

Myrec.coop: Commercial Energy Suite

Knowing where your energy dollars go will give you the edge on controlling your costs. At REC, we value our relationships with our member-owners, and we understand that if the businesses we serve are strong – then REC is strong.

Partnering with Apogee Interactive, REC has brought powerful online tools to our commercial members. The CommercialEnergySuite on the Cooperative's website, www.myrec.coop, provides businesses with calculators and libraries that will enable commercial building operators, energy managers and utility account representatives to identify significant energy saving opportunities for their facilities.

"REC wants to put as many tools as possible in the hands of its members to help them increase energy efficiency and take more control of their energy costs," said Butch Williamson, key account executive with REC. "These online energy efficiency tools are a great resource for our commercial customers, particularly small to mid-size businesses that may not have full-time energy managers."

Apogee's CommercialEnergySuite complements the Cooperatives existing Questline resource and further enables businesses of all types and sizes to evaluate energy efficiency, energy

usage patterns and opportunities for cost savings for their facility in an online format that is available 24 hours a day, seven days a week.

The cornerstone of the CommercialEnergySuite is the CommercialEnergyCalculator. This interactive energy calculator shows a business the steps it can take that will yield the biggest cost savings. The calculator covers different business types and sizes, features drop-down menu prompts and instantaneously displays annual energy costs by major end-use systems. Members can compare current energy usage with any number of scenarios to determine whether the change is cost effective.

An extensive library of practical commercial energy system information is also included in the Suite, giving members access to even more energy advice. A special section addressing the difference between energy consumption and energy "demand" is presented to help businesses understand demand's impact on energy costs as well.

Start using the online energy management resources available to your business today. Visit www.myrec.coop/commercial. •

Power Connection is your free source of information about energy conservation and management, energy services, technology trends, government and regional economic development.

For additional information about this publication, to suggest a topic for a future issue, or to update your name and address, contact REC at **800-920-WATT (9288)** or powerconnection@myrec.coop

