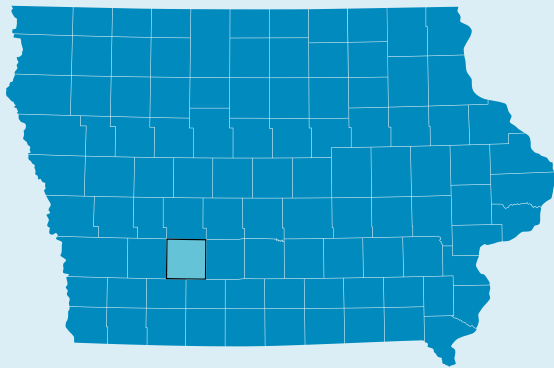


Wind Impact Case Study: Adair County



Population: 7,389¹



Number of wind turbines: 506²



Total production capacity:
1,102 megawatts (MWs)³



Project introduction years: 2008, 2011,
2012, 2018, 2019, and 2020⁴



Total taxable valuation of wind turbines in 2022 for the fiscal year 2023-24:
\$237,354,331⁵



Total wind valuation relative to total county property valuation: 25.7%⁶



Total tax revenue 2023-24: \$5,503,461; \$4,009,054 was directed to special projects through Tax Increment Financing (TIF)

Introduction

Iowa is second in the nation for total wind energy production, which provides significant opportunities for economic development in rural counties.⁷ Adair County hosts more than 500 turbines, or 8% of all turbines in the state, the most of any Iowa county.⁸ In the annual assessment year of 2022, the total valuation of all turbines was \$237.4 million, making up 25.7% of Adair County's total property valuation. In the fiscal year 2023-24, the county collected \$5.5 million in tax revenue from wind turbines, which was directed to regular taxing bodies and special projects through a tax increment financing structure.⁹ However, the total revenue is not completely reflective of the number of turbines in the county because of the way Iowa values wind turbines. Seventy percent of active turbines in Adair County were built between 2018 and 2020, which means they will add \$150 million to the total valuation of wind turbines over the next 5 years, or a 56% increase from 2022.^{10,11}

Sources

1 "QuickFacts: Adair County, Iowa." U.S. Census Bureau, 2023, census.gov/quickfacts/fact/table/adaircountyiowa/HSD410222. Accessed April 2025.

2 "U.S. Wind Turbine Database." Lawrence Berkeley National Laboratory, U.S. Geological Survey, American Clean Power, February 2025, energy.usgs.gov/uswtodb/viewer/#10.45/41.3309/-94.471. Accessed April 2025.

3 Ibid.

4 Ibid.

5 "Annual Urban Renewal Report, Fiscal Year 2023-2024, Adair County." Iowa Department of Management, legis.iowa.gov/tif/public. Accessed April 2025.

6 "County Property Valuation Files." Iowa Department of Management, dom.iowa.gov/local-government/county-resources#county-data. Accessed April 2025.

7 Wiser, Ryan, et al. "Land-Based Wind Market Report." Lawrence Berkeley National Laboratory, Wind Energy Technologies Office, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, energy.gov/eere/wind/land-based-wind-market-report. Accessed April 2025.

8 "U.S. Wind Turbine Database." Lawrence Berkeley National Laboratory, U.S. Geological Survey, American Clean Power, February 2025, energy.usgs.gov/uswtodb/data. Accessed April 2025.

9 "Annual Urban Renewal Report, Fiscal Year 2023-2024, Adair County." Iowa Department of Management, legis.iowa.gov/tif/public. Accessed April 2025.

10 "U.S. Wind Turbine Database." Lawrence Berkeley National Laboratory, U.S. Geological Survey, American Clean Power, February 2025, energy.usgs.gov/uswtodb/viewer/#10.45/41.3309/-94.471. Accessed April 2025.

