

BLOG *Published September 25, 2024 • 7 minute read*

Clean Energy Investment and Non-College Workers



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Takeaways

1. Nearly \$720 billion of clean energy investment has hit the ground across the country during the last 3.5 years.
2. Investment has gone to over 7,600 facilities across dozens of clean energy industries —solar, wind, EVs, batteries, heat pumps, and other cleantech sectors.
3. With over 80 million people in the labor force, workers without a college degree stand to benefit greatly from clean energy jobs with middle class salaries.
4. Over 40% of clean energy investments are in areas of the country that have above-average unemployment among non-college workers. In Michigan, that number jumps to nearly 50% of investments.

Investment is Accelerating Across the Country

Across the US, there is a trend of strong growth in clean energy investment. These investments are spurring growth in clean energy and the technologies needed to expand the industries of the future and, at the same time, reduce carbon emissions. The [Rhodium Group and MIT](#) recently created a new database to track clean energy investment. ¹ Investments are tracked by type—manufacturing, energy and industry deployment, as well as consumer purchases of durable clean energy goods like heat pumps and electric vehicles.

We have been analyzing these data and are very excited about what we are seeing across the country. We often read about an investment here and there, but there is a massive upward trend in investment in clean energy industries. This map shows all clean energy investments since 2021. Each circle represents an investment, along with a callout box showing the company and investment details.

Clean Energy Investment: Q1 2021 to Q2 2024

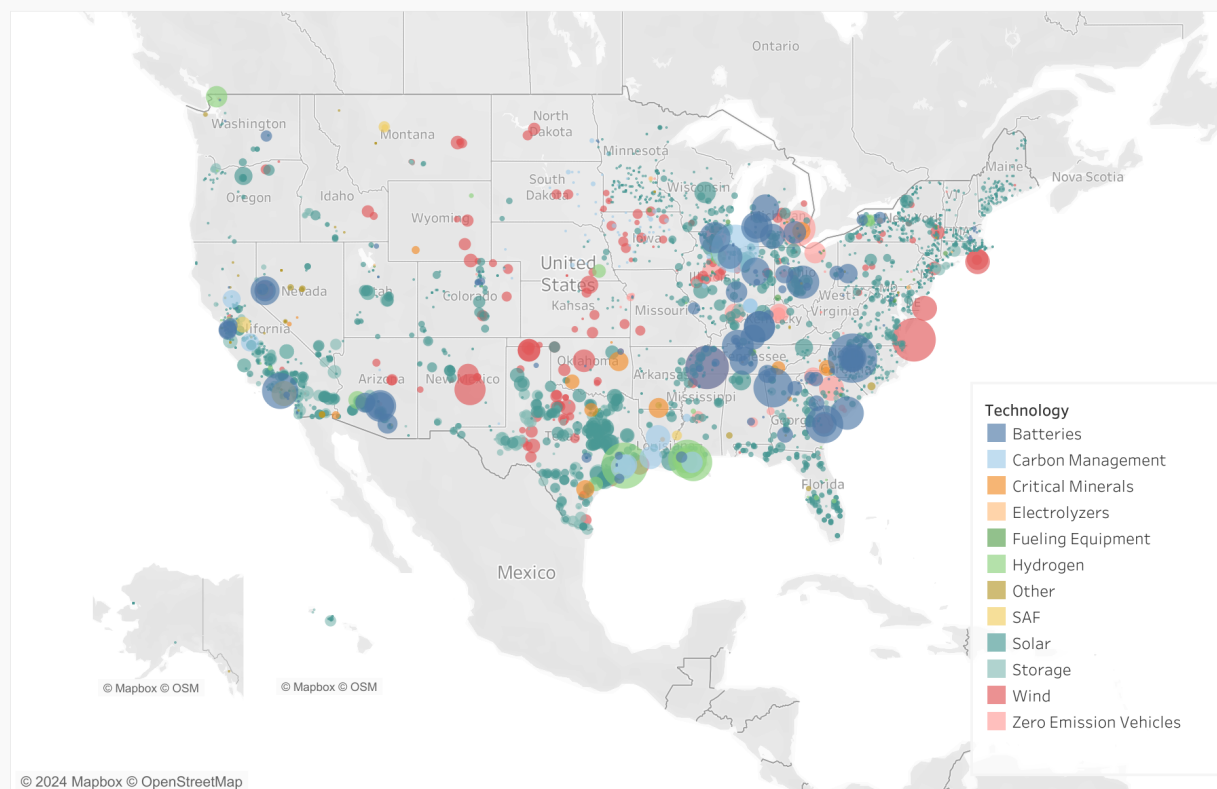
(The circle size represents the investment amount)

