

DIRECTION

Policy • Advocacy • Business • Finance • Legal • Environment • International

PORTLAND GENERAL COMPLETES 267MW TUCANNON RIVER PROJECT



Portland General Electric Company recently announced its Tucannon River Wind Farm is in service and available to generate power for PGE customers. Tucannon River is PGE's second fully owned and operated large-scale wind project, with 116 turbines and a total installed capacity of 267 megawatts. Given the variability of wind power, the plant is expected to produce an average of 101 megawatts — enough to power the homes of about 84,000 average PGE residential customers.

“Tucannon River Wind Farm is a key infrastructure investment that will serve our customers with clean, renewable energy for de-

acades to come,” said Jim Piro, PGE president and CEO. “Tucannon River supports a balanced, diverse energy portfolio for reliable, reasonably priced power. The new wind farm will also help PGE meet Oregon’s Renewable Portfolio Standard, which requires us to supply 15 percent of the electricity our customers use from qualified renewable resources by 2015 and 25 percent by 2025.”

Tucannon River Wind Farm is located on 20,000 acres near Dayton, Wash. The new wind farm complements PGE’s existing portfolio of wind resources located in Eastern and North-central Oregon: Biglow Canyon Wind Farm, which

is fully owned and operated by PGE, and power purchase agreements for the output of the Klondike II and Vansycle Ridge wind farms. By securing wind power from different geographic locations, PGE is able to better integrate wind into the system because the facilities are less likely to cycle up and down simultaneously.

In addition to providing carbon-free and emissions-free generation of electric power, Tucannon River is providing economic support to the region.

“The Tucannon River Wind Farm has been a great addition to Columbia County and the Dayton community,” said Mike Talbott,

Columbia County Chair. “The project brought hundreds of construction jobs to the region, and now 18 permanent, family-wage positions to the Dayton community. It’s also bringing income to local businesses and increasing county tax revenue. We’re happy to have PGE in our community.”

Tucannon River was built for PGE by general contractor and independent renewable power developer Renewable Energy Systems Americas Construction Inc. using wind turbines manufactured by Siemens, each with a nameplate generating capacity of 2.3 megawatts. Power generated at Tucannon River will be brought to PGE customers via a new interconnection at Central Ferry Substation constructed by the Bonneville Power Administration. The plant was completed

on time and on budget under fixed-price contracts, with final construction costs expected to be approximately \$500 million, excluding AFDC.

Completion of Tucannon River Wind Farm is a significant milestone in the implementation of the action plan that came out of PGE’s 2009 Integrated Resource Plan. The plan was acknowledged by the Oregon Public Utility Commission in November 2010. The requests for proposals used to select the project were conducted pursuant to competitive bidding guidelines established by the OPUC, using objective scoring criteria intended to identify projects that provide the best balance of cost and risk while meeting PGE customers’ needs for reliable, affordable electric power. ↘



In the last **5** years, wind energy has become a powerful force **4** business. WINDPOWER brings together the best and brightest for **3** days of education, discovery, networking, strategizing and **2** chart the future of wind energy. Don't miss this **1** of a kind opportunity to learn how wind energy builds business **NOW**

Register now at www.windpowerexpo.org

MARYLAND ENERGY CHIEF CHOSEN TO DIRECT BOEM

Secretary of the Interior Sally Jewell recently named Abigail Ross Hopper as the Director of the Bureau of Ocean Energy Management (BOEM), which manages the development of our nation's conventional and renewable energy and marine mineral resources on the Outer Continental Shelf.

Hopper, who most recently served as the Director of the Maryland Energy Administration, will be the second director in BOEM's history. Acting Director Dr. Walter Cruickshank, served in the post temporarily since former Director Tommy Beaudreau became Chief of Staff to Secretary Jewell in May 2014.

"Abigail Hopper's knowledge of the energy sector, experience working with a wide variety of stakeholders and her legal expertise will be valuable assets to the Bureau and the Department as we continue to ensure the safe and responsible development of our domestic energy and mineral resources and stand up an offshore wind program," said Secretary Jewell. "She is an accomplished professional who brings strategic leadership and long-term vision to the job, and I look forward to having her as a member of our senior leadership team."

Hopper has led the Maryland Energy Administration since 2012, first as Acting Director and then as Director in June 2013.

