

Cement Plants and Waste Incineration as “Alternative Fuels”

Titan Cement’s current air permit for their proposed Castle Hayne plant specifies that they may only burn coal and an industrial waste known as “petroleum coke” as fuel in their kiln. However, they could later request a permit revision to allow them to burn hazardous waste, tires, or other toxin-rich materials, which fall under the industry term “alternative fuels.” This fact sheet explains what alternative fuels are, how cement companies get permits to burn them, and provides examples of those fuels that Titan currently burns at their two existing cement plants.

What are alternative fuels?

Within the cement industry, the term “alternative fuel” refers to substituting traditional fossil fuels, like coal and natural gas, with a variety of wastes and industrial byproducts, mainly due to their lower energy costs relative to coal and/or gas. In the US, cement plants commonly get up to 70% of their energy needs from alternative fuels.¹ Examples of alternative fuels include **plastics, tires, agricultural and animal wastes, solvents and other chemicals, shingles, carpets, municipal, industrial, and medical wastes, and “auto fluff” (shredded car interiors which can contain PCBs, mercury, and asbestos).**² “Biomass,” a category of alternative fuels, is another misleading term that is often used in conjunction with “renewable energy” by industry advocates, yet in reality it often includes animal and slaughterhouse wastes, sewage sludge, municipal waste, and certain industrial wastes.^{3, 4, 5}

According to the US Environmental Protection Agency (EPA), biomass often results in higher variations in temperature, which can cause increased production of dioxins, an acutely carcinogenic class of toxic chemicals. Additionally, chlorine present in water treatment waste can increase the volatility of heavy metal emissions, such as mercury and arsenic, when those wastes are used as fuel.⁶ Canada’s Pollutant Release Inventory, the equivalent of the US EPA’s Toxic Release Inventory, has documented massive increases in toxic pollutants, including heavy metals, when cement plants have begun incinerating wastes and other alternative fuels.⁷

What would Titan burn at their proposed Castle Hayne plant?

Titan’s current air permit stipulates that they may only use coal and petroleum coke (an industrial byproduct from oil refineries) as fuel sources for their kiln. A review of the operations of cement companies indicates a pattern of obtaining their necessary permits for a conventionally-fueled plant, then later requesting air permit modifications, often through an expedited process, to burn cheaper, dirtier wastes.⁸ To date, Titan has never publicly pledged, in writing or otherwise, that they would not burn hazardous waste or any other “alternative” fuels in their Castle Hayne kiln.

In their 2008 air quality permit application, Titan indicated that they would derive **up to 50% of their kiln’s heat input from “alternative fuels”**.⁹ This language eventually disappeared from the application’s later revisions, but the state’s regulatory processes would allow Titan to request a permit revision to allow them to burn hazardous waste, tires, and other heavy-polluting materials for their operations. This is often used as part of a strategy to avoid additional public scrutiny during the initial permitting process.¹⁰

What is the process for a cement plant to add or change fuel sources?

In North Carolina, a cement plant would be required to apply for and receive a permit amendment to burn alternative fuels.¹¹ This process would require the Division of Air Quality to provide a public notice, appearing on their website and in a local newspaper, **however there is no legal requirement that a public hearing be held before the company is issued a permit to burn these materials.**^{12, 13} The decision on whether to require any type of public hearing rests solely with the Director of the NC Division of Air Quality. If the director deems a hearing necessary, the public will receive 30 days' notice before the hearing is held.¹⁴

What does Titan burn at their other cement plants?

Titan America, the parent company of Carolinas Cement Company, operates two other cement kilns in the US: one in Medley, FL, and another in Troutville, VA. Both of these plants had initially been permitted only to burn traditional fossil fuels, as is the case with their proposed plant in Castle Hayne. However, both of these plants are now permitted to burn a range of wastes and other "alternative fuels." In the case of Titan's Troutville plant, no permit modification or public notice was necessary for them to begin burning alternative fuels. At their Florida plant, a public notice in the local newspaper followed by a 14-day comment period, with no public hearing, was all that was required for the new fuel sources. Here is a partial list of wastes and other materials that these plants are permitted to burn:

- Roanoke Cement in Troutville, VA^{15, 16}
 - Gas from landfills
 - Agricultural wastes, including animal carcasses and other slaughterhouse wastes¹⁷
 - Wastewater treatment and sewage sludge (treated "to an acceptable level")
 - Municipal solid waste (trash incineration)

- Pennsuco Cement Plant in Medley, FL¹⁸
 - Arsenic-, copper-, and/or chromium-treated wood
 - Plastic
 - Tires
 - Shingles
 - Carpets

¹ <http://ies.lbl.gov/iespubs/LBNL-525E.pdf>

² <http://www.downwindersatrisk.org/cementipedia/>

³ <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-RCRA-2008-0329-1807>

⁴ <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-RCRA-2008-0329-1808>

⁵ <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-RCRA-2008-0329-1809>

⁶ <http://ies.lbl.gov/iespubs/LBNL-525E.pdf>

⁷ <http://www.ecojustice.ca/media-centre/press-releases/groups-demand-ontario-kill-toxic-plan-to-burn-tires-and-trash>

⁸ <http://www.movementech.org/gis/pdf/hollyhillreport.pdf>

⁹ http://daq.state.nc.us/permits/psd/docs/titan/Carolinas_Cement_PTE.pdf

¹⁰ Interview with Jim Schermbeck, Downwinders at Risk

¹¹ Interview with Tom Mather, NC DAQ

¹² *id.*

¹³ <http://ncair.org/rules/rules/Q0521.pdf>

¹⁴ <http://www.ncair.org/rules/rules/Q0521.pdf>

¹⁵ <http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5-520-20>

¹⁶ Interview with Dave Skelly at VA Department of Environmental Quality, Air Permitting

¹⁷ http://www.pmsolid.com/psp/data/ip_3776_2_gb_cement.pdf

¹⁸ http://www.dep.state.fl.us/air/emission/construction/tarmac_pennsuco/tepd.pdf