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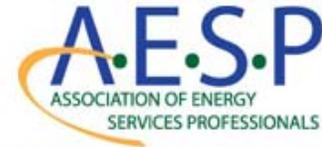


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Letter from the AESP Chair

by Sara Van de Grift

There are those big moments in life that seem so far away and then suddenly they are at your doorstep in the blink of an eye. Events like your child's first day of kindergarten. There they are, a babe in your arms, and then — blink — they are waving at you from the classroom door. That is how I feel about becoming the AESP Board Chair. It seems like only moments ago I was pondering running for the board, seconds ago I was selected as Chair Elect, and now here I am, taking on the role as Chair. I am humbled by this opportunity. Serving on the AESP Board has been a labor of love and being selected Chair is a pinnacle moment in my career.



Sara Van de Grift
AESP Chair

My industry colleagues often ask me how I find the time to volunteer for AESP. They ask, is it worth it? I typically confess that it never feels like work, it feels like a privilege for me. I have always gotten more back than I have put in to AESP. AESP offers an amazing opportunity for members willing to take full advantage of their membership. This next year I hope to help each of you take full advantage of what AESP can offer.

It's easy to say "I am so busy, there is so much else to do, I just don't have time." Here is why you should make time for AESP. This past year I launched my own company with my partner Anne Dougherty. Launching ILLUME required insane courage, more than I could ever have imagined. If it were not for the support of my AESP board colleagues, the lessons they shared with me, the mentors I gained, the networks and friendships I developed in expo halls, sessions and hallways, I would not have been brave enough to take that leap.

This past year the board spent a few days on intensive strategic planning. As part of that, we came up with what we called our "big hairy audacious goal" for AESP — we want AESP to be the community that is essential for building professional and industry success.

For me, AESP has been that essential community; I truly believe without my involvement in AESP I would not have had the courage to launch my own firm. So what is your professional dream? Is it to grow in your company, to find the next opportunity, to start your own firm, to be a go-to expert? No matter what your dream is, I promise you that AESP provides the foundation on which to build your professional dreams. All you have to do is take full advantage of all that membership offers. AESP gave me a network, a venue, a safety net, and courage to create my own professional vision. It gave me everything I needed to grow and, in turn, support the industry that I love. I hope over the course of my time as chair I can help AESP do the same for all its members.

FEBRUARY 2014



Upcoming Events

Chapter Events

Lone Star Chapter

Feb. 10 — CenterPoint Energy lessons learned from EE pilot programs

Wisconsin Chapter

Feb. 27 — Lakefront Brewery tour and happy hour

Brown Bags

March 13

[Why Bother? Is Energy Efficiency Really Worth It?](#)

If you would like to organize a Brown Bag, please contact Kisha Gresham at kisha@aesp.org.

AESP Training Courses

If you would like to schedule an onsite training please contact Suzanne Jones at (480) 704-5900 or suzanne@aesp.org. For more

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Industry News

"The Consumerization of Demand Response"
 "All Carrot No Stick: How BGE Plans to Enroll 1 Million Customers for Demand Response"
 "KCP&L Will Increase Wind Power and Energy Conservation"
 "Public and Private Financing Drives Energy Efficiency in Rural America"
 "Feds Reach Deal to Cut Energy Use of TV Boxes"
 "Energy Efficiency, Conservation Paying Off"
 "What's the Future of Green Building in 2014? Industry Leader Offers Top 10 Megatrends"
 "Massachusetts Takes A Major Step Forward In Smart Grid Technology"
 "Improved Electronic Energy Efficiency Thanks to New Laptop Adapter From MIT"
 "Net Zero is All About the Building Envelope"
 "Ten Projects You Loved in 2013"
 "Karuna House Becomes the World's Greenest House"

Featured Articles

What's Up 2014? Call for Comment: American National Standards Institute EESCC Standardization Roadmap V1.0 draft

AESP News

News Releases and Announcements

Industry News

The following executive summaries of current news items were written for Strategies after being compiled from various news sources.

The Consumerization of Demand Response Greentech Media (01/09/14) Smith, Matthew

The demand response (DR) market is poised for significant change in the coming years, as communicating thermostats and other "smart home" technologies become increasingly available. According to IMS Research, shipments of communicating thermostats that consumers can remotely control are projected to quadruple by 2017. This is good news for utilities, as customer-owned communicating thermostats represent a potential new DR resource that utilities can call upon to curtail peak demand. Currently, nearly all mass-market DR programs rely on utility-owned devices. The promise of customer-owned communicating thermostats is that they let utilities expand DR programs to more residential and small-commercial customers without forcing them to directly pay for or have to install the device. Customer ownership reduces the utility share of DR program costs, which can substantially improve overall program cost-effectiveness. Questions remain as to whether customer thermostats can be counted on to respond in the same reliable manner as utility-supplied devices. In addition, there will continue to be customers who prefer a utility-supplied device, either because they are not technically savvy enough to install and maintain the equipment themselves or because they cannot afford a \$200 to \$300 communicating thermostat. Consequently, utilities should plan to continue upgrading existing programs to smart grid technology while beginning to integrate customer-owned devices into their DR portfolio. Customer-owned thermostats can best be connected to the utility smart grid network through a smart meter and a standards-based interface. Using smart meters as the gateway into the home makes it easy for utilities to reliably deliver DR signals to either customer- or utility-owned thermostats. In addition, this smart grid approach ensures that utilities maintain a strong relationship with their customers, mitigating the risk of disintermediation by the thermostat manufacturer or another third party, until a time when manufacturer business models or regulatory structures become more clear.

