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Energy Leader

*A Publication of the **Ventura County Regional Energy Alliance***

*Home of the **Ventura County Energy Resource Center***

Please visit us online @ www.vcenergy.org to register to receive the Energy Leader newsletter and training seminar "Email Blasts" and to update your contact information.

Energy Professionals and Energy Service Providers are encouraged to register their company under the Vendor menu among the business service categories.

For Information about VCREA and Energy Efficiency in the Ventura County region Contact:

Cheryl Collart
Executive Director

David Inger
Energy Projects Manager

1000 So. Hill Road,
Suite 230
Ventura, California 93003

Tel: (805) 289-3335
Fax: (805) 289-3111
Email:
vcrea.admin@ventura.org

Website: www.vcenergy.org

In This Issue:

Are You "SMART" About Your Electricity?

The electricity that is provided to Ventura County comes by way of a complex network of power generators, transmission lines, substations, distribution systems, etc. For the most part, everyone in the Western U.S. is connected to this system. In a way, this system, often called "the grid," is analogous to the network of roads that allows you to leave your driveway and end up anywhere in the country you choose to go. From the largest interstate freeway to that little cul-de-sac on which you live, there is an interconnection.

As with our road system, much of the electrical infrastructure that makes up the grid is either aging, in need of repair or not well suited for 21st century power needs. While the existing grid can be repaired and expanded, investment alone may not solve near- and long-term challenges to electricity supply and consumption. Enter the "Smart Grid."

The term smart grid means different things to different people; there is no one unified definition that encompasses all the characteristics that people would like to see in a modern electricity supply and distribution system. At a minimum, a smart grid has more automation and control to provide for more reliability and power quality. Today, some "local" grids, such as the one operating in California, have a high level of control and coordination. The California Independent System Operator (a non-profit public corporation) is charged with managing the movement of wholesale, high-voltage power throughout the state. It is the link between power generators and the utilities that distributes power to customers.

While higher levels of automation and control may help solve certain problems (such as responding to power disruptions or unusually high demand), the use of these tools does not, by themselves, make a grid smart.

The proponents of a smart grid believe that the increasing use of renewable energy sources will require enhancements to the "energy highway." Due to the intermittent nature of many renewables, such as wind and solar, grids need to make space for these sources when they are available. If solar and wind sources are producing, preference on the grid has to be made for this power in preference to energy supplied by conventional fossil fuel generators. But again, maximizing the use of available renewable sources is not enough to make a grid smart.

Smart grids need smart meters. Definitions of smart meters will vary based on the functions these meters perform. The simplest element of a smart meter is that it provides an information interface for the electricity customer. Traditional meters total information as power is used. Meters for larger, typically non-residential users, will also capture "time-of-use" demand data. Power costs more during certain times of the day and season; it is typically more expensive during summer weekdays when demand is greatest. Time-of-use meters account for when power is used and how much it will cost during various time periods. But traditional meters do not give "real-time" information to the utility customer so that the user can more efficiently and economically manage their power usage.

Are You "SMART" About Your Electricity? (Continued)

Smart meters could be provided with a display panel inside the building or home, or it could display energy use on a computer. The utility customer could use this real-time information to decide when and how much energy to use. There are a variety of rate proposals which could maximize opportunities for utility customers to reduce energy costs by choosing different conservation and efficiency strategies.

Smart meters would convey their information to the customer as well as the utility. Energy use information can be captured without the need for a meter reader to physically visit the site. This bi-directional flow of information to both the utility and customer can provide for some additional conservation opportunities. For example, customers may be given the option to allow the utility to have some control over their power usage during times of high power demand. The meter could "talk" to the building's thermostat adjusting the settings to reduce power uses. In commercial buildings, lighting fixtures are available which can automatically be dimmed to reduce power use upon receiving a signal from the utility. Several countries have already implemented the use of some form of smart meters; Canada and Italy seem to be in the forefront. But as with renewable energy and automation, smart metering does not, in itself, make up a smart grid.

