

Coal Power in Alaska

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Ground Truth Trekking

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Less than 10% (http://www.instituteforenergyresearch.org/state-regs/pdf/Alaska.pdf) of Alaska's electricity comes from coal. Most is from gas, hydro, and oil. There are six small coal-fired power plants in Alaska, all found on the "Railbelt" (/Issues/Infrastructure/Railbelt-Electrical-Grid.html) power grid north of the Alaska Range between the Usibelli Coal Mine (UsibelliCoalMine.html) and the Fairbanks area. Most were built in the 1950's and 1960's and are "co-generation" plants where the coal is used for power as well as generating steam that is piped into businesses, residences, or military bases. All the existing plants use the "pulverized coal" method of combustion (/WildResource/Issues/CoalCombustionMethods.html) and the coal combustion wastes (/WildResource/Issues/CoalCombustionWastes.html) are deposited as fill in a variety of places. These plants are located on Fort Wainwright (http://www.wainwright.army.mil/sites/local/),Eielson Air Force Base (http://www.eielson.af.mil/), Clear Air Force Station (http://en.wikipedia.org/wiki/Clear_Air_Force_Station) in Fairbanks (Aurora Energy LLC), on

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the University of Alaska, Fairbanks campus (http://www.uaf.edu/), and near Usibelli coal mine (http://www.gvea.com).

Fort Wainwright Central Heat and Power Plant

The Fort Wainwright Central Heat and Power Plant (CHPP) is the largest coal-fired power plant owned by the U.S. military. It was first constructed in the 1940's, and has been modified extensively over time. This co-generation plant uses around 230,000 tons of coal per year and can produces up to 20 Mw of electricity as well as steam for heating.

In 1999 this plant was fined over $16 million by the EPA (http://yosemite.epa.gov/opa/admpress.nsf/a883dc3da7094f97852572a00065d7d8/55e9dfaa0e9dc4c9852570cb0075e18 for violation of the Clean Air Act, which at the time was the largest fine levied by the EPA against a Department of Defense installation. Around this same period, Fort Wainwright was designated as Superfund Site (http://cfpub.epa.gov/supercpad/cursites/csitinfo.cfm?id=1001146) for contamination of soil and groundwater with coal, petroleum and pesticide wastes. However, the site is currently in compliance with EPA regulations. In 2007, an air-cooled condenser was added to the plant to address (http://www.navytimes.com/legacy/com/1-comnews-377552.php) the problem of generating ice fog near the cooling pond in the winter that affected visibility on the Richardson Highway. This plant uses a baghouse to capture fly ash from the stack. Significant changes to the plant are

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underway as a result of a 2010 decision to privitize the plant. The facilities are now operated by Doyon Utilities (http://doyonutilities.com/about/fort-wainwright-utilities/).

Eielson Airforce Base

The co-generation power plant at Eielson Air Force base was constructed in 1951 and uses about 196,500 tons of coal per year to produce up to 25 Mw of electricity. In the winter the plant produces more than 380,000 pounds of steam per hour, two thirds of which is used to heat the base and the remainder to generate electricity (http://www.af.mil/News/ArticleDisplay/tabid/223/Article/127621/eielson-powers-its-own-mission.aspx). This plant uses a baghouse to capture fly ash from the stack.

Clear Air Force Station

The co-generation plant at Clear Air Force Station began operations in 1961 and currently uses around 58,000 tons of coal per year. This plant produces up to 22.5 Mw of electricity as well as steam for heating. This plant uses a baghouse to capture fly ash from the stack. In September 2012 the base announced (http://newsminer.com/view/full_story/20169255/article-Plan-to-put-Clear-Air-Force-Station-on-electric-grid-prompts-questions) an interested in mothballing this plant and connecting to the grid managed by GVEA. The Air Force has also tried to sell the plant but as of the end of 2012 had not

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found a buyer (http://newsminer.com/view/full_story/21174117/article-GVEA-won%E2%80%99t-buy-Clear-Air-Force-Station-power-plant?instance=home_news_window_left_top_1).

(/photos/ChenaPlant.jpg)

Chena powerplant - photo Russ Maddox

Aurora Energy LLC (Chena Plant)

Aurora Energy LLC, a subsidiary of Usibelli Coal Mine Inc. (UsibelliCoalMine.html), took over operations of the Chena Power Plant and District Heat System in Fairbanks in 1998. This plant provides steam and hot water for approximately 165 consumers in Fairbanks, as well as generating up to 25 Mw of electricity which it sells to the Golden Valley Electric Association (http://www.gvea.com). This plant uses approximately 210,000 tons of coal per year and produces ~350,000 metric tons of CO2 per year. In 2006, this facility installed a full baghouse which captures the fly ash. In 2011 a study (http://www.akaction.org/Publications/Coal_Development/Coal_Ash_in_Alaska_Feb_2011.pdf)(4.2 MB) sampled coal ash from this facility that was being used as fill and found high levels of toxic compounds including arsenic, mercury, and vanadium. The EPA launched a preliminary investigation (/static/uploads/files/EPA-PA-Fairbanks-Coal.pdfGOqKVt/EPA-PA-Fairbanks-Coal.pdf)in 2012 and based on that work plans to return for a full hazard assessment of the facility later in the year which could include listing on the National Priorities List (a.k.a. Superfund). In early 2013 an injury and a worker

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complaint raised questions (http://fm.kuac.org/post/employee-claims-safety-long-time-issue-local-power-plant) about safety practices at Aurora.

(/photos/UAFplants004.jpg)

UAF powerplant - photo Russ Maddox

The University of Alaska, Fairbanks

The University of Alaska, Fairbanks operates (http://www.uaf.edu/fs/departments/utilities/) a 23 Mw capacity co-generation plant constructed in 1964. This plant uses approximately 60,000 tons of coal per year to supply all the electricity, hot water, and heat to the University. UAF has requested (http://www.uaf.edu/files/alumni/fact-pdfs/fact_sheet_CHP_final_25Jan.pdf) $22 million for FY2014 to construct a new coal-fired plant that could also use up to 15% waste and/or biomass though total costs would be much higher (http://www.alaskajournal.com/Alaska-Journal-of-Commerce/September-Issue-3-2013/UAF-to-press-again-for-funding-to-replace-aged-power-plant/). This was followed in early 2014 by a request (http://www.newsminer.com/news/local_news/uaf-chancellor-says-replacing-power-plant-worth-the-high-pricetag/article_52be2b84-9943-11e3-92dc-001a4bcf6878.html) for the full $195 million that such a plant would require. In late 2014, a design company was selected (http://www.itbusinessnet.com/article/Stanley-Consultants-Selected-to-Design-University-of-Alaska-Power-Plant-3615819) and the proposed completion date would be in 2018.

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The Golden Valley Electric Association



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HEALY "MINE MOUTH" PLANT — Healy "mine mouth plant" in foreground. HCCP in background. — Get Photo (/photos/healy-mine-mouth-plant/)

The Golden Valley Electric Association (http://www.gvea.com/) also operates a "mine-mouth" plant in Healy, near the Usibelli coal mine (UsibelliCoalMine.html). This 25 Mw facility was built in 1967 and is located just next to the newer Healy #2 "Clean Coal" (HealyCoalPower2.html) plant which is currently non-operational. This plant uses a baghouse to capture fly ash from the stack.

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