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information about the AESP Institute, [click here](#).

Conferences

Spring Conference
Marketing & Implementation: Finding New Pathways to Reach Program Goals
 Baltimore
 May 12-14, 2014

Summer Conference
Evaluators & Implementers: Merging on the Energy Efficiency Highway
 San Francisco
 August 4-6, 2014

25th National Conference
 Orlando
 February 9-12, 2015

WELCOME & THANK YOU to our New and Renewing Members!

New Members

Alexandra Aznar, Student--IU
 Alyssa Na'im, NMR Group
 Amy Brown, Efficiency Nova Scotia
 Andrea White, Conservation Services Group
 Andrew Correia, NMR Group
 Andrew Healy, CakeSystems
 Andy Bardwell, OptiMiser
 Andy Carlson, Yukon Electrical Co
 Angela Elridge, Alabama Power
 Angela Rybalt, AEP-OH
 Anne Miller-George, SCE
 Aron Jarr, Franklin Energy Services
 Arpit Arora, Coding Institute
 Brad Ouderkirk, Ecova
 Brian Barnacle, Energy Solutions
 Brian McAuley, Itron
 Brooke Wilfley, Graybar
 Casey Cardillo, TechniArt Inc.
 Christine Gustafson, ICF Marbek
 Christy Martell, Opower
 Colton Aston, FortisBC
 Dan Cote, Ecova
 Daniel Jarvis, DNV GL
 David Carleton, Cambridge Hydro
 David Gonzales, Itron
 David Kirsch, Facilities Solutions Group
 Debra Miller, SWEPCO
 Dennis Meli, Sodexo
 Diana Miller, Franklin Energy Services
 Elaine Mckeown, Entergy
 Elisabeth Brinton, C3Energy
 Erik Bluvus, Green Creative
 Ernest Akeriwe, SaskPower
 Ethan Goldman, VEIC
 Ferit Ucar, NMR Group
 Frank Ferrentino, SkyeTec
 Frank Pagano, Energy Masters
 Gabriel Ayala, Enovative
 Gannate Khowailed, SRA International
 Geert Aerts, Construction Services Group of Educational Service District 112
 Geoff Overland, CLEAResult

All Carrot No Stick: How BGE Plans to Enroll 1 Million Customers for Demand Response

Greentech Media (01/10/14) Tweed, Katherine

Baltimore Gas & Electric's (BGE) Smart Energy Rewards allows customers to earn a rebate of \$1.25 for every kilowatt-hour of energy reduced during peak events. This summer, about 900,000 residential customers will be enrolled in the program, and by next year it will have more than 1 million participants. "We wanted a way [for] customers [to] benefit from smart meters directly," says Ruth Kiselewich, director of demand-side management programs at BGE. The utility did not just want to rely on operational benefits to justify its smart meter investment. In the summer of 2013, there were four "energy saving days" in which 82 percent of customers received a credit toward their summer bill. The average cost reduction was \$9 per customer bill. The savings are weighed against the highest three days of energy usage in the previous two weeks. BGE conducted four years of pilots to test different pricing options, such as critical peak pricing, where energy costs more at certain times, versus rebate-only programs. The utility found that the energy savings accruing from peak pricing and peak rebate schemes were similar, but that the rebate approach significantly improved customer satisfaction. Unlike other new residential demand response programs, Smart Energy Rewards does not hinge on customers possessing any particular devices, such as two-way digital thermostats. Instead, BGE expanded its partnership with Opower, Accenture, and Oracle to build the program. Customers can choose to get alerts via email, text or phone the day before an event. Customers are asked to reduce energy use between 1 p.m. and 7 p.m. One of the keys is providing feedback rapidly, says Tom Mercer, group product manager at Opower. Another key for the utility is ensuring that the messages can be sent to more than 1 million customers without any problem, and then being able to measure the load shed on the back end. One of the challenges of setting up the program was gathering accurate email addresses or mobile phone numbers to which to send the alerts. BGE set up a standalone call center to engage customers and update information, and it will continue that effort this year as the program expands.

