

# Minnesota State Center for Energy Excellence: Data and Workforce Development

**Molly Ingram,**  
Senior Research Specialist  
DEED LMI

**Katie McClelland,**  
Director  
GWBD, Strategic Workforce  
Initiatives

October 23, 2024

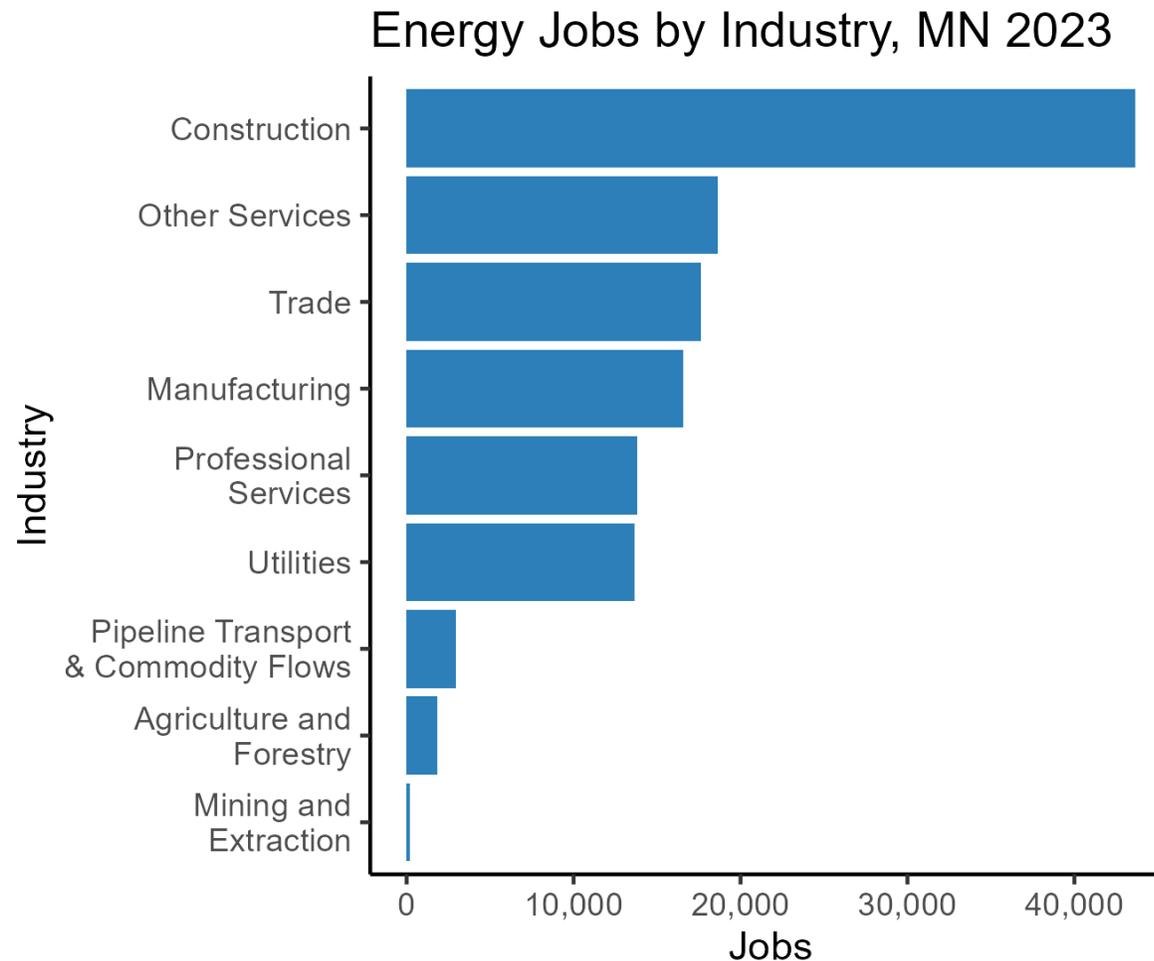
# Outline

- Data
  - What we know now, where the data comes from?
  - What opportunities/challenges are coming?
  - Current research update
- Workforce Development
  - Funding dashboard
  - Power specific projects

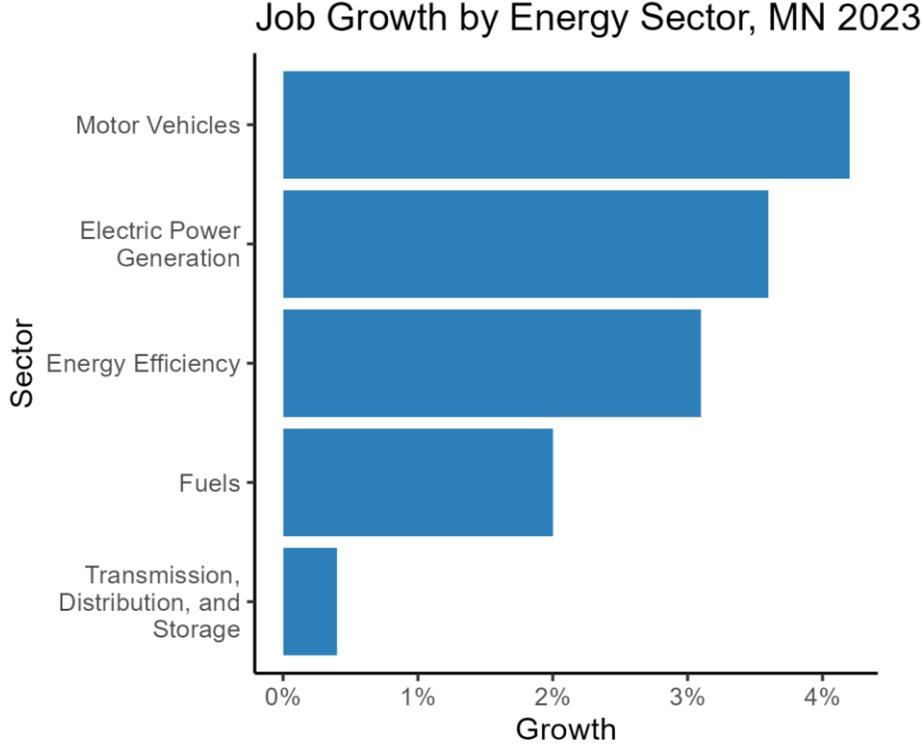
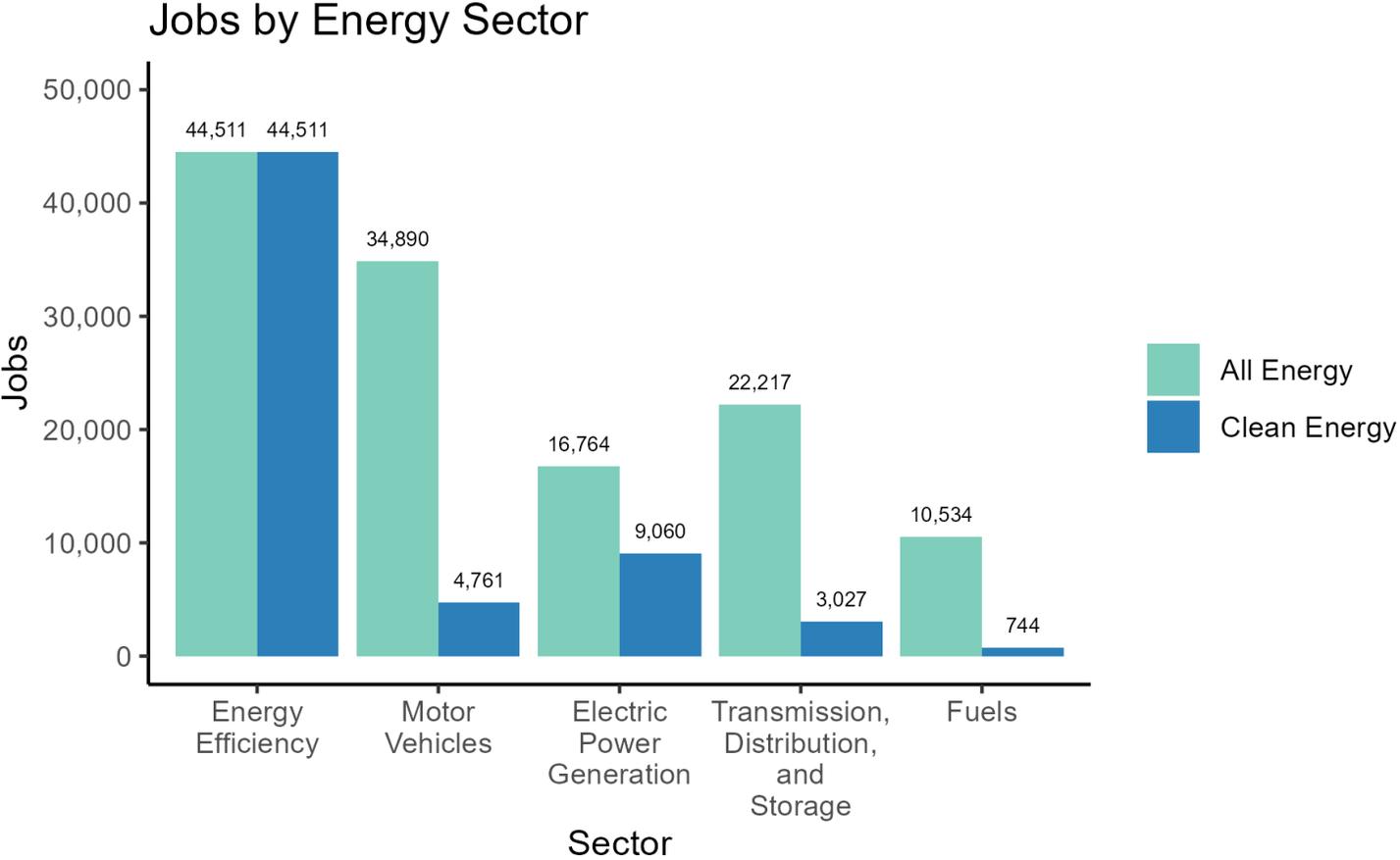


