



What is Muscatine's Energy Future?

A Conversation with Progress Muscatine

What is Progress Muscatine?

501(c)3 non-profit organization

Mission: Empower Muscatine County residents to identify problems and work toward sustainable solutions for the common good.

www.progressmuscatine.org



A large orange circle is positioned on the left side of the slide, partially overlapping the white background. The text 'Why are we here?' is written in white inside this circle.

Why are we
here?

1. Weather & Climate Disasters
2. Non-Attainment & Natural Resource Preservation
3. Energy Independence & Resiliency
4. Energy/Financial Savings



Weather & Climate Disasters

2016-2022

122 weather and climate disasters in the US

Deaths

5,169

Financial Cost

\$1,026.4 Billion = Over \$1 Trillion

\$1,000,000,000,000.00

Source: National Centers for Environmental Information
(NCEI) U.S. Billion-Dollar Weather and Climate
Disasters (2023).

<https://www.ncei.noaa.gov/access/billions/>, DOI:
[10.25921/stkw-7w73](https://doi.org/10.25921/stkw-7w73)

Non-Attainment

Not Attaining National Ambient Air Quality Standards (NAAQS)

Science based health standards for *criteria pollutants*

According to the EPA:

Criteria pollutants

- 1. Injure health**
- 2. Harm the environment**
- 3. Cause property damage**

Triggers oversight

EPA: Sulfur Dioxide Basics

<https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects>

Non-Attainment

Muscatine:

The only place in Iowa in non-attainment for any criteria pollutant.

Muscatine Classified non attainment for

Sulfur Dioxide

1994-1997 & 2013-2023

EPA Greenbook

https://www3.epa.gov/airquality/greenbook/anayo_ia.html

Why does
Non-Attainment
matter to
business?

Non-attainment hinders economic development

Additional:

1. Air Modeling
2. Regulation
3. Oversight for business expansion and new development.

US Code: Part D - Plan Requirements for Nonattainment Areas [Govinfo.gov](https://www.govinfo.gov)

Energy Independence

**What does Progress Muscatine mean
when they say they want
energy independence?**

**We want Muscatine to be *independent* from the
cost of external fuel sources.**

**MPW plans to become dependent on natural gas
from Texas.**

**Volatile natural gas prices and unstable systems
in Texas pose a threat to Muscatine customers.**

<https://progressmuscatine.org/energy-independence>



Financial
Savings

Energy savings is *Measurable* and *Predictable*

Individuals

Non-profits

Commercial Businesses

Industrial Businesses





Why are you
here?

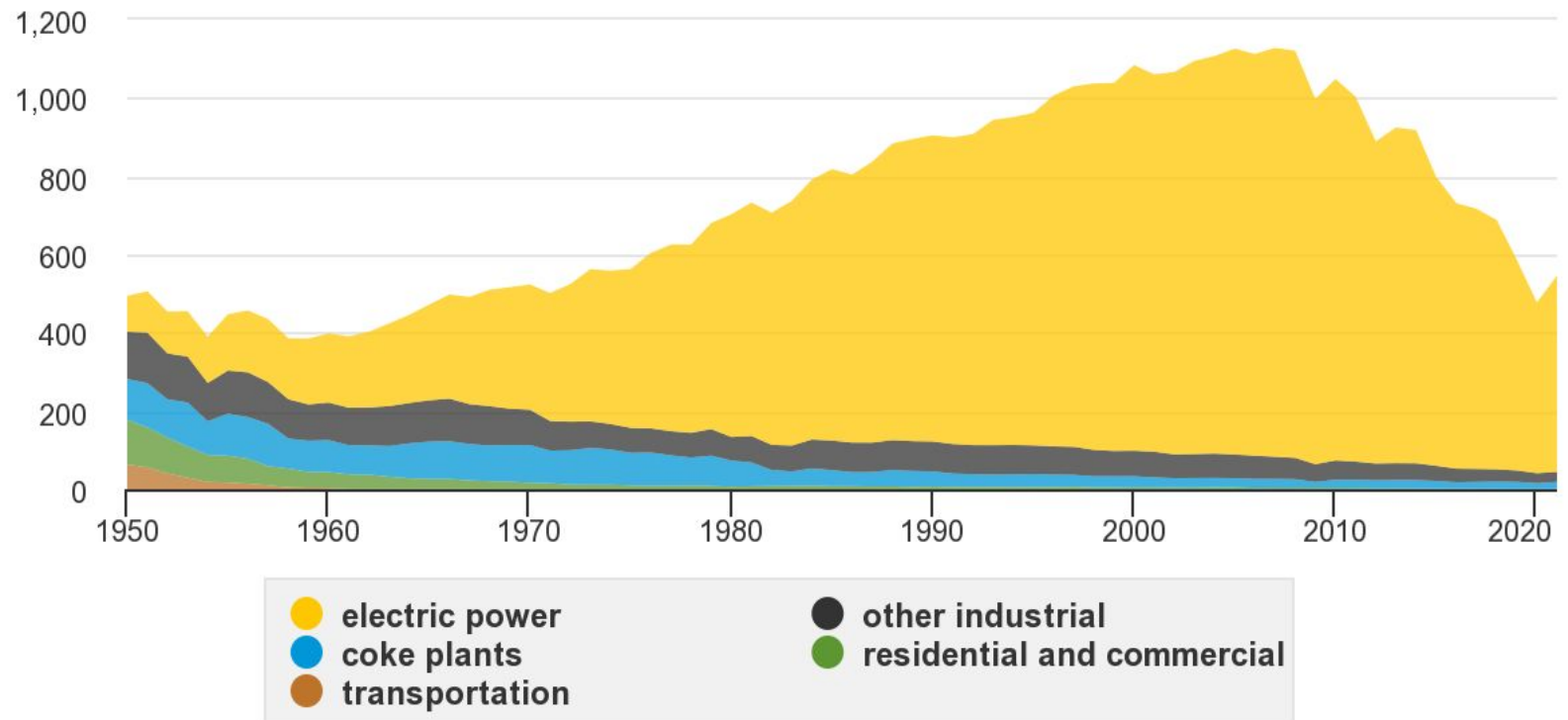


Coal: A snapshot

U.S. Coal Consumption

U.S. coal consumption by major end users, 1950-2021

million short tons



Data source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 6.2, May 2022, preliminary data for 2021



Note: Coke plants are industrial coking coal plants; other industrial includes all other, non-coking coal industry use.