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KCP&L Will Increase Wind Power and Energy Conservation

Kansas City Star (01/08/14) Stafford, Diane

Kansas City Power & Light Co. plans to expand its energy efficiency programs. The utility will open the rebate programs under the Missouri Energy Efficient Investment Act to all of its Missouri customers. That counters environmentalists' criticism that an earlier conservation-incentive plan wasn't comprehensive enough. KCP&L says it is filing with the Missouri Public Service Commission to expand an energy efficiency program designed to "improve lighting, provide rebates for recycling older, inefficient appliances, and for replacing inefficient heating and cooling systems, among other programs." The new filing follows up on an energy-conservation program first announced in December 2011 that would give rebates to commercial and residential customers who buy energy efficient equipment, appliances, and lighting. The utility had intended to commit \$25 million a year to reducing energy demand and passing eventual savings along to customers. But within months, KCP&L pulled back on the plan's availability for about 270,000 Kansas City customers, saying it would have to raise electricity rates too high to justify the program and that it had enough electricity generation for its Kansas City customers. In late 2012, regulators approved KCP&L's intent to offer the conservation program to about 300,000 Missouri customers outside of Kansas City, basically covering customers acquired when it bought Aquila Inc. Environmental groups were disappointed when KCP&L pulled back on its original plan and have continued to call for the utility to expand it. Katie McDonald, KCP&L's director of communications, says the new filing contains various programs that require commission review and approval before being offered to relevant customers. "We believe the total benefit for our customers over the next 20 years is that rates and costs will be about \$1 billion lower than they would have been if we hadn't been investing in wind and energy efficiency," McDonald says. The benefits would come from about \$400 million from energy efficiency and about \$600 million in savings due to wind power that reduces the need to use other kinds of fossil fuel.

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Public and Private Financing Drives Energy Efficiency in Rural America

Environmental Defense Fund (01/15/14) Marsh-Robinson, Marilyn

George Plattenburg, Burton Energy Group
 Graham Brown, EnergySavvy
 Grayson Dorr, Santee Cooper
 Guanhuigui Zheng, Lubbock Power and Light
 Jacob Hannan, MCR Performance Solutions
 Jake Allen, Thunder Bay Hydro
 Jason Fielder, Energy Masters
 Jeff Moore, All Professional Trades
 Jeffrey Johnston, Energy Solutions
 Jennifer Rafferty, ICF International
 Jeremy Jones, SoCore Energy
 Jesse Rebello, Ecova
 Jessica Burdette, MN Dept of Commerce
 Jessie Hennesy, Minnesota Municipal Power Agency
 Jill Cliburn, Cliburn and Associates
 Joleen Graves, AEP-OH
 John Cook, The Home Depot
 John Gengarella, C3Energy
 John Jewell, Environmental Law and Policy Center
 John Smola, Alabama Power
 John Steinberg, EcoFactor
 John Tehrani, FirstFuel Software
 Jon Itkin, Brand Cool
 Josh Bachman, Cascade Energy
 Josh Lich, Opower
 Judy Hoffman, Radius Global Market Research
 Jun Shimada, ThinkEco
 Kara Rodgers, Northeast Utilities
 Kara Roth, Brand Cool
 Karen Germain, The Germain Partnership
 Karen Heater, Sodexo
 Kathy Mickaliger, SCE
 Kelly Choi, EcoFactor
 Kelly Morgan, Opower
 Ken Ladd, Vaughn Corp
 Lara Krecic, DNV GL
 Lisa Adam, SaskPower
 Lisa Cascio, NEEP
 Logan Brown, VEIC
 Lorraine Espinoza-Nall, SCE
 Luke Scheidler, Itron
 Marcus Wilcox, Cascade Energy
 Mark Berman, Davis Energy Group
 Mark Cosby, Westar Energy
 Mark Shewfelt, ICF Marbek
 Marley Urdanick, Student--Yale
 Matt Kim, MaxLite
 Matthew Rose, Terra Vista Energy
 Matthew Tolliver, ThinkEco
 Michael Daukoru, EnerNOC
 Michael Knox, Cambridge Hydro
 Michael Staples, Opower
 Michelle Cross, AEP-OH
 Mike Jackson, FirstFuel Software
 Nicholas Wood, Nexant
 Nichole Jordan, C3Energy
 Nicole Karpavich, Idaho Public Utilities Commission
 Nina Merchant-Vega, Opinion Dynamics
 Pat Niehoff, Direct Options
 Phil Borghuis, Bidgely
 Pia Kristiansen, EnerNOC
 Prachi Gupta, Oncor
 Priscilla Ortiz, SCE
 Rachel Robinson, Opower
 Rich Barnes, DNV GL

Rural homes and commercial buildings tend to be older and less energy efficient. Many homes lack adequate insulation, weather stripping around windows, and other basic improvements that reduce energy use and add dollars to household budgets. Rural communities account for over 70 percent of the U.S. land mass and about 12 percent of total electric utility customers, making them critical to advancing national energy and economic goals. The U.S. Department of Agriculture (USDA) recently announced that \$250 million is available in its Energy Efficiency and Conservation Loan Program to help residential and business customers make energy efficiency improvements that will lower their electric bills. Rural electric cooperatives can also use loan funds to improve their own energy systems, such as transmission and generation facilities. In addition to federal programs like the USDA's, private financing has a role to play. One example is in Eastern North Carolina, where the Environmental Defense Fund partnered with the Roanoke Electric Cooperative and Generations Community Credit Union to design a program that makes low-interest loans to homeowners in a seven-county region. The new program will help homeowners with unusually high electric bills finance basic, yet critical, efficiency measures. Qualified homeowners can borrow up to \$4,000 for improvements, with interest rates as low as 3.5 percent. Customers conveniently pay back the loans through their utility bills. The Roanoke/Generations program is the first in North Carolina to use private capital for energy efficiency retrofits.

