



## Residential Grid-Tie Photovoltaic Systems

Less Than 10kw



COMMUNICATIONS



ENERGY



SPECIAL INDUSTRIES



SOLAR

# Residential Grid-Tie Photovoltaic Systems



Direct Power and Water (DPW Solar) designs and integrates the finest solar electric power systems, and as the southwest's premier solar electric company, we provide seamless, turn-key Photovoltaic (PV) systems for any application. Our independent energy systems provide reliable power for all of your electrical appliances and loads. This power comes from microprocessor-based SATCON, Solectrica, Xantrex, Outback, and SMA Sunny Boy inverters that are highly efficient and U.L. listed. The PV solar panels are built to last for decades and can be mounted on a wide variety of mounting structures that are custom manufactured at our facility to comply with your structural and aesthetic preferences.



Design and construction of these systems are accomplished with U.L. listed components to comply with Article 690 of the National Electric Code. With licensed, bonded and insured electricians on staff and in-house electrical and mechanical engineering expertise, we provide complete professional PV integration for all of your needs from start to finish.

DPW Solar's manufacturing capabilities give the customer much more latitude when choosing a location to mount their photovoltaic array. We have the ability to custom-engineer and manufacture mounting structures, assuring that the PV array encompasses the customer's aesthetic concerns, yet also is in the best possible sun position. Photographs on this sell sheet depict some of the many choices open to customers.



Physical layout of the house and grounds typically determine the site location of modules for optimal power output. An unobstructed southern orientation is a must.

The Residential Grid-Tie PV array consists of high-quality U.L. listed solar modules, with many

models to choose from. Using our experience and professional knowledge, we will specify the most cost-effective and appropriate module for your needs. Layout of the roof or other mounting surface will dictate the size/model utilized in a system. Optical quality and weather resistant tempered glass protects the PV panel surface. These grid-tie systems are extremely reliable and the PV modules are warranted by the manufacturer to provide 80% of their rated power for 25 years. Also, the grid-tie inverters have a 10 year warranty and DPW Solar provides a 2 year warranty on installation. The mounting structures are manufactured at our facility using high grade, corrosion resistant aluminum mild steel with stainless steel hardware and are warranted by DPW Solar for 5 years. These structures are rated to resist 90 mph winds. We also have high wind versions available upon request.

**Inverters:** Production of electricity varies by latitude, geographical location, and insolation (solar radiation) for the area. The inverters utilize the maximum available sunlight for electrical production. Inverters are either placed on an interior or an exterior wall near the service panel. They employ MPPT (Maximum Power Point Tracking) to achieve maximum power for the system, enabling your system to produce at its highest possible performance. We are proud to offer efficient SATCON, Solectrica, Xantrex, and SMA (Sunny Boy) inverters in utility-interactive systems.

## Small Home System

### 1.61 kW Solar System Includes:

- Seven SolarWorld 230 watt modules
- Custom fabricated block and ballast mounting racks for panels (non-penetrating)
- SMA Sunny Boy 3000US True sine wave inverter
- Ability to expand system to 14 solar modules
- Sunny Beam wireless remote monitor optional
- System includes racking system that meets the home and customer's requirements. DPW Solar

manufacturers a complete line of racking products and also custom engineers and designs structures to meet every requirement.

In the Southwest, you could expect to produce approximately 8.0 Kilowatt hours (kWhrs) of electricity per day. The avoided cost would be 8kWhrs x .105 per day plus a REC credit of 8kWhrs x .13.

## Medium Sized Home

### 5.06 kW Solar System Includes:

- Twenty two SolarWorld 230 watt modules
- Custom fabricated POWER-RAIL™ mounting racks for flush mounting on pitched roof
- SMA Sunny Boy SB 5000US Grid tie inverter
- Buried conduit and to mounting electrical components in compliance with NEC Code.

With this system you can expect to produce 30 Kilowatt hours daily in the southwest. The avoided cost of 30kWhrs x \$.105/ "net-metering" and the REC credit program of 30kWhrs x \$.13 are applicable to this PV system.