11 Personal communication, Mandy Berg, Adair County auditor, Sept. 23, 2024.



Introduction, continued

All major projects built in Adair County are owned by MidAmerican Energy Company, one of the largest utility companies in Iowa.¹² According to John Twombly, who served as county supervisor from 2009 to 2025, MidAmerican has made donations to local organizations, in addition to financial benefits seen through tax revenue and landowner payments. For example, in 2020 it committed \$83,000 towards the construction of a new show arena at the Adair County Fairgrounds.¹³



Adair County Fairgrounds show arena

County revenue highlights

Amount of tax increment financing (TIF) revenue collected in 2023-24: \$4 million¹⁴

In comparison, the Adair County budget for roads and transportation in 2023-24 was \$6.5 million, meaning the the extra TIF for roads and bridge projects increased funding to over \$10 million, or a 61% increase.¹⁵

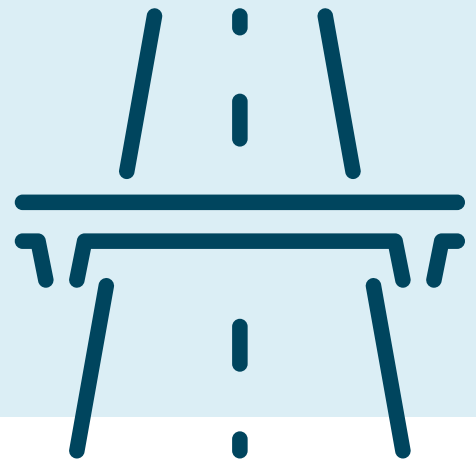
Total amount of TIF granted between 2011 and 2024: \$34.6 million¹⁶

“We wouldn’t be where we’re at with our roads and bridges if it wasn’t for the wind turbine funds, because they’re the number one producer of revenue right now in the county.”¹⁷

–John Twombly, former Adair County supervisor

“The additional tax revenue for a county with a population of around 6,500 is a real big deal.”¹⁸

–Sara Shepherd, Adair County farmer and host of a wind turbine



Sources, continued

12 Major projects in this case refers to any turbines built within a multi-turbine project by a commercial developer. Several single or dual-turbine projects have been built in the county.

13 “MidAmerican Energy Arena in Adair County.” MidAmerican Energy Company, 2024, midamericanenergy.com/articles/midamerican-energy-arena-in-adair-county. Accessed April 2025.

14 “Annual Urban Renewal Report, Fiscal Year 2023-2024, Adair County.” Iowa Department of Management, legis.iowa.gov/tif/public. Accessed April 2025.

15 “County Budget Report Files, FY24 County Budget Summary.” Iowa Department of Management, dom.iowa.gov/local-government/county-resources#county-data. Accessed April 2025.

16 “Annual Urban Renewal Report, Fiscal Year 2023-2024, Adair County.” Iowa Department of Management, legis.iowa.gov/tif/public. Accessed April 2025.

17 Personal communication, John Twombly, Adair County supervisor, Sept. 23, 2024.

18 Personal communication, Sara Shepherd, Adair County landowner, Sept. 23, 2024.

Table 1. Special projects completed in Adair County

Infrastructure	Total TIF expenditure from July 2015 to January 2025	Special projects
Bridges ^{19,20}	\$6.1 million	10 bridge replacements; key projects: ^{21,22} <ul style="list-style-type: none"> • N-19 Washington Bridge: \$920,411 • Jackson W-3 Bridge: \$575,709 • W-32 Jackson Bridge: \$490,272 9 culvert replacements; key project: <ul style="list-style-type: none"> • N-12 Summit Culvert: \$319,703
Roads ²³	\$20.7 million	<ul style="list-style-type: none"> • Approximately 36 miles of hot mix asphalt paving on county highways • Approximately 6 miles of city road resurfacing • Part of rocking all the roads in the county



“If you drove around, you knew Adair County and compared it to others, our rock roads are way better than the others because we can afford to rock them.”²⁴

–John Twombly

“Once the money started coming in, I saw a big improvement in road maintenance: gravel and bridges”²⁵

–Ralph Lents, Adair County farmer and host of a wind turbine

Sources, continued

19 Personal Communication, Nick Kauffman, Adair County engineer, Jan. 30, 2025.

20 “Annual Urban Renewal Report, Fiscal Year 2023-2024, Adair County.” Iowa Department of Management, legis.iowa.gov/tif/public. Accessed April 2025.