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Feds Reach Deal to Cut Energy Use of TV Boxes

The Hill (12/24/13) Hattem, Julian

The Department of Energy has reached a deal with environmental and business groups on new energy efficiency standards for cable and satellite television boxes. The agreement will save about \$1 billion in energy costs for more than 90 million American homes each year, but will not lead to new regulations. Instead, the energy efficiency standards will be voluntary. The energy saved will be enough to power 700,000 homes, the department estimates. "The set-top box efficiency standards will save families money by saving energy, while delivering high quality appliances for consumers that keep pace with technological innovation," says Energy Secretary Ernest Moniz. The department reached the agreement along with the Natural Resources Defense Council, the American Council for an Energy-Efficient Economy, the Appliance Standard Awareness Project, the Consumer Electronics Association, and the National Cable and Telecommunications Association. The agreement will improve efficiency on the TV boxes by 10 to 45 percent, depending on the type of box, over the next three years. By 2017, about 90 percent of the set-top boxes in American homes will work as well as the most energy efficient boxes currently on the market. Major cable and satellite providers like Verizon, Comcast and Dish Network signed on the agreement.

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Energy Efficiency, Conservation Paying Off

Lexington Herald (KY) (01/02/14)

The annual energy outlook from the U.S. Energy Information Agency (EIA) concludes that "Growth in U.S. energy production outstrips growth in consumption, leading to a reduction in net imports." Looking only at electricity, the rate at which U.S. consumption grows declined from 9.8 percent in the 1950s, to 4.7 percent in the 1970s, 2.4 percent in the 1990s, and 0.7 percent since 2000. The EIA says that electricity burned in U.S. homes declined in 2013 for the third year in a row. While Americans are more conscious of energy use because of cultural awareness, increasing costs, and technological innovation, a lot of this savings is a direct result of federal standards and policies. For example, efficiency standards for major appliances such as refrigerators and air conditioners have helped drive improvements that have contributed to lower domestic electricity use throughout the past decade despite the ever-increasing number of plugged-in communication, information and entertainment devices. Thanks to federal law, energy-gulping incandescent light bulbs have been phased out in favor of fluorescent and LED bulbs that use 70 percent to 80 percent less power. Under the Recovery Act, billions of dollars were aimed at retrofitting homes to improve energy efficiency. Much of the debate about energy policy centers around how it is produced, but the real low-hanging fruit in energy policy appears to be conservation.

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What's the Future of Green Building in 2014? Industry Leader Offers Top 10

Richard Sullivan, AEP-OH
 Rob Cerreta, The Weidt Group
 Rob Morton, Cascade Energy
 Robert Lalletment, Matrix Energy Services
 Robert Oliver, ADM Associates
 Ryan Fogelman, Direct Options
 Ryan Kerr, GTI
 Ryan McCracken, SkyeTec
 Ryan Thompson, Graybar
 Samantha Cole, Itron
 Sara Titus, Research Into Action
 Sarah Brown, Ecova
 Sean Sadler, USMC
 Sheila McElhinney, Cascade Natural Gas
 Sinh Tran, Snohomish PUD
 Sloane Child, General Atlantic
 Spencer Lipp, Lockheed Martin
 Spencer Fields, Synapse Energy Economics
 Steve Alfaro, Everblue Training Institute
 Steve Pronko, NS Utility & Review Board
 Ted Clutter, ClimateMaster
 Terry Shire, EcoFactor
 Timothy Wilson, Thunder Bay Hydro
 Will Adams, Chartwell
 William McNamara, California Conservation Corp
 Yvette Maskrey, Honeywell
 Zach Ross, Opinion Dynamics

New Group Members

Brand Cool
 Brickworks Communication
 Cambridge Hydro
 EcoFactor
 Energy Masters
 Facility Solutions Group
 Graybar
 London Hydro
 Santee Cooper
 SkyeTec
 ThinkEco
 WPPI

Renewing Group Members

Duke Energy
 Ecova
 Entergy Arkansas
 FirstFuel Software
 Greater Sudbury Hydro
 NEEA
 NMR Group
 Oncor
 Staples & Associates
 Union Gas
 U.S. EPA
 Vaughn Thermal Corp
 VEIC

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Megatrends

Green Build Consult (12/18/13)

