

Bayshore Regional Sewerage Authority to Recycle Wastewater using the Wind



It may not be long before the water you use in your home, office or business, which is discharged to the municipal sewer system, is cleaned using the power of the wind. The Bayshore Regional Sewerage Authority (BRSA) is working towards a plan right now to use windmills (wind turbines) to power the Sewer Treatment Plant at their 100 Oak Street location in Union Beach.

For over a year, BRSA monitored the wind speeds on the treatment plant site using a Doppler SODAR system. “Doppler SODAR” says Robert C. Fischer, Executive Director of the BRSA, “uses a sound pulse shot up into the atmosphere to measure the

direction and speed of the wind at over ten-(10) different heights simultaneously”. “It is State-of-the-Art technology that allows us to get very accurate wind information that we would otherwise not have”. Using SODAR, Bayshore Regional Sewerage Authority has discovered that the Bayshore Area indeed has a microclimate of its own. In fact, up at the 260-foot level, wind speeds for the first half of this year have averaged 16.7 mph. The 260-foot level is approximately the center of the wind-turbine blade. The minimum wind speed necessary for a viable wind power project is 11 mph.

Wind power uses the force of the wind in the area to turn the windmill blades, which turn the shaft of the electric generator, which creates the electricity. The electricity will be connected to the BRSA power distribution system. When the treatment plant is using more electricity than the wind can provide BRSA will still be able to use the local JCP&L system to supplement their power needs. When the wind provides more electricity than the plant needs, the excess power will turn the BRSA electric meter backwards providing for a dollar-for-dollar credit. This system is called “net metering” which allows BRSA to benefit from wind power they generate but do not use at that particular time. The less power the BRSA draws from the local distribution system (JCP&L) the more power will be available to the local residents for their use.

BRSA's plan is to erect a 260-foot tall wind turbine (the tip of the blades would reach 380 feet) on their treatment plant site in 2010. "Our goal is to stabilize electrical costs, one of the biggest and fastest increasing budget expenses we have, for the next twenty years. In 2008, BRSA paid over \$1 million dollars, about twice as much for electricity as it did in 2004. If we can "lock in" what we are going to be paying for electricity for the next twenty years then we have gone a long way towards keeping your sewer rates stable", says Fischer. "We are also doing our share to combat the energy crisis that this world is just beginning to see".

The project is currently scheduled to receive funding through the Economic Stimulus Act. The complete project includes odor control improvements and tank replacement. In all, the Authority will be borrowing up to \$7.7 million dollars; \$3,850,000 of that loan will not have to be repaid since it is coming from the American Reinvestment and Recovery Act (ARRA). An Additional BPU Rebate of \$400,000 means the BRSA will be receiving \$4,250,000 in grant money on a \$7,700,000 project. The ratepayers will begin benefiting from the reduction in plant operating costs the moment the wind starts to blow and they will only have to payback 45 cents on the dollar for this project capital cost. In addition, they will have contributed to reducing the carbon footprint of the area as well. Over 4 million pounds of CO2 will be eliminated from the atmosphere as a result of this project, that's the equivalent of taking over 1000 cars off the road permanently.

Three years ago, the employees of the Bayshore Regional Sewerage Authority developed a mission statement. "***Committed to a Clean Environment for Today, Tomorrow, and Generations to Come***" This project is in line with that mission. We want to recycle the regions wastewater using the power of the wind; you cannot get much greener than that.

Anyone interested in hearing more about the BRSA wind project can call Robert C. Fischer at 732-739-1095 or e-mail him at Bfisch59@bayshorersa.com