

# **Delaware Energy Plan and Economic Development Working Group**

**August 26, 2008**

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# Managing the Future Energy Supply Needs of Delmarva's Customers

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The Company's Integrated Resource Planning (IRP)<sup>1</sup> has concluded that there is no single “silver bullet” to resolve future electrical supply needs.

A balance of energy efficiency and demand response programs, market resources, transmission enhancements, and renewable resources must all come together to manage our future needs.

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<sup>1</sup> IRP is required under the Electric Utility Retail Customer Supply Act of 2006 (HB 6). The Company's IRP can be found at [www.depsc.delaware.gov](http://www.depsc.delaware.gov)

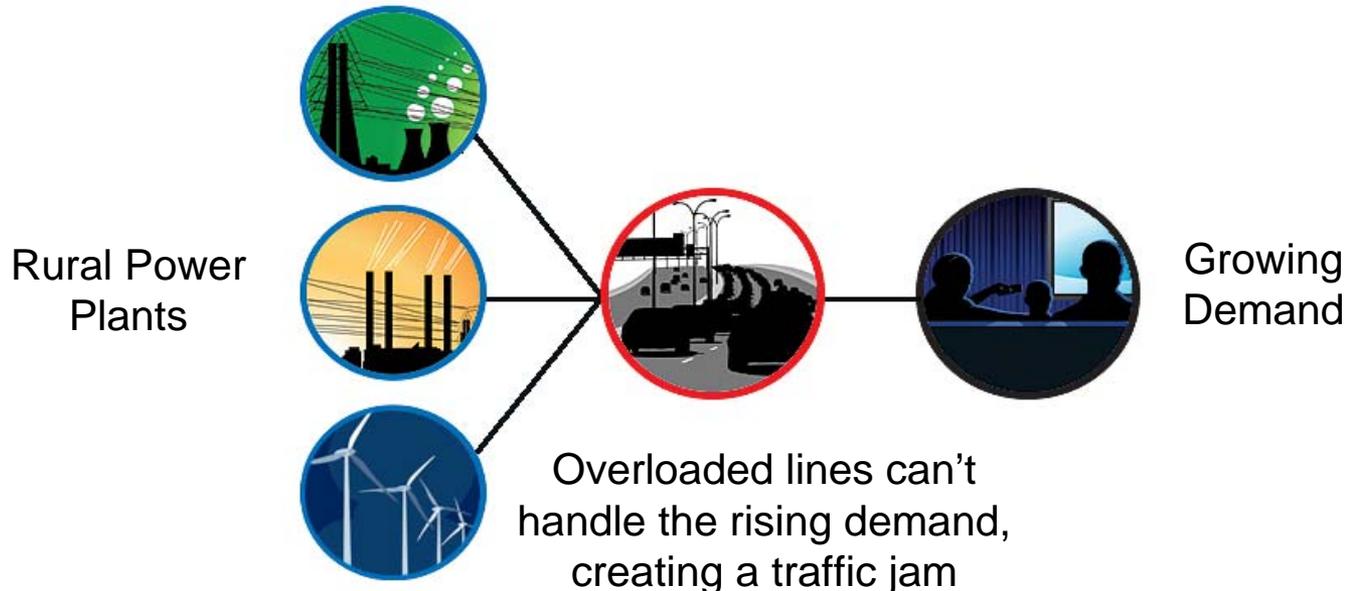
# Managing the Future Energy Supply Needs of Delmarva's Customers