21 “Adair County Popular Annual Report Fiscal Year 2016.” Adair County Auditor’s Office, adaircounty.iowa.gov/files/auditor_documents/fy16_popular_annual_financial_report_79668.pdf. Accessed April 2025.

22 Ibid.

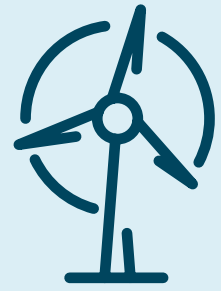
23 “Annual Urban Renewal Report, Fiscal Year 2023-2024, Adair County.” Iowa Department of Management, legis.iowa.gov/tif/public. Accessed April 2025.

24 Personal communication, John Twombly, Adair County supervisor, Sept. 23, 2024.

25 Personal communication, Ralph Lents, Adair County landowner, Sept. 23, 2024.



Public financial impact



Adair County leadership included all of the county's turbines into one Urban Renewal Area (URA) and TIF structure, which taxes the increased property value of certain parcels. Incorporating turbines into a URA and using TIF is a common practice among Iowa counties, as this method pairs well with the state's special valuation. The special valuation begins at 0% for the first year and increases by 5% every year until it is capped at 30% in year 7.²⁶ TIF allows the county to finance loans based on future tax collection from the special valuation of turbines, providing greater flexibility to direct funds to public infrastructure projects. County officials have discretion as to how much they can pull from the incremental value; any value not used in TIF can be directed to regular taxing bodies such as schools, townships, and other services. According to Twombly, the county uses 65% to 75% of the incremental value to pay off the bonds for projects like the ones mentioned in Table 1 on page 3. TIF funds have been spent on roads, bridges, associated administrative costs, and right-of-way acquisitions.

The benefits have been clear, according to Twombly. "We don't have the land value you have north of here... wind turbines have just been a godsend for us," he said.²⁷ The extra funds have been pivotal to public infrastructure projects, increasing the overall budget for transportation. For example, the funds provided an additional 60% for transportation in 2023.²⁸ Twombly compares the wind turbines to 500 \$1 million homes with far less issues. "I've never had a wind turbine call me and complain about a road or anything else," he said.²⁹

While permitting approval and coordination with local officials during construction can be intensive, the turbines require less public financial services than a standard property while making up 25.7% of the overall tax base.

Adair County wind energy ordinance impact on development

Until 2018, the county did not have a wind energy ordinance regulating the placement of turbines. This allowed for construction to begin on the first turbines without road-use agreements, which caused some problems, according to Twombly. That was the last time the county skipped this step. "You gotta have a road-use agreement and have the developer stick by it, but I can't think of anything that MidAmerican hasn't done right with us," Twombly said.³⁰

In 2018 and 2019, the Adair County Board of Supervisors passed regulations which placed 2,000 foot setbacks from neighboring homes and capped the number of turbines that can be built in the county at 535.³¹ Twombly said this came after increased friction in the community, and he felt like Adair County had enough turbines.

Sources, continued

26 Delworth, Alex. "Windswept Fields of Opportunity: Iowa Wind Energy County Tax Impact Studies." Center for Rural Affairs, July 6, 2023, [cfra.org/publications/windswept-fields-opportunity-iowa-wind-energy-county-tax-impact-studies](https://www.cfra.org/publications/windswept-fields-opportunity-iowa-wind-energy-county-tax-impact-studies). Accessed April 2025.

27 Personal communication, John Twombly, Adair County supervisor, Sept. 23, 2024.

28 "County Budget Report Files, FY24 County Budget Summary." Iowa Department of Management, dom.iowa.gov/local-government/county-resources#county-data. Accessed April 2025.

29 Personal communication, John Twombly, Adair County supervisor, Sept. 23, 2024.

30 Ibid.

31 "Adair County Supervisors Put Limits on Wind Farms." Radio Iowa, Nov. 20, 2019, [radioiowa.com/2019/11/20/adair-county-supervisors-put-limits-on-wind-farms](https://www.radioiowa.com/2019/11/20/adair-county-supervisors-put-limits-on-wind-farms). Accessed April 2025.



