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FALL/WINTER 2021

West Virginia's Complete Energy Package

Teaming Up Existing Energy Resources with Renewables



Charlotte Lane

Public Service Commission
of West Virginia

Charlotte R. Lane was appointed to the Public Service Commission as Chairman on July 1, 2019. She previously served on the Commission from 1985-1989 and 1997-2003, and as Chairman from 1997-2001. She has a long career of public service, in addition to her work on the Commission. Lane was elected to three terms in the West Virginia House of Delegates and served on the U.S. International Trade Commission from 2003-2011, having been appointed by President George W. Bush. She has also served as President of the West Virginia Bar Association and the Mid-Atlantic Conference of Regulatory Utility Commissioners.

West Virginia has been a significant exporter of electricity for many years. The state has always offered excellent sites for large base load power plants that can economically and efficiently produce power around the clock to meet the electricity load requirements, not only in West Virginia, but also in other states. At our peak generation output, West Virginia produced three times more electricity than was used in the state, exporting over 65 percent of our production.

West Virginia has historically relied on coal as its primary generation fuel, but that is slowly changing. Prior to 2005, West Virginia produced less than 200 megawatts (MW) of renewable generation, with most of that capacity being conventional hydropower from the locks and dams on our larger navigable rivers. In recent years, over 900 MW of renewable generation capacity, mostly wind turbines, have been built in West Virginia. I expect that trend to continue.

The Public Service Commission is required by law to review applications for the construction and siting of electric-generating facilities by non-utility independent power producers (IPP). The Commission has issued rules governing the form and content of those applications. Recently, the Commission has modified its rules to clarify differing information that must be filed and that we will review depending on the technology proposed for an IPP and the capacity, length and land use required for any associated transmission lines. The information requirements for solar or wind power IPP-generating facilities are now less extensive than the information requirements for fossil fuel IPP facilities.

As I noted, the Commission has authorized siting of over 900 MW of renewable resource generation. The facilities and capacity

that have begun operation after receiving a Commission Siting Certificate are listed in the table below:

Generation Facility Name	MW Capacity
Mountaineer Wind Energy Center	66.0
NedPower Mount Storm	264.0
Beech Ridge Energy LLC	100.5
Beech Ridge Energy Storage Batteries	31.5
Laurel Mountain Hybrid Wind	97.6
Laurel Mountain Hybrid Battery	16.0
Pinnacle Wind Force LLC	55.2
New Creek Wind	103.0
Beech Ridge II Wind Energy Center	56.2
Total	790.0

In addition to the operating facilities listed above, the Commission has granted siting certificates to another 115 MW wind facility (Black Rock, which is under construction) and a 50 MW solar facility not yet under construction. We have also received and have either approved or are processing siting certificate applications for 283 MWs of solar generation facilities. These projects include a 90 MW facility in Raleigh County, a 93 MW facility and an 80 MW facility in Jefferson County, and a 20 MW facility in Hampshire County.

In the 2021 regular session of the West Virginia Legislature, a new law was enacted that further encouraged solar facilities in West Virginia by making it easier for retail electric customers to contract for on-site solar energy facilities. The bill promotes localized solar by allowing non-utility developers to install and operate solar facilities at or near a consumer location without going through the Commission's siting process if the output is sold to that consumer. There are size limits, but any class of consumer

can qualify for an on-site solar purchased power agreement with a non-utility. The facilities serving each customer are limited to 25 kilowatts for a residential customer, 500 kilowatts for a commercial customer and 2,000 kilowatts for an industrial customer. This new law answers some of the complaints we have heard that existing and new customers want on-site solar generation, but do not want to own and operate the facilities.

West Virginia will remain an ideal location where electricity can be generated using renewable resources, and there are opportunities for West Virginia to participate in renewable generation and maintain our position as an exporter of electricity. The location of West Virginia relative to large eastern electricity loads; the availability of generation sites; the availability of transportation facilities, including river transportation; the availability of a large, interconnected electricity grid; and the availability of a reliable work force that is hungry for jobs can all be factors that lead to West Virginia being in the forefront of renewable resource electricity generation.

wind. The availability of reliable fossil fuel-fired generation plants in West Virginia could be an unexpected partner that will help to solve reliability problems inherent in generation from solar and wind resources as we transition to a greater dependence on renewable generation.

Storage is the solution to the problems inherent with intermittent resources. The most promising and probable energy storage technology is the use of batteries. But to store energy there must be a source of excess energy that is not being used for other purposes. Installing more wind and solar capacity than is needed for traditional purposes could be the source of excess electricity that can be used to charge batteries. However, no amount of excess solar capacity will charge batteries at night and very large amounts of excess wind capacity would be needed to support sufficient battery storage to provide stability and reliability.

The partnership that I mentioned could match our West Virginia fossil-fueled power plants with storage facilities and renewable generation resources



West Virginia is uniquely positioned to offer both reliability and storage capability in conjunction with new wind farms and solar farms throughout our region. At first glance, the concept may be unpopular with those who dislike fossil fuels, but I am not suggesting increasing fossil fuel capacity. I suggest using existing plants to provide the backup and storage charging support to economically solve the reliability problems caused by the intermittency of solar and wind facilities.

There is a promising future for West Virginia's participation in providing the region with increased renewable

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There are problems with renewables, but West Virginia can help solve those problems over a transition period. I cannot realistically envision a future that relies heavily on solar and wind resources for electricity generation without also recognizing that they present a reliability issue due to the intermittent nature of sunshine and

to provide reliable, always-available electricity that could be delivered anywhere in the PJM or neighboring transmission systems. The excess capacity needed to assure responsiveness to intermittent generation and also provide sufficient storage capacity can come from our existing West Virginia power plants.

generation and an economical answer to reliability problems of intermittent electricity. We can encourage and foster renewables by teaming up existing West Virginia power plants for backup and around the clock storage charging with new intermittent solar, wind and storage facilities. ▼