Illinois Commerce Commission (ICC) Decarbonization Pathways Study - Workforce Analysis

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Illinois' Natural Gas Workforce Profile

This appendix was developed as part of the Illinois Commerce Commission's Decarbonization Pathways Study to assess the implications of the modeled scenarios on Illinois' natural gas workforce. This memo entails the Study's more in-depth evaluation of net workforce impact and skills transferability of current natural gas workers. It establishes a baseline profile of workers in the state's natural gas industries, estimates the potential scale of employment changes in the natural gas sector and in the electric power generation sector under each scenario, and examines the factors that may shape workers' ability to transition into growing industries and occupations.

There are seven industries that capture much of Illinois' current natural-gas-related workforce. Employment is concentrated in three of those industries: Natural Gas Distribution, with nearly 4,300 workers; Oil and Gas Pipeline and Related Structures Construction, with approximately 2,800 workers; and Fossil Fuel Electric Power Generation, with approximately 2,200 workers. Four smaller industries capture additional segments of the workforce: Natural Gas Extraction, Support Activities for Oil and Gas Operations, Drilling Oil and Gas Wells, and Oil and Gas Field Machinery and Equipment Manufacturing (Figure 1). Total employment across these seven industries is 10,561, which is about equivalent to the number of people who work at Libraries and Archives throughout the state. However, additional jobs supporting natural gas activities exist elsewhere in Illinois' economy, including in finance, real estate, legal services, and construction support activities.

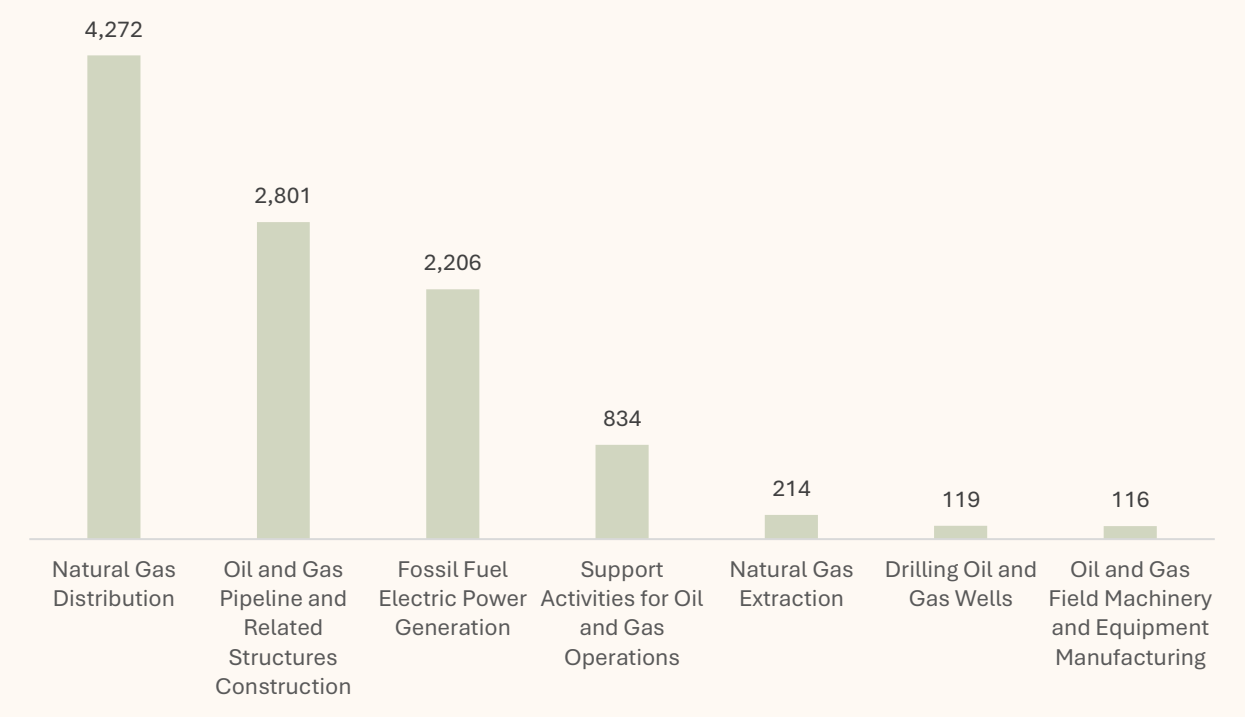
Complementing this industry-level analysis, the 2026 U.S. Energy and Employment Report (USEER) identifies 1,870 workers in Illinois' natural gas fuels subsector and 4,273 workers in the state's natural gas electric power generation subsector.[1,2]

Of the seven industries included in this analysis, only Natural Gas Distribution and Natural Gas Extraction encompass exclusively natural gas activities. The remaining five industries also include activities associated with oil and other fossil fuels. Because many key natural gas workers are employed across all seven industries, they collectively provide a useful proxy for the state's broader natural-gas-related workforce.