# Who reports on energy employment?

- US Dept of Energy ([USEER](#))
  - Split industry employment (QCEW) into energy sectors and technologies
  - Energy sectors:
    1. Electricity Generation
    2. Transmission, Distribution, Storage
    3. Fuels
    4. Energy Efficiency
    5. Motor Vehicles



# Who reports on energy employment?



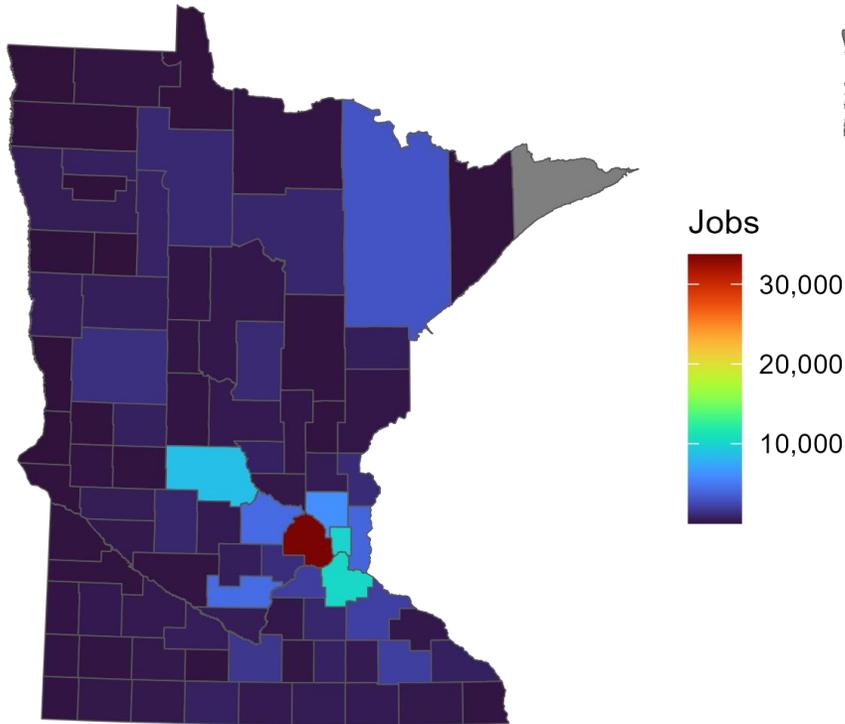
# Who reports clean energy employment?

- Dept of Energy, USEER:
  - Clean Energy Jobs: Jobs in “net-zero emissions” technologies
  - State-level clean energy jobs include all energy efficiency jobs and are reported with/without traditional transmission and distribution jobs
- Clean Jobs America/Clean Jobs Midwest
  - Subset of US DOE Clean Energy Jobs:
    - Electric Power Generation: Solar, Wind, Low impact hydropower, Geothermal electricity, Bioenergy/Combined heat and power
    - TDS: Clean storage, Smart grid, Micro grid, Other grid modernization
    - All energy efficiency
    - Fuels: Other ethanol and non-woody biomass, Other biofuels
    - Motor Vehicles: Hybrid electric vehicles, Plug-in hybrid electric vehicles, Battery electric vehicles, Hydrogen/fuel cell vehicles

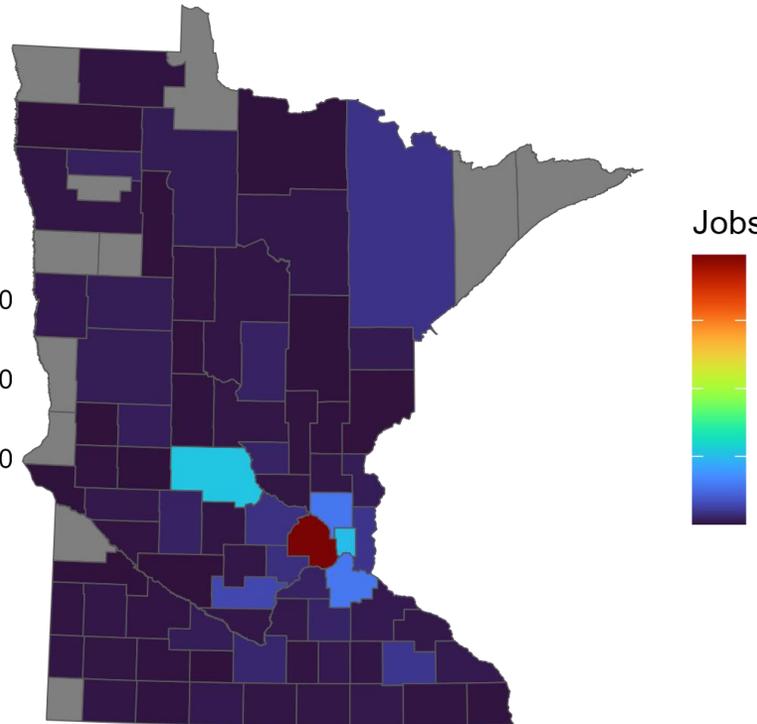


# Energy Jobs by County in 2023

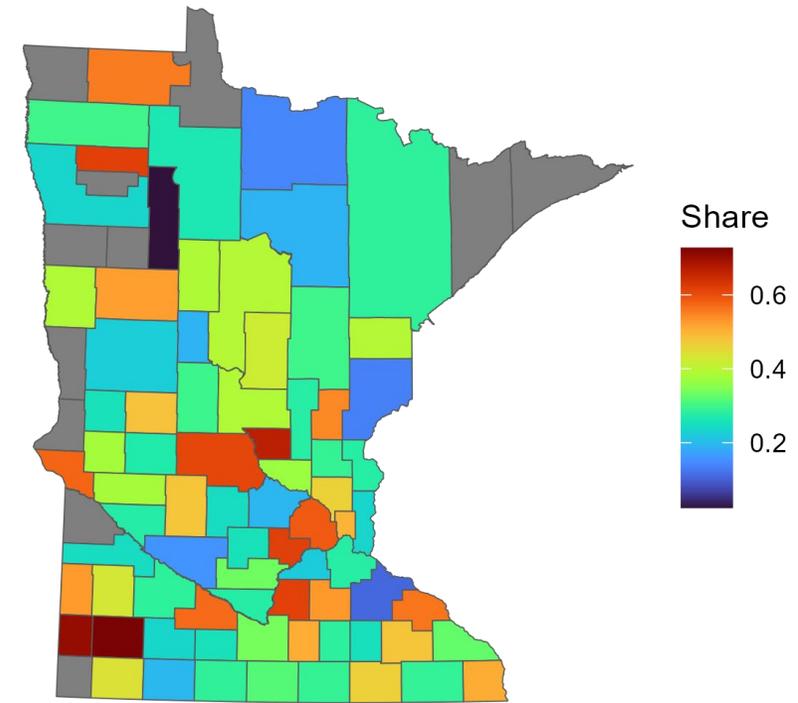
All Energy Employment



Clean Energy Employment

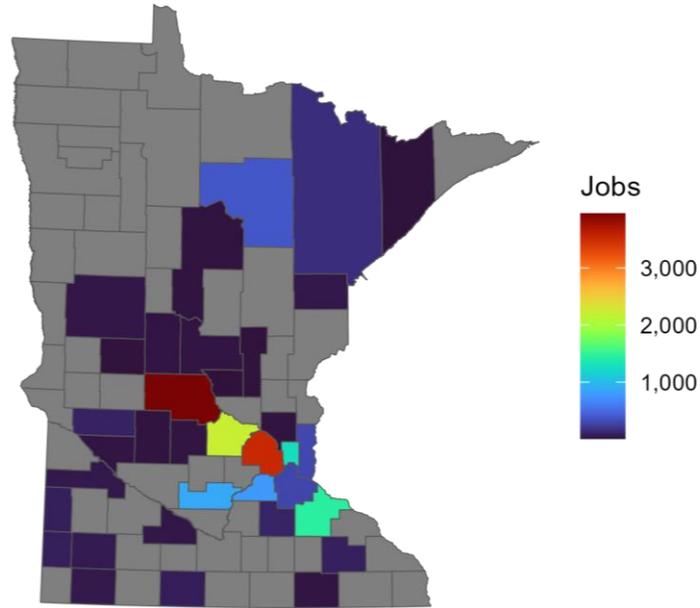


Clean Share of Employment (excludes MV)

