



**American Sustainable Energy  
and  
Bucks County Clean Energy**



**Solar Photovoltaic Renewable Energy Systems  
Feasibility ~ Financing ~ Design ~ Installation ~ Service**

[www.AmericanSustainableEnergy.biz](http://www.AmericanSustainableEnergy.biz)

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## *The Value of Values*

### *Integrity, Quality, & Sustainable Value*

At *American Sustainable Energy*, we are committed to co-creating a culture of sustainability. To us, this means conducting our personal and business relationships in the most respectful and mutually beneficial manner achievable. To you, this means we are committed to quality in everything we do. As a trusted resource to our customers, we add value that helps them continue to be successful, as they help move their respective stakeholders toward success – in their own terms.

### *Choose Your Own Path*

*American Sustainable Energy* specializes in serving commercial, municipal, institutional, agricultural, recreational, and utility customers. In order to optimize your investment, financial services are in place to provide

- **Strategic Incentive Management Plans** to maximize your incentives,
- **Lease agreements** that allow you to own your system over time, or
- **Power Purchase Agreements (PPAs)** to eliminate a large initial investment and stabilize your energy costs for years going forward.

Our Solar Energy Team has worked around the country for 15 years and has field-leading knowledge, insight, and creativity in the Solar Energy space. We work closely with each client, finding the best solutions that meet their current needs, while building a foundation for a brighter future.

### *Inhabiting Your Building*

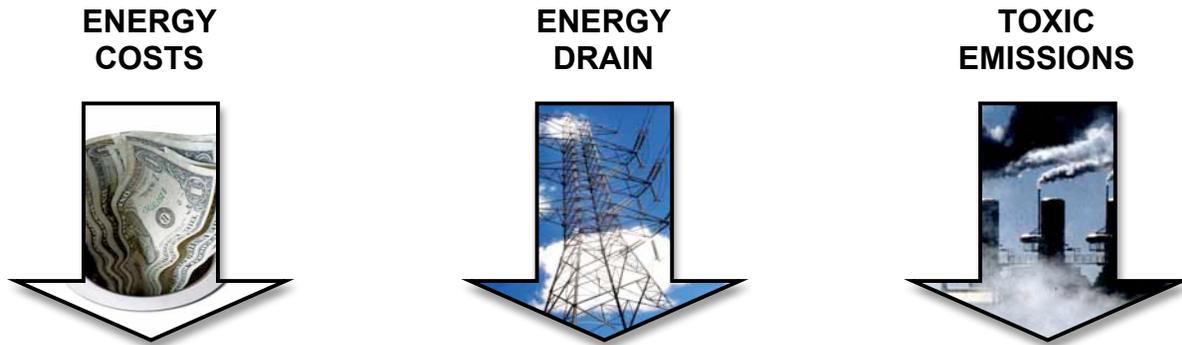
In many cases, Solar PV is the visible strategy to energy and financial conservation objectives. When coupled with other building enhancements, your benefits multiply. ASE's sister corporation, *Doylestown Building & Remodeling Company, Inc.*, has been an award-winning builder for 15 years with an innovative team. A *Certified Sustainable Building Advisor* and a *LEED AP Development and Construction Manager* are here to help you design and implement a comprehensive solution.

Integrating consulting, education, weatherization, and power reduction strategies with renewable energy production helps sustain the motivation and behavior shifts vital in attaining the quickest ROI and ongoing payback. Considering the whole building, as well as the people within, creates the opportunity to offset a higher percentage of power consumed – perhaps *zeroing out* your load completely – resulting in greatly reduced operating expenses for the life of the building.

When such a building is retrofitted for efficiency, a PV system can be scaled down in size and budget, while achieving the original offset goals. This approach supports a phased expansion strategy to become even more efficient in manageable steps.

## Measure What We Treasure

Properly designed and installed renewable energy systems provide tremendous benefits – substantial reductions in terms of energy costs, the building's drain of power from the local power grid, and the production of toxic greenhouse gases and other emissions (where the power is produced) to name a few measures.



You may be surprised to learn that as much as 90% of power produced at the conventional utility plant is lost (wasted) during production and transmission to your building. This means that for every 10 kW of power produced by your renewable energy system, as much as 90 kW of power is saved at the utility plant – 90% of the toxic emissions are also eliminated from your energy footprint.

### Which footprint is YOURS?



This said, renewable energy contributes to more healthful indoor and outdoor environments. Enhancing healthfulness improves all of the treasures that contribute to life quality. The business benefits are clear as well. Among them are lowering costs; increasing profitability; retaining satisfied, effective staff; reducing liability; decreasing toxic emissions; exceeding compliance to environmental authorities; acquiring access to funding, rebates, and tax credits; and enhancing the health and success of your business and your community.

