



Status of Coal in Iowa

A number of the coal-burning plants in Iowa generate electricity for consumers while there are several coal-fired industrial plants. The coal fleet has been replaced by renewable energy over the last couple of decades. Wind energy provided 62 percent of the energy generation in Iowa in 2022.¹ In 2021 wind energy supplied 55.2 percent of Iowa’s electricity, outstripping coal which supplied 32.89 percent.² Wind and solar are power sources found in the state. The money spent on coal is all shipped out of the state since Iowa has no functioning coal mines.

Greenhouse Gas Implications

A comparison of the greenhouse gas emissions in Iowa by sector follows:

	2005 ³	2015 ⁴	2016	2017	2018	2019	2020	2021	2022
Electricity, power plants	31%	23%	20%	20%	23%	19%	14%	19%	17%
Agriculture	23%	29%	31%	30%	30%	29%	31%	29%	31%
Residential, commercial, industrial fossil fuel use		24%	25%	23%	22%	28%	30%	27%	27%
Transportation	17%	16%	15%	15%	15%	15%	15%	16%	16%
Industrial Process	4%	4%	4%	6%	5%	6%	6%	6%	6%
Waste	2%	1%	2%	2%	2%	2%	2%	2%	2%
Natural Gas Transmission and Distribution		1%	1%	1%	1%	1%	1%	1%	1%
Fossil Fuel Industry	2%								
Industrial Fuel Use	13%								
Residential and Commercial Fuel Use	7%								
Land use, land use changes, forestry		2%	2%	3%	1%				

Total greenhouse gas emissions in Iowa have increased since 2005, as shown by the following table:

Year	Total net emissions, million metric tons of carbon dioxide equivalents
2005	102.73
2020	112.22
2022	116.08 ⁵

Coal Plants Operating in Iowa

The following is a list of the coal-fired power plants in Iowa. Some facilities have more than one unit burning coal. Some of the electric utility power plants have additional owners who are not listed in this table.

¹ Brittney Miller, “Alliant’s wind energy contributions in Iowa soar”, Cedar Rapids Gazette, August 31, 2023

² See the Iowa Utilities Board website at <https://iub.iowa.gov/iowas-electric-profile>

³ “Iowa Climate Change Advisory Council Final Report”, December 23, 2008, pages 2-3 and 2-6.

⁴ See Iowa Department of Natural Resources, www.iowadnr.gov/Environmental-Protection/Air-Quality/Greenhouse-Gas-Emissions for 2015 through 2022 numbers.

⁵ 2022 Iowa Statewide Greenhouse Gas Emissions Inventory Report, Iowa Department of Natural Resources, December 28, 2023

	Plant name	Plant owner	Plant location	Notes
1	Ottumwa Generating Station, unit 1 ⁶	Alliant Energy, MidAmerican	Ottumwa	
2	Prairie Creek Generating Station, 3 generating units	Alliant Energy	Cedar Rapids	Will phase out coal by December 31, 2025
3	Streeter Station ^{7,8}	Cedar Falls Utilities, City of Cedar Falls	Cedar Falls	
4	Walter Scott Jr. Energy Center, units 3, 4	MidAmerican	Council Bluffs	Unit 4 began operating in 2007
5	George Neal Station North, unit 3	MidAmerican	Sergeant Bluff	
6	George Neal Station South, unit 4	MidAmerican	Salix	
7	Louisa Generating Station, unit 1	MidAmerican	Muscatine	
8	University of Northern Iowa Power Plant	University	Cedar Falls	
9	University of Iowa Main Power Plant ⁹	University	Iowa City	Will migrate from coal by 2025 ¹⁰
10	Muscatine Generating Station, units 7, 8, 8A and 9	Muscatine Power and Water, City of Muscatine	Muscatine	Studying retiring Unit 9 by 2028.