Coal: A Stranded Asset

What is a stranded asset?

“at some time prior to the end of their economic life (as assumed at the investment decision point), are no longer able to earn an economic return (i.e., meet the company’s internal rate of return), as a result of changes associated with the transition to a low-carbon economy.” Rocky Mountain Institute (RMI)

1. **Regulatory Stranding:** laws or regulations that impede the coal asset from being utilized for its full useful life
2. **Economic Stranding:** when operating economics are such that it is no longer worth it for the plant owners to continue operations.

Benn, Annie, Paul Bodnar, James Mitchell, and Jeff Waller. Managing the Coal Capital Transition: Collaborative Opportunities for Asset Owners, Policymakers, and Environmental Advocates. Rocky Mountain Institute, 2018, page 30. <http://www.rmi.org/insight/managing-coal-capital-transition/>

Coal's legacy in Muscatine

Muscatine's Leaking Coal Ash Dump

Pollutants Exceeding Safe Levels (and by how much):

- Barium (x22), Boron (x10), Sulfate (x2), Thallium (x1)
- Unlined and uncovered coal pile on the bank of the Mississippi River
- Planned Coal use through the end of this decade

Source: Earth Justice & Environmental Integrity Project, Poisonous Coverup Widespread Failure of the Power Industry to Clean Up Coal Ash Dumps, November 3, 2022

<https://environmentalintegrity.org/wp-content/uploads/2022/10/Poisonous-Coverup-11.03.22.pdf>

How is the legacy of
coal ash being handled?

EPA

2015 Coal ash Rule: Gave Power Producers 6 months to close or retrofit unlined ash ponds if they exceed certain pollution limits.

Enforcement was largely ignored until 2 weeks ago.

January 25, 2023

The EPA issued six proposed determinations to deny facilities' requests to continue disposing of coal combustion residuals (CCR or coal ash) into unlined surface impoundments.

Coal Ash Rule <https://www.epa.gov/coalash/coal-ash-rule>

EPA Announcement January 25, 2023
<https://www.epa.gov/newsreleases/epa-announces-latest-actions-protect-groundwater-and-communities-coal-ash>

How is the legacy of coal being handled?

Ames

Ames shut down coal...

- Converted Coal Burning Units to Natural Gas
 - approved in 2013
 - completed in 2016
- 20 year wind power-purchase agreement
- began implementing CCR Closure and Post-Closure Care plan on Coal Ash Pond

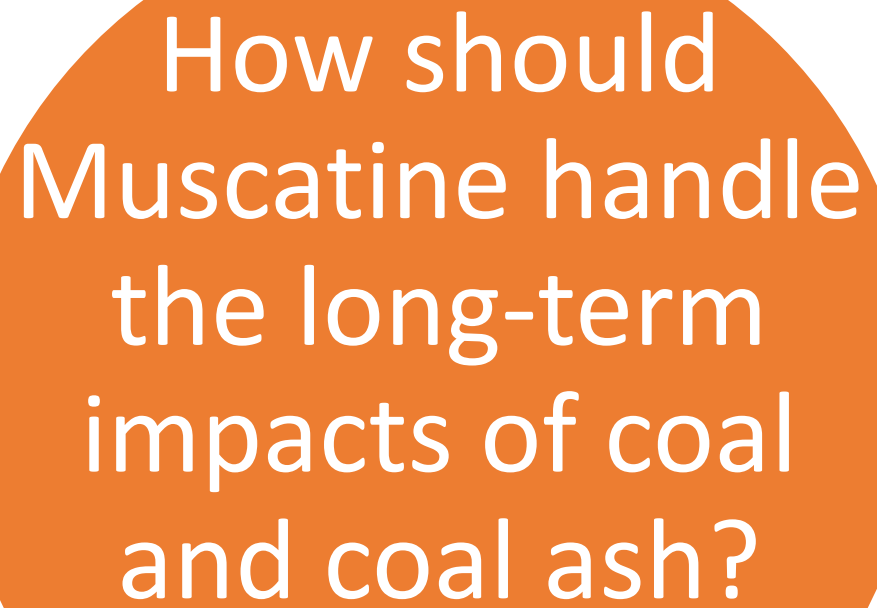
Ames has a lined ash dump, and planned to add a second liner.

- FY 2019/20 approved \$2M for excavation & re-lining of Ash Pond

[1]https://cdn.ymaws.com/members.iamu.org/resource/resmgr/Conference_Archives/EnergyConference2015/Don_Kom.pdf

[2]<https://www.thegazette.com/environment-nature/report-toxic-pollutants-leaking-from-12-iowa-coal-storage-sites/>

[2]<https://www.cityofames.org/home/showpublisheddocument/53389/637100366426530000>



How should
Muscatine handle
the long-term
impacts of coal
and coal ash?



MPW's Actions: An Overview

By the Numbers 2020

Unit 7: 4.1 %

Units 8/8a: 20.4% (Steam/GPC)

Unit 9: 67%

South Fork Wind Farm: 8.8%

August 2021

MPW board voted to retire Units 7, 8 and 8A (Plant 1), “signaling the beginning of the phased transition away from coal-fired power generation. The Units are anticipated to be retired on May 31, 2023.”

Powering the Future- Rotary Presentation: <https://www.youtube.com/watch?v=lf7rJtPw5Y0&t=545s>

MPW Press Releases: <https://mpw.org/news-publications/>

MPW's Actions: An Overview

May 2022

The board voted to defer retirement and use units 7, 8/8a.

August 2022

The board clarifies deferral and are allowing each unit to run as a peaking unit, while limiting each unit to 16.7% of their potential capacity.

November 2022

MPW enters into a power purchase agreement with Nokomis Energy for Muscatine Solar 1

February 2023- Expected update from the Power Supply Study

Future: Building a CHP Natural Gas plant

Powering the Future- Rotary Presentation: <https://www.youtube.com/watch?v=lf7rJtPw5Y0&t=545s>

MPW Press Releases: <https://mpw.org/news-publications/>

What's
missing?

