


# Valley Rural Electric Cooperative, Inc.

Your Touchstone Energy® Cooperative 



One of 14 electric cooperatives serving Pennsylvania and New Jersey

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FROM THE PRESIDENT & CEO

## The search for power supply



by Edward A. Dezich  
President & CEO

**THE ELECTRIC** utility industry is facing a significant challenge in the next decade. Surplus power plants built in the late 1970s and early 1980s are virtually exhausted. The Department of Energy forecasts that U.S. economic growth will drive a 17 percent increase in demand between now and 2020, requiring a capacity increase of 118,000

megawatts of electricity. By 2030, requirements will have increased 30 percent. Adding to the immediate need to build generation and implement aggressive efficiency strategies is the environmental issue of climate change.

Electric cooperatives, like Valley, must make power supply and efficiency investments now so that we can continue to provide our growing consumer base with affordable, reliable electricity. And we must do all of this while meeting new — and increasingly stringent — environmental goals and standards.

### No easy solution


Unfortunately, no one “silver bullet” can solve our looming, widespread power shortage problem. We continue to promote energy efficiency and work to make full use of the renewable resources we have available. However, we also know that the capacity of wind and solar energy, as it exists today, cannot meet our baseload needs. Each power supply option has advantages and disadvantages in terms of availability, cost and environmental impacts. But to meet expected demand in the next decade and beyond, we need to use these sources collectively and cost-effectively.

If we do nothing, our nation could be looking at major weaknesses in the area of reliability. Technicians and operations personnel whose daily, behind-the-scenes efforts keep the electric grid intact are already seeing reliability “near-misses” when key lines or power plants go down. These events haven’t resulted in widespread blackouts and, so far, haven’t received attention in the press or from policymakers. But if we fail to address our growing energy infrastructure and technology development needs, some regions face increasing probabilities of brownouts and blackouts in the near future.

### The power of policy

Our policymakers must step back and view the climate change debate in the context of our long-term electricity and energy needs. Carbon mitigation policies done well can direct investment into new technologies for electric generation, transmission and efficiency. But done poorly, the policies will result in no net emission reductions, skyrocketing electricity costs and reduced reliability.

Without a balanced approach that uses all available technologies, electric reliability will be uncertain. If an energy market emerges without adequate structure and oversight, large commercial entities with no interest in consumers will dominate the industry.

At Valley Rural Electric Cooperative, we believe all energy and climate change legislation should be evaluated to determine its ultimate cost to our members and its realistic contribution to environmental goals. In the end, we will support policies that help keep the lights on, the economy strong and electric power affordable. 

# Green light

## Solar project a 'go' at Raystown Field Station

BY SUSAN R. PENNING  
Communications Specialist,  
Member Services Department

### JUNIATA COLLEGE'S

Raystown Field Station, which sits on 365 leased acres along Raystown Lake in Huntingdon County, will now be even "greener" thanks to the installation of solar panels on its 6,000-square-foot multi-purpose building.

The 5-kilowatt photovoltaic (PV) project was made possible through a \$46,564 Pennsylvania Energy Harvest Grant and \$15,000 in matching funds from Juniata College (plus matching funds for education and outreach).

Technicians from Envinity Inc., a State College-based green design and construction firm, installed the equipment, while Valley Rural Electric personnel played an integral role in helping to bring the system on-line. (Raystown Field Station is served by the cooperative.)

Funding the venture was the initial challenge, but it wasn't the only one. Countless hours were spent on the rigorous and lengthy process of researching power interconnectivity requirements, submitting proposals and formal plans, making modifications



**POWER PARTICULARS:** Terry Hutchison, director of engineering and technical services at Valley REC, tests the photovoltaic system at the station to see if equipment responds properly to power grid fluctuations.

to equipment and gaining approval to link to the utility power grid.

"With these types of projects, we must first evaluate the plans and proposals and confirm that they meet interconnectivity qualifications," says Terry Hutchison, co-op director of engineering and technical services. "Then we must test the equipment to make sure it properly connects to — and disconnects from — the grid. This is absolutely vital for the safety of people and equipment in the area."

### How it works

Through PV solar technol-

ogy, sunlight is converted directly into electricity. The method is based on the unique properties of some semiconductors to alter solar radiation. The conversion occurs between sets of solar cells, which are usually comprised of high-grade crystalline silicon. These cells individually produce a relatively small direct current — a little less than a 9-volt battery. The cell sets are joined together to create modules (or panels). A typical PV module may have about 40 cells and is a little larger than a standard 2-foot by 4-foot acoustic ceiling tile. The panels are then grouped

to create an array. A residential array may be as small as 200 square feet, while larger commercial arrays can cover more than 10,000 square feet.