POWER CONNECTION

Rappahannock Electric Cooperative
A Touchstone Energy Cooperative

BUSINESS & COMMUNITY DEVELOPMENT NEWSLETTER SUMMER 2011

Rappahannock Electric Cooperative
A Touchstone Energy Cooperative

P.O. Box 7388
Fredericksburg, VA 22404

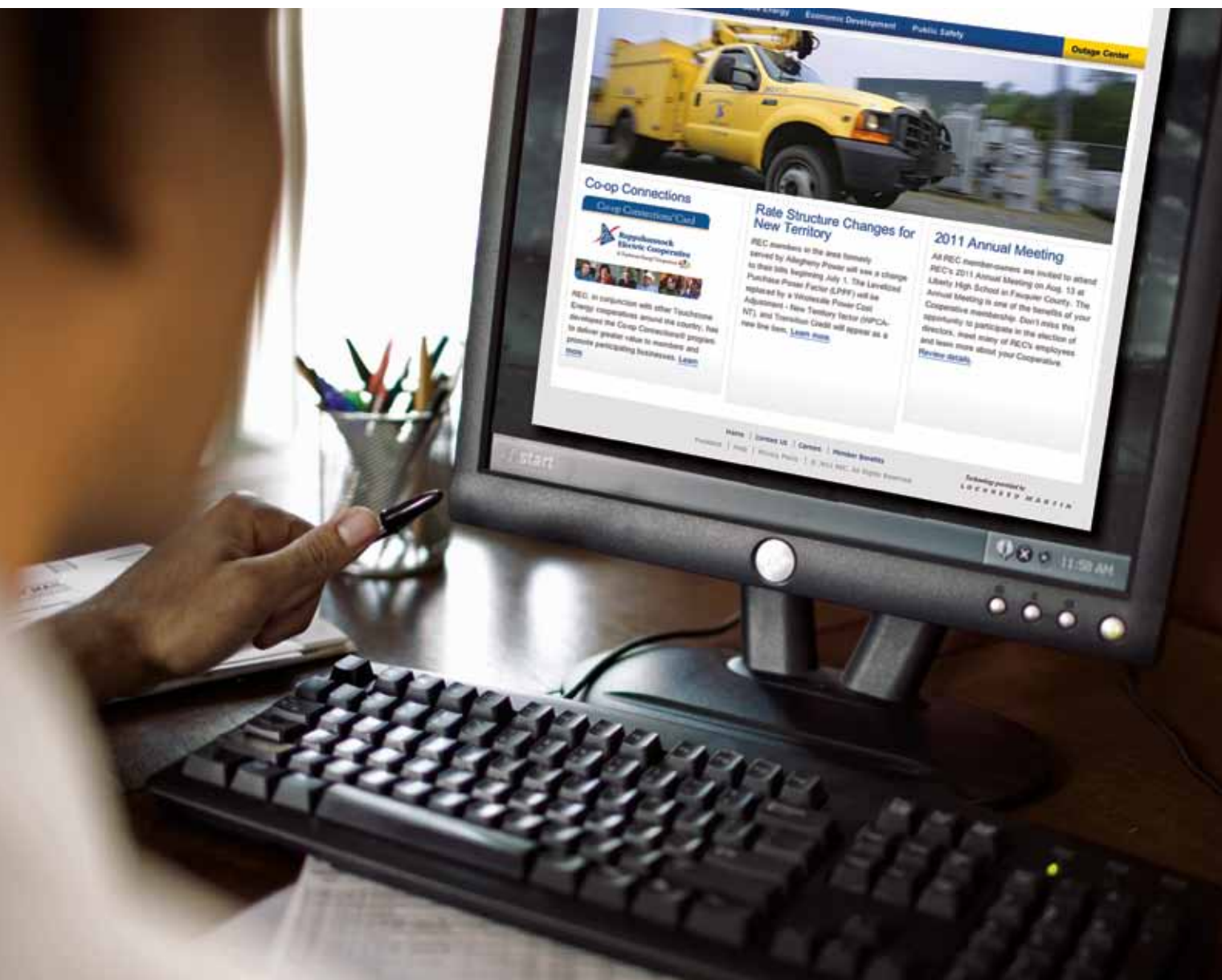
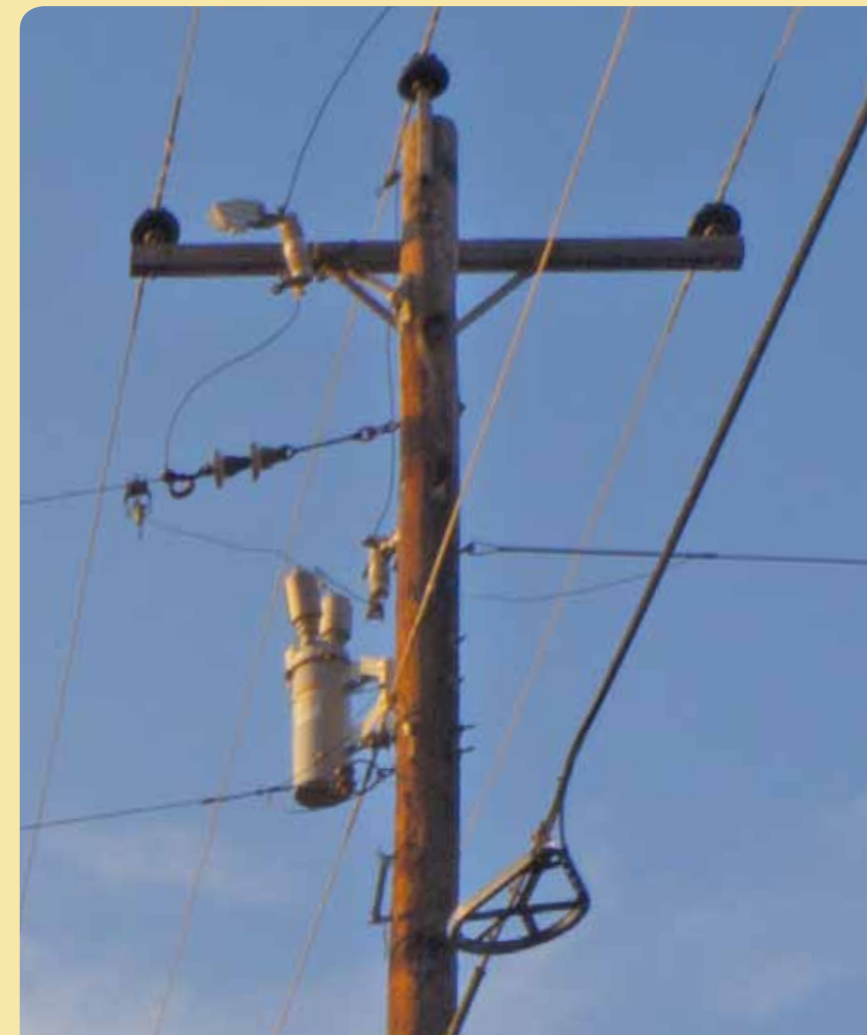
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Play It Safe Around Power Lines