Yudelson Associates founder and LEED Fellow Jerry Yudelson shares his top 10 green building megatrends for 2014. Number one on Yudelson's list is the continued expansion of green building. "Green building is the tsunami of the future that will inundate the entire real estate industry," he says. Energy efficiency increasingly will rely on building automation using cloud-based systems. More developers will work to achieve net-zero buildings to stand out from the mainstream green building industry. Meanwhile, Yudelson says LEED's cost and complexity will continue to attract competing rating systems, such as the Green Building Initiative's Green Globes. The green building industry will focus more on green retrofits and renovations than on new buildings. Green buildings also increasingly will be designed and managed by cloud-based technologies. The trend toward monitoring commercial and government buildings with performance disclosures will continue and rapidly spread, as will product disclosures to ensure that buildings are healthy environments. Solar power will continue to grow as third-party financing helps finance larger rooftop arrays. Finally, Yudelson says more awareness of the global shortages of fresh water will lead to increased water conservation measures.

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Massachusetts Takes A Major Step Forward In Smart Grid Technology

Think Progress (01/03/14) Phillips, Ari

At the end of December, the Massachusetts' Department of Public Utilities (DPU) issued an order that requires large energy providers to submit a ten-year grid modernization plan (GMP) by mid-2014. The plan will require investing in advanced metering functionality that enhances communication between the utility companies and customers, and that is meant to increase efficiency and lead to energy and cost savings. A statement issued by Governor Deval Patrick's office says "the necessary infrastructure includes smart meters, communications networks and new data management systems to give customers greater choice about their energy use and real-time information to enable the utilities to respond better to storms." Advanced metering "functionality is a basic technology platform for grid modernization that must be in place before all of the benefits of grid modernization can be fully realized," the order states. Other added benefits of the upgraded system, according to the order, include "automated outage and restoration notification [and] two-way communication between customers and the electric distribution company." With a customer's permission, the technology will enable "communication with and control of appliances," along with "remote connection and disconnection of a customer's electric service, [and] measurement of customers' power quality and voltage," according to the order. Massachusetts is the latest state to make a serious push for utilities to invest in the smart grid. Maryland, California, Oklahoma, and Illinois all have metrics in place to measure and verify smart grid energy savings and costs in an effort to promote accountability for financed projects.

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Improved Electronic Energy Efficiency Thanks to New Laptop Adapter From MIT

CleanTechnica (01/14/14)

Researchers at the Massachusetts Institute of Technology (MIT) have created a new, novel circuit design that promises to greatly increase the energy efficiency of a number of widely used consumer electronic devices. To showcase the new circuit design, the researchers at MIT have created what is now "the world's smallest laptop adapter" — an adapter that is only about 25 percent of the size of a typical laptop brick. This rather compact charger is capable of running at higher frequencies than normal adapters, as well as possessing the ability to capture and recycle energy that is lost in typical traditional circuit designs. The 65-watt adapter, being made by startup FINsix, can also charge tablets and smartphones because it comes with a USB connector. It can even charge more than one device at once. The ability to run at higher frequencies allows the adapter to be smaller in size, which means less material and ultimately lower cost. This new technology can be used in more than just laptop chargers, but also could be used to make larger appliances like air conditioners and washing machines more efficient. The technology was showcased at the recent Consumer Electronics Show in Las Vegas where it was featured as an Engineering Award winner.

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dedicated to improving the delivery and implementation of energy efficiency, energy management and distributed renewable resources. AESP provides professional development programs, a network of energy practitioners, and promotes the transfer of knowledge and experience.

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Net Zero is All About the Building Envelope

Jetson Green (01/13/14) Walsh, Christine

Green building expert John Wesley Miller, working with the company Green Builder Media, recently completed the latest innovative project in the Vision House Series. The Vision House Tucson is fitted with all the latest fixtures and features of a net-zero home, yet the basis of its energy efficiency lies in its traditional block and cement construction. Miller has designed the walls of the home to act as a thermal-mass storage. He concluded that the secret to an energy efficient home lies in creating the proper building envelope. All the voids in the block are filled, which creates the necessary mass to hold in the cool air during the summer months, and warmth in the winter. The exterior of the home is wrapped in insulation, which is then coated with three layers of stucco. The Tucson, Ariz., house is powered by an array of photovoltaic panels, which will generate 7.2 kilowatts of electricity at peak. In addition to that, the house is also fitted with two rooftop solar water heaters that feed a 150-gallon tank, which preheats outside air in winter and provides hot water. The home was also fitted with ENERGY STAR® rated appliances. The house is located in the Armory Park del Sol neighborhood, which was planned to become a 99-home neighborhood of solar-powered homes. It opened in 2001, and this latest house represents the 95th home built. Despite the 2,500 square feet of living area and a double garage, the yearly utility costs for this home are expected to be no higher than \$300. The PV array will also be able to generate more power than the household needs.