## Large Sized Home

### 7.59 kW Solar System Includes:

- Thirty three 230 watt modules
- Ground mounting, telescoping legs adjustable from 20 to 50 degree tilt angle. Other racking systems available for this size system
- One SMA 7000US watt inverters

With this system you can expect to produce 37 Kilowatt hours of electricity daily in the southwest. The avoided cost of 37kWhrs x \$.105/ "net-metering" and the REC credit program of 28kWhrs x \$.13 are applicable to this PV system.



System sizes vary widely based on the end user's consumption, placement of the racking structure, and the overall complexity of the installation. The available production credits, federal and state tax credits is in place to help enhance customers to install a photovoltaic system.

## Services offered by Direct Power & Water Solar

- Photovoltaic Power System Specialist
  - Economic Analysis for Breakeven of Capital Outlay
  - Utility Applications
    - Single Line Electrical Drawing
    - Site Map
    - 3-Line Electrical Diagram, when required
  - Submit Paperwork for Electrical Permit, Utility interconnection and incentive agreements
    - Meet Inspectors if necessary
- TurnKey 120, 240, VAC electrical systems
  - Licensed Electrical & General Contractor
- National Electric Code Compliant
- Degreed Electrical & Mechanical Engineers on Staff
- Nationally recognized manufacturer of standard & custom PV Module support structures
- NABCEP Certified
- UPS Systems for critical loads
  - Computer systems
  - Security
  - Heating/Cooling
- Licensed, Bonded, Insured for both Residential and Commercial systems. License # 82747 in New Mexico; # 7359 in Colorado





## Rebates and Incentive Programs

The following will illuminate some of the available incentives currently available that makes Solar energy an exciting and financially feasible endeavor.

- 1) The Residential Energy Efficient Property Credit is a non-refundable energy tax credit to help individual taxpayers pay for qualified residential alternative energy equipment, such as solar electric (PV) systems, solar hot water heaters, geothermal heat pumps and wind turbines. The new law removes some of the previously imposed maximum amounts, and allows for a credit equal to 30 percent of the cost of qualified property, which includes installation. In some areas of the country, electric providers also pay buy downs based on the number of watts installed.
- 2) The State of New Mexico offers a state income tax credit of 10% to the federal tax credit, up to a maximum of \$9000.
- 3) "Net-Metering"- refers to the electric utility meter turning in a reverse direction or backwards when the solar system is producing power during the day. When electrical use exceeds kilowatts produced (for example, at night), then the meter spins in the standard direction. This back and forth motion of the meter results in the meter registering the difference between the solar electricity produced and the utility power consumed during the month. An annualized zero-ing out of your electric bill is possible by sizing the Solar system appropriately.
- 4) REC (Renewable Energy Certificates) or "buyback" program is available through PNM (Public Service Company of New Mexico). For grid-tie customers, this program includes installing a second meter that will turn in only one direction during the day, registering all kilowatts of solar electricity produced by the PV system. PNM will credit customers \$.13/kWhr. When a credit accumulates to \$20 or more, then a check is issued to the customer.
- 5) No New Mexico gross receipts tax on complete solar electric systems tax as of July 1, 2007.

With the above incentives in place, the Return on Investment (ROI) for a PV system is as short as 11 years. ROI differs from system to system based on the size of the system and module placement. Our office will prepare a comprehensive estimate based on your last twelve months of electric kilowatt consumption, local climatic conditions, and placement of solar modules.



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*DPW Solar*

*... is dedicated to solar electric power as  
a clean energy alternative to fossil fuels  
and a cornerstone of America's energy  
independence in the 21st Century.*

### DPW Solar

- Established in 1993 in New Mexico
- Thousands of systems installed including Grid-Tie, Grid-Tie with battery backup and Remote Photovoltaic Power Systems
- Major structure and racking manufacturer with capacity to custom design, engineer and build as project requires
- A staff of trained PV specialists, electrical and mechanical engineers, licensed electricians, and inverter technicians
- Certified by inverter companies in the installation of their products
- A subsidiary of Preformed Line Products Company (A Publicly held company)
- Licensed, bonded and insured in New Mexico and Colorado