Segment
All

Technology
All

Year of Announcement
All

Status Description
All



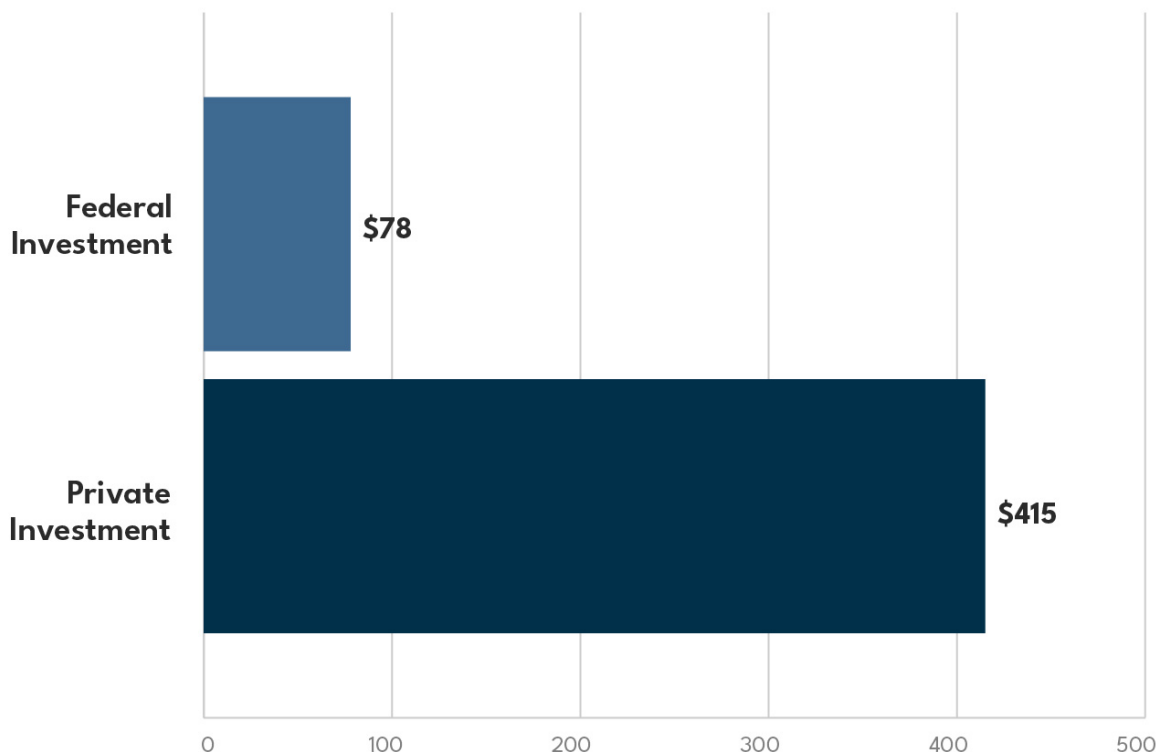
Note: If interested in obtaining data used in this map, you may submit a request for a facility-level bulk download directly from Rhodium Group at datarequest@cleaninvestmentmonitor.org.

Source: Rhodium Group, MIT Center for Energy and Environmental Policy Research. "Clean Investment Monitor," August 8, 2024. <https://cleaninvestmentmonitor.org/>. Accessed Sep 5, 2024.