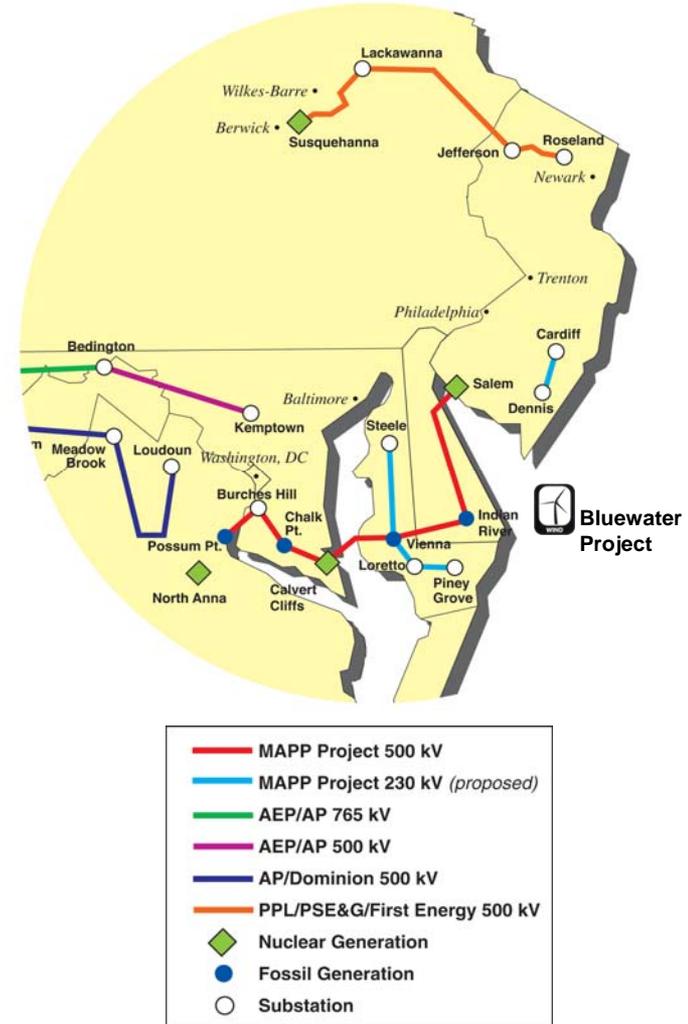
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<p>Energy Efficiency and Demand Response Programs</p>	<p>Various programs identified in Company's IRP supported by the build-out of an advanced meter infrastructure and an appropriate revenue decoupling mechanism</p>
<p>Market Resources</p>	<p>Portfolio management approach including load following contracts, short and long-term block contracts, and spot market purchases</p>
<p>Transmission Enhancements</p>	
<p>Renewable Resources</p>	<div style="display: flex; justify-content: space-around;"> <div data-bbox="799 1068 1238 1289">  <p><i>Offshore</i></p> </div> <div data-bbox="1331 1068 1769 1289">  <p><i>Land-Based</i></p> </div> </div>

- It's been 25 years since the last major interstate transmission line was built in the Mid-Atlantic Region (New York to Washington D.C.).
- Demand for electricity is rapidly increasing in urban centers. At the same time older coal plants are nearing retirement.
- It is difficult to build new power plants close to these high-demand areas. This means power must be imported from rural power plants.
- Mid-Atlantic off-shore wind growth will be dependant on the ability to export power in times of low local demand and high generation.
- The existing transmission system cannot move enough power to meet future demand needs, creating an electricity traffic jam and leading to possible power shortages in the future.



- Ensures a safe, reliable supply of electricity over the long-term by improving the flow of electricity in the Mid-Atlantic Region
- Removing import barriers will allow the system to access new generation including new nuclear, wind power and other planned renewable power projects
- Increases power import/export capability within the Delmarva Peninsula by more than 1,000 MW giving the State access to less expensive power and providing more transportation access for new in-State or near-State generation (i.e., off-shore wind), supporting economic growth and employment
- The cost for these benefits will be shared across the entire PJM system of 51 million customers. We estimate the cost to be less the 40 cents per 1000 kwh's
- Reduces the cost of delivered power by reducing congestion



# Meeting our Renewable Energy Needs Into the Future for Delaware – Wind Power



Delmarva Power has entered into four long term wind contracts with three developers for providing renewable energy to our Delaware customers:

