

THE JAMESTOWN BPU: PROVIDING LEADERSHIP ON GLOBAL WARMING

Concerns about global warming are increasingly in the news media. The Jamestown Board of Public Utilities (BPU) wants to take this opportunity to outline the past achievements of our municipally-owned utility and its plans to build on that record in the future.

The BPU is a community-owned electric utility that has been providing electric service to the City of Jamestown and the surrounding area for more than a hundred years. In fact, Jamestown is the largest municipally-owned electric utility with generation in New York State and is an extremely important part of the local economy. The economic and reliable power provided by the BPU is an important element of the community's comprehensive plan to create a strong economic base with sustainable growth for Jamestown and the Western New York region.

Global Warming

Energy from the sun drives the earth's weather and climate, and heats the earth's surface; in turn, the earth radiates energy back into space. Atmospheric greenhouse gases (including water vapor, carbon dioxide (CO₂), and methane) trap some of the outgoing energy, retaining heat somewhat like the glass panels of a greenhouse.

However, problems may arise when the atmospheric concentration of greenhouse gases increases. Since the beginning of the industrial revolution, atmospheric concentrations of CO₂ have increased. These increases have enhanced the heat-trapping capability of the earth's atmosphere. Plant respiration and the decomposition of organic matter release more than 10 times the CO₂ released by human activities. Scientists generally believe that the combustion of fossil fuels and other human activities, however, are the reason for the increased concentration of CO₂.

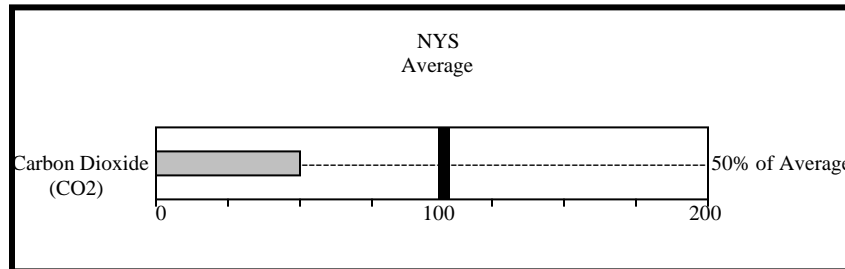
Rising global temperatures are expected to raise sea levels, and change precipitation and other local climate conditions. Changing regional climate could alter forests, crop yields, and water supplies. It could also affect human health, animals, and many types of ecosystems. Most of the United States is expected to warm, although sulfates may limit warming in some areas. While it is clear that human activities contribute to global warming, the extent of the human impact and the effect on the environment is less clear. Like many fields of scientific study, there are uncertainties in this area. Scientists and policy makers continue to study and debate global warming.

The BPU: The Past Record

The power the BPU provides its customers contains one of the lowest CO₂ emission rates in New York State, and contains less than half the CO₂ emissions of the power provided to the average New York State customer. The BPU's power has these low emission levels because the BPU's generation mix includes a significant amount of clean,

renewable, hydropower and other renewable resources, and the BPU has voluntarily invested in efforts to reduce CO₂ emissions.

**The Power the BPU Provides Its Customers
Contains Less Than Half the Carbon Dioxide Emissions of the Power
Provided to
the Average New York State Electric Customer**
(from New York State Public Service
Commission Environmental Disclosure Labels for Jamestown)



<u>Fuel Sources</u>	
Biomass	0%
Coal	15%
Gas	5%
Hydro	80%
Nuclear	0%
Oil	0%
Solar	0%
Solid Waste	0%
Wind	0%
Total	100%

The BPU and other New York municipal utilities have funded the New York Power Authority's Niagara Project, which is the largest renewable and CO₂-free project in New York. Eighty percent of the BPU's power comes from the Niagara Project, and is CO₂-free.

The BPU has voluntarily taken several additional measures to reduce CO₂ emissions at the Samuel A. Carlson Generating Plant. To maximize the useful energy from fossil fuels burned at the BPU's Carlson Plant, the BPU has installed an award-winning "district heating" energy conservation system. District heating is a cogeneration system that utilizes heat from combustion rather than simply releasing the heat into the atmosphere. The BPU began installation of this system in the mid-1980s and has significantly expanded the system to serve over 67 customers. Another innovative

strategy that the BPU has utilized in an effort to conserve energy is district chilling. The Jamestown Savings Bank Ice Arena was developed with a central chilled water plant, a variation on district heating, to take advantage of the efficiencies of a large central system, as opposed to smaller inefficient cooling systems. This system significantly improves the efficiency of the BPU's Carlson plant and our communities' hydro allotment, while also reducing greenhouse gas emissions.

Additionally, the BPU recently added a state-of-the-art natural gas-fired turbine to the Carlson Plant. The gas turbine has low CO₂ emission characteristics. In another example of renewable energy, the BPU uses methane generated from its Wastewater Treatment process to provide heat for the treatment process and to reduce the BPU's operating costs (less natural gas and electricity). This further reduces greenhouse gas emissions while providing the BPU an additional source of electricity. The BPU is currently working on increasing the size of the boiler at the Wastewater Treatment Plant to further reduce greenhouse gas emissions.

The BPU has implemented a variety of demand side management, energy conservation and load management practices, including high efficiency lighting incentives, commercial/industrial energy audits and outreach and education programs. These programs, like the measures above, reduce greenhouse gas emissions.

The BPU: Directions for the Future

In addition to its existing projects, the BPU has plans to further decrease CO₂ emissions. In addition to the 80% of its energy portfolio that comes from hydropower, the BPU is seeking to add further renewable generation to its portfolio. The BPU has entered into a contract for wind generation. Like the BPU's hydroelectric purchases, this purchase will have no CO₂ emissions. Additionally, the BPU is also working with Chautauqua County on a potential landfill gas project, which will further diversify the BPU's generation portfolio and will continue our commitment to renewable energy sources and less CO₂ emissions.

The BPU has plans to further reduce air emissions from the Carlson plant in the future. The BPU is moving forward with a proposal to build a new clean coal unit and simultaneously retire two of the BPU's existing 40-60 year old coal boilers. The BPU's plant is part of a new generation of utility plants that will significantly reduce CO₂ emissions. The BPU has selected a circulating fluidized bed (CFB) technology because of its efficiency and low emissions of a variety of chemicals, which will allow the BPU to produce significantly less CO₂ emissions for the same amount of energy.

The BPU also looks forward to participating in the Northeastern States Regional Greenhouse Gas Initiative (RGGI). This groundbreaking initiative proposes significant reductions in CO₂ emissions through a CO₂ trading program for power plants in the northeast, including New York. The BPU will be participating in this program, which will produce significant reductions in CO₂ emissions on a state-wide level.

In addition to further reducing CO₂ emissions, the new clean coal unit will give the Jamestown area the electric independence and security necessary to ensure reliable and economical electric service in the future. Proceeds from the BPU will remain in the Jamestown area and support a variety of municipal services in the area. The new clean coal unit, in combination with the BPU's significant purchases of clean, renewable hydropower, and the existing gas turbine and coal units, will allow the BPU to continue providing economical, environmentally responsible and reliable power to the City of Jamestown and the Western New York area well into the future.