Another potential element of a smart grid is *distributed energy storage*. These systems consist of some type of battery system, power conditioning and metering equipment. These units could be anything from a small residential system to large-scale modules located at utility substations. The batteries could be charged during the night when power is usually abundant and inexpensive. The stored energy would then be available for use during peak energy demand or as a backup power source during power disruption.

Another version of this storage option would rely on the increasing numbers of hybrid-electric (or even all electric) vehicles that are growing in use. The onboard batteries are connected to the grid when the vehicles are in their stationary charging mode. If connected via a smart meter, the stored electricity could augment the power on the grid or could be used as an emergency power source. Current hybrid cars store enough power to supply the average household for several days during an emergency. It will take mass production of hybrid vehicles to make any significant contribution to the grid, but the potential exists. Once again, distributed energy storage can be part of a smart grid, but it is only one potential component.

While there are many proponents of smart grids, they are not without their critics. First, implementing any of the components of the new grid will be very costly. Imagine if we had no Interstate Highway system in America today and wanted to fund one. Cities can spend billions constructing a mass transit system. These costs would be dwarfed by a fully implemented smart grid.

Privacy advocates are also concerned about the smart grid. There are concerns about the irresponsible use of information gathered by smart meters. Data gathered about individual usage patterns can be seen as another loss of personal privacy. If smart grids allow utilities or government entities to control or ration power, what are the safeguards to protect the individual?

Our power grids are getting smarter, even if only to insure more reliability and quality. It still remains to be seen if and when all the items on the smart grid "menu" will be implemented.

Calendar of Events

By Appointment **VCREA Conference Room** **To schedule an appointment email:** **vcrea.admin@ventura.org** **or call: 805.289.3335**	**Energy Efficiency Design Review With Energy Projects Manager** This design review will provide technical assistance, information and support to individuals who are in the early stages of remodeling or new construction of their homes and businesses. The focus will be on all aspects of energy efficiency in both residential and commercial buildings. Attendees should bring their plans and may invite their architects or building contractors.
Thursday, July 16 **10:15 a.m.** **1001 Partridge Dr.,** **Suite 150, Ventura**	**VCREA Quarterly Board Meeting** The VCREA Board meeting is open to the public. The agenda is posted on the website: www.vcenergy.org
Thursday, July 16 **(#20991) Day One** **&** **Friday, July 17** **(#20991) Day Two** **8:00 a.m. to 5:00 p.m.** **The Gas Company's** **Energy Resource Center** **9240 Firestone Blvd.,** **Downey**	**Certified Green Building Professional Training** (#20991) This is a two-day, 16-hour course that is based on the overarching principles of green building and a systems approach to the design, construction and operation of buildings. The course is followed by a written exam. As green building becomes more popular, homeowners and homebuyers are looking for contractors, architects, engineers, specialty contractors and real estate professionals who are qualified to provide green building services. Now is your chance to establish yourself in this potentially profitable niche and distinguish yourself in this growing marketplace. Course content includes: Energy conservation, efficiency and renewable energy; Resource conservation; Indoor air quality; and, Developing and marketing a green business. **For more information on this series and a complete listing of The Gas Company's Energy Efficiency training opportunities visit: www.socalgas.com/business/resourceCenter/ercHome.html**
Friday, July 17 **(#23570)** **8:30 a.m. to 12:30 p.m.** **Southern California Edison's** **Ventura Service Center** **10060 Telegraph Rd.,** **Ventura**	**Transformers: Turning Existing Buildings Green** (#23570) Owners and operators of existing buildings can improve their property's energy performance and make a true claim to "sustainability" by attending this workshop. Receive an overview of operations and maintenance (O&M) techniques for transforming existing buildings into greener facilities. Learn how landscaping practices, water usage, waste disposal, indoor environmental control, and energy efficiency influence the sustainability of buildings. A discussion of the LEED for Existing Buildings: Operations and Maintenance ™ certification standard will be included, along with practical ideas for low cost "green" O&M practices. **For more information on this class and a complete listing of SCE Energy Efficiency training opportunities visit: www.sce.com/Rebatesand Savings/EnergyCenters/workshops.htm**
Tuesday, July 28 **11:30 a.m. to 2:00 p.m.** **Channel Islands of California Chapter Association of Plumbing and Mechanical Officials** **Carrows Restaurant** **2401 Harbor Blvd.,** **Ventura**	**Title 24 Requirements Relating to Plumbing and Mechanical Applications** presented by David Inger, CEM, LEED AP, and Energy Projects Manager of VCREA. Contractors, Engineers, Architects, Code Enforcement, Inspectors, Building Officials, Plumbers and Students are welcome from Ventura to Santa Barbara County.