Life Cycle Assessment of Natural Gas

Extraction - Fracking

Processing

Transport

End Use - Combustion*

***Methane* has 25 TIMES MORE WARMING POWER
than *CO2***

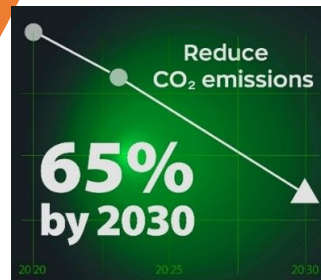
**MPW is not measuring the most harmful pollutant
produced by their planned energy source**

Natural Gas

EPA: <https://www.epa.gov/gmi/importance-methane>

US Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory. Life Cycle Analysis of Natural Gas Extraction and Power Generation May 29, 2014 DOE/NETL-2014/1646 page 2

https://www.energy.gov/sites/prod/files/2019/09/f66/Life%20Cycle%20Analysis%20of%20Natural%20Gas%20Extraction%20and%20Power%20Generation%2005_29_14%20NETL.pdf



Natural Gas: A Very Short History

Natural Gas has been used as fuel for generations.

1980's -1990's: Mitchell Energy and Development Corporation experiment with methods of hydraulic fracturing

2000- ME&DC developed a technique that produced commercial volumes of shale gas

Source: <https://www.eia.gov/energyexplained/natural-gas/where-our-natural-gas-comes-from.php>

Natural Gas: A Very Short History

Five of the 34 natural gas producing states accounted for about 70% of total U.S. dry natural gas production in 2021.

The top five natural gas-producing states and their share of total U.S. natural gas production in 2021 were:

Texas 24.6%

Pennsylvania 21.8%

Louisiana 9.9%

West Virginia 7.4%

Oklahoma 6.7%

Source: <https://www.eia.gov/energyexplained/natural-gas/where-our-natural-gas-comes-from.php>



1961 President Kennedy, with Governors from Delaware, Pennsylvania New York, and New Jersey, and a federal representative, North Atlantic Division Engineer, Army Corps of Engineers

Create a unified approach to managing a river system without regard to political boundaries

Created the Delaware River Basin Compact

Federal law & law in each state

The DRBC is responsible for the drinking water of over 13 Million people.

Source: <https://www.state.nj.us/drbc/about/>

In February, 2021 the DRBC, which includes the Federal Government, in equal partnership with 4 state governors,

BANNED FRACKING
in the
Delaware River Basin

What is missing?

Conclusion: Fracking harms groundwater, surface water, and drinking water.

<https://www.dec.ny.gov/energy/75370.html>

https://www.dec.ny.gov/docs/materials_minerals_pdf/findingstatehvhf62015.pdf

<https://www.epa.gov/hfstudy/executive-summary-hydraulic-fracturing-study-final-assessment-2016>

Life in the Permian Basin

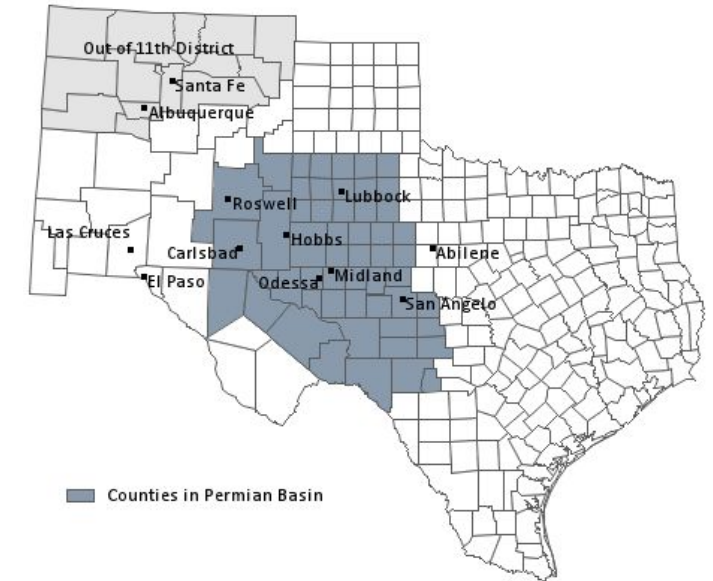
2019-2021
Nearly 1,100
super emitters
identified in the
Permian

-Constant, high
levels of methane
emissions

What is missing?

Carbon Mapper research team detected nearly 1,100 super emitters across the Permian Basin over the course of their research which was performed as part of a joint NASA, RMI, and University of Arizona research program and EDF's [PermianMAP](#) initiative.

Location of Permian Basin



SOURCE: Railroad Commission of Texas.

Life in the Permian Basin

What is missing?

Permian emissions are over twice as high as any other oil and gas basin, according to satellite measurements.

Carbon Mapper research team detected nearly 1,100 super emitters across the Permian Basin over the course of their research which was performed as part of a joint NASA, RMI, and University of Arizona research program and EDF's [PermianMAP](#) initiative.



Life in the Permian Basin

Earthquakes that reached over 3.0
on the Richter Scale

2015: 6

2016: 6

2017: 17

2018: 78

2019: 181

First 3 months of 2022: 59

What is missing?

Sergio Chapa and David Wethe, Bloomberg, April 29, 2022 Fracking Boom Turns
Texas into the Earthquake capital of the US

<https://www.bloomberg.com/features/2022-permian-basin-earthquakes/>

What is
missing?

