

PROPOSED COAL POWER IN
GEORGIA:

A POLLUTANT SUMMARY

April 2007



Written by Jennette Gayer and Jeff Kerr of Environment Georgia Research and Policy Center

The opinions expressed are those of the authors and do not necessarily reflect the views of our funders or those who provided editorial review. Any factual errors are strictly the responsibility of the authors.

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**Environment Georgia Research & Policy Center
741 Piedmont Ave NE, 2nd Floor
Atlanta, GA 30308
(404) 892-3573
www.environmentgeorgia.org**

INTRODUCTION

The New Jersey based company, LS Power, is in the permitting stages for building a 1,200 MW coal power plant in southwest Georgia. If this plant were to be built it would have pollution effects in nearby counties and across the state. As part of LS Power's application process, the company was required to detail the proposed plants annual emissions of several major pollutants, including sulfur dioxide, nitrogen oxides, particulate matter, mercury and lead. These pollutants cause respiratory and cardiovascular problems, can poison people who eat fish, damage crops and ecosystems, and create an unsightly haze that can travel for hundreds of miles.

Burning coal for power is an inherently polluting process. Coal plants have been cleaned up to a certain degree with the help of certain filters and scrubbers that reduce some pollutants, but the basic pollution problems with coal plants have not changed. What follows is a detailed look at the pollution that will be emitted by the proposed Early County Plant and the impacts that we can expect to see.

LS Power was required to submit a detailed list of the amounts of each major pollutant that the plant would emit:¹

Pollutant	Potential Emissions
Particulate matter (PM ₁₀)	1,805 tons per year
Nitrogen Oxides (NO _x)	3,783 tons per year
Carbon Monoxide (CO)	8,072 tons per year
Sulfur Dioxide (SO ₂)	6,456 tons per year
Volatile Organic Compounds (VOC)	194 tons per year
Lead (Pb)	0.65 tons per year
Sulfuric Acid Mist (H ₂ SO ₄)	265 tons per year
Fluoride (as HF)	159 tons per year
Mercury (Hg)	242 pounds per year

Carbon Dioxide is not included in the above report because it is not currently regulated by Georgia's Environmental Protection Division. Through extrapolation we have estimated carbon emissions and have included them in our discussion of emitted pollutants.

¹ "RE: Air Quality Permit Application for Power Plant," Georgia Department of Natural Resources, available from <http://www.air.dnr.state.ga.us/airpermit/psd/dockets/longleaf>; Internet; accessed 11 January 2007.

POLLUTION OVERVIEW

PARTICULATE MATTER:

Particulate matter consists of fine particles that can get deep into lung tissue. Some are in fact so tiny that they can be transmitted from the lungs into the bloodstream, where they can damage the heart and other organs. They have been linked to several health complaints and diseases, such as difficulty breathing, coughing, irritation of the airways, decreased lung functioning, worsened asthma, chronic bronchitis, irregular heartbeat, heart attacks, and premature death. Children, the elderly, and people with respiratory or heart problems are most likely to be affected.² Fine particles are one of the main causes of haze and visibility reduction. This can even be seen in National Parks and wilderness areas. According to the EPA, "Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems."³

NITROGEN OXIDES

Nitrogen oxides react with sunlight to produce ground-level ozone or smog, which can cause damage to lung tissue and decreased lung-function in children,

² The Environmental Protection Agency, "Particulate Matter: Health and Environment," available from <http://www.epa.gov/air/particles/health.html>; Internet; accessed 15 March 2007.

³ Ibid.

people with respiratory problems such as asthma, and people who work outdoors. This ozone can be carried great distances by wind currents. Ozone can also damage vegetation and crops. Furthermore, along with sulfur dioxide, nitrogen oxides form acid rain, which can cause lakes and streams to become acidic and deadly to fish. It can also damage and deteriorate cars, buildings, and monuments. Nitrous oxide is also a greenhouse gas and causes global warming.⁴

SULFUR DIOXIDE

Along with particulate matter and nitrogen oxides, sulfur dioxide primarily affects the respiratory system. People with can asthma can experiencing difficulty breathing outdoors when sulfur dioxide concentrations are high, and long term exposure can worsen respiratory illnesses and existing heart diseases. Sulfur dioxide also contributes to particulate pollution, haze, and acid rain. It is known to damage forests, crops, lakes, and streams.⁵

MERCURY

Unlike the other pollutants that affect human health by being inhaled, mercury

⁴ The Environmental Protection Agency, "Health and Environmental Impacts of NOx," available from <http://www.epa.gov/air/urbanair/nox/hlth.html>; Internet; accessed 15 March 2007.