## Let the sun work for You ...

### Solar LEASE Agreements (with Buyout Option)

#### NO UPFRONT CAPITAL COSTS

#### BENEFITS

- No Upfront Capital Costs
- Cash Flow Positive from Day One
- Low Monthly Payment – less than your current Electric Bill
- No Risk for System Performance or Operation
- Increased Property Value
- Support Local Economy and Job Creation
- Reduce Environmental Toxins

#### Making it *Simply Solar*

Solar Leases are typically 7-15 year agreements. Your lease agreement is structured so that your lease payments are lower than your current utility payments. Your payment amount is escalated at - or lower than - the current utility escalation rate for the term of the contract.

This means your lease payments continue to be lower than you current utility rates. You own the solar electric system after the term of the contract with a pre-negotiated buyout payment.

#### Why is this important ?

Your electric rate will continue to rise 3.5 - 5% per year (historical trend) – even more in regions experiencing de-regulation. Since January 2006 there have been 5 rate increases, largely unpublicized.

... so you can work for your Customers

**Solar POWER PURCHASE Agreements (PPA's)**

**NO UPFRONT CAPITAL COSTS**

**BENEFITS**

- No Upfront Capital Costs
- Cash Flow Positive from Day One
- Predictable Energy Pricing
- No Risk for System Performance or Operation
- Increased Property Value
- Support Local Economy and Job Creation
- Reduce Environmental Toxins

**Making it *Simply Solar***

Solar Power Purchase Agreements, or PPA's, are agreements between a Solar Energy Provider and a customer to purchase on-going solar power at beneficial long-term rates.

This means that there is NO Capital Outlay required of the customer. The customer simply buys their electricity at a reduced rate from the Solar Energy Provider generating the power. The customer will own the system after the term of the contract.

**Why is this important?**

Your electric rate will continue to rise 3.5 - 5% per year (historical trend) – even more in regions experiencing de-regulation. Since January 2006 there have been 5 rate increases, largely unpublicized.

***One of the Nation's Largest Solar Carports  
Stockton College, NJ***



***Stockton College Project Manager, Ron Frei, inspects installation***



***(Photo by Anthony Smedile, published in PressOfAtlanticCity.com)***

## Powered Parking under the Sun and Moon

- Cost per watt is slightly higher, but more panels are employed; enhanced performance is not limited to the size, shape, and orientation of a building's roof.
- More renewable power means fewer toxic emissions.
- Strategically planning and executing project phases maximizes financial incentives.
- Installing canopies does not disrupt activities or service within the building.
- Customers will appreciate the partial shading and rain protection over their cars in summer, as well as the reduced snow accumulation on and around them in winter.



- Canopies can also be equipped with charging stations for plug-in hybrid or fully electric vehicles – as fossil fuel prices continue to climb.
- More panels offset a higher percentage of your power, protecting you from Utility Company increases – particularly in states where electrical prices are being deregulated.
- Solar installation demonstrates building inhabitant's environmental commitment.

- Free night lighting



## *Tracking the Sun's Movement*



- *40% increase in power output compared to ground mount systems*
- *40% reduction in toxic emissions as well*
- *Sturdy, easy to install, low power usage and reduced maintenance*
- *Remote monitoring and control*

## Tracking the System's Performance

### Data > Information > Knowledge > Wisdom

Most businesses today collect data. It arrives in all forms: bills, letters, drawings, electronic documents, spreadsheets, smart phones, video, etc. When related data is available in one place, it informs understanding. Integrating information promotes pattern recognition and knowledge of trends, thereby improving planning processes.

Wisdom is even more valuable. Wisdom requires the seamless integration of knowledge, experience, and intuition coupled with ongoing learning in order to guide effective action in the moment it is needed. A person must have accurate information presented in a way that enhances understanding, interpretation, decision-making, and appropriate action. Another word for this is response-ability.