Physicians for Social Responsibility

Fracking with “Forever Chemicals”

July 2021

- Pre - and polyfluoroalkyl substances (PFAS)
- PFAS accumulate in the environment and do not break down in the environment
- PSR: 1st longitudinal study linking PFAS and natural gas
- 1,200 emitting wells in 6 US States: Arkansas, Louisiana, Oklahoma, New Mexico, Texas, and Wyoming (2021-2020)
- Severe health effects, in particular, male reproductive toxicity and tumors

Dusty Horwitt, J.D. Physicians for Social Responsibility July 2021 Fracking with “Forever Chemicals”
<https://psr.org/wp-content/uploads/2021/07/fracking-with-forever-chemicals.pdf>

How your bill looks today

How it would change under MPW's balanced plan

How it would change under a 100% Renewable plan

RESIDENTIAL - CURRENT BILL (2021)

MPW
Muscatine Power and Water
3205 Cedar Street
Muscatine, IA 52761-2204
563-263-2631

Lobby Hours
8:00 AM - 4:00 PM
Monday - Friday
563-263-2631

Page 1 of 3

ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
RESIDENTIAL CUSTOMER	123 MAIN ST	10/10/21	10/30/21	\$361.93

BILLING SUMMARY			
Last Month's Total Bill			\$356.42
Payment Through	10/08/21		-\$356.42
Previous Balance			\$3.00
Electric Charges			\$102.39
Water Charges			\$21.21
Communications Charges			\$163.00
City Charges			\$50.83
This Month's Charges			\$361.93
Payment Due On	10/30/21		\$361.93

Electric Charges \$102.39

RESIDENTIAL - MPW BALANCED PLAN (2028)

MPW
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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
RESIDENTIAL CUSTOMER	123 MAIN ST	10/10/28	10/30/28	\$451.14

BILLING SUMMARY			
Last Month's Total Bill			\$456.12
Payment Through	10/08/28		-\$456.12
Previous Balance			\$0.00
Electric Charges			\$119.91
Water Charges			\$24.85
Communications Charges			\$242.83
City Charges			\$63.56
This Month's Charges			\$451.14
Payment Due On	10/30/28		\$451.14

Electric Charges \$119.91

RESIDENTIAL - 100% RENEWABLE SUPPLY (2028)

MPW
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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
RESIDENTIAL CUSTOMER	123 MAIN ST	10/10/28	10/30/28	\$563.31

BILLING SUMMARY			
Last Month's Total Bill			\$566.90
Payment Through	10/08/28		-\$566.90
Previous Balance			\$0.00
Electric Charges			\$250.14
Water Charges			\$24.85
Communications Charges			\$242.83
City Charges			\$45.40
This Month's Charges			\$563.31
Payment Due On	10/30/28		\$563.31

Electric Charges \$250.14

SMALL BUSINESS - CURRENT BILL (2021)

MPW
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Muscatine, IA 52761-2204
563-263-2631

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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
SMALL BUSINESS CUSTOMER	123 MAIN ST	10/10/21	10/30/21	\$410.08

BILLING SUMMARY			
Last Month's Total Bill			\$412.16
Payment Through	10/08/21		-\$412.16
Previous Balance			\$0.00
Electric Charges			\$205.66
Water Charges			\$36.58
Communications Charges			\$108.18
City Charges			\$59.66
This Month's Charges			\$410.08
Payment Due On	10/30/21		\$410.08

Electric Charges \$205.66

SMALL BUSINESS - MPW BALANCED PLAN (2028)

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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
SMALL BUSINESS CUSTOMER	123 MAIN ST	10/10/28	10/30/28	\$468.62

BILLING SUMMARY			
Last Month's Total Bill			\$468.62
Payment Through	10/08/28		-\$468.62
Previous Balance			\$0.00
Electric Charges			\$240.84
Water Charges			\$42.85
Communications Charges			\$112.02
City Charges			\$68.53
This Month's Charges			\$468.24
Payment Due On	10/30/28		\$468.24

Electric Charges \$240.84

SMALL BUSINESS - 100% RENEWABLE SUPPLY (2028)

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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
SMALL BUSINESS CUSTOMER	123 MAIN ST	10/10/28	10/30/28	\$697.64

BILLING SUMMARY			
Last Month's Total Bill			\$699.14
Payment Through	10/08/28		-\$699.14
Previous Balance			\$0.00
Electric Charges			\$474.24
Water Charges			\$42.85
Communications Charges			\$112.02
City Charges			\$68.53
This Month's Charges			\$697.64
Payment Due On	10/30/28		\$697.64

Electric Charges \$474.24

SMALL INDUSTRIAL - CURRENT BILL (2021)

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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
SMALL INDUSTRIAL CUSTOMER	123 MAIN ST	10/10/21	10/30/21	\$75,993.75

BILLING SUMMARY			
Last Month's Total Bill			\$76,236.25
Payment Through	10/08/21		-\$76,236.25
Previous Balance			\$0.00
Electric Charges			\$72,326.32
Water Charges			\$2,671.18
Communications Charges			\$203.18
City Charges			\$793.07
This Month's Charges			\$75,993.75
Payment Due On	10/30/21		\$75,993.75

Electric Charges \$72,326.32

SMALL INDUSTRIAL - MPW BALANCED PLAN (2028)

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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
SMALL INDUSTRIAL CUSTOMER	123 MAIN ST	10/10/28	10/30/28	\$86,981.72

BILLING SUMMARY			
Last Month's Total Bill			\$89,373.67
Payment Through	10/08/28		-\$89,373.67
Previous Balance			\$0.00
Electric Charges			\$84,716.06
Water Charges			\$3,144.27
Communications Charges			\$210.40
City Charges			\$910.90
This Month's Charges			\$88,981.72
Payment Due On	10/30/28		\$88,981.72

Electric Charges \$84,716.06

SMALL INDUSTRIAL - 100% RENEWABLE SUPPLY (2028)

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ACCOUNT				
NAME	SERVICE ADDRESS	BILL DATE	DUE DATE	AMOUNT DUE
SMALL INDUSTRIAL CUSTOMER	123 MAIN ST	10/10/28	10/30/28	\$171,085.02

BILLING SUMMARY			
Last Month's Total Bill			\$171,218.36
Payment Through	10/08/28		-\$171,218.36
Previous Balance			\$0.00
Electric Charges			\$166,819.36
Water Charges			\$3,144.27
Communications Charges			\$210.40
City Charges			\$910.90
This Month's Charges			\$171,085.02
Payment Due On	10/30/28		\$171,085.02

Electric Charges \$166,819.36

What is missing?

Today	MPW Current Plan	100% Renewables	100% Renewables after IRA (½ \$)
Individuals \$102.39	\$119.91	\$250.14	\$125.07
Small Business \$205.66	\$240.84	\$474.24	\$237.12
Small Industry \$72,326.32	\$84,716.06	\$166,819.36	\$83,409.69

<https://mpw.org/help/how-will-electric-bills-change-under-mpws-balanced-plan-and-under-a-100-renewable-plan/>

IRA reductions: MPW Board Meeting, October 25th 2022. Presentation by Doug White

What is missing?