⁵ The Environmental Protection Agency, "Health and Environmental Impacts of SO2," available from <http://www.epa.gov/air/urbanair/so2/hlth1.html>; Internet; accessed 15 March 2007.

is primarily a risk because it contaminates fish that people eat. As fishing is a major recreational activity in Georgia, there is ample reason to be concerned about mercury poisoning. A single mercury thermometer containing 0.0273 ounces of mercury is capable of contaminating an entire home if broken.⁶

The LS Power facility would emit roughly 3,520 ounces of mercury in a year; that is the equivalent of breaking about 129,000 mercury thermometers! The EPA has said that during mercury poisoning outbreaks, “mothers with no symptoms of nervous system damage gave birth to infants with severe disabilities and it became clear that the developing nervous system of the fetus may be more vulnerable to methylmercury [the organic form of mercury that is created when mercury from power plants falls into lakes and streams] than is the adult nervous system.”⁷

WATER ISSUES

The coal plant could increase water intake from the Chattahoochee River by 27 million gallons per day, reducing the water flow on this already stressed river.⁸ These reductions will eventually

⁶ “Mercury Thermometer Exchange Program,” The Rhode Island Department of Health, March 2004, available from <http://www.health.ri.gov/environment/risk/mercurherm2003.pdf>; Internet; accessed 1 March 2007.

⁷ The Environmental Protection Agency, “Mercury: Human Exposure,” available from <http://www.epa.gov/mercury/exposure.htm>; Internet; accessed 15 March 2007.

⁸ Chris Adams and Larry Sanders, *RE: Application for Issuance of Surface Water Permit to Longleaf Energy Associates, LLC and Modification of Surface Water Permit Held by Great Southern Paper Company*, The Turner

have impacts on the Apalachicola River, which is partly fed by water from the Chattahoochee. The Apalachicola is home to several endangered and threatened species, such as the Gulf Sturgeon and various species of mussels.⁹ Moreover, the increased water intake required for the Early County coal plant will harm aquatic organisms in the Chattahoochee: “heightened flows through the cooling water intake structure...will increase the number of organisms entrained and impinged in the structure.”¹⁰

GLOBAL WARMING POLLUTION

A wide scientific consensus confirms that carbon dioxide emissions resulting from human activities are responsible for a global warming trend that could have disastrous consequences. For instance, a leading economist has listed consequences such as

major surges of the West Antarctic ice sheets, leading to a sea-level rise of 20 feet or more; unexpected shifts in ocean currents, such as displacement of the warm current [the Gulf Stream] that warms the North Atlanta coastal communities; a runaway greenhouse effect in which warming melts tundras and releases large amounts of additional GHG [greenhouse gases] like methane; large-scale desertification of the current grain-belts of the world; very rapid shifts in temperature and sea levels; or

Environmental Law Clinic at The Emory School of Law, 6 November 2006, 2.

⁹ *Ibid*, 5.

¹⁰ Larry Sanders and Angela Durbin, *RE: Proposed NPDES Permit for Longleaf Energy Associates, LLC*, The Turner Environmental Law Clinic at The Emory School of Law, 9 November 2006, 4.

the evolution and migration of lethal pests in new climatic conditions.¹¹

The LS Power facility would contribute significantly to this worldwide problem. Coal is the most “carbon-rich” of all fossil fuels, and coal power plants release more carbon dioxide per kilowatt hour than power plants that run on different fuels, such as natural gas. Because carbon dioxide emissions are not currently regulated (although they likely will be in the next few years) LS Power was not required to disclose how much they would emit per year. However, it is possible to extrapolate based on the capacity of the plant, since there will be no technology in place to limit CO₂ emissions. Calculations reveal that, running at full capacity, the Early County coal plant would emit roughly 9 million metric tons of carbon dioxide annually.¹²

In Georgia alone, that would be about a 13% increase in the amount of carbon dioxide released by electricity generation.¹³ To put these figures in perspective, **LS Power’s carbon dioxide emissions would be equivalent**

to having about 1,300,000 extra cars and trucks on the road.¹⁴

CONSEQUENCES OF GLOBAL WARMING IN GEORGIA

If left unchecked, global warming will have a range of consequences in Georgia. Coastal areas, inland areas, economic resources, several industries, and the welfare of Georgians will all be affected by the warming trend.