Alliant Energy announced that all of its coal plants would be shuttered by 2040.¹¹ Alliant Energy reported that 53 percent of the energy provided to Iowa customers was from renewable sources, mostly wind.¹²

Muscatine Power and Water (MP&W) commissioned a Power Supply Study to review the power plant's electricity generation and fuel sources. As a result of the study, officials began looking at replacing the power plant with solar and natural gas. The discussion by MP&W officials centered on replacing units 7, 8, and 8A by 2022 and unit 9 by a

⁶ John Strope, "Alliant's renewable energy use in Iowa jumps in 2020", *Cedar Rapids Gazette*, July 20, 2021, reported "The coal plant in Ottumwa, which Alliant and Des Moines-based MidAmerican Energy co-own, is the only plant Alliant operates that does not have plans to shut down or transition to natural gas." According to Barbara Tormaschy, Alliant's vice president and treasurer, "Alliant is in "on-going discussions" with MidAmerican about retiring the Ottumwa coal plant. We all have different goals and different financial analyses we have to run."

⁷ Pat Kinney of the Waterloo-Cedar Falls Courier interviewed Jim Krieg, the general manager for Cedar Falls Utilities, about Streeter Station. "Krieg noted CFU can burn coal or natural gas at either of Streeter's generating units, as opposed to some facilities which burn only coal, some of which are being decommissioned rather than those utilities pay the cost of retrofitting them. 'The direction we are going more all the time is burning natural gas in our facilities when we have to use them,' Krieg said." See Pat Kinney, "Cedar Falls power plant plans control system upgrade", *Waterloo-Cedar Falls Courier*, February 10, 2016.

⁸ According to an article titled "CFU looking at feasibility of new multi-million dollar electric generating plant" by Andy Milone in the June 22, 2023, *Waterloo-Cedar Falls Courier*, Cedar Falls Utilities is studying installing a reciprocating engine electric generating plant that runs on natural gas and can ramp up and down quickly compared to Streeter Station which requires 12 hours if it is starting up from being cold.

⁹ Vanessa Miller, "Would privatizing UI utilities pay off? Public-private partnership could create endowment", *Cedar Rapids Gazette*, February 9, 2019

¹⁰ University of Iowa officials committed to transitioning off coal by 2025; the recent announcement of privatizing the coal plant to Engie North America and Meridiam included a pledge to move off coal by 2023. See Vanessa Miller, "UI Lands \$1.165B in Utilities Deal", *Cedar Rapids Gazette*, December 11, 2019 and Wendy Moorehead, "UI announces it will be coal-free by 2025", *Iowa Now*, February 20, 2017

¹¹ "Alliant announces net-zero power generation goal", *Corridor Business Journal*, July 22, 2020

¹² Brittney Miller, "Alliant's wind energy contributions in Iowa soar", *Cedar Rapids Gazette*, August 31, 2023

natural gas plant by 2029¹³ or 2030.¹⁴ Since then, MP&W indicated that Units 7, 8, 8A are slated for retirement on May 31, 2023¹⁵ and they are studying retiring Unit 9 by 2028. However, the utility did not meet its stated goal of retiring Units 7, 8, and 8A in 2023.

The following is a list of industrial plants that burn coal.

	Plant name	Use of the plant	Plant location
1	Ag Processing Eagle Grove Power Plant	soybean processing	Eagle Grove
2	Archer Daniels Midland Cedar Rapids Power Plant ¹⁶	Corn processing	Cedar Rapids
3	Archer Daniels Midland Clinton Cogeneration Plant ¹⁷	Corn processing	Clinton
4	Archer Daniels Des Moines Cogeneration Plant	Soybean processing	Des Moines
5	Iowa Army Ammunition Plant	Ammunition plant for Department of Defense	Middletown
6	Roquette America	Wet corn milling	Keokuk
7	Continental Cement Company – Davenport Plant	Cement manufacturer	Buffalo



Coal train at the Archer Daniels Midland Cedar Rapids plant

¹³ David Hotle, “Study recommends Muscatine Power and Water focus on green energy sources”, *Muscatine Journal*, July 2, 2020

¹⁴ Charles Potter, “Group pleased at MPQ plan, says more can be done”, *Muscatine Journal*, October 28, 2020

¹⁵ Charles Potter, “MPW Plant 1 to retire May 31, 2023”, *Muscatine Journal*, September 2, 2021

¹⁶ This plant was responsible for 82.55 percent of the stationary fuel combustion emissions in Linn County, and 24.22 percent of the total emissions, in 2010. It emitted more carbon than the Prairie Creek Generating Station, a coal-fired power plant also in Linn County. ADM was burning subbituminous coal. See Gage Miskimen, “Agribusiness big driver of greenhouse gases, Linn report shows”, *Cedar Rapids Gazette*, August 5, 2021.