Katie Rock, Sierra Club
Beyond Coal
katie.rock@sierraclub.org

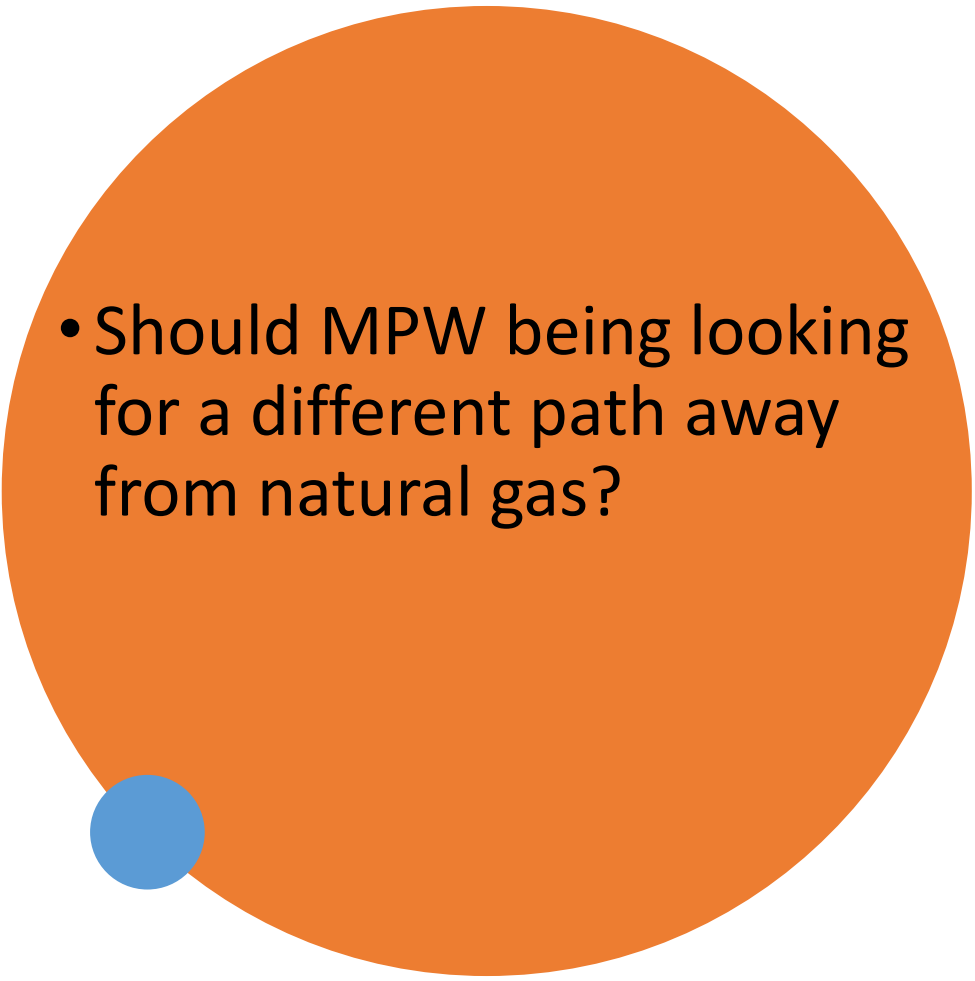
Sierra Club analyzed the cost of a new combined heat and power (CHP) plant in 2020 and found a clean energy portfolio would save millions.

Table 1: Technology breakdown and associated cost information of two clean energy portfolio (CEP) possibilities (megawatts) compared to the cost of a 160 MW combined cycle gas plant proposal with an estimated total cost of \$283 million

PORTFOLIO	Solar (MW)	Wind (MW)	Battery Storage (MW)	Efficiency (MW)	Demand Response (MW)	CEP cost (\$/MWh)	160 MW gas plant cost (\$/MWh)	Total Cost
CEP 1	223	129	112	0	0	\$46.92	\$54.91	\$242 mn
CEP 2	150	113	62	61	49	\$36.10	\$54.91	\$186 mn

Today, clean energy is even more competitive thanks to the Inflation Reduction Act.

- a clean energy portfolio by 2028 is **\$24/MWh cheaper** than a planned 90 MW CC gas plant
- *the cost difference is enough to cover the cost of steam contract estimated at \$9/MWh in value*
- all this without including demand response or efficiency measures

- 
- Should MPW be looking for a different path away from natural gas?



Steps toward resiliency and energy independence

- Energy Planning
- Energy Efficiency
- Microgrids
- Battery storage



Energy Planning

Community Energy Strategic Planning Process



U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

7

Steps toward
Resiliency
and
Energy
Independence

U.S. Dept. of Energy

<https://www.energy.gov/sites/default/files/2014/05/f15/commenergyplanni>

Steps toward
Resiliency
and
Energy
Independence

Energy Efficiency for Individuals

Muscatine County Energy District
Muscatine's New Opportunity

<https://energydistrict.org/>

<https://johnsoncleanenergydistrict.org/>



Steps toward
Resiliency
and
Energy
Independence

Industrial Energy Efficiency

Savings of	20%	40%
Monthly Energy Bill Becomes	\$1,455,208.61	\$1,091,406.46
Monthly Savings	\$363,802.15	\$727,604.30
Yearly Savings	\$4,365,625.80	\$8,731,251.60
15 Year Savings	\$65,484,387.00	\$130,968,774.00

Source: https://www.iowaeda.com/UserDocs/IEDA_EnergyStorage_2019.pdf

<https://act-chargers.com/wp-content/uploads/2017/03/ACT-White-Paper-Energy-Management-through-Peak-Shaving-and-Demand-Response.pdf>

Steps toward Resiliency and Energy Independence

Industrial Energy Efficiency

- C&I customers can achieve energy savings of 20% to 40% when automated technologies are utilized
- Energy Storage Action Plan, May 2019 Iowa Economic Development Authority
• Source Material: Energy Management through Peak Shaving and Demand Response: New Opportunities for Energy Savings at Manufacturing and Distribution Facilities, Kutkut Nasser, DBA Advanced Charging Technologies