[1] *2026 United States Energy & Employment Report*. U.S. Department of Energy, 2026. https://www.energy.gov/documents/2026-useer-national-report

[2] These figures are different from NAICS-level employment estimates in two regards. First, the above USEER estimates exclude natural gas transmission and distribution jobs, which the report does not separately identify at the state level. Second, USEER surveys a range of NAICS industries to identify energy participation outside of 100% energy-related NAICS codes. This makes the USEER definition more comprehensive in capturing the full scope of workers involved in energy.

Figure 1. Employment in Illinois' Key Natural Gas Industries, 2026Q1 [3]



Construction Laborers are the most common occupation in Illinois' key natural gas industries, with almost 1,000 workers, followed by Operating Engineers (approximately 500 workers) and First-Line Supervisors of Construction Trades and Extraction Workers (440 workers) (Table 1). The average wage for the 10 most-common occupations in the natural gas industry is higher than the economy-wide average for those occupations, ranging from a 1% premium for Construction Laborers and Power Plant Operators to a 39% premium for Customer Service Representatives. Additionally, the average wage among workers in the state's natural gas industries is 46% higher than the statewide average wage across all occupations. Replicating the relatively high-quality jobs the natural gas industry supports will require a suite of deliberate, targeted policies.

[3] Employment data as of 2026Q1, JobsEQ.

Table 1. Top 10 Occupations in IL's Key Natural Gas Industries[4]

SOC	Occupation	Employment in NG industries	Average Annual Wage in NG Industries	Wage Premium
47-2061	Construction Laborers	964	$70,400	1%
47-2073	Operating Engineers and Other Construction Equipment Operators	505	$98,400	5%
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	440	$113,100	7%
51-8013	Power Plant Operators	415	$114,300	1%
11-1021	General and Operations Managers	344	$178,700	29%
47-2152	Plumbers, Pipefitters, and Steamfitters	342	$111,600	17%
43-4051	Customer Service Representatives	333	$69,300	39%
11-9021	Construction Managers	311	$127,000	7%
51-8092	Gas Plant Operators	294	$100,300	4%
49-9051	Electrical Power-Line Installers and Repairers	247	$124,600	12%
00-0000	**All Occupations**	**11,135**	**$114,158**	**46%**

In Illinois' Natural Gas Extraction and Natural Gas Distribution industries—the only two composed entirely of natural gas workers—the three most common occupations are Gas Plant Operators (281 workers), Customer Service Representatives (280 workers), and Plumbers, Pipefitters, and Steamfitters (196 workers) (Table 2). These three occupations, along with General and Operations Managers, also rank among the ten most common occupations under the broader seven-industry

[4] Employment and wage data as of 2026Q1, JobsEQ.

measure of Illinois natural gas workforce. Each of these occupations has a higher average wage in the two natural-gas-exclusive industries than across the seven-industry group.

Table 2. Top 10 Occupations in IL's Natural Gas-Exclusive Industries[5]