Also encouraging is the fact that this surge in investment is being driven by the private sector. Since the private sector is nearly 90% of GDP, this “crowding in” of private investment increases the odds of sustainable, long-term growth resulting from these investments. Strong growth in private investment increases the pace of commercialization of these technologies. During the period since the Inflation Reduction Act was passed, federal investment in clean energy was \$78 billion. Private investment was \$415 billion.² This means that \$5-6 of private investment is being crowded in for every \$1 of federal investment—a huge win for everyone.

In 2019-2020, there was little if any hope that the US would be a manufacturing hub for battery cells. At the time, the US was expected to produce, at best, 300 GW of battery cells by 2030, enough to make 4 million electric vehicles. Fast forward to today: the investments that are being made will grow battery cell manufacturing to over 1 TW of capacity by the end of the decade, tripling previous estimates.³

IRA Impact: Private Investment of \$5-6 for every \$1 of Federal Investment (Billions)



Note: Data are inflation adjusted billions of 2023 dollars. Investment is cumulative from Q3 2022 to Q2 2024.

Source: Rhodium Group and MIT Center for Energy and Environmental Policy Research. "Clean Investment Monitor: Tallying the Two-Year Impact of the Inflation Reduction Act." August 7, 2024. <https://www.cleaninvestmentmonitor.org/reports/tallying-the-two-year-impact-of-the-inflation-reduction-act>. p. 17. Accessed 19 Aug 2024.

Focal Point: Non-College Workers

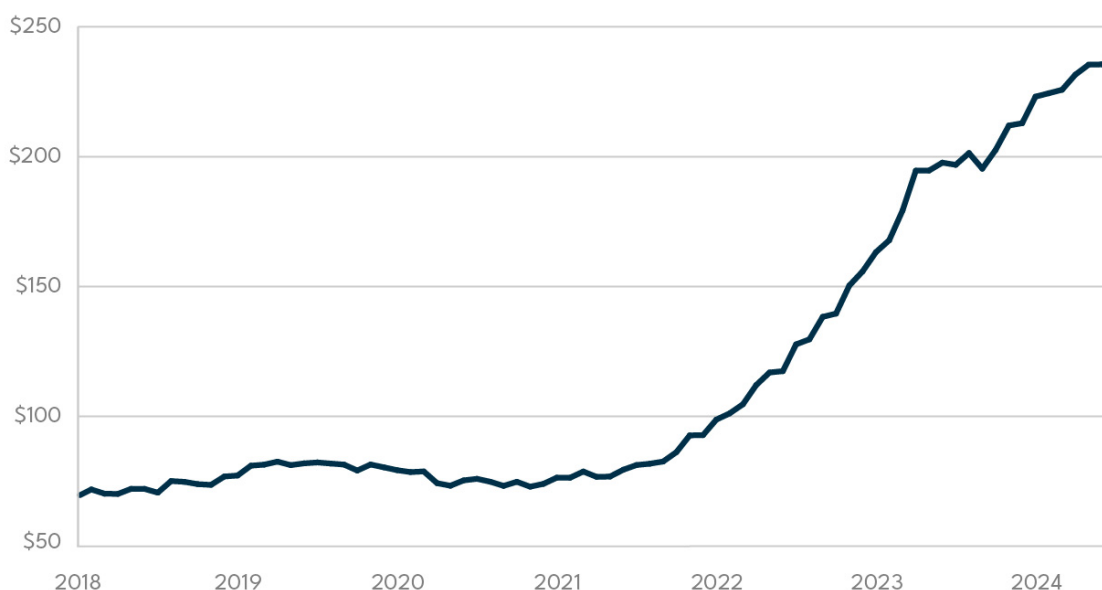
Third Way's Economic Program has made a strong case that to grow the middle class you need to think about helping workers without a 4-year degree. The median income of non-college households is \$61,000—less than half of the \$127,000 college-educated households take in. While typical household wealth for non-college Americans is roughly \$125,000, median wealth for college-educated households is triple that at \$450,000. Non-college households are four times more likely to be in the bottom 20% of earners. And three times as many non-college individuals are unemployed or out of the labor force. ⁴

When policy is strategic and provides incentives for strong investment over several years, it is much more likely to create good paying middle class jobs. Many non-college workers are regaining a presence in the middle class. This and other positive impacts are happening for the US economy, stemming from the Biden-Harris Administration policies that are benefiting non-college workers.