Along the Georgia coast, rising sea levels will contribute to coastal erosion and to the loss of wetlands—especially in areas where wetlands are prevented from migrating landwards by seawalls or coastal developments.¹⁵ Georgia’s coast will be even more vulnerable to the rising sea-levels produced by global warming because of its shallow waters:¹⁶ the low-lying marshes and barrier islands that protect Georgia from storms and storm surges could be completely submerged.¹⁷

¹¹ Richard Posner, *Catastrophe: Risk and Response* (New York: Oxford University Press, 2005), 45.

¹² “How Coal Works,” The Union of Concerned Scientists, available from http://www.ucsusa.org/clean_energy/fossil_fuels/offmen-how-coal-works.html; Internet; accessed 11 January 2007.

¹³ This calculation is based on data from the file, CO2FFC_2003, available from http://www.epa.gov/climatechange/emissions/strate_energyco2inv.html; Internet; accessed 28 February 2007.

¹⁴ Calculation based on vehicle data at <http://www.fueleconomy.gov/>; Internet; accessed 28 February 2007.

¹⁵ “Global Warming and Georgia,” The National Wildlife Federation, available from <http://www.nwf.org/globalwarming/pdfs/Georgia.pdf>; Internet; accessed 28 February 2007 & Dr. Ron Carroll, “Climate Change: Drying Rivers and Drowning Coasts,” available from http://www.southernenvironment.org/cases/global_warming/Ron_Carroll.pdf; Internet; accessed 28 February 2007.

¹⁶ “How Will Global Warming Affect People in Georgia?,” The University of Georgia College of Agricultural and Environmental Sciences, available from <http://apps.caes.uga.edu/news/storypage.cfm?storyid=2986>; Internet; accessed 28 February 2007.

¹⁷ “Panorama Summer 2006,” The Georgia Conservancy, available from

Georgia's interior would be affected as well. High temperature could make many of Georgia's mountain streams too warm for the State's prized native Brook Trout populations to survive.¹⁸ Even the Georgia's State bird, the Brown Thrasher, could abandon its State if warming trends caused it to change its migration patterns and habitat. Warmer winters could also lead to increased numbers of invasive red fire ants, which would endanger newly born fawns, hatching quail, and groundnesting waterfowl chicks.¹⁹

On the economic front, Georgia's fishing and coastal tourism industries would be at serious risk. Rising sea-levels would harm critical habitat for shrimp, oysters, and other important species for fishing.²⁰ The multibillion dollar tourism industry will surely feel be affected by the numerous effects of global warming along Georgia's coast. And global warming could also affect the State's agriculture and commercial forestry industries, forcing them to shift as much as 200 miles to the north.²¹

Global warming will also have serious public health and welfare

<https://www.georgiaconservancy.org/News/SummerPano06.pdf>; Internet; accessed 1 March 2007.

¹⁸ "Global Warming and Georgia," The National Wildlife Federation, 11 December 2006; available from <http://www.nwf.org/globalwarming/pdfs/Georgia.pdf>; Internet; accessed 1 March 2007.

¹⁹ Ibid.

²⁰ Ibid.

²¹ "Panorama Summer 2006."

consequences for Georgia. Rising temperatures will allow disease-carrying tropical pests to migrate into the State and introduce new diseases such as Dengue fever. And the EPA has stated that heat related deaths in Atlanta during the summer could more than double by the end of the century.²² Scientists also suggest that global warming will lead to bigger hurricanes, and a large rise in sea level could inundate some of Georgia's coastal communities, which have been projected to grow rapidly in the next 20 years.²³

²² "Global Warming and Georgia."

²³ "Panorama Summer 2006."

