

League of Women Voters of Delaware

INFORMATION FOR ENERGY STUDY – PART III

This article is the third of four which will appear in the January, February, March and April Voters that will provide League members with information needed for consensus on the League of Women Voters of Delaware's Energy Study. The April Voter will contain questions, approved by the State Board in March, which will help us arrive at consensus at the New Castle County (NCC) Unit meeting in April. We suggest that all members save this Voter material for use at the April consensus meeting in New Castle County and at subsequent unit meeting in Kent and Sussex Counties.

Renewable Energy Portfolio Standards

In response to growing environmental concerns, a number of states have enacted Renewable Energy Portfolio Standards (RPS) legislation. These laws require electricity providers to obtain a portion of the energy produced from fossil fuels with cleaner, renewable sources within a certain date. As of September 2009, 29 States (including Delaware), and the District of Columbia had enacted RPS laws, while five additional states had adopted Renewable Energy Portfolio Goals (RPG), similar but non-binding.

Although the underlying principles of RPS policies are similar, there is wide variation with respect to the specifics, including amounts, dates, and eligibility of various types of renewable energy fuels. Most states' RPS requirements are in the range of 15%-20% by 2020-2025. More aggressive standards include California (20% by 2010), New York (24% by 2013), and Hawaii (40% by 2030).

Delaware's law requires that by 2019, 20% of retail electricity sales must be generated from a prescribed list of renewable fuels. Of the total 20%, at least 2% must come from solar photovoltaic (solar panels) sources.

However, it is important to understand that Delaware's RPS requirement does not apply to all electricity sold in the state. Its largest impact will fall on Delmarva Power, Delaware's largest retailer and on a handful of smaller competitors, such as Washington Gas & Electric. Municipal electric companies and rural electric cooperatives existing at the time the law was passed were exempted. Both the Delaware Municipal Electric Corporation (DEMEC) and the Delaware Electric Cooperative (DEC) chose to opt out of the standard. These two companies are required to offer

their individual customers the option of purchasing renewable energy at additional cost. They are free to develop their own plans for incorporating renewable energy into their respective portfolios, but are under no legal obligation to do so.

Second, the law also excludes industrial users with peak demands of more than 1,500 kilowatts, thereby exempting a substantial portion of the State's major electricity consumers.

Since the exemptions constitute about one-third of Delaware's total electric use, only about two-thirds is subject to the RPS law. What this means is that, according to current law, by 2019 only about 13%-14% of the State's total electricity sales will be required to come from renewable sources.

Demonstrating compliance with Delaware's RPS is the responsibility of retail sellers of electricity (as opposed to electricity generators). The sellers must acquire the requisite number of Renewable Energy Certificates, or Credits (RECs). These are uniquely numbered tradable instruments, in which one REC represents one megawatt-hour of renewable power. One REC is awarded to each renewable energy generator for each megawatt-hour of electricity produced. The energy might be generated, for instance, by a commercial wind farm or an individual homeowner with solar panels on the roof.

These RECs, in turn, are tracked through a computer system managed by PJM Interconnection, the regional transmission organization responsible for coordinating the flow of wholesale electricity in our area. The Delaware Public Service Commission (PSC) is responsible for assuring that electricity retail sellers (e.g., Delmarva Power) have obtained sufficient valid RECs to be in compliance with the law.

References:

1. Delaware Code: Title 26, Chapter 1, Subchapter III-A. Renewable Energy Portfolio Standards. <http://delcode.delaware.gov/title26/c001/sc03a/index.shtml>
2. Delaware Public Service Commission "Rules and Procedures to Implement the Renewable Energy Portfolio Standard." February 10, 2009. Available on the Delaware Public Service Commission web site. http://depssc.delaware.gov/electric/rpsrules_fin021009.pdf
3. Map of state renewable portfolio standards - www.dsireusa.org

RPS article submitted by Brian Kramer, Lisa Pertzoff and John Sykes

TRANSMISSION AND DISTRIBUTION

TRANSMISSION HISTORY

There is a window of opportunity for Delaware to impact the design and build-out of the country's future high-speed transmission grid. The convergence of a severe economic downturn, with the reinvigorated focus on energy efficiency and conservation plus strong incentives and investment in distributed energy and renewable sources, produced a downward bend in the electricity consumption curve. The January 24th News Journal's Business section lead story was titled: "Lower energy projections put the brakes on power lines."

