

GREEN POWER News

WAPA's Renewable Resources Program covering
green power, reports, studies and funding

WESTERN AREA POWER ADMINISTRATION

Welcome to the *Green Power News Update*. This is a summary of the stories that ran during **April 2017**. New stories are added throughout the month to make sure you always know what is happening in our fast-changing industry. Check back often to see what's new!

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Green Power

Building on Community Solar Success

In Oklahoma, members see value in participating in small-scale solar

Karen Higgenbotham and her husband, Leroy, have been members of East Central Oklahoma Electric Cooperative since they bought their farm in Haskell more than 50 years ago.

After half-a-century, they're primed for a new energy future. Karen signed on to the co-op's community solar project after seeing photovoltaic panels as she drove around Oklahoma.

"I subscribed to two panels. As it turns out, they were the first two," she said. "This was a way to get solar without worrying about maintenance."

For Okmulgee-based East Central Oklahoma EC, a 250-kilowatt array developed with help from its power supplier, Western Farmers Electric Cooperative, is off to a strong start. About 150 of the 950 panels available have already been subscribed at a one-time cost of \$350 each.

Source: Electric Coop.com, 4/17/17

Flashbacks: The First Wind-Power Boom

We're in the middle of a wind-power boom. Installed capacity has increased from just over 4,000 MW in 2001 to close to 70,000 MW today. This happened once before in the United States, although with a tamer technology.

Between 1920 and 1935, farmers and ranchers purchased a million wind chargers—not the iconic windmills used since the 1850s to pump water for crops and livestock and still seen along rural back roads, but small, propeller-driven electricity generators.

Old black-and-white photographs show the propellers and attached tail vanes sticking up from farmhouse and barn roofs like TV antennas. Others perched atop lightweight steel towers. A big, prosperous farm might have had two or three towers.

The essential components were the propeller and tail, an attached generator, and wires leading indoors to a control panel and a battery.

Source: Rural Electric Magazine, 4/10/17

Register for May 18 Webinar on Distributed Solar for Smaller Utilities

12-1 p.m. MT

Join the Distributed Generation Interconnection Collaborative (DGIC) on May 18 for a free webinar on the topic of distributed solar for smaller utilities.

While the distributed solar spotlight often falls on a dozen or so large investor-owned utilities, some smaller utilities have quietly met or surpassed their peers in solar deployment

on a per-customer basis. At the same time, these organizations may have fewer resources to maintain safety, reliability, and affordability for their customers. This webinar will highlight the experiences of two utilities, each having between 5,000 and 50,000 customers, as they shift their business processes, staffing, planning, and operations to incorporate distributed solar into their systems.

Stay tuned to the [DGIC website](#) for more information on our upcoming webinars planned for July on plug-and-play solar and September on aggregation of distributed energy resources.

Source: Distributed Generation Interconnection Collaborative, 4/20/17

SMART Program webinar recording now online

The Solar Carve-Out and SREC program in the Massachusetts renewable portfolio standard have dramatically increased solar capacity in the Commonwealth. Last year, the Massachusetts Department of Energy Resources carried out a thorough process, with considerable stakeholder input, to design a new program that would maintain robust growth in the number of solar installations while reducing costs for ratepayers. The state is now in the process of implementing a new solar incentive program that seeks to reduce market risk and uncertainty so that incentives can be smaller.

In this webinar, Kaitlin Kelly, RPS Program Coordinator at DOER, described the context for the program, discussed the program's design considerations, and explained how the program will work and be rolled out. Her presentation was followed by a Q&A with the audience.

Source: Clean Energy States Alliance, 4/13/17

Presentations from Imperial Valley Renewable Energy Summit available to download

The Imperial Valley Renewable Energy Summit offered three days of exciting, comprehensive program, featuring engaging speakers and ample networking opportunities. The event also included: a press conference, banquet, business-to-business expo and tours of renewable energy facilities. Tour participants had the opportunity to visit the Salton Sea, as well as Imperial Irrigation District- Battery Energy Storage System, Tenaska Imperial Solar Energy Center West, Energysource John L. Featherstone Plant, Ormat Geothermal Plant-Heber 2, San Diego State University- Sustainability Center and Imperial Valley College Solar Facility.

Source: Imperial Valley Economic Development Corporation, 4/11/17

FEMP webinar explores green tariffs

**May 4
11:30 A.M. MT**

First Thursday Update presents a new option for agencies to purchase renewable energy through their utility: green tariffs. Green tariffs allow large utility customers in traditionally regulated states to procure renewable power from their utility through a special tariff for energy from a specific renewable energy project—typically through a long-term contract.

Instructors will explain how green tariffs are structured and what agencies need to consider when examining this purchasing option. This update will also discuss emerging tariffs and how agencies can work with their utility to create new green-tariff options.