Outdoor tasks seem to increase as warm weather approaches, and many of these tasks involve working around overhead power lines. Overhead power lines are not insulated. These power lines carry enough energy to cause serious injury and death. Before beginning any work, be aware of where power lines are located and avoid them if possible.

If you are not sure if overhead wires are power lines, check with REC. Occupational Safety and Health Administration (OSHA) regulations require maintaining a distance of at least 10 feet from all power lines and equipment, and some states require a distance of 15 to 25 feet. If you plan to work any closer than that, you may be required to make arrangements with REC before the work begins. When working near power lines, remember the following safety guidelines:

- Check for power lines before doing any work.
- Call 911 immediately if you see a downed power line.
- Maintain a distance of at least 10 feet .
- Call Miss Utility before digging.
- Keep all equipment away from power lines.
- Familiarize yourself with local and state laws.
- Educate family members and coworkers about the dangers. •



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Energy Management: Overcoming the Barriers

Rappahannock Electric Cooperative (REC) emphasizes that energy-efficiency projects can lower operating costs, improve productivity and reduce impact on the environment. Despite these benefits, energy is often regarded as merely a cost of doing business. While many organizations have come to see energy as a manageable resource, few have implemented full energy-management projects often because the facility managers implementing these projects are faced with a number of institutional barriers, including the following:

- **Time and expertise.** Upper management and facility personnel often do not have the time and expertise needed to develop energy policies and institute energy-efficiency projects.
- **Misunderstanding.** Energy efficiency is often confused with getting the best energy price. Using an energy-marketing firm to purchase fuel may help to reduce fuel costs in the short-term, but will do nothing to reduce energy consumption.
- **Lack of accountability.** Manager accountability and incentives are tied mainly to production. Unless top management assigns responsibility, energy-efficiency efforts may get lost among other priorities.
- **Interdepartmental rivalries.** Departments often compete for budget priorities. For example, expenses for energy projects may be incurred by the maintenance department, while the accrued savings may be allocated to production.
- **Outdated accounting.** Energy costs are often treated as overhead; allocated evenly across all departments. This hides energy waste in individual departments and acts as a disincentive for any one department to conserve.
- **Lack of resources.** Management, focusing on profitability, often views energy-management projects as short-term liabilities rather than long-term opportunities to reduce costs.

TEAMING UP FOR CHANGE

During any period of innovation, there is some organizational resistance to change. Energy teams can provide leadership across the organization in removing barriers to energy conservation.

Butch Williamson, key accounts executive and energy services coordinator at REC says, "A successful energy team

should have a strong, cross-functional representation. A variety of skills, experience and knowledge are needed to make change happen. Include representatives from as many departments as possible and give each member a specific role."

While management provides leadership and can approve projects, the employees who use equipment every day can provide a useful perspective. A successful team should consist of the following:

1. **A representative from maintenance** to help identify energy-saving opportunities.
2. **A plant engineer** to provide detailed information on energy consumption.
3. **A financial representative** to manage the budget
4. **A special events coordinator** to plan and organize energy team activities and events.
5. **A public relations or marketing representative** to promote energy team activities and publicize its successes.
6. **A representative from the environmental/health and safety department** who will ensure that energy-efficiency measures do not interfere with a safe and healthy work environment.
7. **An executive sponsor** who will ensure that the team's goals are aligned with corporate goals and provide authority for larger projects.

MAKING CHANGE HAPPEN

Williamson adds, "The first priority of an energy team is to measure energy consumption. Review past energy bills to get an overview of energy consumption and install sub-meters to provide insight into specific energy use. An energy audit can provide a more detailed analysis of your facility and equipment, and will help to identify specific energy-saving opportunities."

