DEED digest
American Public Power Association

# NOVEMBER 2019 EDITION

## DEED Webinars: Hear first-hand from public power innovators about their DEED supported projects

### Developing a Demand Side Management Program Using Blockchain

Blockchain is an emerging technology with a wide array of applications, yet unfamiliarity in the electric utility space, and few, if any, validated use cases or successfully working programs. Join the project team at Burlington Electric Department (BED) and Omega Grid on this webinar to learn how they used the technology to create an innovative, new demand side management program for commercial and industrial customers. In this webinar you will learn how blockchain might be able to assist utilities in helping to manage the proliferation of customer-owned devices like solar panels, batteries, and electric vehicles, as well as learn about the costs and feasibility of developing and managing a market incentive program at the local level.

Join us for one hour on **Thursday, December 5th at 2:00 PM EST** to hear from the staff at BED and Omega Grid that executed this project.

Register Now

DEED Webinars

A chronological listing of DEED webinars is posted for DEED member only access **here**.
DEED webinars are provided free to DEED members. To find out if you are a DEED member, **click here**.

This webinar's speakers include:

- **Casey Lamont,** Resource Planning Analyst, Burlington Electric Department, VT
- **Killian Tobin,** CEO, Omega Grid, VT

### Increasing Rural Household Access to Community Solar Programs

Community solar programs have emerged to provide residents and businesses access where individually owned systems face barriers. Join the project team at WPPI Energy and Chart House Energy on this webinar to learn how they identified strategies to cost effectively increase participation of low to moderate income (LMI) household participation in public power community solar programs. The research involved qualitative

interviews, focus groups, a survey to evaluate community interest and participation rates, and a cost-benefit analysis of various program features including demand-side energy efficiency options.

In this webinar you will see how an inclusive community solar program was developed and how the Excel based tool created can be used to determine a cost-effective community solar project scale.

Join us from **2 - 3:00 p.m. EST on Tuesday, December 10th** to hear from the staff at WPPI Energy and Chart House Energy that executed this project.

Register Now

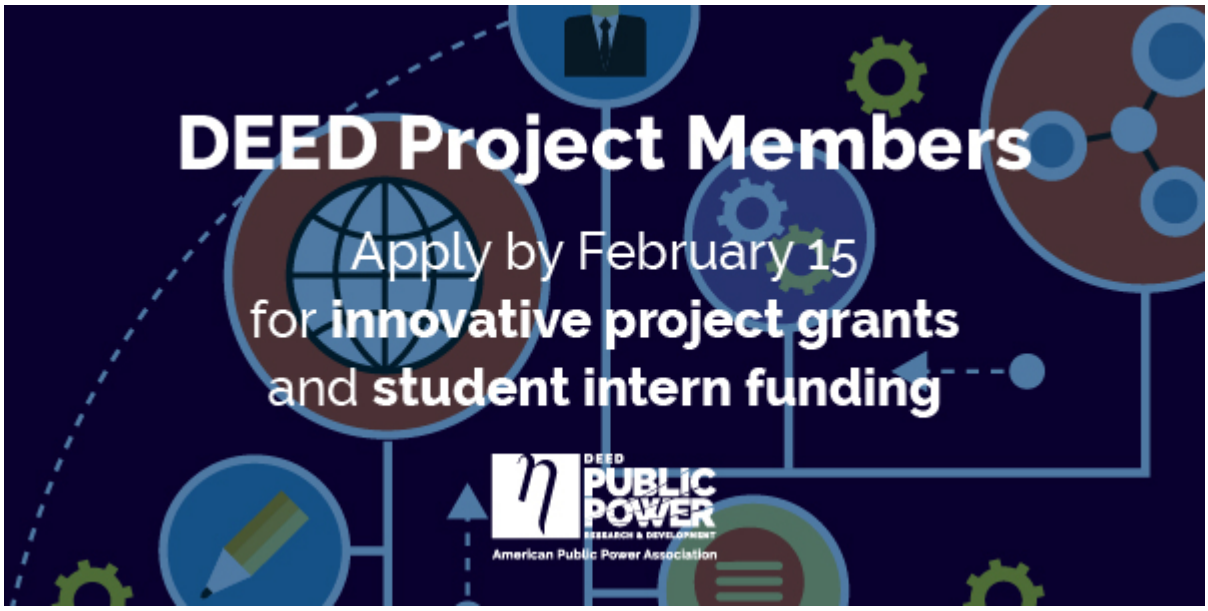
This webinar's speakers include:

- **Brett Niemi**, Senior Energy Services Representative, WPPI Energy, WI
- **Emily Prehoda**, Policy and Innovation Director, Chart House Energy, MI

## Help us deliver content you want - Take Our Survey!

As we continue our monthly ***Dig Deeper with DEED*** segments, we need to hear what topics are most important to you! Tell us what you want us to investigate by **clicking here.**

## Next Opportunity to Apply for Grant Funding has Arrived




The Spring 2020 Grant Application Cycle is now open for utility grants**!** The deadline to apply is **February 15th, 2020.**

DEED members may apply for **up to $125,000 in grant funding** for their innovative utility projects. Grants target projects that improve utilities by increasing efficiency, reducing costs, investigating new technologies, offering new services, and improving practices to better serve customers. For more information, view DEED's funding page**,** and our past webinars Tips when Applying for a DEED Grant and Maximizing your DEED Membership Benefits. Please also contact your region's DEED board director and APPA staff to obtain guidance on your project idea.

To get started and gain access to the application, email DEED@PublicPower.org.

The Spring Intern application opens on December 1.

## DEED Grants Approved at Fall Board Meeting

DEED'S Board of Directors met on September 25th-26th in Knoxville, TN to vote on a new round of grants.

Brief descriptions of the eight newly approved projects and their DEED Project Database web-links are provided below. A list of the newly approved scholarships will be in the December issue of the DEED Digest.


Back row: **Kyle Roadman**, Emerald People's Utility District, OR, Region 9; **Todd Dlouhy**, Lincoln Electric System, NE, E&O Chair; **Darryl Strother**, City of Rocky Mount, NC, Region 5; **Christopher Roy**, Belmont Light, MA, Region 8; **Alex Hofmann**, APPA Senior Director of Energy and Environmental Services, **Mike Noreen**, River Falls Municipal Utilities, WI, Region 2
Front row: **Brian Coate**, Tullahoma Utilities Authority, TN, Region 7; **Allen Johnson**, Bountiful City Light & Power, UT, Board Vice Chair, Region 1; **Kenny Roberts**, ElectriCities of North Carolina, NC, Region 10; **Liz Jambor**, Austin Energy, TX, Board Chair, Region 4; **Rachel Huang**, Sacramneto Municipal Utility District, CA, Region 6; **Chris Ching**, APPA Engineering Services Assistant, **Michele Suddleson**, DEED Program Director

**CG-2261 Battery Energy Storage System to Maximize Renewable Energy Generation**
*$125,000 to Chelan County PUD, WA*

Chelan County PUD plans to execute a battery energy storage system (BESS) to reduce or eliminate the need for diesel generation at their utility. This shift would reduce emissions and make Chelan County PUD's generation completely carbon-free. This project will show how BESS can be used to meet load growth using existing generating equipment, while maximizing renewable generating resources like hydro, wind, and solar. The battery system will enable Chelan PUD to expand its renewable hydro resources to meet future peak demand and load growth. READ MORE

**CG-2262 Fault and Load Indicator Technology Integration**
*$25,335 to City of Rock Hill, NC*

The City of Rock Hill (CRH) will install 115 Smart Overhead Fault Indicators throughout their grid in an effort to increase outage response time. The project team has partnered with DataVoice International to provide the integration with the outage management system. The indicators will be placed throughout the grid to detect momentary and permanent faults and will be connected to a functional app used by the outage response teams. This endeavor will not only increase customer service quality, but also allow CRH to effectively map weak points in the system in need of improvement. READ MORE