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Ten Projects You Loved in 2013

EcoBuilding Pulse (12/20/13) Weeks, Katie

EcoBuilding Pulse picked the 10 top energy-efficient projects they featured in 2013, based on readers' clicks and views. Topping the list was the Charles David Keeling Apartments in La Jolla, Calif. The second reader's choice is Dynamic D*Haus, a 1,100-square-foot, factory-built home in London that can transform into eight shapes in response to weather conditions. Third place is the House and Laneway House in Vancouver, Canada, a very cost- and space-efficient Built Green-certified home and guesthouse. The Castaway II in Tampa, Fla., is fourth on the list, a large, 3,100-square-foot net-zero home using energy efficient designs from Marc Rutenberg Homes. In fifth place is the New Norris House in Norris, Tenn., a prefabricated cottage designed by students and faculty from the University of Tennessee, Knoxville, and earning LEED platinum certification for its small footprint, careful siting, and use of locally sourced natural materials. Formerly a stable, now a live-work studio, the Lantern House in Philadelphia is sixth on the list, and seventh is the energy efficient Lake Champlain home in Burlington, Vt. Eighth on the list is a 2,700-square-foot modular home called Modern Cottage in Akram, N.Y., and ninth is a LEED Platinum project in Toledo, Ohio. Finally, the Inspiration Home in Olympia, Wash., is certified to ENERGY STAR 3.0, EPA Indoor airPlus, and Built Green Level 5.

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Karuna House Becomes the World's Greenest House

Jetson Green (12/09/13) Walsh, Christine

The Karuna House in Yamhill County, Ore., is the world's first house to receive three of the most rigorous green building certifications—Passive House (PHUIS+), Minergie-P-ECO, and LEED for Homes Platinum. The net-zero home has an advanced building envelope featuring an optimized solar design that requires fewer than 10 kilowatts to run the home. The building envelope begins with a foundation of concrete made of 30 percent fly ash and locally-sourced aggregate poured over a thick layer of expanded polystyrene geofoam. The air- and water-tight, vapor permeable, R-60 rated insulated wall assembly includes Forest Stewardship Council-certified cedar siding, studs from FSC-certified wood, 1/2-inch plywood sheathing covered in a vapor permeable liquid membrane, cellulose, a 6-inch-thick exterior layer of foil faced polysio foam, three layers of 2-inch foam in between Z-joists, insulation made from 12 tons of recycled newspaper, and 5/8-inch drywall covered in natural lime plaster. The windows are triple-glazed, and the flashing is a liquid application, also adding to the house's air-tightness. The high-efficiency HVAC system also serves as a low-temperature radiant system in the house's flooring. A Zehnder heat recovery ventilator recaptures 90 percent of the heat from air exhaust. A high-efficiency heat pump with an on-demand hot water recirculation system supplies the house's hot water through carefully sized pipes that help reduce the hot water left in water lines after use. The home was designed by Holst Architecture and built by Hammer & Hand.

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Featured Articles

What's Up 2014?

Join us in the second part of AESP's special feature for members. This month, we focus on the outlook for renewables and the Smart Grid.

Renewables

Elsewhere on the renewable energy front, a new report from GTM Research and the Solar Energy Industries Association finds that more American homes installed solar panels in the third quarter of 2013 than ever before, with 52 percent more going online than in the same period the year before. The report indicates that 31,000 American homes installed solar panels in the third quarter. Overall, the United States installed 930 megawatts worth of solar panels, up 35 percent from the same time last year. The United States is



expected to install more solar panels than world leader Germany for the first time in 15 years, the report finds. "Solar is the second-largest source of new electricity capacity in the U.S. this year, trailing only natural gas," says Shayle Kann, vice president of research for GTM Research. "Already the groundwork has been laid for a mainstream solar future." According to the report, there is now enough solar capacity in the United States — 10,250 megawatts — to power 1.7 million average American homes. The residential sector is still a small proportion of the overall solar market but has the strongest growth. Rapidly falling prices could be a reason for the spread of solar power to homes, as costs fell 9.7 percent from last year.

As states race to bring more wind, solar and geothermal power online, those and other forms of alternative energy have become a new source of anxiety. The problem is that renewable energy adds unprecedented levels of stress to a grid designed for the previous century. Green energy is the least predictable kind. Nobody can say for certain when the wind will blow or the sun will shine. A field of solar panels might be cranking out huge amounts of energy one minute and a tiny amount the next if a thick cloud arrives. In many cases, renewable resources exist where transmission lines do not. "The grid was not built for renewables," says Trieu Mai, senior analyst at the National Renewable Energy Laboratory. The frailty imperils lofty goals for greenhouse gas reductions. Concerned state and federal officials are spending billions of dollars in ratepayer and taxpayer money in an effort to hasten the technological breakthroughs needed for the grid to keep up with the demands of clean energy. Making a green energy future work will be "one of the greatest technological challenges industrialized societies have undertaken," a group of scholars at Caltech said in a recent report. The report notes that by 2030, about \$1 trillion is expected to be spent nationwide in bringing the grid up to date. The California Public Utilities Commission in November ordered large power companies to invest heavily in efforts to develop storage technologies that could bottle up wind and solar power, allowing the energy to be distributed more evenly over time. Whether those technologies will ever be economically viable on a large scale is hotly debated. The commission mandate nonetheless requires companies to produce enough storage by 2024 to power about 1 million homes.