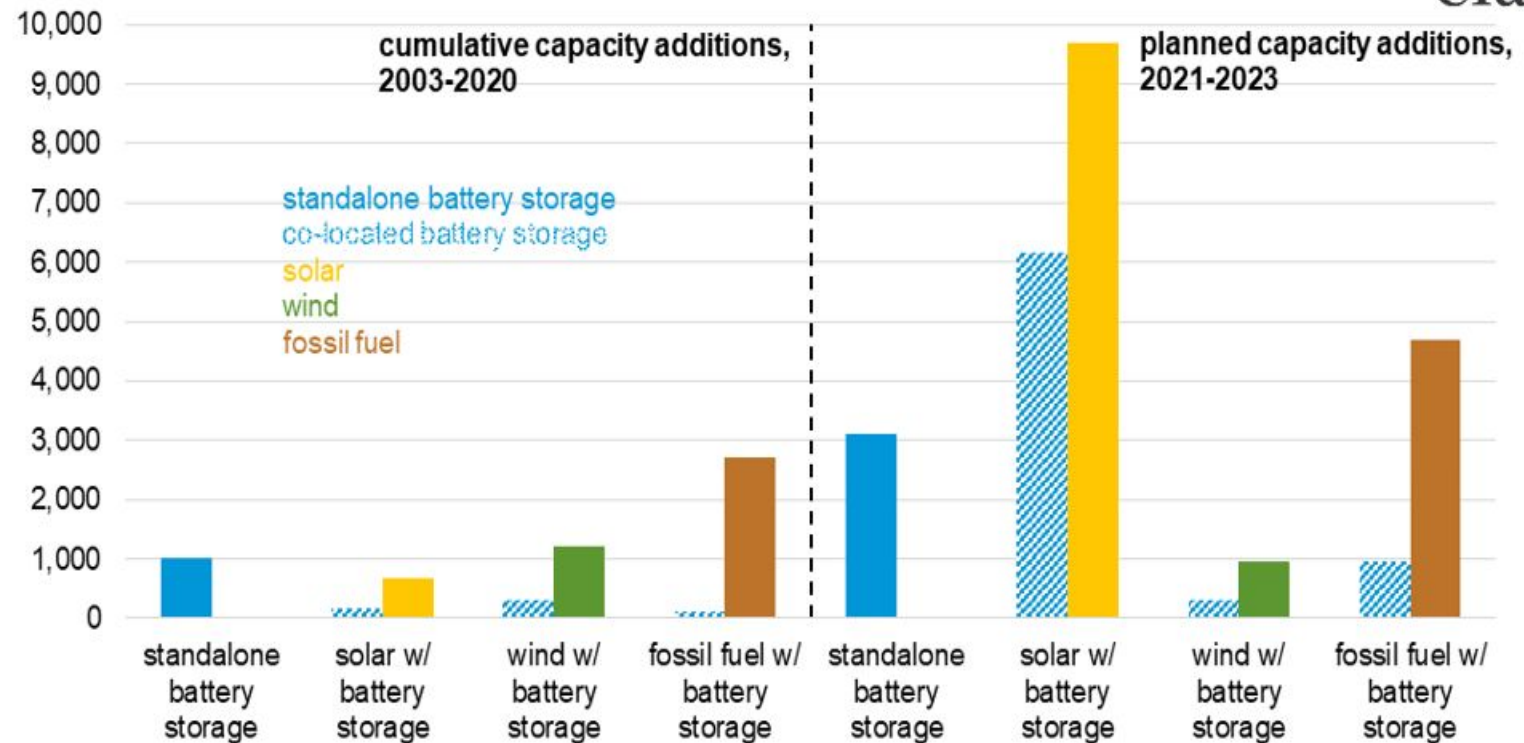
Source: https://www.iowaeda.com/UserDocs/IEDA_EnergyStorage_2019.pdf

<https://act-chargers.com/wp-content/uploads/2017/03/ACT-White-Paper-Energy-Management-through-Peak-Shaving-and-Demand-Response.pdf>

Steps toward
resiliency
and
energy
independence

Battery Capacity

Figure ES3. U.S. large-scale battery storage power capacity additions, standalone and co-located megawatts



Source: U.S. Energy Information Administration, Dec 2020 Form EIA-860M, [Preliminary Monthly Electric Generator Inventory](#)

Note: Solid yellow, green, and brown bars indicate generating total capacity of solar, wind, and fossil fuels that have battery storage on-site.

Steps toward
resiliency
and
energy
independence

Battery Innovation

Iron-Air Battery
Multiple-Day energy storage

NO Lithium or precious metal.

Storage for up to 100 hours = 4 day storage

Expected to have pilot project within 2 to 3 years.

Where to watch for the innovative battery
Form Energy, a company based in Massachusetts
that's co-run by a former Tesla Inc. official.

Popular Mechanics D. Orf, "Iron-Air Batteries Are Here. They May Alter the Future of Energy" (2023),
<https://www.popularmechanics.com/science/energy/a42532492/iron-air-battery-energy-storage/>

Scientific America J. Fialka, "Rusty Batteries Could Greatly Improve Grid Energy Storage" (2022),
<https://www.scientificamerican.com/article/rusty-batteries-could-greatly-improve-grid-energy-storage/>

Steps toward resiliency and energy independence

Microgrids

- Red Lion Renewables - Terry Dvorak
- Solar Arrays at 40 facilities for 12 schools
\$8,700,000 saving over 30 years
101 Customer Facilities; \$13,000,000 over 30 years

Can you give us an overview of your projects with school, local government, and churches?

How does financing work with Red Lion?

What is the timeline for an install? Has the supply chain slowed you down?