She also served concurrently as Energy Advisor to Maryland Gov. Martin O'Malley since 2010. The Maryland Energy Administration coordinates and directs energy planning for Maryland State agencies, and helps local governments implement programs to reduce energy consumption. It also helps businesses become more competitive by introducing new technologies and developing strategies for emerging competitive energy markets.

As Director, Hopper was pivotal in ensuring the passage of the Maryland Offshore Wind Energy Act of 2013. She oversaw programs designed to achieve Maryland's strategic energy goals, including increasing renewable energy production, reducing energy consumption and reducing greenhouse gas emissions. She presided over the launch of new programs, including Smart Energy Communities, which provides funding to local governments that adopt cutting-edge clean energy policies. Hopper has also focused significant resources on improving the resiliency of the State's electric utilities in the face of major storms.

— Source: U. S. Department of the Interior

ENBRIDGE ACQUIRES 80 PERCENT INTEREST TWO E.ON WIND FARMS

Enbridge Inc. recently announced a deal whereby the Company will purchase an 80 percent interest in a portfolio of two wind farms in the U.S. from E.ON, one of the world's largest investor-owned power and gas companies. The agreed enterprise value for the portfolio is approximately \$650 million.

The 203 MW Magic Valley 1 wind farm located near Harligen, Texas and the 202 MW Wildcat 1 wind farm near Elwood, Indiana are operational and came into service in 2012. The two wind farms are located in areas with favourable wind regimes and combined, provide enough clean power for more than 120,000 households.

"This strategic investment provides a significant contribution to our growth targets in power generation," said Vern Yu, Senior Vice-President of Corporate Development for Enbridge. "The transaction extends our renewable platform in the U.S., complementing our existing wind farm presence in Texas and establishing Enbridge in the Indiana renewable market. E.ON is a global leader in renewables and we welcome the partnership with a company that is a safe, reliable and proven asset operator."

Enbridge has invested approximately \$3 billion in renewable energy assets over the past five years. Upon closing, the acquisition of these two wind farms will bring Enbridge's total net generating capacity of green power projects to more than 1,600 MW and helps position the Company to double existing capacity by 2018. The projects also further help Enbridge meet its Neutral Footprint commitment to generating a kilowatt hour of renewable energy for every additional kilowatt of energy consumed by its Liquids Pipelines business, a goal the Company is on track to meet by 2015.

Commenting on the deal, Eckhard Rummeler, CEO of E.ON Climate & Renewables, said: "Thanks to our excellent project portfolio and our capabilities there is a vital demand in the market for assets built and operated by E.ON. We are happy to have found a reliable partner in Enbridge, who shares our approach of combining high class assets and safe operations."

Under the terms of the agreement, E.ON will retain a 20 percent interest and remain the operator of the wind farms, demonstrating its ongoing commitment to the projects and the North American market. E.ON currently operates more than 2,700 MW of renewable capacity in the U.S. and is a leader in the American wind industry.

Completion of the transaction is subject to regulatory approvals.

REPORT STATES WORLD'S DOCUMENTED WIND POTENTIAL AT 95 TW

The Technical Committee of the World Wind Energy Association has published the first World Wind Resource Assessment Report. The report gives a comprehensive overview of currently available wind resources assessment from most world regions, as far as available. The total wind potential of the world, as identified by these existing studies, is 95 million MW, or 95 TW. The relation to the current global energy demand of around 100,000 TWh suggests that wind energy alone would be more than sufficient to cover the world's energy supply several times.

Dr. Jami Hossain, Chair of the WWEA Technical Committee: "In assessing the worldwide potential for wind energy, data and information has been accessed from varied but authentic sources such as national laboratories, research reports, peer reviewed scientific publications and industry associations. Interestingly, different methods and information sources have come up with numbers that are similar in order and magnitude for different parts of the world. Be it the wind energy potential for Germany,

US, Russia China or India or the entire world, the order of magnitude appears to be similar and one study corroborates the other. The report also presents a bird's eye view of the wind resource assessment practice."

"The new WWEA report underlines once more that there is no scarcity of energy on our planet. We can state that we have an abundance of wind alone, although some of the documented figures are still rather conservative," said Stefan Gsänger, WWEA Secretary General. "In addition to wind, also solar, hydro, geothermal and bioenergy can contribute a lot to mankind's energy supply hence a combination of renewable energies makes it even easier to satisfy the demand. Also in terms of cost, wind power can now beat today fossil and nuclear power. The main challenges are still in the need to change the energy market regulations all over the world so that this abundance can be used, for the benefit of human development, of the climate and the environment in general."