¹⁷ The current power plant in Clinton, which began operating in 2009, is co-generating with biomass. This power plant replaced several old coal boilers.

Migration Away From Coal

In the 21st Century, several coal-fired power plants and related projects have been suspended before they were built, have been retired, or have transitioned to natural gas.

- The last coal mine in Iowa closed in 1994.¹⁸ Historically Iowa had many coal mines (at least 278), particularly in southern Iowa.
- In 2004, Dairyland Power Cooperative abandoned plans to build a power plant in either Mitchell or Chickasaw Counties near Mona.
- A proposed coal-fired ethanol plant for Des Moines was withdrawn by Lincolnway Energy in 2006.
- Lansing Generating Station stopped using boiler unit 1 in 2006.
- The Sixth Street Generating Station in Cedar Rapids was shuttered by Alliant Energy after the plant was heavily damaged in a flood in 2008. The plant was demolished in 2015. Alliant removed the coal ash ponds from the site in 2017.¹⁹
- LS Power abandoned plans to build a coal-fired power plant near Waterloo in 2009.
- Alliant Energy cancelled a new coal-fired power plant in Marshalltown in 2009.
- A coal heap planned to be built by Southern Coal Handling near Nevada was abandoned in 2009.
- In 2010 Alliant retired Unit 2 at its Dubuque Generating Station, Unit 1 at M. L. Kapp Generating Station in Clinton, Unit 2 at Prairie Creek Station in Cedar Rapids, Unit 2 at Sutherland in Marshalltown, and Unit 2 at Lansing.²⁰
- In November, 2011, Alliant transitioned its 2 boilers (Units 3 and 4) at its Dubuque Generating Station from coal to natural gas in preparation for final closure in 2017.
- In 2011, John Deere Dubuque Works, a farm machinery manufacturing plant in Dubuque, ceased burning coal and stated one of the reasons for that decision was the proposed maximum achievable control technology (MACT) standards for mercury and other hazardous air pollutants.
- Alliant completed converting two of its coal-fired boilers (Units 1 and 3) at Sutherland Generating Station in Marshalltown from coal to natural gas in 2012. However these boilers are still licensed to burn coal. These two boilers are expected to be repowered or retired in 2019, based on the Consent Decree signed between the Sierra Club and Alliant.
- In 2012 the Pella Municipal Power Plant announced it would be shuttering its coal-fired power plant.
- The Central Iowa Power Cooperative Fair Station in Montpelier was shuttered in November, 2013, with plans to tear it down.²¹
- In 2013 Iowa State University decommissioned one coal boiler (unit 5) and converted two boilers to run on natural gas (units 3 and 4).
- Alliant Energy shuttered Unit 3 at Lansing Generating Station in 2013.
- Corn Belt Power Cooperative converted its Earl F. Wisdom Generating Station in Spencer to natural gas and fuel oil in 2014.
- In 2014 Lincolnway Energy, a dry-mill ethanol plant in Nevada, switched from coal to natural gas.²²



Prairie Creek Generating Station. Photo by Elwood Garlock.



Sixth Street Generating Station. Photo by Elwood Garlock.

¹⁸ Jim Pollock, "Eyeing a career in Iowa coal mining? Too late", *Business Record*, April 27, 2008

¹⁹ B. A. Morelli, "Alliant to cap ash ponds near Cedar Lake," *Cedar Rapids Gazette*, August 16, 2016 and

B. A. Morelli, "Alliant begins work to cap coal ash ponds," *Cedar Rapids Gazette*, May 5, 2017.

²⁰ Dave DeWitte, "Alliant to Close Dubuque Power Plant," *Cedar Rapids Gazette*, November 3, 2010

²¹ Joe Jarosz, "Coal plant powers down," *Muscatine Journal*, November 14, 2013

²² Jolene Stevens, "Lincolnway Energy converts to gas," *Farm News*, January 18, 2015