Use the Facility Assessment Wizard found on REC's Questline e-newsletter. After filling out a short questionnaire, you will receive a set of energy-efficiency recommendations tailored to your facility.

After likely candidates for energy-efficiency projects have been determined, the energy team will provide leadership in making recommendations, setting goals, seeing projects through to implementation, and reporting on progress. It is also important that the energy team publicize its activities by demonstrating how energy-efficiency projects are saving money and promoting the company's strategic goals. •

Notice to Members: Rate Structure Changes Were Effective July 1

Rappahannock Electric Cooperative (REC) began announcing changes to member's rate structure in early May 2011 through its official communication magazine to members, *Cooperative Living*. Those changes went into effect beginning July 1.

The changes implemented are the first step in a multi-year rate transition plan that the Virginia State Corporation Commission (SCC) has required of REC. The transition plan is designed to smooth out rate adjustments over several years to protect members from steep increases in their rates.

Kent D. Farmer, president and CEO said, "Since the transition of members to REC occurred in 2010, we remain focused on providing affordable electric service to all of our members. We are a not-for-profit, member-owned cooperative. When the Virginia State Corporation Commission approved the transfer last year, it also approved a multi-year rate transition plan and consumer protection measures to prevent unintended and unreasonable rate impacts."

As part of the transfer, REC received approximately \$8.75 million from Allegheny Power to reduce the costs of providing electricity over the next year. Members who were formerly charged the Levelized Purchase Power Factor (LPPF) saw this charge replaced on July 1 with the Wholesale Power Cost Adjustment – New Territory (WPCA-NT).

Matt Faulconer, manager of government and regulatory affairs for REC, explained, "The WPCA-NT is a formulary rate that the SCC approved in May 2010. This charge is a pass-through of the variable costs of generating and acquiring wholesale power."

In addition, on July 1, members also began receiving a Transition Credit. This is a per kilowatt-hour credit applied to member's bills to ease the transition from capped rates to cost-based rates. Large industrial members will experience bill impacts of 1.25 percent or less. This amount is far less than the nearly 18 percent increase forecasted by the utility company previously serving this area.

Farmer added, "Our commitment to minimizing the impacts of any rate changes means that rates will go up more slowly than they would have with Allegheny Power. It is REC's privilege to serve its new members.

We hope that the service we are providing is meeting their expectations, and that they have begun to appreciate the value of being a member-owner of an electric cooperative."

For more information, or for answers to questions about a bill, contact an REC customer service representative at 800-552-3904. Additional information can be found on the Cooperative's website, www.myrec.coop.



Retrofitting Your Facility for Energy Success

Innovative energy conservation and efficiency projects help facilities save energy, improve productivity, increase business competitiveness and save money. Energy retrofits that replace older systems with newer, more efficient technologies can save organizations up to 30% on energy costs. However, efficiency upgrades can require significant upfront investments in time and money.

Retro Commissioning

Retro commissioning is a key first step in a successful energy-efficiency project. Retro commissioning is a systematic, documented process that identifies low-cost operational and maintenance improvements to ensure that existing building systems are operating according to current needs. It also facilitates the identification and implementation of energy-saving opportunities. Each system covered in the retro-commissioning process, including lighting, space conditioning, building envelope, and so on, contributes substantially toward overall energy consumption. Retro commissioning takes a holistic view of building systems and provides a unique perspective regarding energy-efficiency performance improvements.

A four-step process helps to ensure the successful implementation of a retro-commissioning project:

- 1. Planning.** The core retro-commissioning team is assembled. The team establishes a set of goals and priorities and time line for completion.
- 2. Investigation.** Information about building systems is gathered through inspections, document review, testing and monitoring. A prioritized list of measures to improve building performance is identified.

- 3. Implementation.** The recommended measures are put into place, starting with projects that can be implemented quickly and measured easily, so results can be obtained and publicized.
- 4. Continuation.** Retro commissioning is an ongoing process of monitoring energy data, periodic review of operational practices, and regular updates that include occupant and operator feedback.

Retro-commissioning will not only provide energy savings by improving the efficiency of building systems, it will also reduce maintenance costs, improve indoor air quality and increase property value by providing documented evidence of superior building performance.