Source: Federal Energy Management Program, 4/10/17

Watch Clean Energy Group's Solar+Storage webinar

Resilient power technologies, like solar combined with energy storage (solar+storage) can not only provide critical power to essential facilities and services during a power outage, they can also provide economic benefits throughout the year, by reducing power bills and generating revenue through providing services to utilities and grid operators.

To help deploy more resilient power systems in the communities that need them the most, Clean Energy Group has developed Resilient Power Toolkits, with specialized resources for community service providers and affordable housing developers.

In *Tools for Building More Resilient Communities with Solar+Storage*, Clean Energy Group staff provided a brief introduction to the concept of resilient power, and introduced the newly developed Resilient Power Toolkits.

Source: Clean Energy Group, 4/6/17

Solar Utility Network Deployment Acceleration Project

The Solar Utility Network Deployment Acceleration project, or SUNDA, is developing a standardized "Photovoltaic system package" consisting of engineering designs, business models, financing and insurance options, and optimized procurement that can reduce the cost of utility-scale solar projects. NRECA estimates these packages can reduce engineering design costs by 25 percent, procurement costs by ten percent and insurance costs by 25 percent.

The SUNDA project aims to bring the cost of installed solar down to \$1.60/Wp.

Thanks to a grant from the Department of Energy's SunShot Initiative, NRECA is partnering with the National Rural Utilities Cooperative Finance Corporation, PowerSecure and the 17 cooperatives to develop, test and refine standardized system packages that will enable co-ops across the country to develop solar at a minimal cost.

Source: Cooperative.com, 4/6/17

Webinar looks at New York City's Solar+Storage plan

In *NYC's Policy Target and Roadmap for Resilient Solar+Storage*, Laurie Reilly of Sustainable CUNY and Kathryn Wright of Meister Consultants Group discussed the collaborative development process for creating the Roadmap, along with the barriers and recommendations outlined within the plan. Ben Mandel of the NYC Mayor's Office of Sustainability described the City's storage target and what types of policy initiatives can help drive NYC towards achieving this goal.

This webinar was a presentation of Clean Energy Group's Resilient Power Project, and was moderated by Clean Energy Group project director Seth Mullendore.

Source: Clean Energy Group, 4/4/17

Free webinar explores solar provision changes to National Electrical Code

May 11, 12 p.m. MT

There are more than 1.3 million photovoltaic (PV) systems installed nationwide, with more installed every day. PV system safety and reliability is increasingly guided by robust codes and standards, including solar provisions in the National Fire Protection Association's (NFPA) National Electrical Code (NEC). Although solar is by no means new to the NEC, the 2017 version has updates and additions to support the growing solar economy.

Join us for this interactive webinar on May 11, 2017 at 2pm ET with national expert Jim Rogers. Learn about new articles in the NEC, such as large scale photovoltaic electric supply stations and energy storage systems, as well as updates to existing provisions like rapid shutdown, and grounding of PV systems. You will have an opportunity to submit your specific questions in advance or during the webinar.

Sources: Interstate Renewable Energy Council, 3/29/17

Webinar recording gives industry view on Solar+Storage

This webinar features a presentation by Ellen Howe and Roman Couvrette of JLM Energy, an employee-owned energy technology company based in Northern California. JLM has created a fully-integrated solar+storage software platform and energy technology bundle that optimizes energy use and maximizes savings for customers, including a newly announced MicroStorage product. Their technology bundle includes solar, energy storage, monitoring devices, algorithms and load controllers that are all unified in a single software platform.

In this webinar, guest speakers from JLM Energy discussed their experiences in the solar+storage market, new product offerings, and where they see opportunities for solar+storage today and in the future.

Source: Clean Energy Group, 3/29/17

Find more [publications and webinars](#).

Reports and Studies

Energy Storage Guide for Policymakers Released Today by Interstate Renewable Energy Council

A new tool published today by the independent Interstate Renewable Energy Council, ***Charging Ahead: An Energy Storage Guide for State Policymakers***, provides regulators and other decision makers with specific guidance on key issues for policy consideration, including foundational policies for advanced energy storage - a new generation of technologies characterized by flexible operating capabilities and diverse applications.

The characteristics that make energy storage so valuable and attractive also make it challenging to address in policy and regulatory contexts.

Despite its game-changing potential to transform the electricity system, energy storage is vastly underutilized in the U.S. electricity sector. Its deployment remains hampered by the current features of regional, state and federal regulatory frameworks, traditional utility planning and decision-making paradigms, electricity markets, and aspects of the technology itself.

To date, state policymakers and electric system stakeholders have largely navigated energy storage issues without the benefit of a roadmap to inform key regulatory and policy pathways for widespread deployment.

Source: Interstate Renewable Energy Council, 4/17/17

Alaskan microgrid to pair battery, flywheel storage systems for Anchorage area

Alaska power customers have typically faced high electric bills, the result of tenuously-connected remote communities and the high cost to serve them. Chugach's Anchorage-area project could have implications for more distant villages, but in the meantime, it will be used to test scalability and improve power stability for roughly 300,000 people.