The surge in the construction of manufacturing facilities is a good example. As of July 2024, construction spending on manufacturing plants reached \$237 billion, the highest ever and up over 20% compared with a year ago. Building plants creates construction jobs for non-college workers—and it also sets the stage for the progression toward growth in manufacturing jobs once those plants are up and running.



Surge in Construction Spending on Manufacturing Plants



Note: These data are monthly billions of dollars at a seasonally adjusted annual rate.

Source: US Bureau of the Census. "Total Construction Spending: Manufacturing." September 3, 2024. <https://www.census.gov/construction/c30/c30index.html>. Accessed 3 Sep 2024.

One of the goals the Biden-Harris Administration had for clean energy investments spurred on by the recently passed legislation is to broaden out opportunities for those trying to climb up to the middle class, which particularly affects workers who do not have a college degree. To understand how much opportunity is actually being created, we overlapped county-level investment data with government data on non-college workers.

We wanted to know if, first and foremost, investments were being located in communities with lots of non-college workers. We know that, of course, these workers can move to different locations to seek out employment. However, growing opportunities where they live likely will bear more fruit than if they must pick up their roots and relocate for, say, a skilled trade job.

What we found is very encouraging. Across the entire country:

1. There are 82 million non-college workers in the labor force (25–64 age). Over 60% live in a county where there has been at least one clean energy investment—with the average investment amount over \$460 million.
2. Over 40% of total clean energy investment since 2021 has gone to counties with above average non-college unemployment.
3. Since 2021, counties with above average non-college unemployment rates received a total of \$220 billion.

A Closer Look at Michigan

In order to get a fuller picture of the employment opportunities that these clean energy investments create for non-college workers, we zoomed in on Michigan. Here are the topline:

- A total of \$20 billion in clean energy investment went to Michigan during the first 3.5 years of the Biden-Harris Administration, over triple the pace of the 2018–2020 period.
- Nearly half (49%) of this investment went to communities where non-college unemployment rates are higher than average.
- Of the \$20 billion invested in clean energy in Michigan, \$13 billion went to clean energy manufacturing, with a sizable portion of that going specifically to battery manufacturing.
- Roughly \$6 billion of battery manufacturing investment has been made in Michigan counties facing above-average rates of non-college unemployment.

What kinds of opportunities will battery cell manufacturing investments offer non-college Michiganders?

With nearly one-third of Michigan's clean energy investment going into the soon-to-be iconic battery industry, these new manufacturing plants are poised to give non-college workers a great career. Michigan battery manufacturing jobs grew 60% from 2020 to 2023. As the US continues its transition toward EVs, the job growth and wage gains for Michigan non-college workers will be substantial and abundant.

Based on Bureau of Labor Statistics and Census data for Michigan battery cell manufacturing, we found the following statistics that give us optimism based on the growth in investment now taking place.

Skill requirements for battery cell manufacturing fit non-college workers like a glove: ⁵

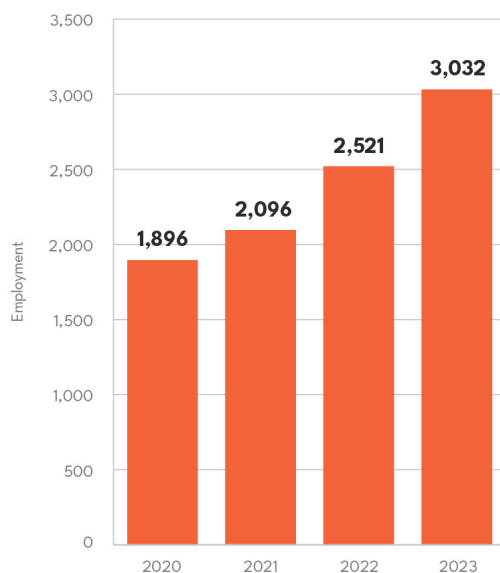
- 23% of these jobs have no education requirement.
- Two-thirds require a GED.
- 90% of these jobs require a GED or less.
- 98% of these jobs do not require any certifications/credentials to be hired.
- Average hire has one year of work experience.
- 50% of battery manufacturing jobs do not require previous work experience.