### Quality Information + Dashboard Design = Timely Response

Here is an example of an Energy Monitoring Dashboard (by Fat Spaniel). On-site and remote monitoring of one or more PV systems has several benefits:

- Remote monitoring of a portfolio of PV installations (24 x 7)
- Analysis of performance and operations
- Alarm response and fault resolution
- Designing appropriate escalation processes - Failure analysis
- Proactive portfolio management for optimized ROI
- Dispatching of field service personnel



Screenshot by Fat Spaniel

## A Few Projects...

Sea Gull Lighting, NJ  
1 MW Roof Installation



COURTESY: SEA GULL LIGHTING PRODUCTS, LLC



Rick's Auto Body, NJ  
30 kW Ground Mount  
Installation

Satcon PowerGate Plus (typically used in  
larger installations)



## *Selected Solar Project Team Experience*

<i><b>Date</b></i>	<i><b>Project</b></i>	<i><b>Size</b></i>	<i><b>Value</b></i>
Jan 2010	Self Storage - Mullica Hill, NJ Ground mount	28 KW	\$182,000
Oct 2009	Auto Body Company – Medford, NJ Roof and Ground mounts	30 KW	\$195,000
Aug 2009	College – Pomona, NJ Carport	482 KW	\$3.1 M
Mar 2007	Institute of Technology – Hoboken, NJ Roof mount	275 KW	\$1.8 M
Feb 2007	Water Treatment Plant – La Mesa, CA Water Reservoir mount	1.14 MW	\$7.4 M
Feb 2007	Department Store – East Brunswick, NJ Roof mount	.50 MW	\$3.2 M
Aug 2006	Lighting Manufacturer – Delran, NJ Roof mount	1.00 MW	\$6.5 M
Jul 2006	University – Chico, CA Roof mount	326 KW	\$2.1 M
Jun 2006	Utility – San Luis Obispo, CA Roof mount	250 KW	\$1.6 M

## Ecological Design, Sustainability, & Net Zero Energy



Oberlin College,  
Adam Joseph Lewis Center for Environmental Studies  
Architect: William McDonough + Partners  
Landscape/water treatment Design (aka, "Living Machine"): Dr John Todd

### **Healthy Places = Healthy People**

The theory of *Biophilia*, posits an essential and vital relationship between people and the natural environment. Ecological Design embraces the idea that culture and nature are mutually compatible. In the words of designer and educator, Sim Van der Ryn, sustainability emerges from the perspective; *the more we work together to heal our places, the more we heal ourselves.*

Net Zero Energy buildings produce as much power as they consume. It is becoming clearer through projects like the one above that the benefits continue to exceed expectations. Not only is such a building healthier for the environment – and therefore people, it is healthy for businesses and hence the local economy.