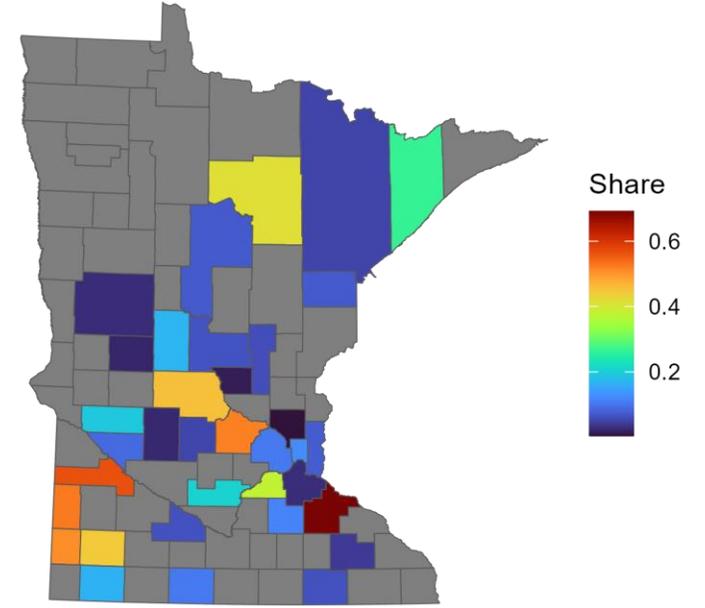


# Electricity Power Generation Jobs by County in 2023

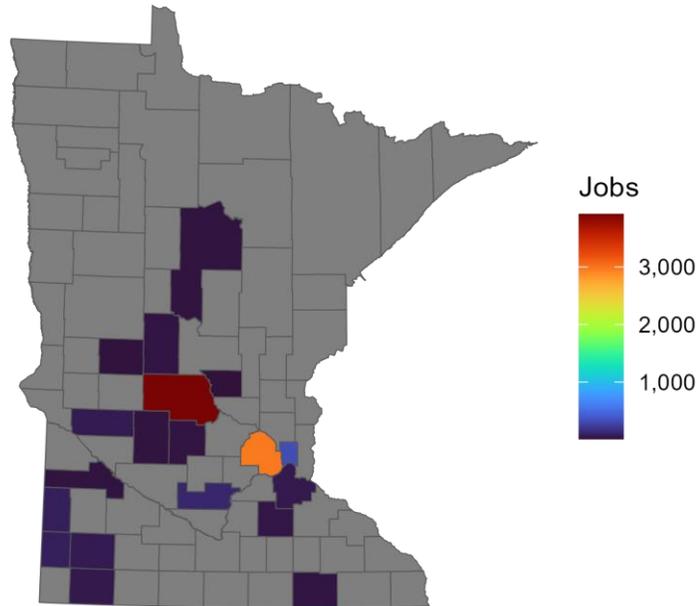
Electricity Generation, jobs



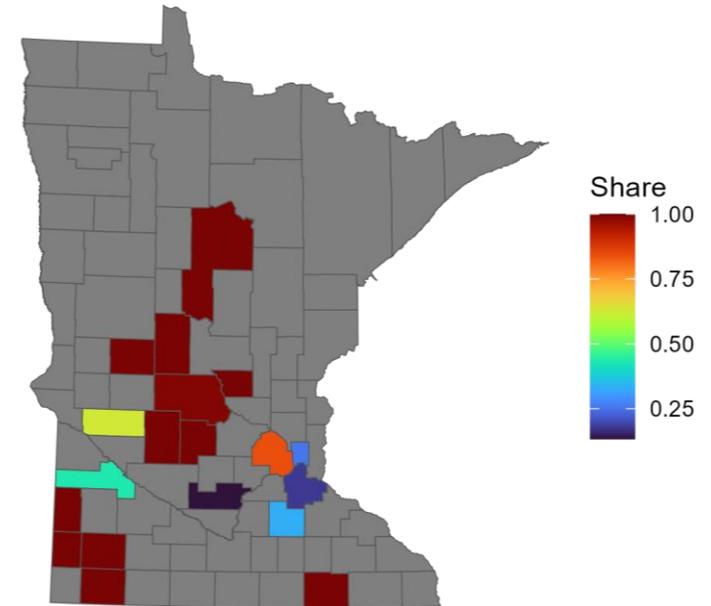
Generation Share of Employment



Clean Electricity Generation, jobs

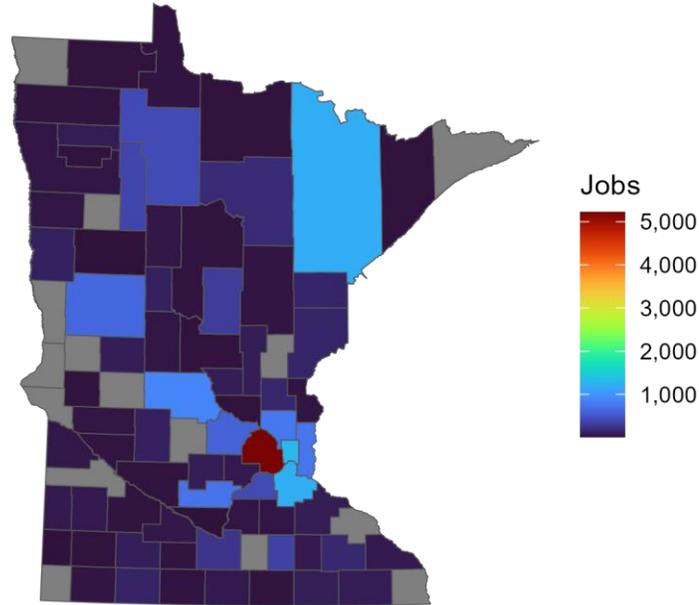


Clean Share of Generation Employment

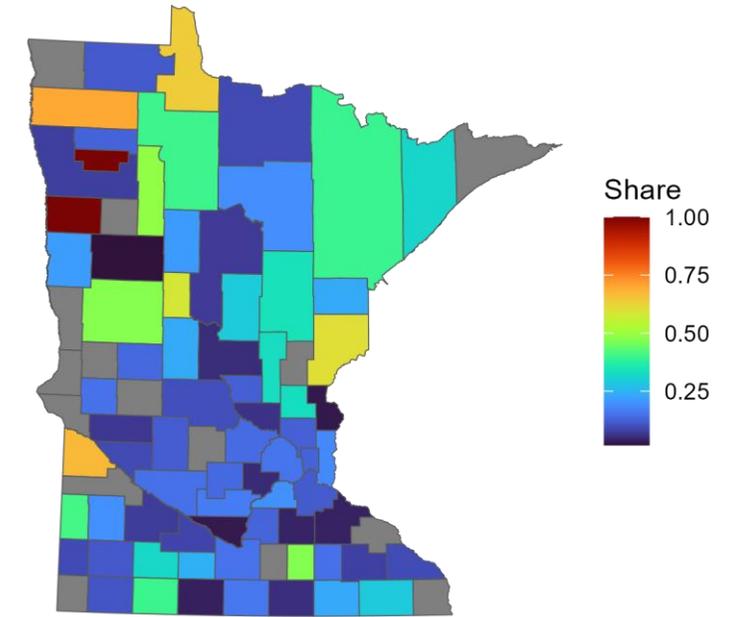


# Transmission, Distribution, Storage Jobs by County in 2023

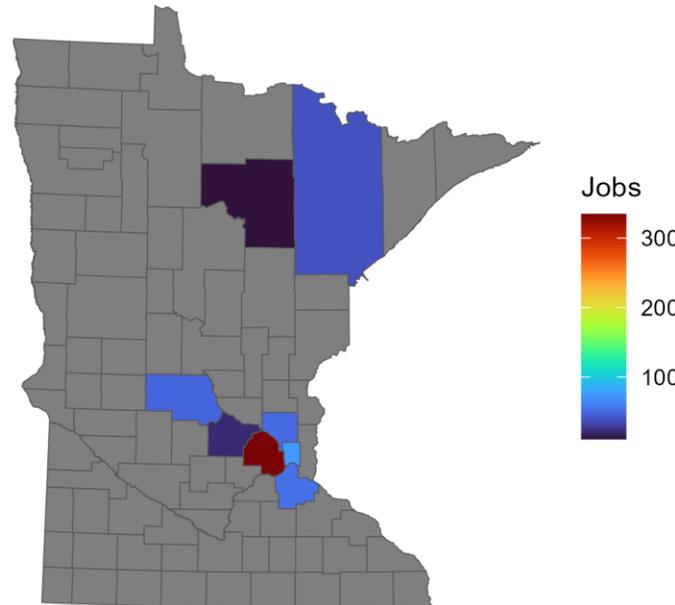
Trans, Dist, & Storage, jobs



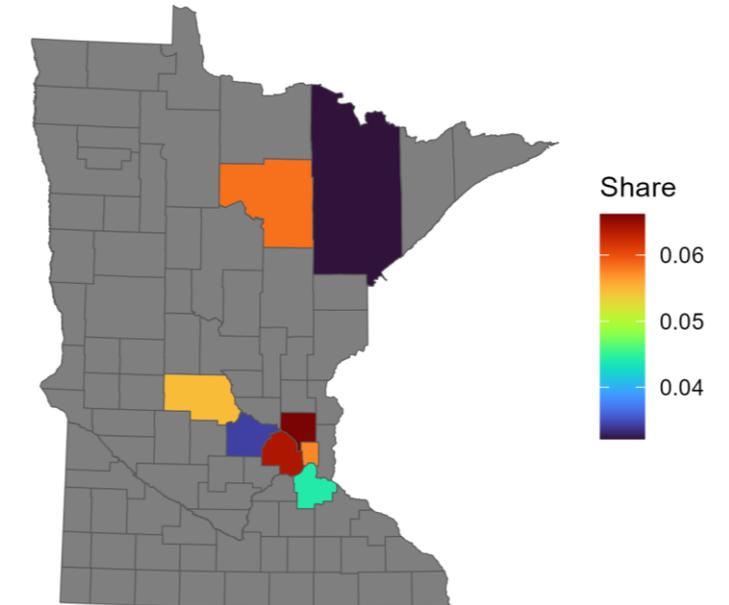
Trans, Dist, & Storage Share of Employment



Clean Trans, Dist, & Storage, jobs



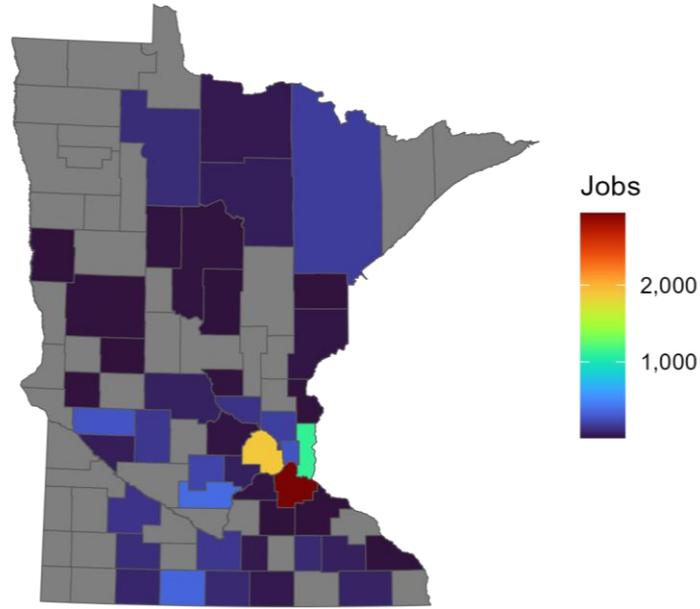
Clean Share of Trans, Dist, & Storage Employ