Source: Utility Dive, 2/7/17

DGIC webinar on energy storage available online

Utilities and regulators are responding to the growth of distributed generation with new business models and approaches.

Energy Storage Permitting, Interconnection and Analysis covers the many aspects of building and stabilizing an emerging energy sector in a changing environment.

Source: National Renewable Energy Laboratory, 4/6/17

New Report Shines Light on Installed Costs and Deployment Barriers for Residential Solar PV with Energy Storage

Researchers from the U.S. Department of Energy (DOE) National Renewable Energy Laboratory (NREL) are making available the most detailed component and system-level cost breakdowns to date for residential photovoltaic (PV) solar systems equipped with energy storage-and quantifying previously unknown soft costs for the first time.

The report, titled "***Installed Cost Benchmarks and Deployment Barriers for Residential Solar Photovoltaics with Energy Storage: Q1 2016***," was written by researchers from NREL, the Rocky Mountain Institute, and the Energy Department.

"There is rapidly growing interest in pairing distributed PV with storage, but there's a lack of publicly available cost data and analysis," said Kristen Ardani, lead author of the report and a solar technology markets and policy analyst at NREL. "By expanding NREL's well-established component- and system-level cost modeling methodology for solar PV technologies to PV-plus-storage systems, this report is the first in a series of benchmark

reports that will document progress in cost reductions for the emerging PV-plus-storage market over time."

Source: National Renewable Energy Laboratory, 3/28/17

Demonstration of Essential Reliability Services by a 300-MW Solar Photovoltaic Power Plant

The California Independent System Operator, First Solar and the National Renewable Energy Laboratory conducted a demonstration project on a 300-MW photovoltaic power plant in California to test its ability to provide essential ancillary services to the electric grid. Testing was completed in August 2016, and an analysis of the large amount of test data the unit produced demonstrated that advanced power electronics and solar generation can be controlled to contribute to system-wide reliability.

Source: National Renewable Energy Laboratory, 3/31/17

Part 2 of Low-Income Solar webinar now online

In this webinar, Lawrence Berkeley National Laboratory researcher Greg Leventis reviewed low-income energy efficiency financing products and discussed how different financing products can address different barriers to low-income energy improvements.

Source: Clean Energy States Alliance, 3/30/17

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Source: National Renewable Energy Laboratory, 3/28/17

Report: Factoring risk into generation resource decisions

Berkeley Lab is pleased to announce the release of a new report: "Using Probability of Exceedance to Compare the Resource Risk of Renewable and Gas-Fired Generation."

Among the many risks surrounding long-term investments in power plants, resource risk is one of the most difficult to mitigate, and is also a risk that manifests differently for renewable and natural gas-fired generation. For renewable generators like wind and solar projects, resource risk is primarily a quantity risk-i.e., the risk that annual energy production will be less than expected due to a weaker-than-expected wind or solar resource. Conversely, for gas-fired combined cycle generators, resource risk is primarily a price risk-i.e., the risk that natural gas will cost more than expected.

This paper presents a new framework, grounded in statistical concepts related to “probability of exceedance,” to incorporate resource risk into utility decision-making processes.

Source: Lawrence Berkeley Laboratory, 3/29/17

Find more [publications and webinars](#).

Funding

EERE Budget Office supports clean energy solutions

The Budget Office in the Office of Energy Efficiency and Renewable Energy (EERE) tracks funding and develops the budget justifications in conjunction with EERE program offices. The Budget team also prepares for the annual congressional appropriations hearing and responds to inquiries from Congress, the Office of Management and Budget (OMB), and the U.S. Department of Energy (DOE)’s Chief Financial Officer (CFO).

EERE’S FISCAL YEAR 2017 BUDGET REQUEST

The FY 2017 budget request of \$2.89 billion reinforces DOE’s role in researching solutions to the nation’s energy challenges. It seeks to double U.S. clean energy investments in five years by including a \$2.10 billion request for Mission Innovation to accelerate worldwide clean energy technology innovation and cost reduction. This support is an increase of \$702 million from the enacted FY 2016 budget.

Source: DOE Office of Energy Efficiency and Renewable Energy, 4/24/17

Higher Education Challenge Grants Program

Applications Due: May 30, 2017

Department of Agriculture

Projects supported by the Higher Education Challenge Grants Program will:

- address a state, regional, national, or international educational need;
- involve a creative or non-traditional approach toward addressing that need that can serve as a model to others;
- encourage and facilitate better working relationships in the university science and education community, as well as between universities and the private sector, to enhance program quality and supplement available resources; and
- result in benefits that will likely transcend the project duration and USDA support.

See the FOA.

Estimated Total Program Funding: \$4.5 million

Source: Van Ness Feldman, 4/20/17

Find more [funding sources](#).