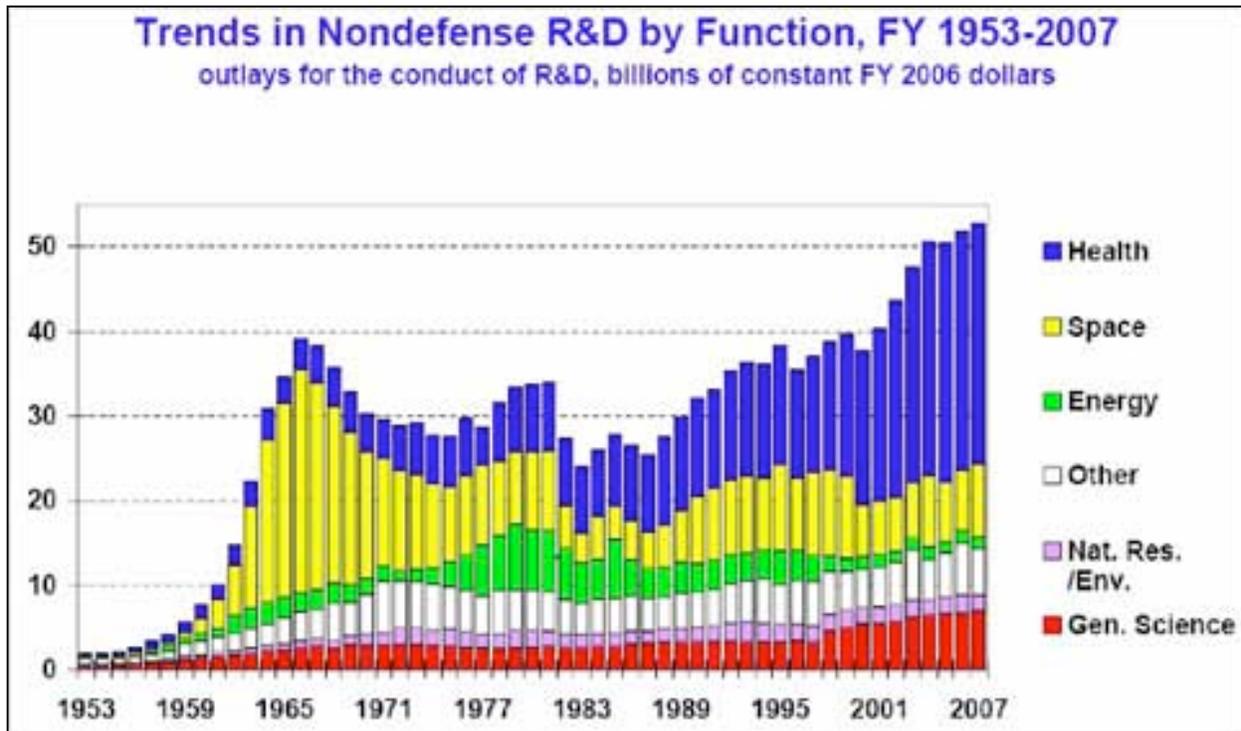
### **Our Renewed Passion**

At our integrated companies, *Doylestown Building and Remodeling* and *American Sustainable Energy*, we find such projects truly inspirational. That is precisely why we have been refocusing our award-winning talent on sustainable, responsible design efforts, be they sustainable building solutions, renewable energy systems, or expanding the conSerVation conVerSation through community education.

We wish to be sustainable so that we may continue to do meaningful work. That means looking forward to Mondays as much as Fridays, building beneficial relationships for life, and having a positive presence in the communities in which we serve.

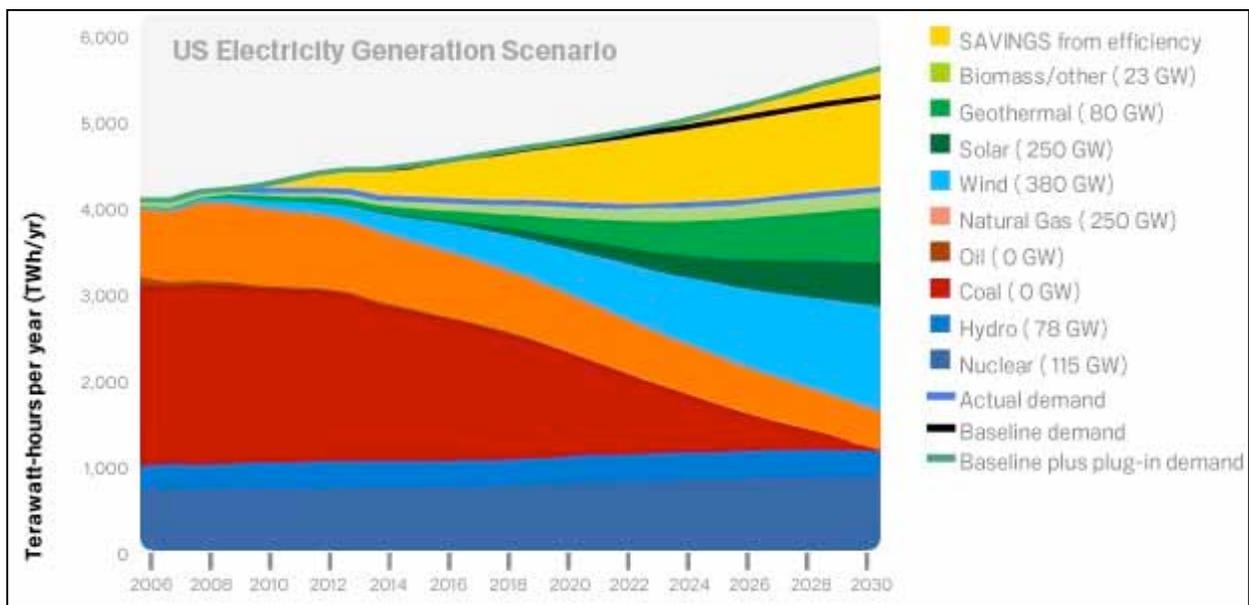
Renewable Energy is who we are as much as what we do. We are enthusiastic about the future – your future and our future. When you succeed, we succeed.

## Renewable Energy Scenarios



**ABOVE:** New York Times climate writer, Andrew Revkin, compared the amount of funding the space program received in the late '60s (around \$30 billion a year in 2006 dollars), which resulted in huge technological payoffs, to the comparatively low investment in energy research that continues today. As a result, no breakthroughs in clean energy comparable to putting a man on the moon have been realized as yet.

**BELOW:** Google.org's projections for eliminating electricity generation from coal and oil by 2030



*Empowered by the Sun...*



*How about Your environment?*



"Solar sunflower" collectors, designed by Cambridge's Harries/Héder Collaborative

We appreciate your interest.

## *American Sustainable Energy*

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### Some of our preferred providers