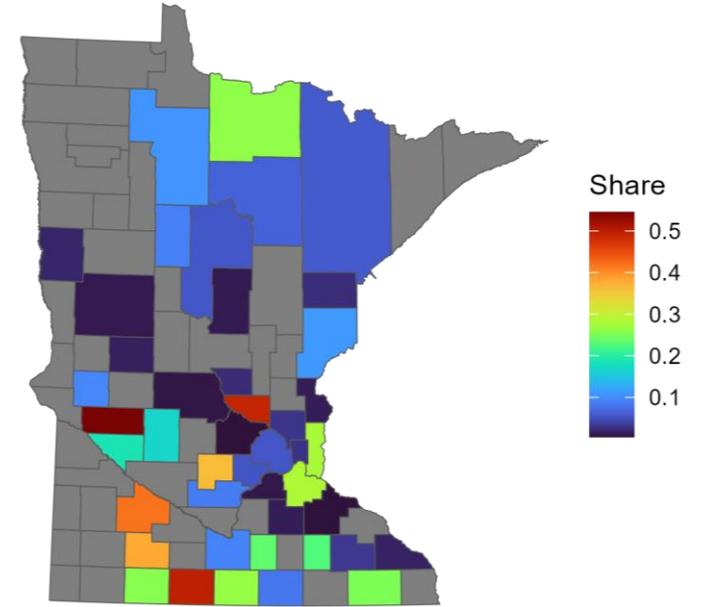


# Fuels Jobs by County in 2023

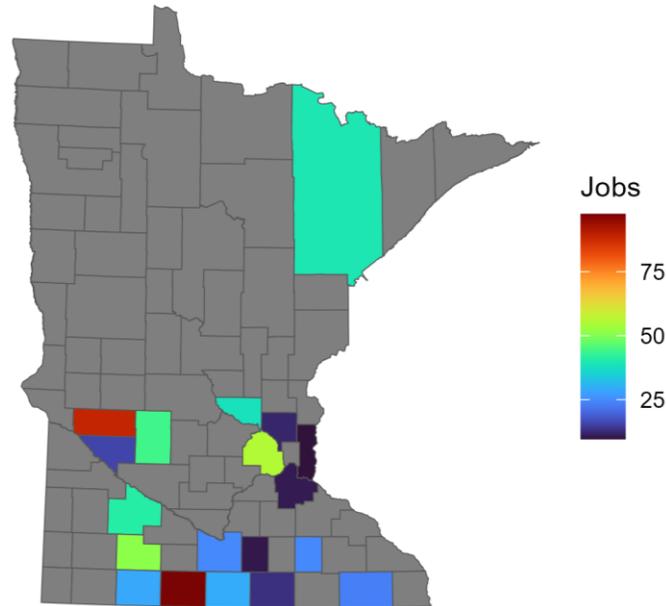
Fuels, jobs



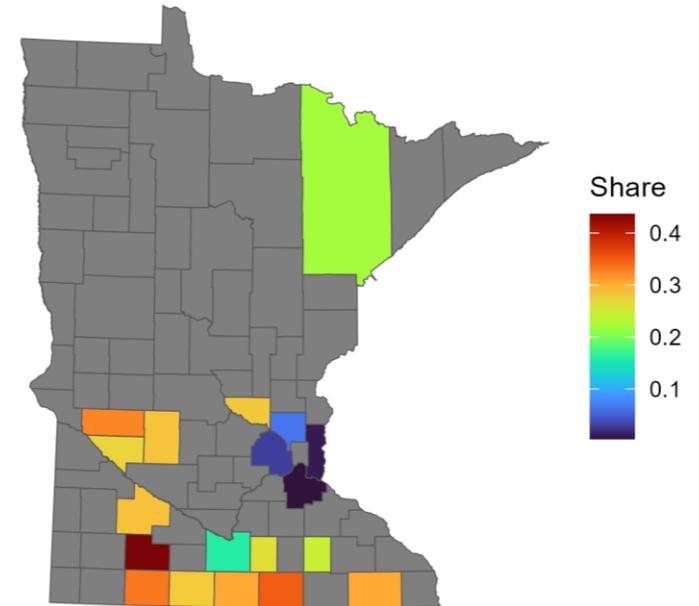
Fuels Share of Employment



Clean Fuels, jobs

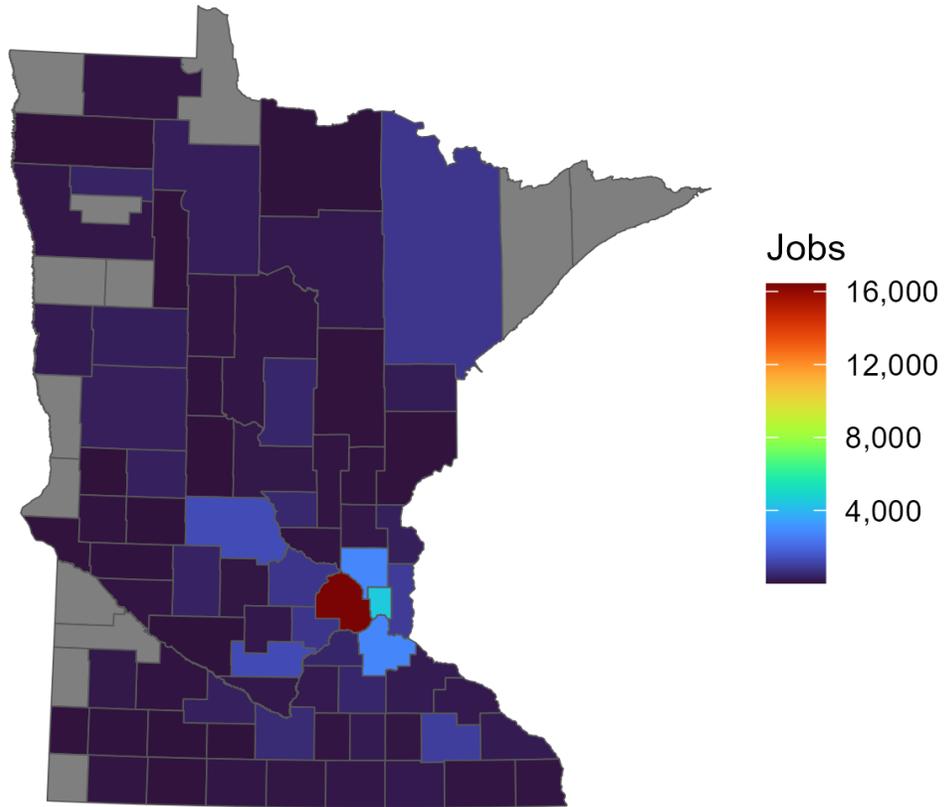


Clean Share of Fuels Employment

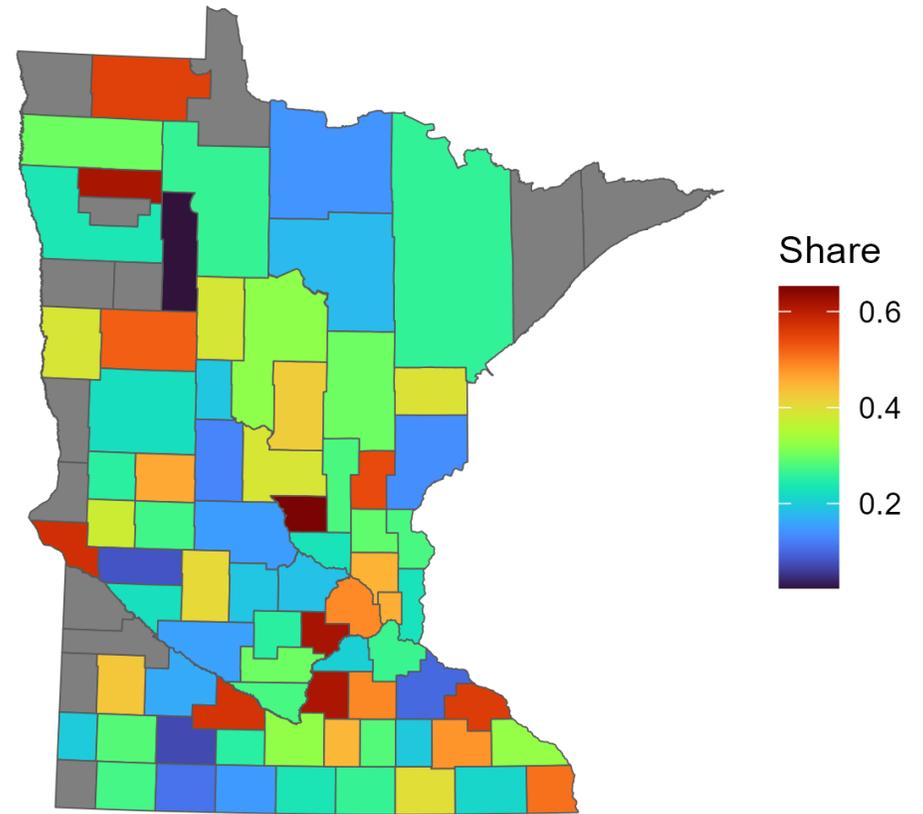


# Energy Efficiency Jobs by County in 2023

Energy Efficiency, jobs

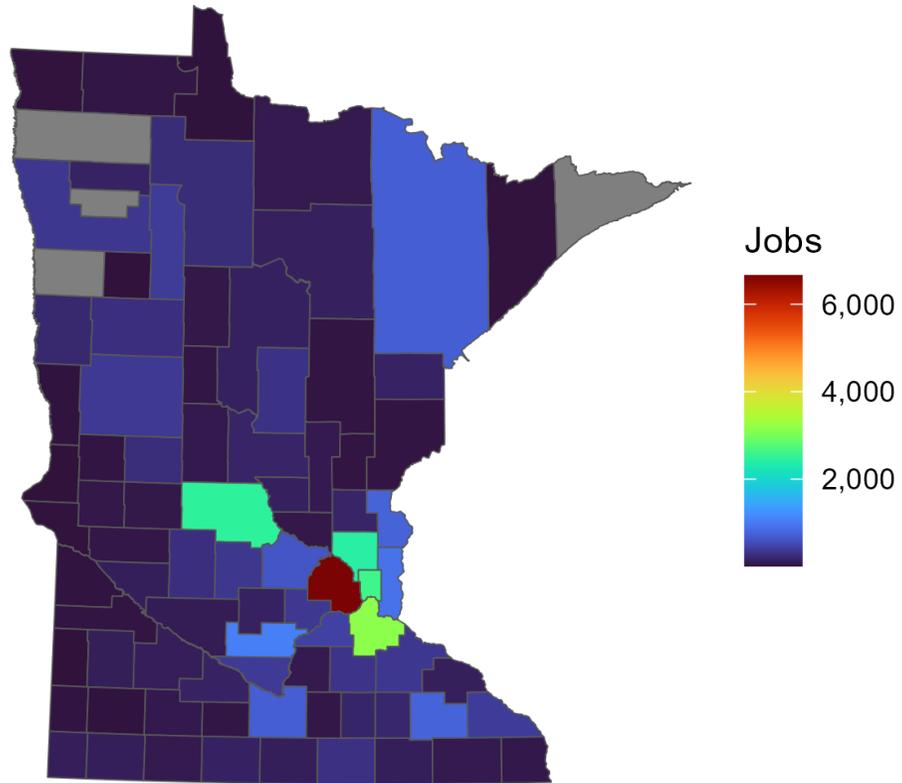