— Source: World Wind Energy Association

Measure Where it Matters

The Vaisala Triton Sonic Wind Profiler offers:

- Accurate hub-height wind data
- Integrated solar power supply, allowing for autonomous operation in remote locations
- Reliability — over 500 Triton systems, more than 2,500 commercial installations, and over 11 million hours of data

Visit our website to learn why the vast majority of wind energy developers use Triton every day.

SECONDWIND
by Vaisala

www.vaisala.com/triton

VAISALA

DOE TAKES ON ENVIRONMENTAL REVIEW OF PLAINS & EASTERN TRANSMISSION PROJECT

Proposed 700-mile HVDC transmission line could carry up to 3,500 MW of renewable energy to the Mid South and Southeast

The U.S. Department of Energy has released for public review and comment the Draft Environmental Impact Statement (EIS) for the proposed Plains & Eastern Clean Line transmission line project. The Draft EIS describes the project, its purpose, and assesses its potential environmental impacts. Clean Line Energy (Clean Line) is developing the Plains & Eastern Clean Line, an approximately 700-mile overhead high voltage direct current (HVDC) transmission line and associated facilities capable of delivering more than 3,500 megawatts (MW) from renewable energy generation facilities in the Oklahoma Panhandle region to customers in Arkansas, Tennessee, and other areas in the Mid-South and Southeast. The proposed project includes converter stations at the endpoints of the HVDC line near Guymon, Oklahoma and Memphis, Tennessee. In addition, an intermediate delivery converter station that would have the capacity to deliver up to 500 MW of power has been proposed in central Arkansas. The Draft EIS identifies the proposed location of the direct current transmission line and other project facilities, and provides analysis of the potential environmental effects at these locations as well as alternatives. DOE is accepting public comments on the Draft EIS and will hold public meetings in January and February of 2015.

“The release of the Draft EIS marks an enormous step for the Plains & Eastern Clean Line project. After a multi-year process that involved input from thousands of stakeholders and a tremendous amount of analysis and thought, we are very pleased with the quality and depth of the information presented in the Draft EIS,” said Michael Skelly, President of Clean Line Energy. “We appreciate DOE’s consideration and independent review of the Plains & Eastern Clean Line and encourage stakeholders to continue to participate in the environmental review process.”

Prior to making a determination whether to participate in the proposed project, DOE, in consultation with the Southwestern Power Administration, must complete its evaluation of the proposed project, including reviewing the potential environmental impacts pursuant to the National Environmental Policy Act (NEPA). Other federal agencies, including the U.S. Fish and Wildlife

Service, the U.S. Army Corps of Engineers, and the Tennessee Valley Authority, are cooperating with DOE in the NEPA review. The project is not seeking federal funding.

Clean Line developed the proposed route for the direct current transmission line using a multi-step process that minimizes adverse impacts. Routing for the Plains & Eastern Clean Line involved an extensive review of existing conditions including the locations of homes and businesses, as well as cultural, historical and environmental resources. Clean Line adopted guidelines and criteria consistent with best practices for transmission line siting. Over the past several years, Clean Line received input regarding routes and other project locations from thousands of stakeholders, including landowners, local leaders, agencies, and conservation organizations in Arkansas, Oklahoma and Tennessee.

“We are pleased that the review process for the Plains & Eastern Clean Line project has passed this crucial stage so that Arkansas and other southeastern states are one step closer to having greater access to low-cost wind energy,” said Steve Patterson, Executive Director of Arkansas Advanced Energy Association. “We look forward to the continued progress of the environmental review process and appreciate the diligence involved with siting this project carefully and thoroughly.”

DOE will not make a decision regarding the project until it has completed the environmental review process. The release of the Draft EIS initiates a 90-day public comment period that is scheduled to conclude in March 2015. DOE will host 15 public meetings in Oklahoma, Arkansas, Tennessee, and Texas during January and February of 2015. Based on the current schedule, Clean Line anticipates that DOE would issue a Final EIS later in 2015, which will consider and respond to comments received regarding the Draft EIS. Clean Line expects DOE to identify a preferred route in the Final EIS.

Public input is a key component of the NEPA review process. Interested parties can learn more about the NEPA review process, view a copy of the Draft EIS, and learn how to participate in DOE’s comment process by visiting DOE’s Plains & Eastern EIS website at www.PlainsAndEasternEIS.com.