



# Smart Energy Design Assistance Center

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[www.sedac.org](http://www.sedac.org)

## SEDAC

The Smart Energy Design Assistance Center (SEDAC) provides advice and analyses enabling private and public facilities in the State of Illinois to increase their economic viability through the efficient use of energy resources. SEDAC is sponsored by the Illinois Department of Commerce and Economic Opportunity in partnership with ComEd and Ameren Illinois Utilities and provides valuable services at no cost to for-profit businesses and public facilities. SEDAC is managed by the University of Illinois at Urbana-Champaign and supported by the 360 Energy Group.

*(Hyperlinks are shown in green)*

## EDUCATION

### **Missed a SEDAC presentation?**

Click on SEDAC Presentations at [sedac.org](http://sedac.org)

### **BUILDING INDUSTRY TRAINING and EDUCATION (BITE)**

Training Dates and Locations

[http://www.illinoisbiz.biz/dceo/Bureaus/Energy\\_Recycling/BITE\\_training.htm](http://www.illinoisbiz.biz/dceo/Bureaus/Energy_Recycling/BITE_training.htm)

### **ENERGY CENTER OF WISCONSIN**

**Online course available anytime:**

**Beyond Code: Designing Energy Efficient Commercial Buildings** by **Donald Fournier**

### **CHICAGO CENTER FOR GREEN TECHNOLOGY**

### **USGBC CHICAGO CHAPTER**

## EFFICIENCY BEFORE RENEWABLES



### **Is Solar Right for My Building? *Load reduction and efficiency first***

SEDAC has had numerous inquiries from clients eager to place photovoltaic (PV) systems on their buildings. SEDAC would like to take this opportunity to briefly discuss these systems. PV systems have been gaining in popularity and several states have significant incentives (30% in Illinois) that when combined with federal incentives (30% tax rebate) help defray the high front-end cost of these systems. However, even including incentives, these systems are very expensive. Costs are typically in the \$4.80 to \$5 per watt range for the crystalline silicon modules, the most common type of technology currently used. As a rule of thumb, the solar module represents only 40-50% of the total installed cost of a "solar system". This percentage will vary according to the nature of the application.

A complete solar system includes all the other components required to create a functioning system, whether it be to feed energy into the grid or to be used in stand alone off-grid applications. Grid-tied PV systems don't have the added expense and maintenance of batteries since they take advantage of a net metering interconnect with the power company. A small 1,000 watt peak solar system typically costs about \$8,000-\$12,000 installed (\$4,000-\$6,000 after rebates). Assuming an energy rate of \$0.12/kWh, this system will offset about \$170 in electricity over a year in Illinois. Additional costs would include engineering fees, electrician's fees, and time and effort to negotiate connections with the utility company. Needless to say, installation of a PV array on your roof is not a trivial undertaking.

SEDAC's mission is to help clients identify cost effective energy cost reduction measures (ECRM). With this in mind, particularly in older buildings, there is frequently a multitude of opportunities for cost effective ECRMs. A prudent approach to energy conservation is as follows:

- 1. Load Reduction:** Identify and implement no-cost and low cost conservation opportunities. For example, turn off lights in unused spaces, turn back thermostats during unoccupied periods, seal obvious air leaks through the envelope, clean, tune, repair existing equipment. Also consider adding insulation and upgrading windows and doors.
- 2. Efficiency Improvements:** Swap out inefficient older equipment with new high-efficiency equipment. For example, replace an old boiler with a high-efficiency boiler, replace T12 lighting with T8 or T5 lighting, replace incandescent lights with CFLs, upgrade to a high SEER air conditioner, etc.
- 3. Renewable Generation:** Installation of solar thermal or photovoltaic systems to offset a portion of the remaining energy consumption with onsite energy generation.

*...over*

## DCEO CONTACTS

**DCEO Public Sector Electric Efficiency Program**  
[www.illinoisenergy.org](http://www.illinoisenergy.org)

### HOW TO APPLY

#### DCEO Program Contacts

Custom Incentive Program  
Retro-Commissioning Pilot  
New Construction Program  
contact:  
Tom Coe, 217-785-2433  
[tom.coe@illinois.gov](mailto:tom.coe@illinois.gov)

Standard Incentive Program  
contact:  
Andrea Reiff, 217-785-0164  
[andrea.reiff@illinois.gov](mailto:andrea.reiff@illinois.gov)

DCEO Outreach  
contact:  
Carol Kulek, 217-785-3412  
[carol.kulek@illinois.gov](mailto:carol.kulek@illinois.gov)

#### ComEd Smart Ideas

[www.comed.com/  
businesssavings/  
programs/incentives/](http://www.comed.com/businesssavings/programs/incentives/)

HOW TO APPLY at  
ComEd.com

#### Ameren Illinois Act On Energy

[www.actonenergy.com/business.  
asp](http://www.actonenergy.com/business.asp)

HOW TO APPLY at  
ActOnEnergy.com

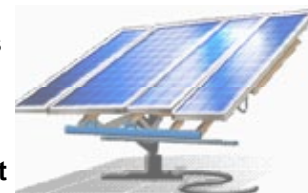


**NEW Search tool  
for SEDAC pre-  
qualified Energy  
Service Providers**

## SOLAR *...contd.*

Addressing any one of these conservation pathways will conserve energy; however, if cost effectiveness is a consideration, they must be addressed in order. Except for unusual circumstances, renewable generation is recommended only after load reduction and efficiency improvements are already in place. In conclusion, SEDAC does not want to discourage the installation of photovoltaic systems, however, we recommend **load reduction** and **efficiency improvements** first prior to installation of photovoltaic systems.

The Database of State Incentives for Renewables and Energy Efficiency can be found at  
[www.dsireusa.org](http://www.dsireusa.org)



#### DOE, Treasury Provide Guidance on Direct Payments for Renewable Projects

DOE and the U.S. Department of Treasury issued guidance recently on the process for renewable energy project owners to receive direct federal payments in lieu of tax credits. Most large renewable energy projects are eligible to receive federal tax credits, and prior to the economic downturn, it was common for such projects to receive financing from third parties that would benefit from the tax credits. But with most companies now earning lower profits and expecting to pay lower taxes, tax-credit financing has dried up, making it more difficult to take advantage of the tax credits. To address that issue, the American Recovery and Reinvestment Act authorized the Treasury Department to make direct payments to companies that create renewable energy facilities and place the facilities in service on or after January 1, 2009.

The Treasury Department has set aside \$3 billion in Recovery Act funds for the direct payments, sufficient to support an estimated 5,000 facilities using biomass energy, solar energy, wind power, and other types of renewable energy. The agency is not yet accepting applications for the direct payments, but by releasing the guidance documents now, the Treasury Department aims to give businesses ample time to prepare their applications. The agency intends to launch a Web-based application process in the coming weeks. See the **DOE press release** and the terms and conditions, guidance, and a sample application for the direct payments on the **Treasury Department Web site**.

#### Is Your Business Planning to Upgrade Mechanical Equipment, Office Products, Appliances, or Lighting?

If the answer is yes, a good place to start is ENERGY STAR's Purchasing and Procurement page at



[www.energystar.gov/index.cfm?c=bulk\\_purchasing.bus\\_purchasing](http://www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing)

**APPLY FOR SEDAC  
SERVICES ONLINE**

To participate in the *Smart Energy Design Assistance program*, contact us at: (800) 214-7954 or [info@SEDAC.org](mailto:info@SEDAC.org)  
Smart Energy Design Assistance Center, 1 East St. Mary's Road, Champaign, IL 61820  
[www.sedac.org](http://www.sedac.org)