Energy Efficiency Share of Employment

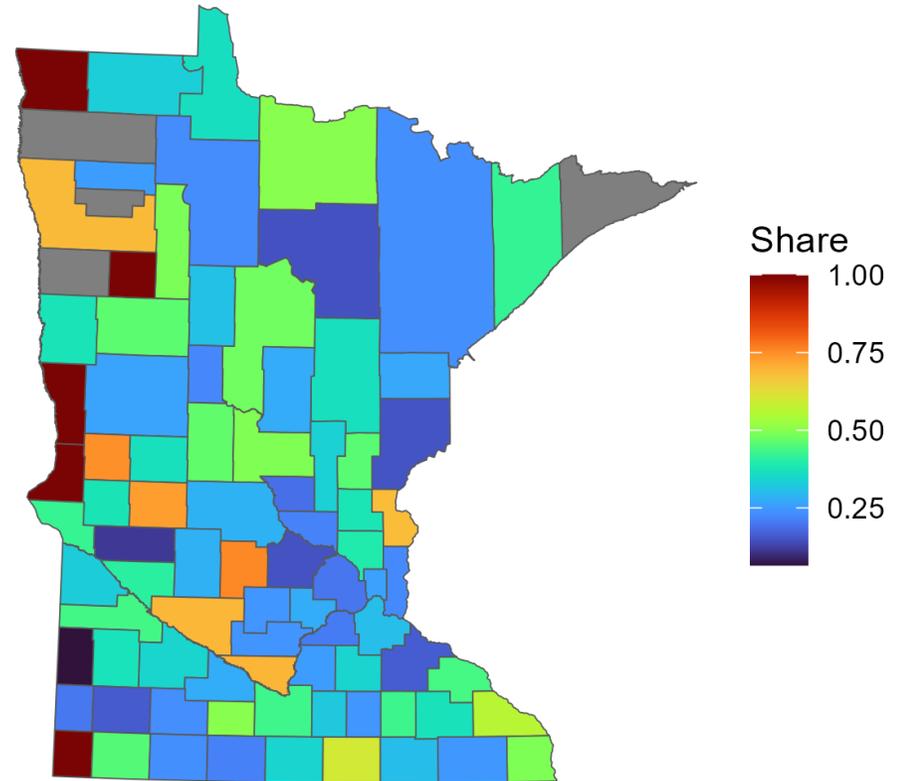


# Motor Vehicle Jobs by County in 2023

Motor Vehicle, jobs



Motor Vehicle Share of Employment



# What's coming?

## Climate Action Framework targets

Reduce  
GHGs 50%  
by 2030

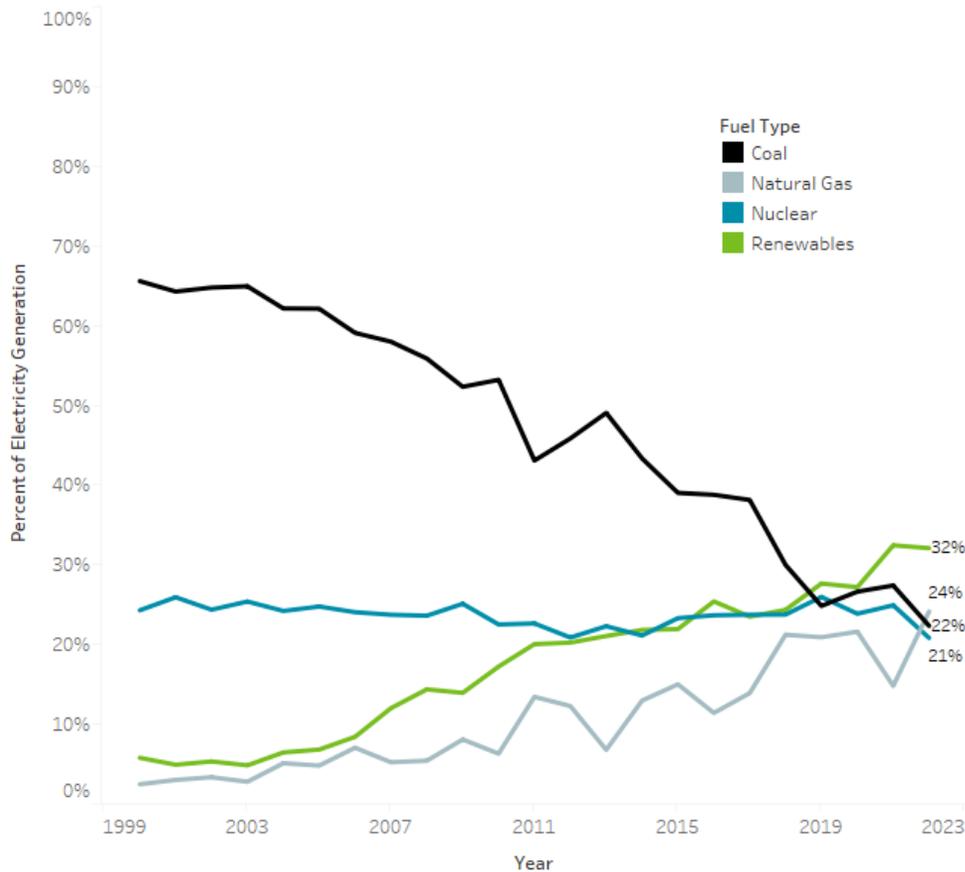
100%  
Carbon-free  
and 55%  
renewable  
electricity  
by 2040

Net-zero  
emissions by  
2050