Red Lion Renewables: <http://redlionrenewables.com/>

US Department of Energy, Office of Electricity, *"The Role of Microgrids in Helping to Advance the Nation's Energy System"* (2023),
<https://www.energy.gov/oe/role-microgrids-helping-advance-nations-energy-system>

National Renewable Energy Laboratory, *"Microgrids"* (2023),
<https://www.nrel.gov/grid/microgrids.html>

Infrastructure Investment and
Jobs Act (IIJA) &
Inflation Reduction Act (IRA)

Infrastructure Investment and Jobs Act (IIJA)

- Signed into law November 2021
- It will invest \$1.2 trillion into community infrastructure projects over the next decade.

https://iafederalfunding.org/resources/?fbclid=IwAR23z7KK_PxUvTpRVFTeiaX7rhi97zb0f0UsBSATSPnet2_PdM02Sre_hCw

Inflation Reduction Act (IRA)

- Signed into law August 2022
- The IRA is the largest climate investment in U.S. History, supporting \$370 billion in programs that benefit households, businesses, and communities.
- Implementation of IRA programs would put the country on the path of reducing emissions 40% by 2030.

https://iafederalfunding.org/resources/?fbclid=IwAR23z7KK_PxUvTpRVFTeiaX7rhi97zb0f0UsBSATSPnet2_PdM02Sre_hCw

How can the IRA and IIJA help Muscatine County?

Individuals, Businesses, Non-profits, Governments

<https://iafederalfunding.org/>

Individuals

CONSUMERS CAN LOWER THEIR ENERGY COSTS WITH PROGRAMS GEARED TOWARD HOME ENERGY EFFICIENCY UPGRADES, HOME ELECTRIFICATION, CLEAN ENERGY INSTALLATION, AND ELECTRIC TRANSPORTATION.

<https://iafederalfunding.org/individuals/>

Individuals

Renewable Energy & Energy Efficiency

- **RESIDENTIAL SOLAR, WIND, GEOTHERMAL AND BATTERY STORAGE INVESTMENT TAX CREDIT**
This Investment Tax Credit (ITC) reduces the cost of installing residential solar PV systems, small wind turbines, geothermal and battery storage. Starting in 2023, this credit can also be applied to standalone battery storage installed without solar.
- **ENERGY EFFICIENCY HOME IMPROVEMENT TAX CREDIT**
A 30% tax credit on energy efficiency home improvements such as insulation, air sealing, installation of energy-efficient doors and windows, and more.

<https://iafederalfunding.org/individuals/>

Individuals

Renewable Energy & Energy Efficiency

- **HOME ENERGY PERFORMANCE-BASED WHOLE HOUSE REBATES (HOMES)**

The Department of Energy will send funds to state energy offices to implement a HOMES rebate program to provide rebates to homeowners and aggregators for whole-house energy saving retrofits.

- **HIGH-EFFICIENCY ELECTRIC HOME REBATE (HEEHR)**

The Department of Energy will provide grants to States and Tribes to implement a high-efficiency electric home rebate (HEEHR) program. Eligible recipients must fall below 150% of the area median income, providing up to \$14,000 in point-of-sale rebates per household.

<https://iafederalfunding.org/individuals/>

Individuals - Electric Vehicles

- **CLEAN VEHICLE CREDIT**

A consumer tax credit for the purchase of a qualified new clean vehicle, including electric vehicles, plug-in hybrids, and hydrogen fuel cell vehicles.

- **USED CLEAN VEHICLE CREDIT**

A maximum tax credit is equal to the lesser of \$4,000 or 30% of the vehicle cost on previously owned clean non-commercial vehicles. Vehicles must be at least 2 years old and have a sale price less than \$25,000.

<https://iafederalfunding.org/individuals/>

How much money will you get with the Inflation Reduction Act?

Rewiring America IRA Calculator

<https://www.rewiringamerica.org/app/ira-calculator>

Businesses

THE INFLATION REDUCTION ACT (IRA) EXPANDS OPPORTUNITIES FOR IOWA BUSINESSES TO TAKE ADVANTAGE OF COST-SAVING TAX CREDITS TO GENERATE AND STORE CLEAN ENERGY, ELECTRIFY FLEET VEHICLES, AND TO REDUCE ENERGY WASTE.

<https://iafederalfunding.org/business/>

Businesses - Renewable Energy

- **INVESTMENT TAX CREDIT FOR RENEWABLE GENERATION (BEFORE 2025)**
30% investment tax credit for solar, small wind, geothermal, fuel cell, microturbine, combined heat and power, waste energy recovery, energy storage technology, and biogas constructed before January 1, 2025.
- **PRODUCTION TAX CREDIT FOR RENEWABLE GENERATION (BEFORE 2025)**
Production tax credit of 1.5 cents/kilowatt hour (inflation adjusted to 2.6 cents / kwh) for solar, geothermal, wind, closed- and open-loop biomass, landfill gas, municipal solid waste, hydropower, and marine and hydrokinetic facilities.

<https://iafederalfunding.org/business/>

Businesses - Renewable Energy

- **EMISSIONS-BASED INVESTMENT TAX CREDIT (2025 AND AFTER)**
30% technology neutral investment tax credit replaces Section 48 with an emissions-based investment tax credit that is neutral and flexible between clean electricity technologies. Taxpayers choose between a PTC (45Y) and an ITC (48E).
- **EMISSIONS-BASED PRODUCTION TAX CREDIT (2025 AND AFTER)**
Technology neutral production tax credit replaces Section 45 with an emissions-based production tax credit that is neutral and flexible between clean electricity technologies. Credit of 1.5 cents/kwh (inflation adjusted projected at 2.8 cents/kwh). Taxpayers choose between a PTC (45Y) and an ITC (48E).

<https://iafederalfunding.org/business/>

Businesses - Energy Efficiency

- **ENERGY EFFICIENT COMMERCIAL BUILDING DEDUCTION**

Building owners can get a section 179D tax deduction for new construction and retrofits to commercial buildings. The energy efficiency improvements, including lighting, envelope design, and heating and cooling, must reduce the energy consumption by a minimum of 25% when compared to a building that meets the minimum requirements of Reference Standard 90.1 of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

- **NEW ENERGY EFFICIENT HOME CREDIT**

Builders and contractors of single-family and manufactured homes can collect a credit for meeting the Energy Star Program requirements and the DOE Zero Energy Ready Home criteria. Builders and contractors of multifamily homes can collect a credit for each Energy Star-compliant unit or Zero Energy Ready Home-compliant unit.