1. Transmission issues have historically been dominated by Regional Transmission Operators (RTOs), generators and utilities. These RTOs are regulated by FERC, the Federal Energy Regulatory Commission, an agency of the U.S. Department of Energy. PJM is the RTO for Delaware and a 13-state area plus the District of Columbia and manages the regional movement of wholesale electricity, all transmission planning and marketing functions, future growth of the system, new generation connections, and approves new construction and transmission expansions.

Based on the results of a study of electricity grid congestion the U.S. Secretary of Energy in 2007 announced that the networks of high-voltage power lines in two regions --the Southwest and mid-Atlantic--were so inadequate fixing them was a national priority. As a result, he named both areas, 'national interest electric transmission corridors' (NIETC), which meant if state officials denied or delayed proposed transmission lines within these two wide N-S corridors, companies could appeal to FERC, which would have the power to overrule the states and issue the permit. FERC's assumed authority was challenged by a large number of regional and national environmental groups and states (Delaware filed a supporting brief). In 2009 the 4th Circuit Court of Appeals overturned FERC's expansive interpretation of the law and further ordered the agency to consult with the Council on Environmental Quality and to prepare an Environmental Impact Statement before issuing a permit; an appeal by FERC was denied.

2. Research from the University of Delaware's College of Earth, Ocean and Environment quantified the potential offshore wind power generation from North Carolina to Maine as sufficient to meet the needs of most or all of the entire East Coast, which contains over 50% of the U.S. population. Until recently the east has been viewed as having very little electricity generation potential. Offshore wind potential in the shallow waters of the mid-Atlantic region is 64+ GW (NREL 2005).

HANDY ACRONYMS/DEFINITIONS

NIETC = National Interest Electric Transmission Corridor

Designations were made in 2007 based upon a study of electricity grid congestion, naming two new corridors: a Western Corridor and a Mid-Atlantic Corridor. The latter included all or parts of 13 states plus the District of Columbia. This designation indicated that additional transmission infrastructure was needed in these areas.

FERC = Federal Energy Regulatory Commission

An agency of the U.S. Department of Energy, it has broad powers under the Energy Policy Act of 2005, including the authority to issue permits for new transmission lines within designated National Interest Electric Transmission Corridors.

MAPP = Mid-Atlantic Power Pathway

Proposed by Pepco Holdings, Inc., owner of Delmarva Power and other regional electricity distributors, originally as a 230-mile, 500kV transmission project, from Possum Point, VA, to Salem/Hope Creek, NJ, in three segments at a cost of \$1.4+B and scheduled to begin construction this year. MAPP was approved by PJM Interconnection in 2007 and incorporated into its Regional Transmission Expansion Plan. Now scaled back to 150 miles and \$1.2B cost, the project is on hold for at least one year with the Indian River to New Jersey segment deferred for future study. In January Pepco Holdings was granted a "procedural delay" pending completion of a PJM study to re-evaluate the region's overall transmission needs.

Proponents claim that MAPP will provide ample, more affordable power to a power-needy region and that it will be able to carry East Coast renewable energy westward. Opponents contend that it is not needed because of reduced demand and that it would become a vehicle for moving fossil fuel generated power from the Midwest to the East Coast.

NREL = National Renewable Energy Laboratory

A national laboratory of the U.S. Department of Energy. In January 2010 released an important research report: "Eastern Wind Integration and Transmission Study"

3. In May, 2009, the Governors of Maine, Massachusetts, New Hampshire, Vermont, Rhode Island, New York, New Jersey, Delaware, Maryland, and Virginia wrote to the U.S. House of Representatives and Senate leadership developing the energy and climate change bill forcefully warning of disincentive to investment in the vast renewable East Coast offshore wind resource, should the NIET corridor approval get fast-tracked before their planned wind farms are financed and operational. They also urged no curtailment of states' prerogatives in transmission line siting.

4. The existing design of the national grid creates a significant advantage for nuclear and fossil fuel generated energy to be quickly flooded from the Midwest to East Coast markets. Fifty-six percent of Midwest produced electricity comes from coal-fired plants. Regulated Return on Investment due to a rate-payer subsidized federal transmission grid would increase greenhouse gas emissions.

5. Although national transmission grids can be designed to carry renewable energy to the west, the difference in start-up time for the investment and development of the East Coast, offshore wind farms would advantage the already existing supply of cheap, subsidized, and polluting energy from the Midwest to the East.

6. With economists predicting lower consumption trends, PJM is now 'dialing back' its projections for future energy use, and renewable energy use is growing faster than anticipated. There is a window of opportunity to strongly advocate for incentives and investment to continue the upward trend in conservation, energy efficiency, and the use of renewable energy (in Delaware mainly solar/PV and offshore wind) to accelerate this healthy downward trend in electricity consumption.