Minnesota's Climate Action Framework sets a vision for how our state will address and prepare for climate change. It identifies immediate, near-term actions we must take to achieve our long-term goal of a carbon-neutral, resilient, and equitable future for Minnesota. [Climate Action Framework | Our Minnesota Climate \(state.mn.us\)](#)

# How do we get there? Current generation

Electricity Generation Trend in Minnesota

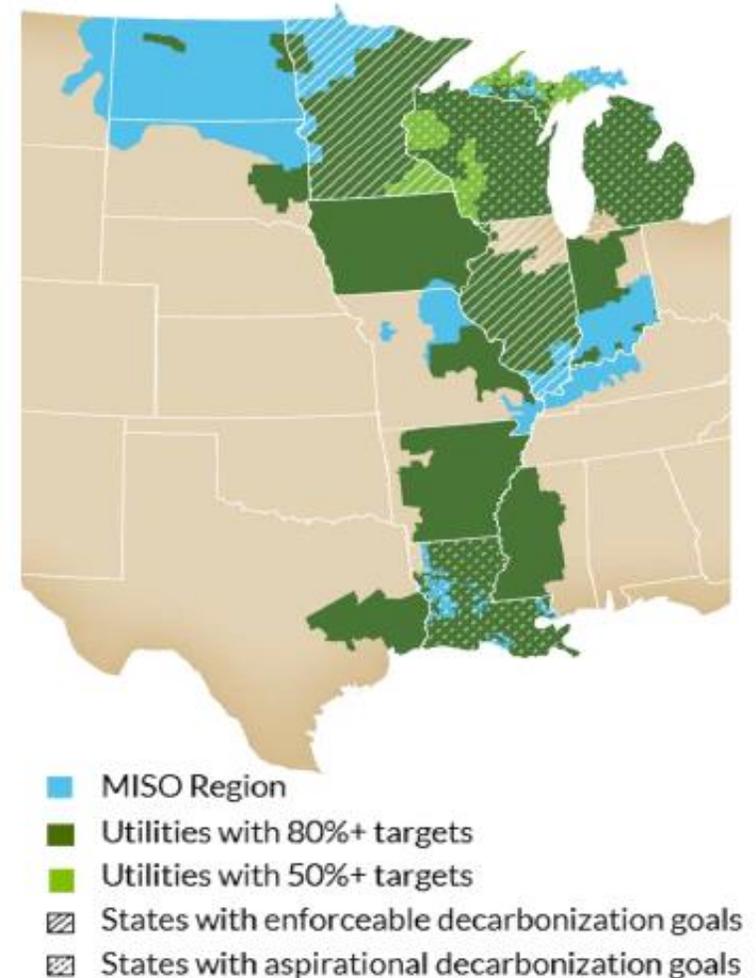
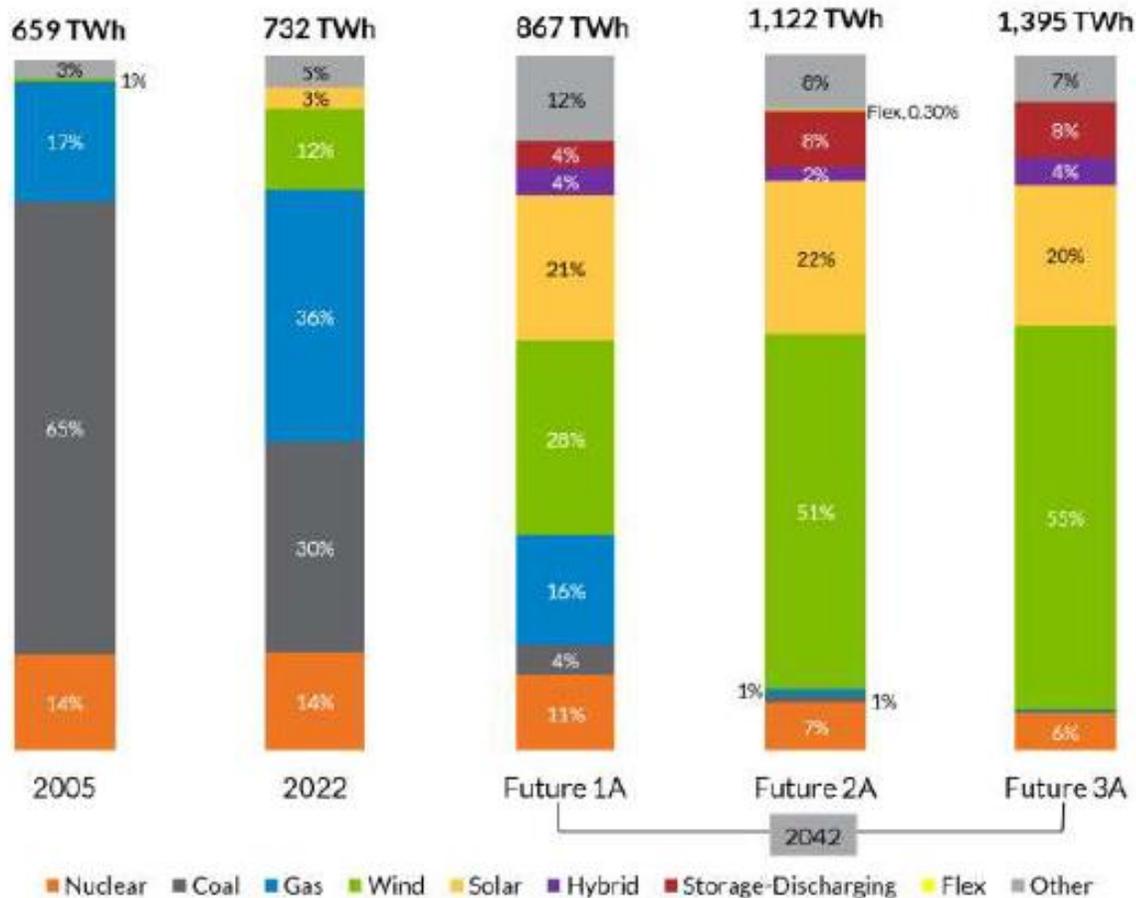