Nodaway Valley Community School District bus

Benefits to local schools

Nodaway Valley Community School District³²

Location: Adair County

Number of students and employees in the district: 635 students and 53 teachers³³

Number of Adair County turbines in the district: 80

Valuation of the turbines: \$46,363,097

Percentage of the total property value made up by turbines: 16%

Additional funding provided by turbines: \$253,081



Breakdown of additional funds

- Management levy – \$46,984
- Voted and regular Physical Plant and Equipment Levy (PPEL) – \$77,425
- Instructional support – \$3,501
- General Obligation (GO) bond indebtedness levy – \$125,168

Use of the additional funds

- Turbines pay for one of the eight four-year bus leases, which costs the school \$119,000 each year
- Helped pay for a \$3.7 million HVAC project

Sources, continued

³² “School Resources, School Data.” Iowa Department of Management, dom.iowa.gov/local-government/school-resources#school-data. Accessed January 2025.

³³ “Iowa Public School and AEA Teacher and Teacher Leader Information (Salaries by District).” Iowa Department of Education, educate.iowa.gov/pk-12/data/education-statistics#staff-data. Accessed May 2025.

³⁴ Personal communication, Paul Crogham, Nodaway Valley superintendent, Sept. 23, 2024.

Landowner experience

Turbines in Iowa are most commonly built on land leased to a project owner by a voluntary landowner, often a farmer. Three farmers in the county who host wind turbines were interviewed to explore how wind turbines have affected their farming operations and any lessons learned.

Impact on agricultural operations

For successful development, all landowners noted the importance of flexibility from the developer during negotiations on the placement of turbines and other land-lease agreement terms. “While the price is basically set, there is a little room to negotiate on some of the language in the contract to make it more agriculturally friendly,” said Sara Shepherd.³⁶

For example, she negotiated to allow for aerial spraying while Ralph Lents worked out the location of the turbine’s access road to mitigate impacts on his operation.³⁷

Lents and Shepherd both experienced damage to field tiling and crops during construction and were compensated by the project developer afterward. Landowners commonly experience tile damage due to ground compaction from heavy machinery during the construction of wind turbines. Through the land-lease agreement, the developer is usually financially responsible for these damages.

Financial impact

The primary benefit to farmers hosting turbines is the consistent land-lease payments during the lifetime of the project. All of the landowners agreed the extra money has been helpful and that some of it has gone back into their operations. Lents and Shepherd said the payouts from one turbine are not pivotal, but it would be different if they had several.

“It’s a nice supplemental income. You’re not going to buy a farm with it, but you could use it for some repairs.”³⁸

–Lents

“The check helps, but at the end of the day, one turbine is not going to make or break your operation.”³⁹

–Shepherd



Sources, continued

³⁵ Ibid.

³⁶ Personal communication, Sara Shepherd, Adair County landowner, Sept. 23, 2024.

³⁷ Personal communication, Ralph Lents, Adair County landowner, Sept. 23, 2024.

³⁸ Ibid.

³⁹ Personal communication, Sara Shepherd, Adair County landowner, Sept. 23, 2024.



Local wind turbine co-op

Randy Caviness, who hosts MidAmerican wind turbines on his property, said, “They have been really good, we work well together.”⁴⁰

Caviness is also the head of a local wind developer co-op owned and operated entirely within Adair County. The co-op began in 2008 with 13 original investors and has blossomed to about 200 investors, mostly farmers. Collectively, they own 13 wind turbines, compared to the nearly 500 turbines in the county owned by MidAmerican. Caviness said tax credits, grants, and 0% loans made the initial investment attractive, but it is difficult to compete with the purchasing power of larger corporations.



The 13 turbines owned by the co-op are capable of backing up Greenfield’s water company when power in the town is lost.⁴¹ The town previously used diesel generators to ensure running water was available to the town.

Sources, continued

⁴⁰ Personal communication, Randy Caviness, Adair County landowner, Sept. 23, 2024.

⁴¹ Ibid.