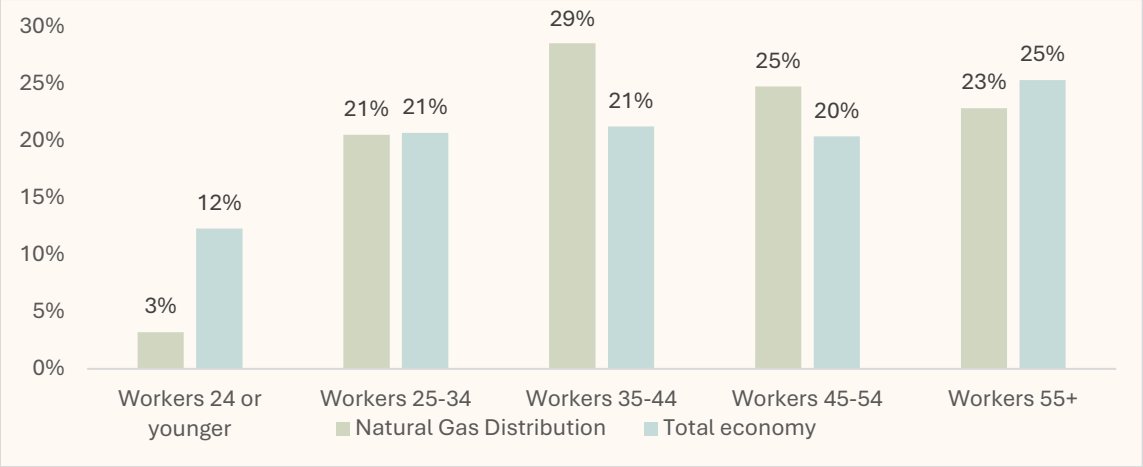
SOC	Occupation	Employment in NG-Exclusive industries	Average Annual Wage in NG- Exclusive Industries	Wage Premium
51-8092	Gas Plant Operators	281	$100,600	5%
43-4051	Customer Service Representatives	280	$72,900	46%
47-2152	Plumbers, Pipefitters, and Steamfitters	196	$120,500	26%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	163	$84,000	1%
11-1021	General and Operations Managers	133	$182,900	32%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	115	$127,900	39%
49-9041	Industrial Machinery Mechanics	106	$107,200	35%
13-1111	Management Analysts	101	$124,100	7%
13-1082	Project Management Specialists	99	$137,400	21%
51-1011	First-Line Supervisors of Production and Operating Workers	97	$133,700	70%
00-0000	**All Occupations**	**4,468**	**$112,585**	**44%**

[5] Employment and wage data as of 2026Q1, JobsEQ.

Natural Gas Distribution accounts for the largest share of Illinois' natural gas workforce and serves as the best available proxy for the sector's age profile, though its demographics should be interpreted directionally rather than as representative of every natural gas industry. Roughly 48% of workers are age 45 or older, compared to 45% across the economy as a whole, suggesting that a portion of the projected workforce reductions may be absorbed through retirements and normal attrition, easing transition pressure (Figure 2).

Nearly all remaining workers, roughly half of the workforce, are between the ages of 25 and 44. As a result, if the industry contracts at a pace faster than retirements, a greater share of displaced workers may be mid-career professionals at or approaching peak earnings, with decades of remaining working life.

Figure 2. Age Demographics of the Illinois Natural Gas Distribution Workforce and the Overall State Economy[6]



Each of Illinois key natural gas industries has a location quotient-- a ratio that represents the relative concentration of an industry--below one, suggesting that there is a lower concentration of natural gas employment in Illinois than the nation overall.[7] As a result, a transition away from natural gas may cause relatively less economic disruption in Illinois than in more gas-dependent states. Upstream production is especially limited: Illinois accounts for less than 0.1% of U.S. gas output,[8] and its extraction workforce includes just 214 workers (Figure 1), with a location quotient of 0.15. Much of the state's natural gas workforce is instead tied to distribution, spread throughout Illinois

[6] Age and demographic data as of 2026Q1, JobsEQ.

[7] LQ data as of 2026Q1, JobsEQ. Location Quotient measures how concentrated an industry is in a region compared to the United States as a whole

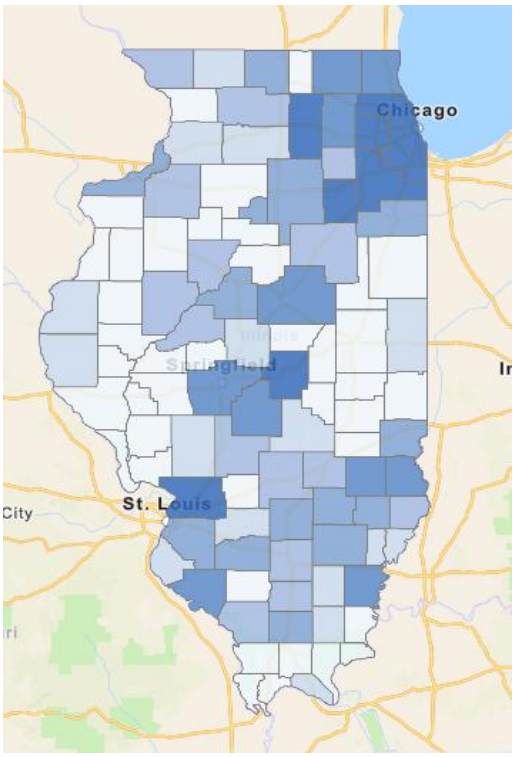
[8] U.S. Energy Information Administration. *Natural Gas Gross Withdrawals and Production*. U.S. Department of Energy, released August 31, 2026. https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGM_mmcf_a.htm