Source: U.S. Energy Information Administration

Type	State Employment
Total	16,764
Total, clean only	9,060
Solar	5,332
Wind	2,860
Other electricity	2,617
Nuclear electricity	1,772
Coal electricity	1,194
Traditional hydropower	1,028
Natural gas electricity	1,004
Bioenergy/Combined heat and power	524
Low impact hydropower, marine, and hydrokinetics	200
Geothermal electricity	144
Oil and other fossil fuel electricity	91

# How do we get there? Future generation

## MISO's Generation Fleet Transition





# What we want to know?

- CAF Priority Action: *Complete a clean economy workforce and economic development plan. Assess high-growth sectors, potential job losses, and workforce and skill set needs, using an inclusive definition of clean jobs.*
  - CAF Goal Chapt:
    - Clean Transportation
    - Climate-smart Natural and Working Lands
    - Resilient Communities
    - Clean energy and efficient buildings
    - Healthy lives and communities
    - Clean Economy
- Workforce Analysis components:
  - Industry & occupation information (employment, wages, projections)
  - Regional and demographic breakdowns
  - Education/training pipeline to workforce (cost-benefits, barriers and equity)
  - GHG reduction policy and economic forecasting



# What we want to know?

- Outcomes from Workforce Analysis:
  - Demand- & supply-side policy recommendations ([most recent MN recommendations for sectors, MBVC 2023](#))
  - Examples of current approaches (strengths and weaknesses)
  - Sector specific reports
  - Data dashboard
- CAF Engagement: [Help us update Minnesota's Climate Action Framework | State of Minnesota, Environmental Quality Board](#)
- Other MN recipients of EPA climate action planning fund
  - Met Council, will lead workforce specific taskforce for Metro area
  - Shakopee Mdewakanton Sioux Community
  - Mille Lacs Band of Ojibwe
  - Midwest Tribal Energy Resources Association

# How do we support this transition?

- Funding
- Workforce development

# Federal IIA Investments



**\$1.2 Trillion**  
for Roads, Bridges, and General Infrastructure Projects

[Learn more about the IIA](#)



**\$1.3 Trillion+**  
for Clean Energy Transition and Climate Activities

[Learn more about the IRA](#)



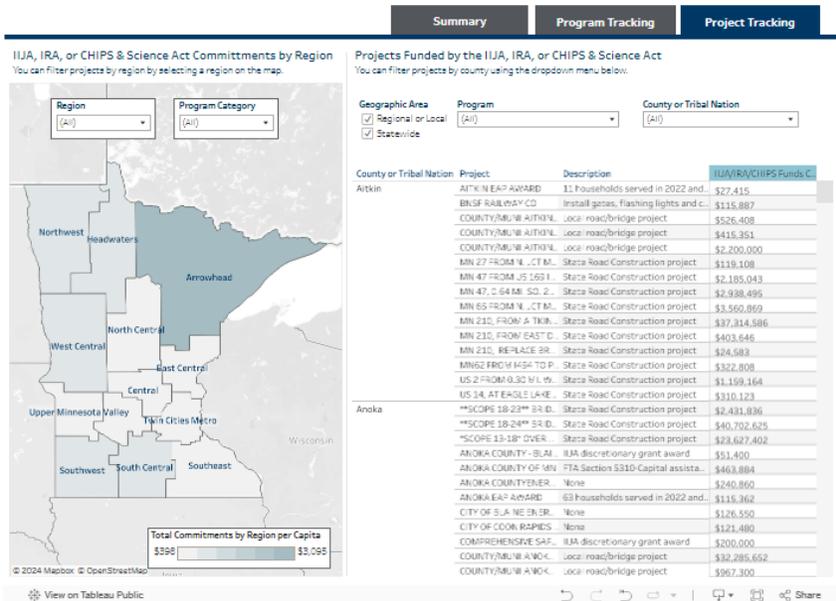
**\$280 Billion**  
for High Tech Manufacturing, Supply Chain, and Workforce Development

[Learn more about the CHIPS & Science Act](#)

Program Awards and Project Tracking for Minnesota  
Under the IIA, IRA and CHIPS & Science Act

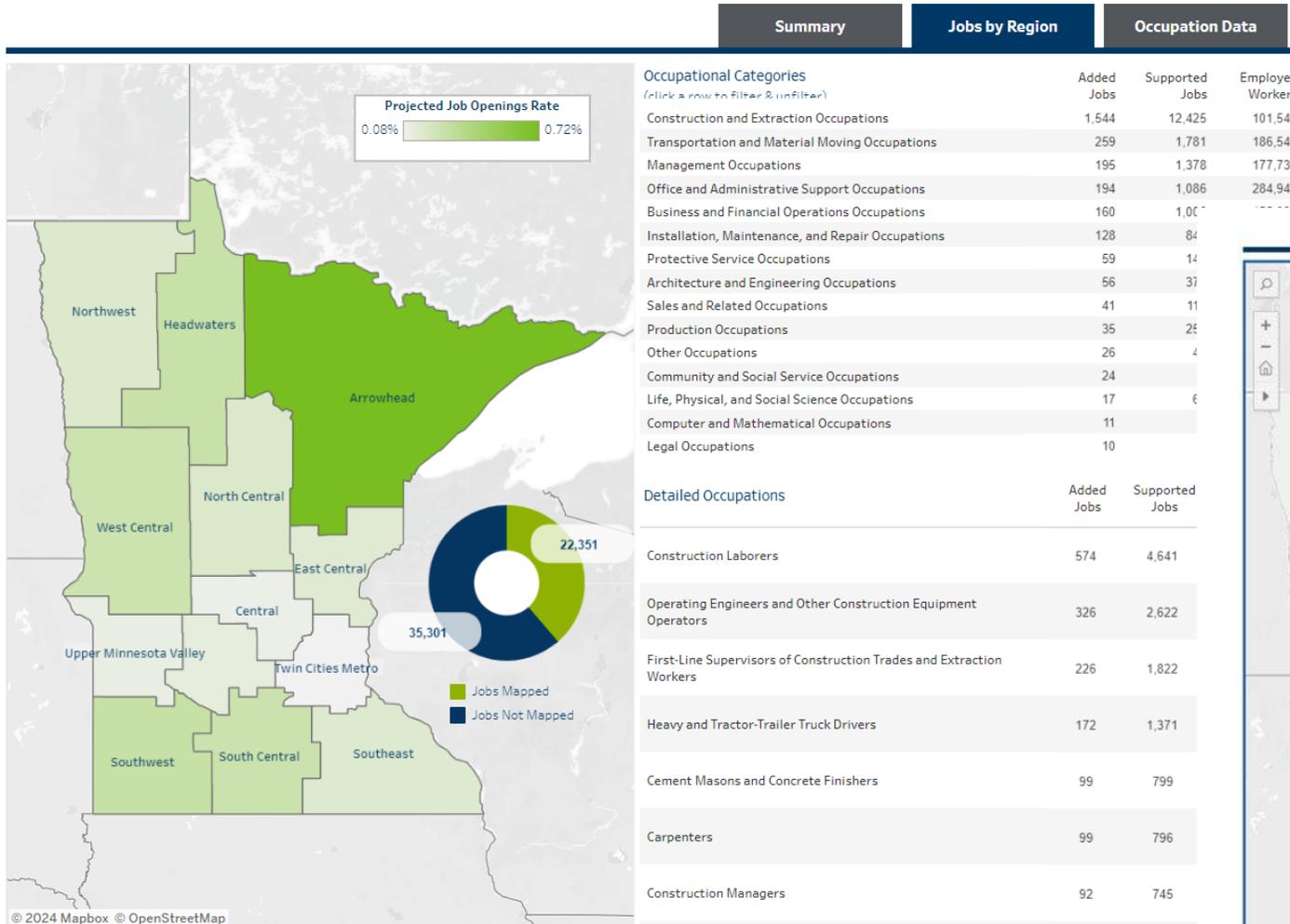
Please email [FederalInvestments.MMB@state.mn.us](mailto:FederalInvestments.MMB@state.mn.us) to request an accessible format of this data.

