



Climate Change and Drinking Water

NJEF Fact Sheet
2008



Numerous scientist reports have proven that climate change will have a tremendous impact on water. Climate change is already causing sea temperature rise, arctic ice melt, and more severe weather events including flooding and hurricanes. As climate change progresses, this and other factors will lead to different types of contamination and degradation in specific places, as well as severe water shortages.

Scientific consensus, including America's foremost climatologist, NASA scientist James Hansen, says to avoid the worst aspects of global warming, we must reducing carbon emissions 20% by 2020 and 80% by 2050. Reducing emissions is critical, but the same thing is true for water. According to General Electric, one of the world's biggest companies, growing water scarcity is increasing the cost of water and industries must work to reduce water consumption and invest in water recycling technologies.


“Watery”

Like oil, water is an essential part of all industries. According to a USGS 2000 report, U.S. industry uses more water than agriculture thanks to its use in power generation. Thermoelectric power accounts for *almost half the water (48%)* used in the U.S., while domestic uses, like drinking and sanitation account for less than 1%. Droughts are already severely impacting industry. In 2006, a severe drought in the southeast forced a nuclear power plant, Browns Ferry, to shut down one of three reactors for a week.

Watery Fact:

A family of four can use three times more water to power their home than the combined use of water to drink, bathe and water their lawn.

Electricity Guzzling Up Water Supplies

 According to a USGS 2000 report, power plants are the single largest users of freshwater in the United States. This means that when you switch on a light bulb, cook a meal, or check your email you are relying on millions of gallons of water for that power. That's because power plants (e.g. nuclear, fossil fuels, geothermal and hydropower) convert water into high-pressure steam which drives turbines to create energy. In New Jersey, electric utilities used 4 billion gallons of water per day in 2000. Most of this water was derived from surface water and used for “once-through” cooling at nuclear power plants.

Water Goes Up in Smoke

Older power plants use once-through, or open loop, cooling systems to condense the steam used to generate electricity. The water flows in one end of the plant, condenses steam into water, and then returns it to the river out the other end. The quantities of water required are enormous—up to 500 million gallons a day for one medium-sized coal plant. The U.S. Department of Energy (DOE) estimates that power plants in the U.S. could consume more than 9 billion gallons a water a day by 2030, 3 times the amount consumed in 1995. This is due to water lost through downstream evaporation after the hot water from the plant is returned to the cooler source waters.

Newer plants no longer use once-through cooling systems because of environmental concerns. They re-circulate the water in closed-loop systems, sending hot water to be air cooled in tall towers. Although these systems withdraw a fraction of the water used by once-through systems, they still lose 66% of the water through evaporation (source: Electric Power Research Institute).

A Changing World

As water faces dwindling supplies and growing demand, some are calling water, “The Next Oil”. It's hard to grasp this concept when most people in the developed world feel as though water is so plentiful, automatic, and free. The reality is that humans are using much more water than can be replenished. We are also dumping chemicals, compounds and other waste into the system faster than the system can clean it out again. Today and into the future, securing large amounts of water will continue to be a difficult issue for energy plants, especially in NJ whose own Clean Water Council reported that NJ is on a path to run out of clean drinking water by the year 2020 unless something is done about it.





According to an EPA report entitled *Climate Change and New Jersey*, climate change in New Jersey will cause evaporation, contamination and depletion of water resources, increased sea level rise and flooding, and salt water intrusion. (Desalination plants are not the solution to salt water intrusion, as the technology is extremely expensive and the plants dump salt-laden waste in oceans that causes acidification & killing of aquatic life).

Despite this knowledge, our federal government continues to dismantle federal environmental safeguards set by the **Clean Water Act**, as well as block legislation that will adequately address climate change. Currently there are over 150 new plans for coal-fired plants to be built and support for the building of more nuclear reactors.

Working to Stay Ahead of the Curve



NJEF is working to pass the **Clean Water Authority Restoration Act (CWARA)** which will reinstate the original intent of the Clean Water Act to ensure that all waters of the United States are protected from pollution and destruction. We are also serving on the NJ Sustainable State Institute's "Sustainable Communities Working Group" to develop a **Green Future Roadmap** that will provide a set of tools and guidance that will facilitate municipal and county-wide progress toward sustainable development and greening. In 2007, NJEF helped pass the **NJ Global Warming Response Act of 2007**, the strongest global warming law in the country. NJEF also supports investing in sustainable energy. The Corzine Administration is conducting a pilot project of up to 80 wind turbines off of NJ's coastline, and with nearly 2,000 solar installations, NJ is the second largest solar energy market in the nation.

While there are clear signs of progress, there is also real cause for concern. NJEF is pushing the Corzine Administration to update the state's **energy and water supply master plans**, both of which are very outdated, lack teeth, and fail to address the challenges described here. NJEF is co-leading **Stop the Relicensing of Oyster Creek (STROC)**, a coalition working to shut down Oyster Creek, the oldest operating nuclear power plant in the nation, due to numerous environmental, water, and safety concerns. NJEF supports a just transition for workers displaced as we move to a cleaner energy future. ***This will not be easy, and we need your help.***

What You Can Do

1. **Support NJEF's efforts** by becoming a member of our organization. Call 732-280-8988 or visit: <https://secure.groundspring.org/dn/index.php?aid=2851>
2. **Get involved!** Take action on key issues and sign up to receive NJEF's bi-monthly action alerts by emailing jvickers@cleanwater.org or visiting <http://cleanwateraction.org/takeaction/>
3. **Go Green in Your Community!** NJEF provides free Sustainable Communities training and implementation for your school or municipality (including reducing pesticides, vehicle idling, and using green cleaning products). Contact Jenny Vickers at 732-280-8988 or jvickers@cleanwater.org today!
4. **Write to Governor Corzine** at www.state.nj.us/governor/govmail.html and ask his administration to develop and implement a strong, clean energy master plan that shuts down Oyster Creek, requiring cooling towers for any existing power plants; promotes renewable energy; increases energy efficiency, and implements the Global Warming Response Act.
5. **Write to your U.S. Senators and Representatives** at: www.cleanwateraction.org/issues/water and ask that they pass the Clean Water Authority Restoration Act.
6. **Help reduce urban sprawl** so people don't have to drive so far to work! Encourage carpooling, the use of hybrid and electric cars and ensure mass transit is available and affordable.
7. **Reduce your own carbon footprint** at home or your business: www.thegreenguide.com/doc/119/calculator.
8. **Purchase green power from non-polluting sources**, such as windmills, through your local utility. Compare the costs and environmental benefits of green power at www.powerscorecard.org/

For more information, contact NJ Environmental Federation, the NJ Chapter of Clean Water Action, at 732-280-8988, jvickers@cleanwater.org, or visit www.cleanwateraction.org/njef