but concentrated around major urban areas (Figure 3). Proximity to diverse urban economies may ease the transition for distribution workers by providing access to a broader range of employment opportunities and retraining resources. Workers involved in distribution of natural gas and resulting heat are also best positioned to support the buildout of distribution systems for some cleaner technologies discussed in the transition scenarios, including geothermal, renewable natural gas, and hydrogen.

The statewide employment landscape, however, masks important differences within the workforce. Although extraction and plant operations workers make up a small share of the state's natural gas workforce, their jobs are tied to individual facilities, often in rural areas with limited access to alternative or emerging employment opportunities. A 2023 nationwide worker-transition model found that even with a perfect skills match, only about 5.5% of fossil fuel extraction workers would move into green occupations, largely because these workers are not located near current or projected renewable energy job growth.[9] Therefore, even if the transition creates more jobs than it eliminates statewide, some displaced workers may lack realistic pathways to those new opportunities.

[9] Lim, Junghyun, Michaël Aklin, and Morgan R. Frank. *Location Is a Major Barrier for Transferring US Fossil Fuel Employment to Green Jobs*. Nature Communications, 14: 5711, September 26, 2023. https://www.nature.com/articles/s41467-023-41133-9.pdf

Figure 3. Geographic Spread of the Illinois Natural Gas Distribution Workforce[10]



Quantifying the Workforce Transition

Potential Employment Changes Under the Pathways Study Scenarios

All five Pathways Studies scenarios are expected to produce net job growth, although the scale, quality of jobs, and sources of that growth differ. In the High Electrification, High Geothermal, and Hybrid Electrification scenarios, employment gains are likely driven primarily by building decarbonization, weatherization, and biomethane, with geothermal contributing additional employment in the High Electrification and High Geothermal scenarios (Table 3).

Building decarbonization generates substantial employment growth, but many of these positions are not directly transferable for workers currently employed in the natural gas industry. Key occupations include Electricians, HVAC Mechanics and Installers, and Insulation Workers, which generally require a different set of skills than workers involved in natural gas.

Although building decarbonization accounts for much of the anticipated job growth in these scenarios, geothermal may offer a more direct transition pathway for existing gas workers, and these employment transition opportunities would be particularly abundant in the High Geothermal scenario. Gas distribution utility workers already have experience building, operating, and

[10] Geographic data as of 2026Q1, JobsEQ

maintaining underground network infrastructure. The Home Energy Efficiency Team (HEET), a nonprofit that initiated and partnered on the first utility-owned Thermal Energy Network (TEN), assessed training requirements for workers transitioning to geothermal community heating systems and found that workers performing comparable duties may require relatively limited additional training, ranging from less than one week to approximately two months.[11]

In the Hybrid Gas and Continued Gas Use scenarios, employment growth is more concentrated in biomethane and hydrogen, which may provide relatively more direct skill-transfer opportunities for existing natural gas workers than building decarbonization. Once biomethane is upgraded to pipeline quality, it is largely interchangeable with conventional natural gas, allowing much of the existing gas utility infrastructure and associated workforce capabilities to switch fuels relatively easily. Hydrogen development similarly requires many infrastructure-related activities already performed within the oil and gas industry. Workers involved in pipeline construction and related infrastructure may be able to apply existing skills in pipeline construction, equipment installation, welding, excavation and trenching, valve and compression-system installation, inspection, and maintenance.