**CG-2264 2nd Drive - Used EV Dealer Program**
*$70,000 to Energy New England, MA*

Energy New England aims to provide a sales incentive to used car dealers to encourage inventory of used EVs, while providing support in marketing, education, and charging infrastructure. The results of the pilot could assist state and local governments in making decisions about allocating funds for EV

**CG-2265 Computer Vision Model for Asset Management and Condition Monitoring in Distribution Systems**
*$22,580 to Fort Collins Utilities. CO*

Fort Collins Utilities (FCU) is developing a comprehensive asset management program to monitor equipment, such as medium voltage cables and cable accessories, in their underground vaults.

adoption as a used EV market develops. This program will support EV adoption and electrification of transportation in lower income communities where used car purchases are a norm, and therefore provide the economic and environmental benefits of clean transportation to those who need it the most.
READ MORE

**CG-2266 Smart Pole Solutions**
*$125,000 to Kissimmee Utility Authority, FL*

Kissimmee Utility Authority (KUA) aims to guide their community towards becoming a smart city, integrating information and communication technology to optimize city operations. Their project will combine the current function of their utility poles with a wide variety of additional service options to solve customer problems and challenges like safety and security via camera monitoring, used Wi-Fi hotspots, EVSE charging stations, etc. The project team will research the new technology, promote, design, and install systems initially for key accounts customers, and report on the transferability of the technology. READ MORE

**CG-2268 Illuminate Research**
*$50,000 to Nebraska Public Power District, NE*

Nebraska Public Power District (NPPD) has partnered with University of Nebraska's Energy Science Research Center and the Electric Power Research Institute's Incubatenergy to work on a framework that develops research, data collection, and analytical skills for students in kindergarten through college. This project is a focused effort to provide resources, opportunities, and events that develop a technical workforce and a culture of energy innovation within NPPD's "Path of Innovation." The team aims to empower students to engage in innovative learning focused on energy, entrepreneurship, and employment and foster mentorship, community pride, and economic development. READ MORE

The team aims to develop and evaluate a computer vision model to mine key attributes from visible and infrared images of closed underground vaults. The mined data will be mapped and visualized to serve as a resource for both inspection and maintenance crews and utility managers that will allow for a syste-wide view of the closed underground vault network.
READ MORE

**CG-2267 Critical Infrastructure Lightning Protection**
*$125,000 to Kissimmee Utility Authority, FL*

Kissimmee Utility Authority's (KUA) Critical Infrastructure Lightning Protection plan will target critical assets and infrastructure within the company's footprint and provide lightning protection to prevent equipment damage and possible injury. By partnering with EMP Defence, KUA will use advanced lightning protection systems to prevent a strike from occurring. The EMP Defence Systems balance the electromagnetic field and eliminate the factors that cause lightning before it strikes using lightning suppression technology that surpasses anything on the market. READ MORE

**CG-2269 Income-Qualified Energy Efficiency Pilot Program**
*$50,000 to Omaha Public Power District, NE*

Omaha Public Power District (OPPD) aims to improve participation and remove barriers in their current income-qualified energy eficiency program to better quantify the effectiveness of their energy efficiency measures. OPPD will address the way customers participate, and hope to streamline their application process by introducing partner agencies that reduce the verification portion. The pilot and information gained will give the OPPD vital information, data, and results to make an informed decision to pursue a larger-scale program for income-qualified customers. READ MORE

## Dig Deeper with DEED: Serving Low-Moderate Income Customers

This month we are covering projects that aim to serve low-moderate income customers. Considering a DEED grant or scholarship involving this topic? Related projects include:

- Gainesville Regional Utilities' completed grant- Engaging Communities for Energy and Water Savings: Improving measurement and effectiveness of energy/water audits for low income neighborhoods
- WPPI Energy's current grant- Increasing Low-to-Moderate Income Household's Access to the Benefits of Rural Public Power Community Solar Programs
  **Register for the upcoming webinar here.**