Most PV systems are directly connected to the utility power grid and typically do not provide 100 percent of a facility's power demand, nor do they limit how much power a facility can purchase from the grid during peak periods. They may use a special "net meter" that measures energy exported to the grid, as well as facility load in excess of what was generated by the PV system.

### Project with a purpose

Although the work was complex — and expensive — the PV project at Raystown Field Station is expected to yield significant environmental benefits.

The solar panels are projected to produce about 6,500 kilowatt-hours of electricity per year, offsetting about 20 percent of the electricity used at Shuster Hall, according to Dr. Sharon Yohn, co-director at the station.


"The system will help improve air quality by mitigating conventional energy use and thereby reducing emissions of nitrous oxides, sulfur





**BRIGHT IDEAS:** Raystown Field Station serves as a think tank and laboratory for ecosystem research and education. Students and visitors are taught how to reduce waste sent to landfills, conserve energy and water, and decrease harmful greenhouse gas emissions. The facility's Shuster Hall (above) recently received Leadership in Energy and Environmental Design (LEED) certification, marking it as an environmentally responsible, profitable and healthy place to live and work.

dioxide, carbon dioxide, particulate matter, mercury and volatile organic compounds. It should also improve water quality by lowering deposition of nitrate, mercury and acid rain in the Chesapeake Bay watershed," she says.

In addition to the environmental benefits, this undertaking offers valuable educational opportunities for the next generation of scientists, engineers and scholars. Ideally, the research that goes into these projects will help pave the way for more efficient, cost-effective power production in the future. And that's something cooperatives like Valley Rural Electric will always support. 

## Is photovoltaic the answer in Pennsylvania?

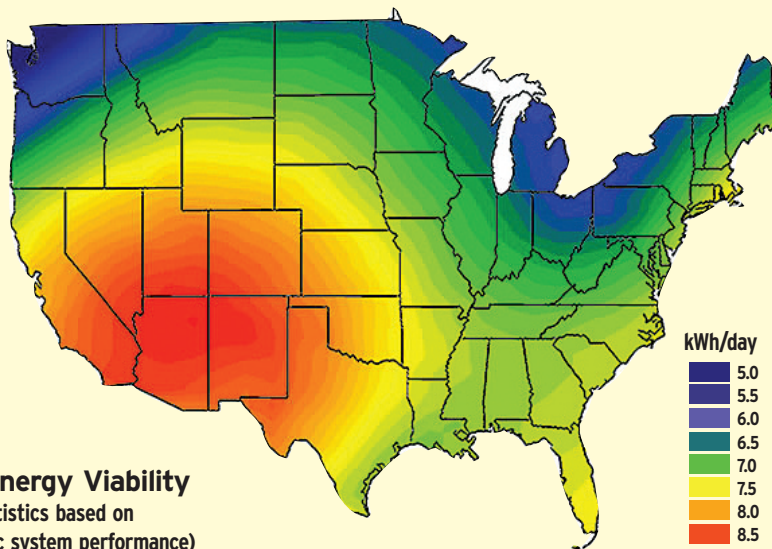
Solar power remains an important component of Pennsylvania's Energy Independence Strategy. It can technically be harnessed anywhere in the Commonwealth, although statistics show that it is cost-effective in only a very limited number of applications.

Currently, photovoltaic (PV) systems are economically viable against the cost of power from the grid only when state subsidies and federal investment tax credits are applied. As a general point of refer-

ence, power produced from PV costs about 28 cents per kilowatt-hour (kWh). Valley's current cost per kWh is 8.9 cents.

Fortunately, PV system efficiencies continue to improve and the price tag continues to drop. In 1976, PV cost about \$4/kWh and by 1990, it was down to 52 cents/kWh.

For more information on incentives for alternative energy projects, visit [www.dep-web.state.pa.us](http://www.dep-web.state.pa.us) and click the link for "Grants & Loans."



**Solar Energy Viability**  
(Statistics based on photovoltaic system performance)

MAP COURTESY OF FLORIDA SOLAR ENERGY CENTER



# Click, calculate, save

## Online tool can help you manage energy costs

Consumers looking to lower their home energy bills can now go to the Valley Rural Electric Cooperative website at [www.valleyrec.com](http://www.valleyrec.com) for some fast help. With a few mouse clicks, Valley's new Home Energy Calculator will analyze homeowners' current energy use and allow them to simulate changes that could dramatically reduce their electricity costs.