Table 3. Relative Job Impacts by Scenario

Scenario	Relative Job Creation	Skills Transferability	Primary Technology Pathways
High Electrification	● High	○ Low	Building Electrification; Biomethane; Geothermal
High Geothermal	● High	◐ Moderate	Building Electrification; Biomethane; Geothermal
Hybrid Electrification	● High	○ Low	Building Electrification; Biomethane
Hybrid Gas	○ Low	● High	Biomethane; Hydrogen
Continued Gas Use	○ Low	● High	Biomethane; Hydrogen

To estimate the potential magnitude of employment impacts associated with decarbonization, the research team reviewed quantitative modeling studies of energy transition scenarios across the United States. Five studies included scenarios sufficiently similar to those modeled in this study to provide useful benchmarks. Because none aligned exactly with the scenarios, sectors, geographies,

[11] Workforce Transition," *HEET,* https://www.heet.org/workforce-transition.

and assumptions used here, their employment estimates were adjusted where appropriate to improve comparability.[12] The resulting estimates should therefore be interpreted as indicators of the potential order of magnitude of job impacts rather than as direct projections.

Across the benchmark studies, scenarios most comparable to this study's High Electrification scenario produced net employment gains ranging from approximately 6% to 74% in the electricity sector[13] and 14% to 100% in the buildings sector (Table 4). Of the five studies, Commonwealth Edison's (ComEd) 2022 Jobs & Equitable Energy Transition Study provides the strongest comparison because it examines Illinois and includes a moderate electrification scenario with several assumptions similar to this study's High Electrification scenario, including natural gas demand for electricity generation and comparable changes in residential and commercial heating demand.[14] Using the ComEd results as a benchmark suggests that this study's High Electrification scenario could correspond to approximately 60,000 to 70,000 net jobs in the buildings sector and 50,000 to 60,000 net jobs in the electricity sector by 2050 relative to 2021 employment levels.[15]

[12] Employment growth rates were proportionally rescaled based on differences in key scenario drivers, including natural gas demand, electricity demand, and peak load, with multiple measures used where appropriate to develop an adjustment range.

[13] The electricity sector includes renewable and traditional Electric Power Generation; Transmission, Distribution, and Storage (TDS); and Grid Modernization.

[14] *Commonwealth Edison,* "Jobs & Equitable Energy Transition Study." December 2022. https://www.comed.com/news/news-releases/2023-01-12.

[15] These are point-in-time employment comparisons. They represent how many more people would be working in each sector in 2050 than in 2021, given the investment modeled for that year. They are not cumulative job-years, and they do not imply that any individual position persists across the study period. These estimates also include induced jobs, which are non-energy related jobs that are created from additional economic activity. For example, a diner may have to hire an additional waiter to support the additional customers that come in from an energy project construction site nearby. The additional waiter is an example of an induced employment impact.

Table 4. High Electrification Scenario Comparison

Study	Electricity Sector Growth: Adjusted Range for High Electrification Scenario	Buildings Sector Growth: Adjusted Range for High Electrification Scenario	Comparability
ComEd Jobs & Equitable Energy Transition Study	55%–65%	50%–65%	Most comparable
Massachusetts Clean Energy and Climate Plan[16]	6%–8%	14%–20%	Somewhat similar
California Building Decarbonization Study[17]	NA	29%–39%	Somewhat similar
New Jersey Energy Master Plan[18]	60%–74%	75%–100%	Somewhat similar
Rhode Island Climate Action Strategy[19]	21%–30%	70%–90%	Somewhat similar

The Continued Gas Use scenario, which represents the low end of job growth among all of the Pathways Study scenarios, has weaker matches across the benchmark studies, making its potential employment impacts more uncertain. Across the comparison scenarios, estimated net gains range from approximately 2% to 55% in the electricity sector and 7% to 80% in the buildings sector (Table 5). Using the ComEd report as a central benchmark, the Continued Gas Use scenario could correspond to approximately 40,000 to 50,000 net buildings-sector jobs and 30,000 to 40,000 net electricity-sector jobs relative to 2021 levels by 2050. This comparison is less direct, however. ComEd's moderate electrification scenario assumes substantially greater building electrification and

[16] "Massachusetts Clean Energy and Climate Plan for 2025 and 2030," *Commonwealth of Massachusetts,* June 30, 2022, https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2025-and-2030#clean-energy-and-climate-plan-for-2025-and-2030.

[17] Betony Jones et al., "California Building Decarbonization: Workforce Needs and Recommendations," *UCLA Luskin Center for Innovation (LCI),* November 2019, https://innovation.luskin.ucla.edu/wp-content/uploads/2019/11/California_Building_Decarbonization.pdf.

[18] "New Jersey Energy Master Plan 2024," *The State of New Jersey,* 2024, https://www.nj.gov/emp/.