Improving Lighting Efficiency

Lighting accounts for 20% of the total energy used by commercial buildings. It also affects other building systems through its electricity requirements and the waste heat that it produces. Upgrading to energy-efficient lamps, fixtures, and controls, will reduce energy use, improve visibility and affect the sizing of cooling systems. A lighting upgrade should be consistent with overall company goals and energy policies. Use the following guidelines to ensure that your lighting upgrade results in an efficient and effective system that meets your needs:

- Design the system to obtain the appropriate amount of light for the tasks performed in each space.
- Use the most efficient light source for each application.
- Use daylight whenever possible, but distribute light to avoid direct sunlight and glare.
- Use automatic controls to turn off or dim lights when appropriate.

- Develop a system for ongoing maintenance, group relamping, lamp cleaning and proper disposal.

Energy-efficient lighting designs can cut lighting energy use in half in many buildings. Lighting upgrades pay for themselves in energy savings and provide additional benefits in reduced cooling costs and a more productive work environment.

Increasing Heating and Cooling System Performance

Although heating and cooling provides an essential function in maintaining a comfortable indoor environment, it uses about 45% of the total energy consumption in a typical commercial building. Replacing an older system with a new, more energy-efficient unit, or retrofitting an existing system to increase performance can have significant benefits in operating-cost savings.

Many existing systems are oversized for building load requirements. Proper sizing will save energy, lower installation costs, reduce system noise, improve system performance and increase operating life. Consult a qualified energy engineer to ensure that your system is correctly sized to fit your needs.

Retrofitting existing systems to operate more efficiently can provide a cost-effective way to save energy and achieve a quick return-on-investment. The following are some of the more effective retrofit options for heating and cooling systems:

- Install controls to adjust temperatures when the building is unoccupied
- Install new, efficient burners in boilers and furnaces to improve fuel combustion and reduce emissions.
- Install a boiler economizer to capture and reuse waste heat from flue gases.
- Insulate chilled water pipes, as well as hot water and steam distribution lines in boiler systems.
- Replace standard efficiency or oversized pumps in boilers and chilled water systems with high efficiency pumps that are sized correctly for the load.
- Use variable speed pumps for more efficient operation of chilled water and boiler systems.
- Replace standard valves in chilled water systems with low-friction units to reduce flow resistance.

Upgrading the Building Envelope

The building envelope protects your facility from the outdoor environment and includes windows, doors, walls, the roof and the foundation. Window and roofing system upgrades present significant opportunities to reduce heating and cooling costs and improve occupant comfort.

WINDOWS

Window films, window shading and high-performance windows can reduce heat flow through a building's windows.

- *Window films.* Window films are thin layers of polyester, metallic coatings and adhesives that save energy by limiting both the amount of solar radiation passing through the

window and the amount of internal heat escaping. Window films can be retrofitted to existing windows to reduce heat gain from solar radiation and provide low-cost cooling load reduction.

- *Window shading.* Physical shading can also reduce the solar cooling load imposed by windows. Exterior and interior shading are among the best ways to keep the sun's heat out of buildings particularly those located in sunny climates. Properly placed shades also make day lighting systems more effective by eliminating glare.
- *Energy-efficient windows.* Energy-efficient windows save on energy costs by reducing thermal loss and solar heat gain. Technologies that increase window efficiency include argon gas between windowpanes and low-emissivity (low-e) coatings.

ROOFS

Upgrades that can improve the efficiency of roofing systems include increased insulation and cool roofs.

- *Insulation.* Much of a building's heat loss and gain occurs through the roof. The best way to avoid thermal loss is to maximize roof insulation R-values. When renovating a roof, rigid board foam insulation can be applied underneath the new roof covering. If the roof has an attic or crawlspace, fiberglass batt insulation or blown-in, loose-fill insulation can be added. For buildings with no attic space, apply insulation to the inside roof surface, using either rigid board or spray-on foam insulation.
- *Cool roofs.* Cool roofs feature a highly reflective outer surface that reduces the amount of heat conducted through the roof. On a sunny day, cool roof products typically lower the roof surface temperature by 50°F to 70°F, thereby decreasing the amount of heat transferred into a building.

In addition to the energy-saving opportunities highlighted here, many others exist. For specific guidelines on upgrading your building systems to maximize energy performance, see the U.S. Environmental Protection Agency and the Department of Energy's ENERGY STAR Building Upgrade Manual located at www.energystar.gov.