- **Synergics 100 MW** (two land-based wind farms for SOS customers only)
- **AES 70 MW** (one land-based wind farm for SOS customers only)
- **Bluewater Wind 200 MW** (offshore, 100 MW SOS, 100 for non-SOS)

# Wind Power – Size and Pricing Terms



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<u>Contract</u>	<u>Location</u>	<u>MW</u> s	<u>Products Purchased</u>	<u>Initial Delivery Date*</u>	<u>Guaranteed Initial Delivery Date**</u>	<u>Annual Forecasted Output</u>	<u>Price</u>
Synergics Roth Rock Wind Energy, LLC	Garrett County, MD	40	Energy and an equivalent level of RECs	June 1, 2009	December 31, 2009	(Gwh) 122	\$81/Mwh at the Initial Delivery Date increasing annually at the lesser of: (a) a factor equal to fifty percent 50% of the CPI; or (b) 2.5%.
Synergics Eastern Wind Energy, LLC	Garrett County, MD	30 to 60	Energy and an equivalent level of RECs	June 1, 2009	December 31, 2010	<b>30 MW: 92</b> <b>60 MW: 184</b>	Identical pricing as Synergics Roth Rock
AES Armenia Mountain Wind, LLC	Tioga and Bradford Counties, PA	70	Energy and an equivalent level of RECs	November 1, 2009	April 30, 2010	171	\$94/Mwh fixed throughout contract term.
Bluewater Wind DE, LLC	11.5 miles East of Rehoboth Beach, DE	200	Capacity, energy and 29% equivalent level of RECs***	N.A.	December 31, 2014	558	In 2008 dollars, \$117.10/Mwh for energy and RECs, and capacity priced at \$71.99/kw-year. All increasing annually at 2.5%.

\* “Initial Delivery Date” means the date, which shall be the earliest start date.

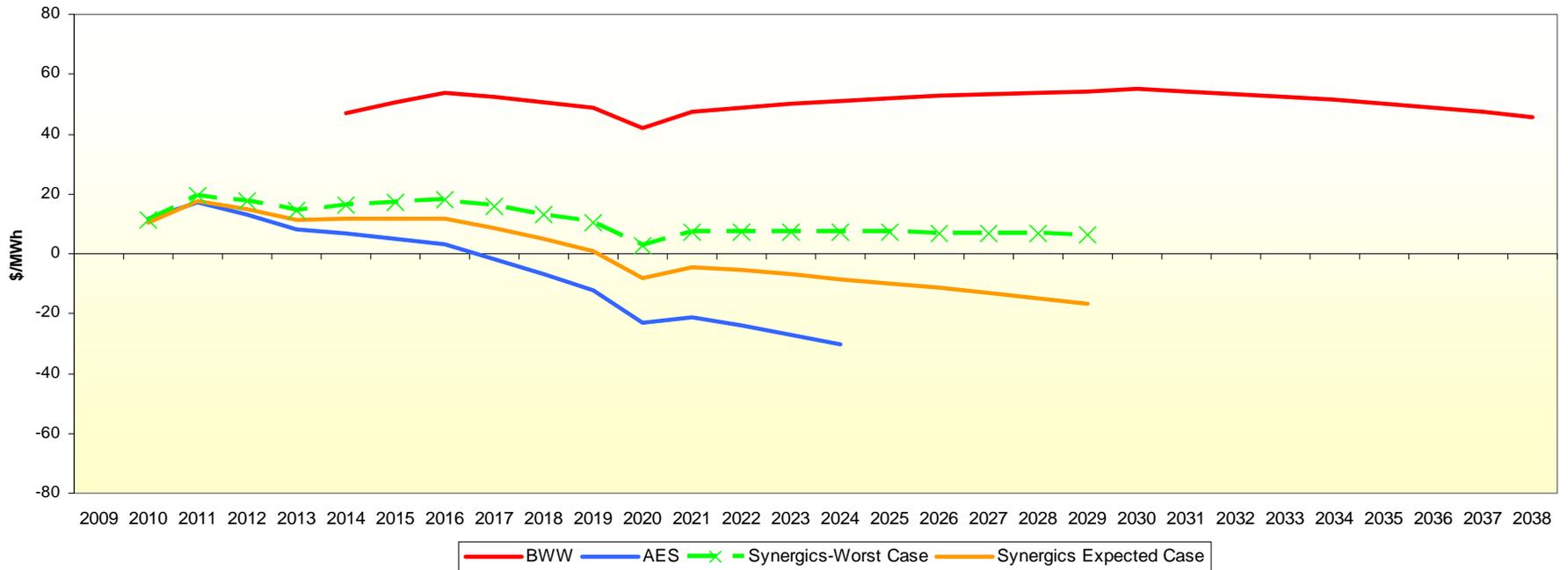
\*\* “Guaranteed Initial Delivery Date” means the date, which shall be the latest start date before damages accrue and are paid.