[19] "Rhode Island 2025 Climate Action Strategy," *RI Executive Climate Change Coordinating Council,* December 2025, https://climatechange.ri.gov/act-climate/2025-climate-update.

reductions in natural gas demand than this study's Continued Gas Use scenario. Its primary value as a benchmark is therefore its shared Illinois geography and its indication of the general scale of potential employment effects, rather than close alignment with the scenario itself.

Table 5. Continued Gas Use Scenario Comparison

Study	Electricity Sector Growth: Adjusted Range for Continued Gas Use Scenario	Buildings Sector Growth: Adjusted Range for Continued Gas Use Scenario	Comparability
ComEd Jobs & Equitable Energy Transition Study	37%–48%	29%–42%	Low to moderate
Massachusetts Clean Energy and Climate Plan	2%–4%	7%–10%	Low to moderate
New Jersey Energy Master Plan	45%–55%	65%–80%	Low to moderate
Rhode Island Climate Action Strategy	6%–13%	39%–56%	Low to moderate

Importantly, net employment growth does not mean that all existing jobs will be retained. Job losses and worker displacement are still expected within specific industries. As an illustration of where displacement could occur, the ComEd *Jobs & Equitable Energy Transition Study* modeled 11,374 electricity-sector jobs, about 12% of 2021 employment, as displaced under its moderate electrification scenario.[20] More than half of the modeled losses (62%) occur in natural gas generation, with the remainder in other fossil generation. Losses are less pronounced in the buildings sector; ComEd models short-term declines in the commercial buildings workforce through 2045, followed by substantial growth, resulting in overall net gains by 2050.

The Scale and Shape of the Transition Under CEJA

The findings presented in this section draw on previous analysis by the state that investigate the workforce and economic impacts associated with Illinois' Climate and Equitable Jobs Act (CEJA). These projections consider many of the same structural changes as the Pathways Study scenarios. However, the policy assumptions, technologies, timelines, and associated workforce impacts differ

[20] These losses are ComEd study results and have not been adjusted or translated to the scenarios modeled in this study.

between the two. The CEJA findings therefore provide useful context for assessing the potential scale of the natural gas transition but should not be interpreted as direct estimates of the employment or economic effects of the Pathways Study scenarios.

The Climate and Equitable Jobs Act (CEJA), signed into law in September 2021, is Illinois' primary clean-energy policy, committing the state to 100% carbon-free electricity by 2045. To support this transition, the Department of Commerce and Economic Opportunity (DCEO) oversees roughly $180 million annually in CEJA workforce and community programs.[21] Among these, the Clean Jobs Workforce Network Program is the main retraining channel and funds 13 community-based hubs across the state that provide training and wraparound support for clean-energy professionals, with displaced energy workers identified as a priority population.[22]

Available modeling suggests that statewide employment gains in renewable energy could more than offset losses from the phaseout of fossil-fuel generation. A 2023 analysis prepared for the Illinois Energy Transition Workforce Commission by the University of Illinois Springfield projected a loss of roughly 4,887 jobs at coal plants, natural gas plants, and coal mines, alongside the addition of 7,200 to 21,000 renewable generation jobs by 2045. Depending on assumptions regarding renewable energy labor intensity, the analysis estimated a net gain[23] of 2,300 to 16,000 electric power generation jobs by 2045.[24]

These are ongoing full-time-equivalent positions in electric generation industries — the change in the number of people employed operating generating capacity in 2045 relative to today — and exclude temporary construction employment, supply chain effects, and induced employment, which the authors deferred to a later phase.

Natural gas accounts for a relatively small share of these projected job losses: roughly 537 jobs at gas-fired power plants between 2021 and 2045, compared with about 1,850 at coal plants. The natural gas plant losses are concentrated in a small number of counties, with the top five largest reductions projected in Will County (160 jobs), followed by Lee (41), Kendall (39), Shelby (37), and

[21] Illinois Department of Commerce and Economic Opportunity. "Gov. Pritzker Announces $38 Million for CEJA Workforce Hubs." July 21, 2023. https://dceo.illinois.gov/news/press-release.26742.html

[22] Kibbey, J.C. *State of Illinois Priority Climate Action Plan*. Illinois Environmental Protection Agency, March 1, 2024. https://www.epa.gov/system/files/documents/2024-03/illinois-priority-climate-action-plan.pdf

[23] Net jobs here refers to ongoing full-time-equivalent positions in electric generation industries, estimated from workers-per-megawatt ratios applied to operating capacity. The figures exclude temporary construction, supply chain, and induced employment, and are not cumulative job-years.