"Energy storage has the potential to be a game changer for our electric grid," says Commissioner Mark Ferron.

The past year continued to see rapid growth in the number of new patents related to renewable energy technologies, according to a new study by the Massachusetts Institute

of Technology and the Santa Fe Institute. One of the biggest increases was for solar energy, with the number of solar patents worldwide increasing by 13 percent annually. A large increase also was seen in the number of patents for wind power technologies, the study found. Report co-author Jessika Trancik says the increase in the number of patents for renewable energy technologies was the result of past investments in research and development as well as the growing market for these technologies.

Smart Grid

The year 2013's \$13.5 billion worth of transmission projects in the United States and Canada will jump to at least \$25.6 billion in 2014, according to TransmissionHub data. The boom continues despite the fact that energy demand is growing at very low rates. Most of the construction involves 345-kV and 500-kV DC and AC lines, reports Kent Knutson, director of Hub Services for Pennwell. For instance, FirstEnergy recently announced it plans to invest an additional \$2.8 billion over four years to expand its "Energizing the Future" transmission initiative. Meanwhile, Minneapolis-based Xcel Energy is joining other major power companies that have created a subsidiary to develop transmission projects beyond its own eight-state customer base. Stand-alone transmission companies are becoming more common because the federal government has encouraged them as a way to boost competition and reduce costs on big multistate projects. In 2002, American Transmission Co., based in Waukesha, Wis., was created as the nation's first stand-alone transmission company, and now has \$3.3 billion in assets.

Even more transmission may come online in the next few years, partly to help meet renewable mandates. For example, Imperial Irrigation District is proposing a massive transmission project designed to deliver renewable energy onto the California grid and to neighboring states. Cal-ISO is reviewing the \$1.7 billion proposal. There are roughly a dozen proposed transmission projects that are being developed to deliver renewables to California from nearby states. Meanwhile, a new report from Research and Markets forecasts the cumulative value of the Smart Grid market to surpass \$400 billion by 2020, growing with an average compound annual growth rate of over 8 percent.

According to a report by the Institute for Electric Efficiency, utilities are continuing efforts to install digital smart meters. In turn, power companies are using the real-time information provided by the meters and other projects involving the digital grid to improve efficiency and reliability. The report found that smart meters were installed in more than 45 million U.S. homes as of July 2013; in May of last year that number was 36 million. The report also noted power company efforts to cut losses, reduce peak demand periods, and provide customer incentives for reducing power use at certain periods. "These investments are changing the way utilities manage the grid. For example, following Superstorm Sandy and Hurricane Irene, utility Smart Grid investments provided valuable information that helped restore power to thousands of customers earlier than anticipated," says IEE executive director Lisa Wood.

An advanced distribution management system (ADMS) is needed to make the distribution grid smarter, faster, and more reliable. For utilities to capitalize on the business advantages of renewable energy, they need to overcome the challenges associated with integrating it into the grid — challenges that are particularly acute when integrating low- to medium-voltage distributed energy resources (DER). As the modern grid grows in sophistication, the need to plan, engineer, and operate the network more effectively is critical for this integration. However, there are technological and software innovations that will have to become more prevalent in order for a larger number of DERs to integrate reliably with the grid. One of the best ways to manage this integration is through ADMS — which can model, visualize, monitor, and control the operation of DERs. ADMS is a key technology that will help utilities in their efforts to meet new renewable energy standards and business objectives.

As distributed generation becomes more prominent, distribution networks might become small islands of energy that can operate while connected to the rest of the network. They also can operate independently as microgrids in a disconnected manner. An ADMS can manage the network through these operating approaches, including demand forecasting, while optimizing it for losses, reliability, or cost of operation. By continuously running real-time analysis, ADMS can identify problems and suggest approaches to better balance the load.

ADMS functionality and tools are demonstrating that utilities can effectively manage demand without building large-scale generation through DER integration. The ADMS can successfully deal with the evolving use of electricity, support changing consumer habits,

and accommodate new distributed sources — all while operating within regulatory norms for voltage levels. As such, it will be an indispensable tool of the Smart Grid era, providing critical functionality to help utilities manage resources and operate their networks efficiently and reliably based on unbalanced distribution networks with frequently changing topologies and demand profiles.