7. In January 2010, the AWEA, American Wind Energy Association, highlighted the release of the Department of Energy National Renewable Energy Laboratory's (NREL) wind integration study validating that large amounts of wind energy--20%-30%-- can be reliably integrated into the nation's electricity grid at competitive cost assuming all human health and environmental costs, termed externalities, are included in the cost analysis. This ground-breaking study demonstrates the major role wind energy can fulfill across the Eastern U.S., reducing and stabilizing electricity rates while protecting the environment. It also shows the urgency to reform transmission planning for both onshore and offshore wind development, because any delay will mean that the transmission lines will not be available to tap these cost-effective domestic renewable resources. The NREL study highlights the following points:

EASTERN INTERCONNECTION

One of two major electricity power grids in North America, it covers the U.S. and Canada from the Rocky Mountains to the East Coast. All electric utilities within this geographic area are tied together and operate at a synchronized frequency.

Representatives of 39 states have formed a working group dubbed "Eastern Interconnection" that will consider mutual interests and needs for additional transmission construction, particularly to accommodate renewable energy sources. Delaware has two members on this group: the Secretary of DNREC and the Chairman of the Public Service Commission. The group's first meeting will be held in March, and it is anticipated that there will be immediate conflict between two areas with some of the highest potential wind generation capacity, the Great Plains states and the East Coast states, over development and transmission priorities for wind energy.

MARCO = Mid-Atlantic Regional Council on Oceans

Governors/Natural Resource heads in Delaware, Maryland, Virginia, New Jersey, and New York in 2009 together dealt with issues relating to the Atlantic Ocean, including issues around offshore wind development. The group received feedback on each state's needs; these will be listed, prioritized, and actions proposed in a forthcoming report.

Status of Offshore Wind development along the Atlantic Coast:

NRG/Bluewater Wind currently has contracts for a total of 292 MW of power (with Delmarva Power, Delaware Electric Cooperative, and Maryland) and is on track to begin construction 12 miles off the Delaware coast in 2014. The states of Maryland, New Jersey, Rhode Island, Massachusetts, New York, Virginia, and North Carolina are in various stages of planning and developing offshore wind energy.

American Clean Energy and Security Act (Waxman-Markey)

Passed by the U.S. House of Representatives in June 2009; if it becomes law, it would establish a new national transmission planning framework under FERC leadership and apply more environmentally sensitive principles than the current process. It directs FERC to "incorporate identified siting constraints or mitigation measures related to project routing" for the Western NIETC but not for the Mid-Atlantic NIETC! Delaware officials are working closely with our U.S. Senators to address this issue in developing Senate legislation.

FERC Docket on Transmission Planning Processes, Fall 2009:

Delaware, Maryland, New Jersey, and Virginia Governors in November filed a joint response noting that PJM's Regional Transmission Expansion Plan inhibits future grid expansion that would allow the integration of renewable energy, particularly wind power, needed for the states to meet their Renewable Portfolio Standards. The states asked FERC to revise its planning process by June 2010 and direct PJM to resolve new transmission cost allocation issues through a stakeholder process.

The four states have concluded that filing a complaint to FERC may be the only mechanism for instigating near term change in the planning process, something the states are reluctant to do because of expected high cost.

- The integration of 20%-30% wind energy is technically feasible but will require significant expansion of the transmission infrastructure and system operational changes.
- Lack of transmission enhancements would cause substantial curtailment of wind generation potential. In parts of the U.S. wind energy has already outgrown the available transmission.
- Drawing wind energy from a larger geographic area makes it both less expensive and a more reliable energy source. Increasing the geographic diversity of wind power projects in a given operating pool makes the aggregated wind power more predictable and less variable.
- As more wind energy comes on line, less energy from fossil fuel burning plants is required, significantly reducing greenhouse gas emissions.

AWEA's recent findings challenge the existing assumption that coal-fired and nuclear generation will continue to supply the electricity base load, with wind energy and other renewable energy being a variable or secondary resource for electricity production. NREL's findings demonstrate the reliability of interconnected wind farms over a wide geographic area to produce predictable wind energy for the grid. This means clean, renewable sources of electricity have the potential to become the base load supplier, with coal, gas, and nuclear providing the supplementary energy for the East Coast.

Transmission article submitted by Mary Anne Edwards and Lorraine Fleming