[24] Kriz, Kenneth A. *Climate and Equitable Jobs Act Economic and Environmental Impact Report: Phase I Report*. Energy Transition Workforce Commission, Illinois Department of Commerce and Economic Opportunity, February 2023. https://dceo.illinois.gov/content/dam/soi/en/web/dceo/events/energy-transition-workforce-commission/etwc_phaseireport.pdf

DuPage (34).[25] While modest relative to statewide employment, these losses are significant in communities where a power plant serves as a major source of local employment and economic activity. Communities hosting fossil-fuel plants are estimated to lose $28.1 million annually in countywide property-tax revenue, of which $13.7 million would be absorbed directly by school districts. The offsetting benefits are more broadly distributed.[26] Research on Illinois fossil-fuel plant retirements estimates approximately $27.6 billion in annual benefits from reduced greenhouse gas emissions and improved public health.[27] The pattern across both employment and fiscal effects is the same — statewide gains, concentrated local costs — and it is what makes geographically targeted transition planning necessary.

[25] Ibid.

[26] Funderburg, Richard. *The Disparate Local Impacts of Closing Fossil-Fuel Power Plants*. University of Illinois Springfield, 2024. https://www.uis.edu/sites/default/files/inline-images/04-Disparate%20Local%20Impacts%20of%20Closing%20Fossil%20Fuel%20Power%20Plants.pdf

[27] Ibid.

Worker Level Impacts

Factors Shaping Natural Gas Workforce Transitions

Opportunities in Emerging Industries

With sufficient policy and investment in economic development and worker retraining, decarbonization could create opportunities for workforce growth rather than contraction. A 2022 Deloitte analysis, produced with the American Gas Association, the American Public Gas Association, and the Center for Energy Workforce Development, argues that emissions-reduction policies are unlikely to eliminate any natural gas workforce segment entirely. Instead, workers may move into adjacent roles in three emerging industries: renewable natural gas (RNG), hydrogen, and geothermal, drawing on their existing skills and experience. Four core occupational groups—pipeline workers, plant operators, engineers, and technicians—account for roughly 40% of the natural gas workforce and align closely with these industries' needs. All three employ mechanical and electrical engineers, while geothermal and RNG also rely on pipefitters, mechanics, and welders.[28] Geothermal offers an example of how these shared skills can ease the transition: experienced natural gas workers in certain roles may require little or no additional training, while new entrants typically need more extensive preparation (Table 6).

Alongside these potential retraining advantages, anticipated growth in emerging industries could expand employment options for transitioning workers. For example, the Illinois Hydrogen Economy Task Force's 2024 Annual Report projects 3,200 to 4,000 new hydrogen jobs in Illinois by 2030 and a total hydrogen workforce of 24,000 by 2050.[29] Gas utility workers are particularly well positioned to fill many of these roles, as the hydrogen sector requires nearly half of the 512 distinct skills found across their existing workforce.[30]

[28] *The Natural Gas Utility Workforce in a Decarbonizing World*. Deloitte Research Center for Energy & Industrials, 2022. https://www.deloitte.com/content/dam/assets-zone3/us/en/docs/industries/energy-resources-industrials/2025/us-the-natural-gas-utility-workforce-in-a-decarbonizing-world.pdf

[29] *Hydrogen Economy Task Force 2024 Report*. Illinois Department of Commerce & Economic Opportunity, 2024. https://www.ilga.gov/documents/reports/ReportsSubmitted/5748RSGAEmail12466RSGAAttach24%20HETF%20Annual%20Report%20Final.pdf

[30] Keefe, Thomas L., Kate Hardin, and Carolyn Amon. *The Natural Gas Utility Workforce in a Decarbonizing World*. Deloitte Research Center for Energy & Industrials, 2025. https://www.deloitte.com/content/dam/assets-zone3/us/en/docs/industries/energy-resources-industrials/2025/us-the-natural-gas-utility-workforce-in-a-decarbonizing-world.pdf

Table 6. Training Requirements for Key Geothermal Roles[31]