Wages for battery cell manufacturing are high and growing: ⁶

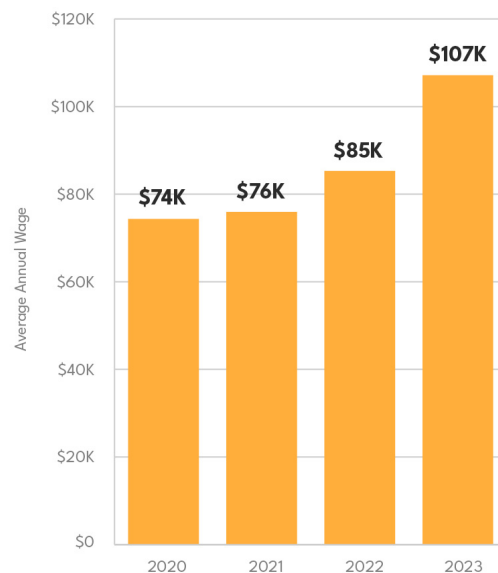
- US battery manufacturing wages reached \$84,000 in 2023.
- US wages overall grew nearly 7% in 2023.
- From 2020 to 2023, battery manufacturing wages in Michigan grew a staggering 44% to \$107,000.

THIRD WAY

**Michigan Battery Manufacturing
Jobs Have Grown 60% Since 2020**



**Michigan Battery Manufacturing Wages
Have Grown Over 40% Since 2020**



Source: "Private, NAICS 33591 Battery Manufacturing, Michigan." Quarterly Census of Employment and Wages, Bureau of Labor Statistics, https://data.bls.gov/ce-w/apps/table_maker/v4/table_maker.htm#type=18&from=2022&to=2023&qtr=1&own=5&ind=33591&area=26000&supp=1. Accessed 21 Aug. 2024.

Conclusion

It takes thoughtful industrial strategy to create the conditions for middle class prosperity. Recent landmark legislation appears to be creating those conditions by unleashing private sector investment in clean energy industries that generate opportunities for non-college workers in the very communities where those people live.

The strategy being executed by the Biden-Harris Administration has launched a huge wave of clean energy investment—with enormous payoffs for the economy and especially non-college workers. And it's just getting started. More jobs with higher wages will be paying dividends for generations to come.

ENDNOTES

1. The Clean Investment Monitor Database created by Rhodium Group and the MIT Center for Energy and Environmental Research covers investments in all technologies which are eligible for tax incentives under the Inflation Reduction Act. The data includes all investments in these technologies since 2018, totaling about 20,000 facilities as well as millions of retail sales of EVs and heat pumps. All investments are placed into one of three categories: manufacturing, energy and industry, and retail.
2. Rhodium Group and MIT Center for Energy and Environmental Policy Research. “Clean Investment Monitor.” <https://www.cleaninvestmentmonitor.org/>. Accessed 20 Sept 2024.
3. Co-author calculations based on research at the University of Michigan Energy Institute and Third Way.
4. See Third Way’s publications on non-college America here: [Third Way](#). “Fast Facts on America’s Non-College Economy.”
5. Bureau of Labor Statistics. “Occupational Requirements Survey.” <https://data.bls.gov/dataViewer/view/timeseries/ORUV1000030T00000076>. Accessed 20 Sept 2024.
6. Quarterly Census of Employment and Wages. “Private, NAICS 33591 Battery Manufacturing, Michigan.” Bureau of Labor Statistics. August 2024. https://data.bls.gov/cew/apps/table_maker/v4/table_maker.htm#type=18&from=2022&to=2023&qtr=1&own=5&ind=33591&area=26000&supp=1. Accessed 20 Aug 2024.