<https://iafederalfunding.org/business/>

Businesses - Electric Vehicles

- **COMMERCIAL CLEAN VEHICLE CREDIT**

A \$7,500 tax credit tax for the purchase of electric vehicles or other qualified clean vehicles for commercial vehicles under 14,000 lbs. and a \$40,000 tax credit for commercial vehicles over 14,000 lbs. Additional information coming soon.

<https://iafederalfunding.org/business/>

Non-profits

THE IRA EXPANDS OPPORTUNITIES FOR NON-PROFITS, CHURCHES, RURAL ELECTRIC COOPERATIVES, AND OTHER TAX-EXEMPT ENTITIES TO TAKE ADVANTAGE OF COST-SAVING TAX CREDITS TO GENERATE AND STORE CLEAN ENERGY, RECEIVE FINANCIAL ASSISTANCE, AND TO RECEIVE GRANTS.

<https://iafederalfunding.org/non-profits/>

Non-profits - Grants & Financial Assistance

- **ENVIRONMENTAL AND CLIMATE JUSTICE BLOCK GRANT**
3-year grants are available for projects related to climate change and air pollution, including air pollution monitoring, extreme heat risk mitigation, resiliency and adaptation, indoor pollution reduction, and community engagement.
- **USDA ASSISTANCE FOR RURAL ELECTRIC COOPERATIVES**
Financial assistance including loans to Rural Electric Cooperatives to achieve the greatest reduction of greenhouse gas emissions. Funds can be used to purchase of renewable energy, renewable energy systems, zero-emission systems, and carbon capture and storage systems, to deploy such systems, or to make energy efficiency improvements to electric generation and transmission systems.

<https://iafederalfunding.org/non-profits/>

Non-profits - Grants & Financial Assistance

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<https://iafederalfunding.org/non-profits/>

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<https://iafederalfunding.org/non-profits/>

Governments

THE IRA EXPANDS OPPORTUNITIES FOR GOVERNMENT ENTITIES, INCLUDING STATE AGENCIES, UNIVERSITIES, PUBLIC SCHOOLS AND LOCAL GOVERNMENT, TO TAKE ADVANTAGE OF COST-SAVING TAX CREDITS TO GENERATE AND STORE CLEAN ENERGY. THE IIJA WILL ALSO PROVIDE GRANT FUNDING TO TARGET SPECIFIC PRIORITIES AT THE LOCAL LEVEL.

<https://iafederalfunding.org/governments/>

Governments - Grants & Financial Assistance

- **ENVIRONMENTAL AND CLIMATE JUSTICE BLOCK GRANTS**

3-year grants are available for projects related to climate change and air pollution, including air pollution monitoring, extreme heat risk mitigation, resiliency and adaptation, indoor pollution reduction, and community engagement.

- **NEIGHBORHOOD ACCESS AND EQUITY GRANTS**

Grants to improve transportation access and mitigate negative safety or environmental impacts in underserved communities, for improvements to reduce air pollution and GHG emissions, manage stormwater run-off, address urban heat islands, and to monitor air quality, transportation related GHG emissions and pollution, and gaps in tree canopy coverage. Federal cost share of a project up to 80%, or in a disadvantaged or underserved community may be up to 100%.

<https://iafederalfunding.org/governments/>

Governments - Grants & Financial Assistance

- **GRANTS FOR ENERGY EFFICIENCY CONTRACTOR TRAINING**

Grants for the training of contractors to carry out energy efficiency upgrades, including those in the residential energy efficiency incentives. The funds may be used to reduce the cost of training contractor employees, to provide testing and certification of contractors, and to partner with a non-profit to develop and implement a training program.

- **GREENHOUSE GAS REDUCTION FUND**

Provides EPA funding for grants to state, local, regional, and Tribal programs that provide financial support to low and zero carbon technologies and can act as seed capital for regional, local, state, or Tribal green banks that provide financial support for low or zero emission projects.

<https://iafederalfunding.org/governments/>

Governments - Renewable Energy

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Governments - Renewable Energy

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<https://iafederalfunding.org/governments/>

For more information go to
the Iowa Energy &
Infrastructure Funding Hub

<https://iafederalfunding.org/>

Justice40

THE JUSTICE40 INITIATIVE SEEKS TO DELIVER AT LEAST 40% OF THE OVERALL BENEFITS FROM FEDERAL INVESTMENTS IN CLIMATE AND CLEAN ENERGY TO DISADVANTAGED COMMUNITIES.

<https://iafederalfunding.org/justice40-initiative/>

Covered Programs

A “covered program” is a Federal Government program that makes covered investment benefits in one or more of the following seven areas:

- Climate change
- Clean energy and energy efficiency
- Clean transportation
- Affordable and sustainable housing
- Training and workforce development
- Remediation and reduction of legacy pollution
- Critical clean water and waste infrastructure

The Climate and Economic Justice Screening Tool

- The Climate and Economic Justice Screening Tool hosts an interactive map with indicators to assist agencies in defining and identifying disadvantaged communities.
- Using the tool, a census tract will be identified as disadvantaged in one or more categories of criteria:
 - IF the census tract is above the threshold for one or more environmental or climate indicators AND the census tract is above the threshold for the socioeconomic indicators.

<https://screeningtool.geoplatform.gov/en/#12.9/41.41882/-91.05585>

[Climate and Economic Justice Screening Tool](#)
 - The Council on Environmental Quality (CEQ)

<https://screeningtool.geoplatform.gov/en/#12.9/41.41882/-91.05585>

Search for an address, city, state or ZIP

48
AK
HI
PR
GU
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MP
VI

Map of Muscatine, IA, showing a highlighted disadvantaged area. Key locations include Trinity Muscatine Hospital, Douglas King Memorial Expy, and various streets like Cedar St, Logan St, and Hershey Ave.

Race / Ethnicity (show v)
Age (show v)

Identified as disadvantaged?
YES

This tract is considered disadvantaged because it meets 1 burden threshold **AND** the associated socioeconomic threshold.

[Send feedback](#)

Climate change	+
Energy	+
Health	+
Housing	+
Legacy pollution	+
Transportation	+
Water and wastewater	+
Workforce development	+

Methodology version 1.0

© Mapbox © OpenStreetMap Improve this map

Equitable & Just National Climate Platform Funding Finder

https://ajustclimate.org/justice40_funding.html