Visit our website at www.vcenergy.org and go to the calendar of events for more detailed information on these and other free seminars---registration is required.

VCREA Member Agencies:

County of Ventura

City of Ventura

City of Oxnard

City of Santa Paula

City of Thousand Oaks

Ventura Regional Sanitation District

Ventura County Community College District

Casitas Municipal Water District

Ventura Unified School District

City of Camarillo

City of Fillmore

VCREA Mission

To establish Ventura County, its communities and neighboring regions as the leader in developing and implementing durable, sustainable energy initiatives that support sensible growth, healthy environment and economy, enhanced quality of life and greater self-reliance for the region by:

1. Reducing energy demand and increasing energy efficiency and
2. Advancing the use of clean, efficient and renewable local resources.

Calendar of Events Continued

Thursday, July 30 (#26-073009) 6:30 p.m. to 8:00 p.m. Simi Valley City Hall City Council Meeting Room 2929 Tapo Canyon Rd., Simi Valley	**Stumped about Solar Energy? A non-technical, easy to understand residential information session** (#26-073009) This session will help residential customers "follow the sun" on the California Solar Initiative (CSI) program and the incentives it offers to homeowners who decide to "go solar." Customers will learn about: Solar energy basics; Benefits of installing a solar energy system; Tax credits and other financial models that can help reduce upfront costs; and, Financial incentives through the CSI program. **To register go online to https://www.sce.com/Forms/SolarTraining.aspx or call 866.970.9221.**
August 2009 Date/Time/Location To be determined ***Contact VCREA for details and to reserve space.***	**Accounting for the Water/Energy/GHG Relationship** Participants in this workshop will leave with an understanding of the water-energy-greenhouse gas connection in California while learning about the variability of this relationship in different regions in the state. In addition, attendees will be able to develop synergies for joint programs among water and energy agencies. There will be discussion of programs and policies that improve multiple parts of the water-energy-greenhouse gas connection. Participants will be expected to bring to class basic information on the amount of water that is pumped, delivered (sold) and un-accounted for; waste water that is collected, treated and discharged; and, the energy expended for doing each of these functions.
Tuesday, August 11 11:00 a.m. to 1:30 p.m. (Lunch Provided) VCREA Conf. Room	**Energy Efficiency for Non-Profits** The session will provide information for Board leaders, managers and key staff on "money saving" energy efficiency for facilities including remodels, new construction and large equipment purchases.
Wednesday, August 12 (#20122) 8:30 a.m. to 12:30 p.m. Southern California Edison's Ventura Service Center 10060 Telegraph Rd., Ventura	**Energy Management Systems** (#20122) This seminar is for management, operations, and maintenance professionals with a basic understanding of HVAC systems. Learn about the potential operating cost-savings using Energy Management Systems, and how to maximize savings using the most current technology in HVAC control methods. Attendees will explore a systematic approach which includes communication networks, equipment studies, conceptual system design, and cost/benefit analysis to help identify, design, and plan for your Energy Management Systems. **For more information on this class and a complete listing of SCE Energy Efficiency training opportunities visit: www.sce.com/Rebatesand Savings/EnergyCenters/workshops.htm**
September 2009 Date/Time/Location To be determined ***Contact VCREA for details and to reserve space.***	**Introduction to the California Solar Initiative (CSI) Training** This course is designed for Photovoltaic (PV) installers, self-installers, managers, and PV owners, and features new and updated information on the CSI program. Learn how to complete the CSI forms, take advantage of SCE's rebates on fixed and tracking photovoltaic (solar energy) systems, and interconnect to the grid. Other topics include metering, monitoring, shading issues, and CSI's "New" on-line power clerk database.

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