There are also national entities supporting solar programs and conducting related research:

- National Renewable Energy Laboratory's Design and Implementation of Community Solar Programs for Low and Moderate-Income Customers

- National Renewable Energy Laboratory's Up to the Challenge: Communities Deploy Solar in Underserved Markets
- Department of Energy's Solar Energy Innovators Program

## Recently Completed Projects

One grant and two scholarships wrapped up in the month since our last newsletter. Visit the DEED Project Database for a repository of hundreds of outstanding research projects funded by DEED. Learn what other public power utilities like yours have done. Discover how you can replicate or improve on the success of projects completed by your peers. Get ideas for your own projects and apply for DEED cofunding with a DEED grant.

**G-410 Data-Driven Customer Segmentation for Reducing Peak Power Energy Consumption**

Managing demand is difficult for small utilities because they have fewer monetary resources to incentivize customers to use less power. **New River Light & Power** applied data-driven analytical techniques to help reduce power consumption during predicted peak power times. The project team focused their efforts on finding the best way to reach customers by segmenting them based on home characteristics. Based on data-driven segmentation of these non-traditional variables, they experimented with the most successful messaging strategies to encourage peak power reduction for these groups. This research combines the power of data-driven segmentation, information communication technologies, predictive and prescriptive analytics to allow utilities to efficiently improve demand response by managing power consumption of target customers, especially during system-wide peak loads. Learn more about the project and read the final report and deliverables here: **READ MORE**

**S-255 GIS Enhancement**

**Florence Utility Commission** hired an intern, Shayla McLain, student at University of Wisconsin - La Crosse, to help continue developing and improving their GIS mapping system. The student was able to map in and out of the office, helping crew members obtain the right maps for their jobs, as well as tagging utility poles. The intern visually inspected each pole and its surrounding lines to make sure the maps were accurate and precise. Learn more about the project and read the final report and abstract here: **READ MORE**

**S-256 CDE Lightband Internship**

**The Clarksville Department of Electricity** hired an intern, Luke Daniel, student at Tennessee Tech, to promote workforce and potential careers in the public power industry. Luke was responsible for solving day-to-day problems such as redesigning an aged tap-line, as well as long-term problems like helping an electrical engineer place and program automated switches throughout the service area. The intern was exposed to many different types of software such as SCADA, GIS, and OMS. Learn more about the project and read the final report and abstract here: **READ MORE**

## Electric Power Research Institute's Consumer Guide to Electric Vehicles

The Electric Power Research Institute (EPRI) has created the **Consumer Guide to Electric Vehicles**, a report that works to demystify plug-in electric vehicles. Not only does this report highlight the electric cars available nationwide as of March 2019, it also answers important questions like "What should I consider in making a purchase?" and "Can weather affect my car's performance?"

## Apply for the Department of Energy's Sponsored Solar Energy Innovators Program

The Energy Efficiency and Renewable Energy (EERE) Solar Energy Innovators Program supports practical research experiences onsite at a utility, energy service company, or public utility commission (PUC) for early- and mid-career innovators. The EERE program is designed to provide opportunities for students and established scientists in the transition to a global, clean, energy economy. Engineers, researchers, scientists, involved in renewable energy programs and research should apply. **Apply here.**

Learn about more opportunities from the Office of Energy Efficiency and Renewable Energy **here**.

## New National Lab Study Quantifies the Cost of Transmission for Renewable Energy


Berkeley Lab has announced a new study, **Improving estimates of transmission capital costs for utility-scale wind and solar projects to inform renewable energy policy**, which seeks to clarify the potential costs of large-scale transmission investments using utility-scale wind and solar. Among other findings, the research highlights that the average levelized transmission capital cost for renewables ranges from $1 to $10/MWh, with utilities being on the lower end of the range.

## Contact

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AMERICAN PUBLIC POWER ASSOCIATION