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Call for Comment: American National Standards Institute EESCC Standardization Roadmap V1.0 draft

The American National Standards Institute (ANSI) Energy Efficiency Standardization Coordination Collaborative (EESCC) has released for a 45-day public comment period, the EESCC Standardization Roadmap V1.0 draft, which outlines 116 recommendations to advance energy efficiency in the built environment through standards and conformance activities. U.S. experts on energy efficiency-related issues, members of the standardization community, and other stakeholders are invited to submit input on the EESCC Roadmap V1.0 by March 15, 2014. The draft is being issued for public comment to provide an opportunity for feedback on the EESCC's findings and recommendations before final publication in mid-2014. The document can be viewed at http://publicaa.ansi.org/sites/apdl/EESCC/EESCC%20Roadmap%20V1.0%20Public%20Comment%20Period/EESCC_RoadmapV1.0_PublicCommentDRAFT.pdf.

Presently, the EESCC Roadmap V1.0 draft outlines 116 recommendations aimed at advancing energy efficiency within five distinct areas:

- Chapter One: Building energy and water assessment and performance standards
- Chapter Two: System integration and systems communications
- Chapter Three: Building energy rating, labeling, and simulation
- Chapter Four: Evaluation, measurement, and verification (EM&V)
- Chapter Five: Workforce credentialing

Broad and varied input is important to ensuring that decisions impacting the future of energy efficiency are made through consensus and collaboration, so we encourage you to review and provide input on the EESCC Roadmap draft by sending the EESCC Roadmap Commenting Form to eesc@ansi.org by March 15, 2014 (further information available from http://www.ansi.org/standards_activities/standards_boards_panels/eesc/overview.aspx?menuid=3).

Please spread the word to all EE and standardization stakeholders. You may share the following link that provides more information on the project: http://www.ansi.org/news_publications/news_story.aspx?menuid=7&articleid=3856.

Call for Comment: U.S. Department of Energy's Uniform Methods Project

The U.S. Department of Energy (DOE) and the DOE National Renewable Energy Laboratory (NREL) invite you to participate in a stakeholder review of the latest measurement and verification guidance document produced by the Uniform Methods Project: **Estimating Net Savings: Methods and Practice**

DOE is developing the protocols in close collaboration with the industry. The protocols will provide a straightforward method for evaluating gross energy savings for each of the most common residential and commercial measures and programs offered by ratepayer-funded energy efficiency programs in the United States.

DOE invites AESP members to participate in a review of the draft ending Friday, February 21, 2014. The review will provide stakeholders with the opportunity to provide feedback about the draft before it is released in its final form. And it will allow DOE to gather feedback on its validity and usefulness. After the review period closes, DOE will update and publish a new draft of the document online along with its responses to reviewer comments.

Learn more about the project and participate in the protocols review at:
http://www1.eere.energy.gov/office_eere/de_ump.html

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AESP News



Announcing the Winners of the 2014 AESP Energy Awards

AESP's Energy Awards were presented last week at the National Conference. Congratulations to the winners and thank you to all those who entered their programs for consideration. Watch for a write-up on the award-winning programs in a future issue of AESPecially for Members.

For Outstanding Achievement in Residential Program Design & Implementation
 Puget Sound Energy, for Contractor Alliance Network Program

For Outstanding Achievement in Nonresidential Program Design & Implementation
 Southern California Edison Company, for Upstream HVAC Program

For Outstanding Achievement in Technology Deployment
 Snohomish County Public Utility District, for Transformative Wave

For Outstanding Achievement in Marketing & Communications — Social Media
 The Sponsors of Mass Save, for Mass Savers Like to Save Campaign

For Outstanding Achievement in Marketing & Communications — Residential
 Brickworks Communications Inc./PowerStream, for Smart Kids

For Outstanding Achievement in Marketing & Communications — Nonresidential
 Nicor Gas Energy Efficiency Program, for Nicor Gas Business Energy Efficiency Rebate Program

For Outstanding Achievement in Pricing & Demand Response
 Baltimore Gas & Electric, for BGE Smart Energy Rewards™

One to Watch Award
 Valari Uhl, Puget Sound Energy

B.H. Prasad Award
 Carol White, National Grid

Even More Winners

Disappointed Broncos fans could say they saw more winning moments at the AESP National Conference than from their team on Sunday. Well there sure were a lot of winners in San Diego, from the many exhibitor-sponsored drawings to AESP's own activities. For the first time, AESP introduced a conference app game at this conference. Congrats to all our winners below.

AESP Raffle
 Suite of GE Appliances — Kelli Bluhm

Pre-Conference Game

1st Place, \$75 gift card — Mary Jackson
2nd Place, \$50 gift card — Jessie Hennesy
3rd Place, \$25 gift card — Kristin Laursen

Conference Game

1st Place, \$75 gift card — Andrea Jester
2nd Place, \$50 gift card — Zach Ross
3rd Place, \$25 gift card — Mike Kernan
Sweepstake Prize, iPad Mini — Karen Heater

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News Releases and Announcements

CLEAResult unites regional energy efficiency companies across the United States and Canada

AM Conservation Group acquires energy and water conservation products division from Niagara Conservation

With new contract, Energy Trust of Oregon and PECL continue to bring energy efficiency to Oregonians

E Source 100 percent powered by alternative energy

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