five years.

**Foreign Trade Zone** – The FTZ provides economic incentives to companies doing business in international markets. The zone allows businesses to store, repackage, display, and assemble goods duty-free and without any customs formalities. In addition, Arizona is one of the few states that provides an 80% reduction in real and personal property taxes for companies that qualify for foreign trade zone designation.

**Incentives for Solar Industry**

- **Yuma County Expedited Permitting** – Any land located in Yuma County that is zoned RA-40 (Rural Area) will only require a special use permit to rezone the land to solar utility generation compatibility. The standard time period for rezoning is 90 days from start to finish.
- **Energy Equipment Property Tax Exemption** - Arizona's property tax exemption was established in June 2006 and originally applied only to "solar energy devices and any other device or system designed for the production of solar energy for on-site consumption." HB 2332 expanded the exemption to include other renewable energy technologies, as well as combined heat and power systems, and energy efficient building components.
- **Property Tax Assessment for Renewable Energy Property** - Renewable energy equipment owned by utilities and other entities operating in Arizona is assessed at 20% of its depreciated cost for the purpose of determining property tax.
- **Solar and Wind Equipment Sales Tax Exemption** - Arizona provides a sales tax exemption for the retail sale of solar energy devices and for installation of solar energy devices by contractors.
- **Renewable Incentive Program** - Arizona Public Service offers customers who install various renewable energy sources the opportunity to sell the credits associated with the energy generated to APS.

- ❖ **Grid-tied residential PV:** \$3/watt DC, adjusted based on expected performance; No system size limit.
- ❖ **Grid-tied non-residential PV:** \$2.50/watt DC; or commercial customers may opt for a production-based incentive (PBI) on a 10-, 15- or 20-year contract.
- ❖ **Off-grid residential PV:** \$2/watt DC; System must be less than 5 kW.
- ❖ **Off-grid non-residential PV:** \$1.50/W or PBI