"We want to provide our members with more information and control over their electric bills," says Valley REC President and CEO Ed Dezech. "This interactive tool takes the guesswork out of where their energy dollars are going and it shows how much money can be saved by implementing certain conservation measures."

The cooperative selected the Home Energy Calculator, provided by Apogee Interactive, Inc., because of the software's ease of use and ability to accurately approximate savings for homes in the

utility's service territory.

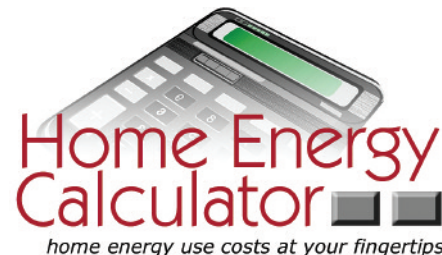
"Users can try changes like adjusting their thermostat settings, turning down their water heater thermostats, adding storm windows or switching their heating systems to see how much those measures might save," says Denny Knepp, co-op energy marketing technician. The calculator automatically factors in local weather and current electricity prices.

Statistics show that web-based tools like the energy calculator are becoming essential to cost-effective customer service as consumers rely on the internet more and more to help manage their busy households.

"This calculator, along with other upcoming programs like online meter reading and bill payment options, will greatly expand what our members can accomplish at their convenience — after business hours," Dezech says. "These tools will also offer cost savings to the co-op through reduced member calls and on-site visits."

According to Apogee president Susan Gilbert, the Home Energy Calculator is one of the firm's most popular applications.

"Valley joins more than 200 utilities



nationwide that have added this educational feature to their websites. (The calculator's ability to answer customers' questions 24/7 and reduce inquiries helps the co-op to accomplish its goal of increasing customer satisfaction while lowering operating costs."

Apogee Interactive, Inc. is the leading provider of online solutions to the energy industry. The company also provides eLearning systems, call center and bill analysis programs, and load management platforms to utilities and their trade associations throughout North America and New Zealand.

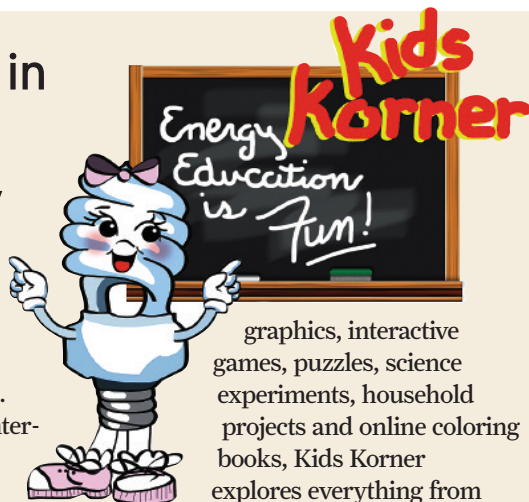
For more details on how to cut energy costs, contact the Valley REC member services department at 814/643-2650 or toll-free 800/432-0680 or email [memberservices@valleyrec.com](mailto:memberservices@valleyrec.com).

## Technology aids in educating youth about electricity

Capturing the hearts and minds of today's younger generation is a tough job. After all, it's hard to compete with video games and other high-tech entertainment.

Recognizing the power of the internet, Valley REC has added an action-packed section to the Home Energy Suite link on its website. It's called "Kids Korner" and it aims to increase interaction with younger customers.

Kids Korner delivers engaging and informative "energy education." Using colorful animations, playful



graphics, interactive games, puzzles, science experiments, household projects and online coloring books, Kids Korner explores everything from transmission, distribution and power generation sources to electrical safety, energy efficiency, and utility careers.

Using the Kids Korner lighting and appliance calculator features, kids can easily compute how many of their

favorite toys or candies can be purchased for the amount of money saved by converting incandescent lamps to compact fluorescents or by changing their appliance use. Over 100 pages of content are presented online.

"We believe it's our responsibility to encourage and educate our children about what we know best — electricity. Kids Korner is an excellent vehicle for not only reaching the kids, but adults, too. And it's a great supplement to our local school involvement and other educational programs," says Luanne Eckenrode, manager of consumer services and public relations at the co-op.

Kids Korner can be accessed free at [www.valleyrec.com](http://www.valleyrec.com). Follow the link on the left titled "Home Energy Suite," then click on the tab labeled "Fun."