

# THE ENERGY EFFICIENCY & RENEWABLE ENERGY TRACKER

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## PEOPLE & PLACES

### Construction Underway at Enbridge's New Creek Wind Facility in Grant County, WV

Construction is currently on-schedule at Enbridge Inc.'s New Creek wind facility near New Creek, WV. The facility will have a nameplate capacity of 103 MW.

As of the end of August six of the towers had been fully erected, with 27 bases complete and the remaining towers set to go up in the coming weeks. All the foundation work has been completed, and the collection system is approximately 80% complete. There are currently about 180 workers on site, although the number fluctuates depending on the activities.

Enbridge acquired the project from EverPower Wind Holdings, LLC in November 2015. The facility is scheduled to begin commercial operation in December of 2016.

SOURCE: Enbridge Inc.



### American Municipal Power Starts Generating Electricity at Willow Island Hydro Facility

The Willow Island Hydro Project, located at the Willow Island Locks and Dam in Pleasants County, WV has been generating electricity since February 2016. The facility is owned by American Municipal Power (AMP), a public power utility, and has a capacity of 44 MW.

Construction on the facility began in mid-2011, with construction of the powerhouse beginning in late 2012. The plant is part of the AMP Phase 1 project, which also includes the Cannelton project (reached commercial operation in June 2016) and Smithland (under construction) hydroelectric projects.

On an annual basis, Willow Island Hydro is expected to produce approximately 239 million kWh of electricity. Power from the facility is received by AMP customers in Ohio, West Virginia, Virginia, Kentucky and Michigan. AMP's member communities in West Virginia are New Martinsville and Philippi.

SOURCE: American Municipal Power



### Appalachian Power Plans to Purchase 120 MW of Indiana Wind for Customers in WV and VA

In June, Appalachian Power announced it intended to sign a power purchase agreement (PPA) for the Bluff Point wind energy center on behalf of its customers in West Virginia and Virginia. The 120 MW facility is located in Indiana and is owned by NextEra.

According to a June 1 filing with the Virginia State Corporation Commission (SCC), Appalachian Power stated it had issued a Wind RFP for the project, which included a pre-qualification process and an initial screening process, and received about 30 proposals. Ten projects were selected for in-depth economic analysis. The Bluff Point Renewable Energy Purchase Agreement (REPA) exhibited the lowest levelized cost of electricity and lowest Net Cost of Energy of all bids.

Appalachian Power stated in the VA SCC document that the Bluff Point REPA will reduce the Company's exposure to the vagaries of the PJM energy market." The utility also stated that much of its energy shortfall occurs in the winter, when demand for energy peaks and when wind resources such as the Bluff Point project are particularly productive.

SOURCE: Appalachian Power and Virginia SCC



### Installed solar prices continued to decline in 2015

In August, Lawrence Berkeley National Lab (LBNL) released two reports summarizing the state of the solar industry titled "Utility-Scale Solar 2015: An Empirical Analysis of Project Cost, Performance, and Pricing Trends in the United States" and "Tracking the Sun IX: The Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States."

Highlights from the utility-scale sector (defined as ground-mounted projects larger than 5 MW<sub>AC</sub>):

- Due to expansion outside of the Southwest, the average long-term insolation level across new projects declined for the first time in 2015.
- Median installed PV project prices fell by nearly 60% since 2007-2009, to \$2.7/W<sub>AC</sub> (or \$2.1/W<sub>DC</sub>) for projects completed in 2015.
- The share of new projects using tracking increased from 58% in 2014 to 65% in 2015; in capacity terms the share increased from 39% to 70%.
- 72% of the utility-scale capacity additions in 2015 were in CA and the Southwest (NV, UT, AZ, CO, NM), a decline from 92% in 2014.

Highlights from the installed price report:

- Median installed prices fell by \$0.2/W (5%) for residential systems, \$0.3/W (7%) for non-residential systems ≤500 kW, and \$0.3/W (9%) for non-residential systems >500 kW.
- Since 2012, all price declines are from non-module costs as module costs have remained flat. (continued on next page)

# PEOPLE & PLACES CONTINUED

## Installed solar prices continued to decline in 2015 (Continued)

- Since 2010, price declines result from:
  - o price reductions for key balance-of-system components, mainly inverters and racking equipment - 20% of decline;
  - o increased median module efficiency (from 14% to about 16.5%) - 8% of decline;
  - o increased residential system size – 10% of decline;
  - o declines in various soft costs (permitting and interconnection, system design, installation, etc.) - 62% of decline.
- 80% of sampled residential installations are located in CA, AZ, NY, MA & NJ.
- 80% of sampled non-residential installations <500 KW are located CA, NY, MA, NJ & NH.
- 95% of sampled non-residential installations >500 KW are located in CA, NC, MA, NJ and CT.

SOURCE: NREL

## Home Gas Furnaces to Become More Efficient

The Appliance Standards Awareness Project of the American Council for an Energy-Efficient Economy (ACEEE) tracks the impact of changes in appliance manufacturing standards mandated by the U.S. Department of Energy (USDOE). In a recent blog, ACEEE described proposed changes to minimum efficiency standards for new home gas furnaces.

The standard is based on the metric Annual Fuel Utilization Efficiency (AFUE), which measures the amount of heat delivered to a home compared to the amount of fuel that must be supplied to the furnace. The standard covers non-weatherized gas furnaces (to be installed indoors) and mobile home gas furnaces.

In 2007, DOE set gas furnace standards at 80% AFUE, effective 2015. The improvement from 80% to 92% efficiency is expected reduce space heating energy consumption by about 13%.

DOE's estimate for energy savings by the proposed standard is that it will reduce US energy use by 2.9 quadrillion Btus over 30 years of sales. This estimate ranks the standard as the biggest end-use natural gas saver of any standard ever issued.

Space heating is the largest component of residential end-use energy consumption, at about 40% of total. About 40% of U.S. households use natural gas furnaces. Small furnaces - with an input capacity of 55,000 Btu per hour or less - would not be affected by the rule.

As reported by ACEEE, DOE is seeking comments on the new proposed standard and is considering increasing the proposed standard to 95% efficiency. A final rule is expected around the end of this year. New standards would take effect five years after the final rule is published.

SOURCE: ACEEE and 10 CFR Part 430



## Wind Projects in the Interior Region Continue to Drive Installation Trends

The "2015 Wind Technologies Market Report" released by the U.S. DOE's National Renewable Energy Laboratory (NREL) in August reveals that about 7.7 of a total 8.6 GW of wind projects completed in 2015 were located in the Interior region of the U.S. No new wind facilities were completed in West Virginia or Pennsylvania in 2015, although 30 MW was added in Maryland. 224 MW was completed in the Northeast region, of which 173 MW is in Maine.

Analysis of wind power purchase agreements (PPAs) shows that the Interior region had levelized PPA prices of \$20/MWh in 2015 net of tax incentives. Data on prices in other regions was not presented. According to NREL, the low PPA prices for Interior wind have been enabled by the combination of higher capacity factors, declining costs, and record-low interest rates.

In spite of these low prices, NREL concluded that the relative competitiveness of wind power declined in 2015 with the drop in wholesale power prices.

SOURCE: NREL



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