- Alliant transitioned from burning coal at the Milton L. Kapp Generating Station, Unit 2, in Clinton, to natural gas in 2015.²³ This plant was demolished in 2020.²⁴
- MidAmerican Energy Company converted Riverside Generating Station in Bettendorf to natural gas in 2015.
- MidAmerican Energy Company also retired units 1 and 2 at Walter Scott, Jr. Energy Center in Council Bluffs in 2015.
- Grain Processing Corporation transitioned its wet corn processing plant in Muscatine from coal to natural gas in July, 2015.²⁵
- George Neal Station North, units 1 and 2 were retired in April, 2016; the plant is located in Sergeant Bluff.²⁶
- Between 2006 and 2016, amount of power generated by coal fell by 25.6 percent, from 34,405,000 megawatts to 25,601,000 megawatts.²⁷
- Between April and June, 2016, the City of Ames transitioned two coal boilers to natural gas.²⁸
- Monsanto's Boiler number 8 was switched from coal to natural gas in 2017, in Muscatine.²⁹
- By 2017, MidAmerican reported that it was generating 47 percent of its electricity from wind and 31 percent from coal. Twelve years prior, MidAmerican generated 70 percent of its electricity from coal.³⁰
- In November, 2017, Alliant Energy converted its largest coal boiler at the Prairie Creek Generating Station, in Cedar Rapids, to natural gas.³¹
- In 2018, Cargill-Cedar Rapids, a grain processing plant in Cedar Rapids, stopped burning coal.
- An August, 2020, open records request to the Iowa Department of Natural Resources asking for the Title V permits of industries that burn coal showed that the following plants no longer had permits: Cargill Corn Milling Power Plant, corn milling, Eddyville; Central Iowa Renewable Energy (CORN) LP, dry mill ethanol, Goldfield; Monsanto (Iowa), pesticide manufacturing, Muscatine.
- Burlington Generating Station in Burlington, Iowa, stopped burning coal and began the transition to natural gas late in the year of 2021.³² It is operated by Alliant Energy.
- In 2022, Iowa State University in Ames began transitioning its coal burners to natural gas and the first boiler was fully transitioned.³³ The second boiler was slated for completion in April, 2023.
- The end of 2022, Alliant ceased operating Boiler Unit 4, its last boiler at the Lansing Generating Station.³⁴
- Iowa State University Power Plant in Ames fully transitioned off coal in 2023.³⁵

²³ "Alliant transitioning M.L. Kapp Generating Station to natural gas," *Corridor Business Journal*, January 3, 2014

²⁴ Dave Vickers of KROS in Clinton, "Retired Clinton power plant brought down", *Radio Iowa*, July 10, 2020

²⁵ George C. Ford, "Grain Processing Corp. now exclusively using natural gas," *Cedar Rapids Gazette*, July 17, 2015

²⁶ MidAmerican Energy Company, "Just the Facts", April, 2016

²⁷ Yvette Romero, "States' Appetite for Coal Shrinks, Except in Nebraska", *Bloomberg*, May 30, 2017. See <https://www.bloomberg.com/graphics/2017-coal-states-shrinking-appetite/>

²⁸ Austin Harrington, "City officials celebrate move to natural gas", *Ames Tribune*, May 20, 2016

²⁹ "Sulfur Dioxide Data Requirements Rule – 2019 Annual Review", Iowa Department of Natural Resources, May 8, 2019, Draft

³⁰ Rod Boshart, "A green future", Iowa Ideas – Building a Roadmap for the Future, *The Gazette*, Cedar Rapids, Iowa, March, 2017, page 42

³¹ Mitchell Schmidt, "Alliant shifting C.R. coal unit to burn natural gas", *Cedar Rapids Gazette*, November 2, 2017

³² Michaele Niehaus, "Alliant Energy's Burlington power station goes greener with elimination of coal", *The Hawk Eye*, Burlington, Iowa, May 11, 2022

³³ Jack McClellan, "Iowa State facing the future of powering campus", *Iowa State Daily*, November 13, 2022

³⁴ Brittney Miller, "End of an era for Alliant's Lansing coal power plant", *Cedar Rapids Gazette*, November 27, 2022

³⁵ Anne Krapfl, "So long, coal", Iowa State University Strategic Relations and Communication, February 23, 2023

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