THIS VISUALIZATION IS NOT OPTIMIZED FOR MOBILE DEVICES. FOR BEST EXPERIENCES, PLEASE VIEW ON A LAPTOP OR DESKTOP.

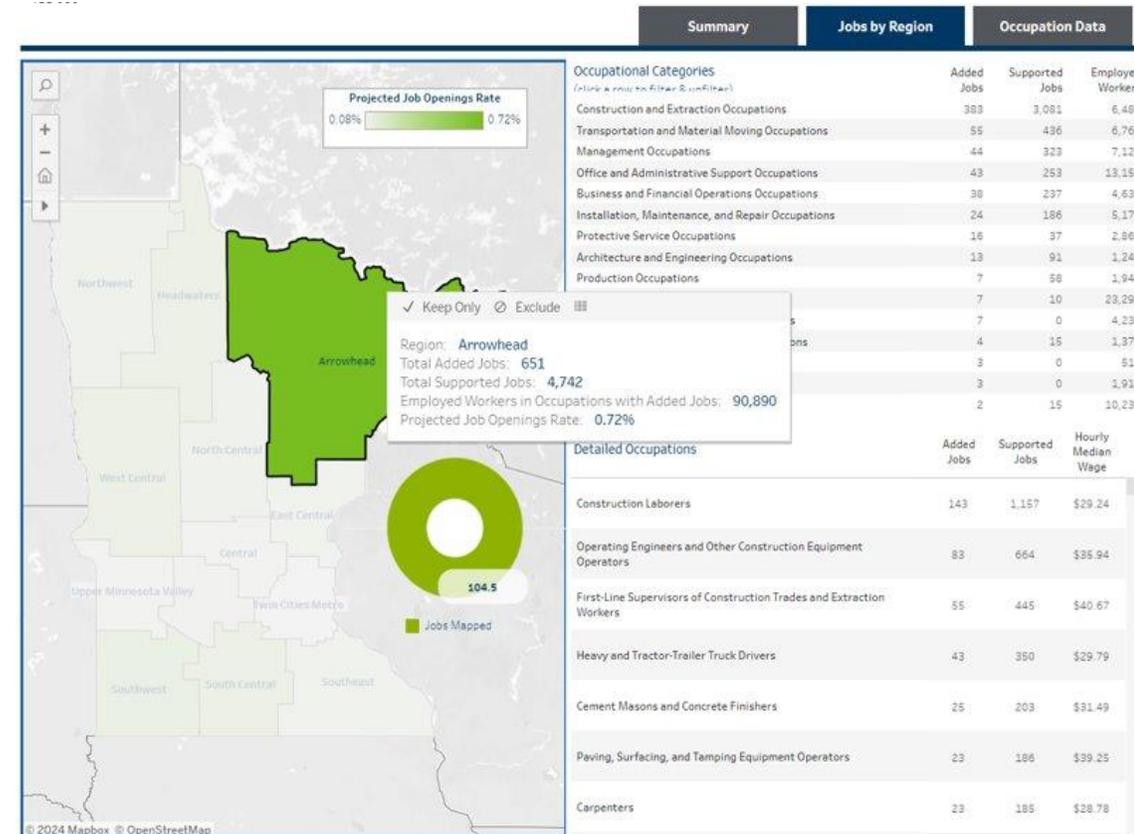


- As of May 2024, Minnesota has secured just shy of \$3 billion of IIA and IRA funding.
  - \$2.4 billion in clean energy, public transportation, electric vehicles and resilience funding
  - Remaining in pollution mitigation and environmental protection funding
- EPA just awarded MN \$200 million to cut climate pollution in food systems. Projects include:
  - Cleaner, more efficient refrigeration and transportation
  - Improved agricultural practices and carbon sequestration on working lands
  - Composting and food waste reduction

# Federal Funds Coordination: Jobs By Region Draft



Dashboard will show statewide forecasts and regionally specific forecasts as seen below



# Federal Funds Coordination: Draft Occupation Data

Summary

Jobs by Region

Occupation Data

Occupation Search:

Projected Difficulty to Fill Added Jobs

Education Required

Related Job Experience Required

Occupation Category

Occupation Data will demonstrate demand for all relevant occupations impacted by federal funding.

Occupation Title	Added + Supported Jobs	Median Wage Hourly	Education Required	Related Job Experience Required	Projected Difficulty to Fill
Construction Laborers	10,637	\$27.45	No formal educational credential	None	
Operating Engineers and Other Construction Equipment Operators	5,688	\$37.67	High school diploma or equivalent	None	
First-Line Supervisors of Construction Trades and Extraction Workers	4,426	\$45.78	High school diploma or equivalent	5 years or more	
Heavy and Tractor-Trailer Truck Drivers	2,644	\$29.89	Postsecondary nondegree award	None	
Carpenters	1,903	\$30.91	High school diploma or equivalent	None	
Construction Managers	1,859	\$51.40	Bachelor's degree	None	
Cement Masons and Concrete Finishers	1,494	\$31.94	No formal educational credential	None	
General and Operations Managers	1,350	\$46.78	Bachelor's degree	5 years or more	
Paving, Surfacing, and Tamping Equipment Operators	1,226	\$36.37	High school diploma or equivalent	None	



Occupation

[Find current job openings in this occupation](#)

# Construction Laborers

Perform tasks involving physical labor at construction sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris, and other waste materials. May assist other craft workers.

[View similar military careers](#)

Also known as

Bituminous Asphalt Technician, Construction Laborer, Construction Worker,

## Data By Region

Select a Region to get Demand, Wage and Cost of Living information for a specific region of Minnesota.

Statewide

Northwest

Northeast

Central

Metro

Southwest

Southeast



### Demand

Minnesota (Statewide)



10-Year Growth **8.3%**

10-Year Openings **32,980**

### Wages

Minnesota (Statewide)

People in this occupation in Minnesota tend to earn **\$22.75 to \$36.38 per hour**.

### Cost of Living

Minnesota (Statewide)

A typical family in Minnesota with two adults - working a combined 60 hours per week - with one child at home needs to earn **\$18.20** per hour per worker to meet their basic needs.

## Qualifications

### Certification Information

Some employers may require an occupational certification to work in this career.

- [Green Business Certification Inc.](#) - LEED Green Associate - Core
- [National Association of Home Builders](#) - Certified Graduate Associate -

### Education

The typical education required for this career in Minnesota is:

**Less than high school**

### Licensing Information

# Federal Funds Coordination: Next Steps

- Coming soon - Workforce Needs Dashboard!
- Regional convenings for infrastructure & climate workforce planning with regional partners
  - Will include Regional Labor Market Information Analysts, Local Workforce Boards, Union Partners, Education Partners, Employers, Community-Based Organizations, State Agency representatives
  - More in-depth analysis for regional workforce needs and planning to equitably and inclusively grow our infrastructure & climate workforce and support employers in providing high-quality employment

# State Funding



Nearly \$100 million in relevant grants available, including

**Clean Economy Equitable Workforce Development Grants**

\$600k matched by McKnight Foundation

**Transformative Career Pathway Grants**

**Youth Workforce Development Fund**

**Minnesota Forward Fund - \$290 Million**

Energy Transition Office: Support for **fossil fuel power plant community transitions** - \$5 million



Nearly \$5 million in grants available, including

**Clean Economy Apprenticeship Grants**

**Expanding Equity in Apprenticeship Grants**



**Minnesota Energy Alley - \$3 million**

Questions?  
Comments?

Email: [molly.ingram@state.mn.us](mailto:molly.ingram@state.mn.us)  
[katie.mcclelland@state.mn.us](mailto:katie.mcclelland@state.mn.us)