\*\*\* Senate Bill 328 permits Delmarva to receive 350% credit for the RECs received from the Bluewater contract to meet RPS requirements. The multiplier results in Delmarva receiving a “REC equivalent” equal to the level of energy supplied by Bluewater.

Each of the four contracts can be found on Delmarva’s website at [www.delmarva.com](http://www.delmarva.com)

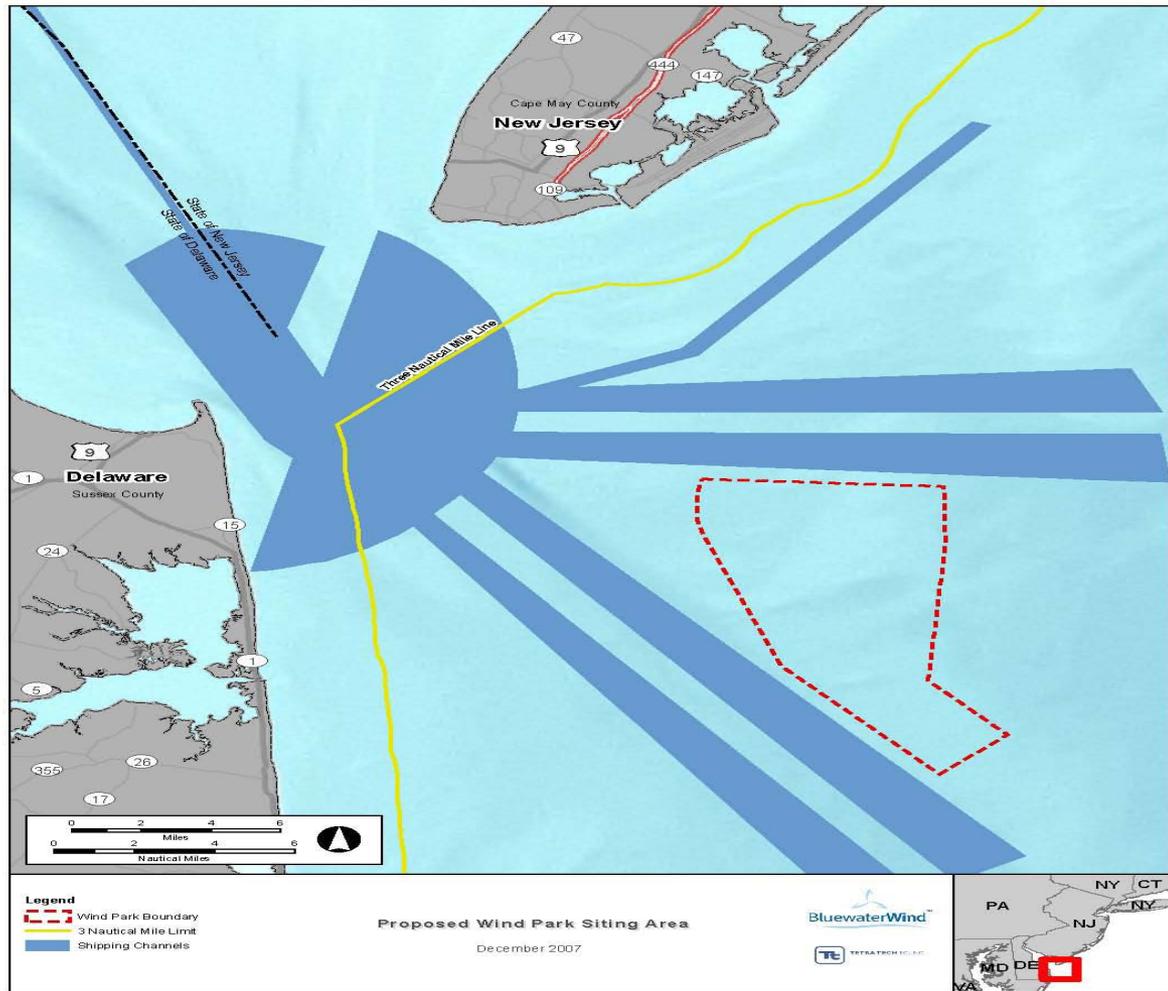
# A Portfolio of Wind Resources for Delmarva Power Delaware SOS Customers - Cost Comparison

