

Benefits of Coal

by Bretwood Higman, Erin McKittrick, David Coil

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Ground Truth Trekking

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History

Coal has been used as a heat or energy source throughout the world since at least the Bronze Age. Coal was an important fuel for the Romans in the West as well as in China around the same period. During the 18th-19th centuries, coal provided a portable abundant energy source to power the Industrial Revolution (http://en.wikipedia.org/wiki/Industrial_Revolution). In addition to the obvious use of coal as a source of heat and steam power, the evolution of steelmaking (http://en.wikipedia.org/wiki/Steel#History_of_steelmaking) from using charcoal to using coal allowed the process to be scaled up to an industrial level.

Current use

Until 2008 coal had generally been providing about 50% of the electricity in the United States, but has since dropped precipetously, and in 2012 is well under 40% (see the EIA Electricity Data Browser (http://www.eia.gov/beta/enerdat/#/topic/0?agg=0,1,2&fuel=pe&geo=g&sec=g&linechart=ELEC.GEN.COW-US-99.M~ELEC.GEN.NG-US-99.M~ELEC.GEN.NUC-

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US-99.M~ELEC.GEN.HYC-US-99.M~ELEC.GEN.AOR-US-99.M&columnchart=ELEC.GEN.ALL-US-99.M&map=ELEC.GEN.ALL-US-99.M&freq=M&start=200701&end=201204&ctype=linechart&rse=0&n for up-to-date numbers). The decline in coal use in the US is dominantly because of abundant natural gas (http://news.discovery.com/earth/co2-pollution-down-to-1992-levels-in-the-us-120821.html) from fracking. Tens of millions of tons are also consumed per year in the production of steel and other industrial commodities (CoalUses.html). In 2010, the US consumed (http://www.eia.gov/coal/annual/pdf/acr.pdf) over one billion tons of coal, the majority of it for electricity generation (975 million tons) and smaller amounts for other industrial processes (49 million tons), steelmaking (21 million tons), and residential/commercial use (3 million tons). Almost half of the combustion wastes (CoalCombustionWastes.html) from the burning of coal for electricity are used in other industrial processes.

Unlike oil, or even natural gas, coal is relatively easy and cheap to find and is quite abundant in many areas in the United States, particularly in Alaska (HowMuchCoal.html). As a result of this and the relative ease of mining, coal is by far the cheapest fossil fuel, costing around a third of the price of oil or natural gas per unit of energy produced. However, this market price of coal does not take into account all of the external costs (CoalTrueCost.html) associated with using coal, like it's contribution to climate change.

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Fuels like coal provides an excellent fuel for “base-load” generation (http://en.wikipedia.org/wiki/Base_load_power_plant) because they can be burned on demand, generating electricity when it is needed. Only some hydroelectric power generation provides greater flexibility, and most renewables (AlaskaRenewableEnergy.html), including wind, solar, and wave generation provide no control over when electricity is generated.



COAL MINER — Kentucky coal miner statue — Get Photo (/photos/Coal-Miner-Statue/)

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Employment

Around 1750 mining (http://www.eia.gov/coal/annual/pdf/acr.pdf) operations in the US directly employed around 86,000 workers in 2010. This includes workers involved in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations. Beyond these workers, many more people are involved in the construction of coal-related facilities, transportation, combustion, waste-management or regulation of coal. A 2006 study (http://www.coalcandothat.com/images/content/PennState2006UpdateFinal072506.pdf) by the University of Pennsylvania estimated that by 2015, coal will contribute more than $1 trillion of gross output directly and indirectly to the economy of lower 48 states, $362 billion to household income, and 6.8 million jobs. However, a recent economic analysis concluded (http://natcapsolutions.org/coal/coalplantsintransition.pdf) that retiring existing coal plants would ultimately contribute more to the economy than maintaining them. While coal-fired power plants undoubtedly bring employment to the area where they are located, there is some evidence (http://www.afractionofthejobs.com/report.shtml) that this effect is usually less than promised in advance.

In Alaska, direct and indirect employment in 2008 due to coal mining and combustion were estimated (http://www.nma.org/pdf/americas_power_states/AK.pdf) to be responsible for 530 jobs with a combined payroll of $20 million.

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Further Reading

> American Coal Foundation (http://teachcoal.org/american-coal-foundation)

> "America's Power" sponsored by the American Coalition for Clean Coal Electricity. (http://www.americaspower.org/Who-We-Are/)

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