Incremental Cost per Megawatthour to Delmarva over Market Value of Land Based and Bluewater Wind Price Offers



Note: Prices reflect the delta from the market price in Delmarva in comparable hours. Prices do not reflect customer rates. For land-based wind, capacity was valued at the market price. Synergics line shown above reflects Eastern Energy offer. Synergics Roth Rock has the same price offer and term, but starts one year earlier. Market value reflects firm power price while the bid prices are unit contingent and hence not firm.

# Location of Bluewater Facility



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# Description of Bluewater Facility

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- Bluewater Wind, owned by Australian Babcock and Brown, is planned to be an ocean-based wind farm with a capacity not less than 200 MW and not more than 600 MW.
- It is to be located in the Atlantic Ocean approximately 11.5 nautical miles East of Rehoboth Beach, DE, between the northern and southern shipping channels into the Delaware Bay.
- The Site includes the seafloor corridor through which electrical interconnection cables transit from this ocean area to Delmarva Power's Indian River Substation.
- Turbine size is not yet determined.

# Description of Bluewater Facility

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- It is proposed that Bluewater Wind may interconnect to Delmarva Power's transmission system near the Bethany substation, and planned that the energy will then be transmitted approximately 12 miles to Delmarva Power's Indian River Substation.
- Bluewater Wind will pay for any needed transmission facilities up to the Indian River Substation, but those facilities will be operated by Delmarva Power.
- Start dates are subject to various contingencies, but permitting currently is projected to be completed in 2012.

# Bluewater/Delmarva Agreement

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- Delmarva Power will buy 200 megawatts of power from the Bluewater wind farm, which can be sized as large as 600 MW. Regardless of the final size, Delmarva Power will purchase a proportion of power equal in amount to that generated by a 200 megawatt nameplate facility.
- The purchase includes energy, capacity that clears the PJM auction process, ancillary services, if applicable, and most environmental attributes associated with the energy or capacity, such as RECs.
- BWW assumes costs of constructing interconnection facilities, and is responsible for transmission service and facilities to deliver the energy to Delmarva Power's Indian River substation. Delmarva Power is responsible for certain network upgrades at and after the point of delivery unless PJM assigns those costs to someone else.
- Delmarva Power will work with Babcock & Brown to establish an optional program whereby any Delmarva Power Delaware customer may choose to purchase more electricity supply from the wind farm.

# What made this agreement work?

- Key enabling legislations passed; 1) spread costs and benefits across all Delmarva's Delaware customers, and 2) give 350% multiplier for offshore RECs towards meeting state goals.
- The size was greatly reduced from earlier discussions based on the needs of Delmarva Power customers.
- The total and unit cost was reduced from earlier discussions.
- Strong desire across the state supporting above market cost for this off-shore renewable project.