Occupation	Training for existing gas workers	Training for a new worker	IL LQ[32]
Drillers	Not Applicable	2 years, with pre-apprenticeship (2 weeks) and apprenticeship (1-2 yrs) programs	0.63[33]
Pipelayers	< 1 week for existing gas workers	Very Little to Some Preparation Needed[34]	0.24
Electricians	None	3-4 months of classwork, 4 yrs apprenticeship	0.78
Heating, Air Condition, and Refrigeration Mechanics	< 1 week for existing service for boilers or furnace workers	Employees usually need one or two years of training involving both on-the-job experience and informal training with experienced workers, likely through an apprenticeship program[35]	0.68
Ground source and water source heat pump installers	1-2 months if already a journey worker < 1 week for ASHP trained or furnace installers & AC	2 year community/vocational college	0.68[36]

Geographic and Cultural Barriers

A statewide, one-size-fits-all approach to the natural gas workforce transition risks overlooking important differences in communities' access to worker retraining and their capacity to secure available funding. Many small rural counties lack nearby training options, as well as full-time mayors,

[31] "Workforce Transition," *HEET*, https://www.heet.org/workforce-transition.

[32] JobsEQ®, data as of 2025Q4.

[33] Earth Drillers used as a proxy for "Drillers"

[34] "Pipelayers," *O*NET,* https://www.onetonline.org/link/summary/47-2151.00.

[35] "Heating, Air Conditioning, and Refrigeration Mechanics and Installers," *O*NET,* https://www.onetonline.org/link/summary/49-9021.00.

[36] SOC 49-9021 Heating, Air Condition, and Refrigeration Mechanics was used as a proxy for this occupation

grant writers, or planning staff, leaving them unable to apply for available CEJA and federal funds even when eligible. The binding constraint is often administrative capacity, not a shortage of allocated funding.[37]

Additionally, the transition is cultural, not just economic in Illinois. Many communities have deep generational ties to fossil fuels as well as a distrust of state and federal government which make renewable workforce initiatives difficult to advance.[38]

Reemployment Prospects and Job Quality After Displacement

A University of California, Berkeley Labor Center study examines the experiences of workers laid off when the Marathon oil refinery in Martinez, California, closed during the COVID-19 pandemic. Based on a survey of 140 former workers and nearly two dozen interviews evaluating workers' post-layoff job searches, employment outcomes, wages, and financial security, the report provides key insights into the economic consequences of fossil fuel worker displacement.[39]

Nearly all workers surveyed (91%) said they would consider retraining, but many drew a clear line: they preferred short-term programs, not multi-year degrees, given the opportunity costs of extended training. This preference is particularly relevant given the educational attainment gap between fossil fuel and clean energy workers. A 2023 report by the Illinois Energy Transition Workforce Commission found 24% of fossil fuel workers have a bachelor's degree or higher, compared to 33% of workers in the wind industry and 42% of workers in the solar industry.[40] This gap may create barriers for displaced fossil fuel workers seeking to enter growing renewable energy sectors, as even those with relevant technical skills may require additional education to meet industry qualifications.

In addition to training barriers, differences in job quality may make re-employment in clean energy less attractive for displaced fossil fuel workers. According to a 2021 report by the Illinois Economic Policy Institute, workers in the nuclear and fossil fuel generation subsectors earn 21% more on average than workers in wind and solar. This gap reflects, in large part, differences in unionization rates. The fossil fuel sector has a long history of collective bargaining, which has steadily raised

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[37] Derhak, Linda. *Rural Realities: An Environmental Justice Needs Assessment of Rural Illinois*. University of Illinois Extension, May 2024. https://extension.illinois.edu/sites/default/files/environmental_justice_needs_assessment_of_rural_illinois.pdf

[38] Ibid.

[39] Parks, Virginia, and Ian Baran. *Fossil Fuel Layoff: The Economic and Employment Effects of a Refinery Closure on Workers in the Bay Area*. University of California, Berkeley Labor Center, April 2023. https://laborcenter.berkeley.edu/wp-content/uploads/2023/04/Fossil-Fuel-Layoff.pdf

[40] Kriz, Kenneth A. *Climate and Equitable Jobs Act Economic and Workforce Effects Preliminary Analysis.* University of Illinois Springfield, Center for State Policy and Leadership, 2022. https://dceo.illinois.gov/content/dam/soi/en/web/dceo/events/energy-transition-workforce-commission/etwc_phaseireport.pdf

wages and secured strong benefits for its workforce. The clean energy sector lacks that history. Wind and solar work tend to be organized around smaller firms and shorter-term projects, which results in lower unionization rates and, in turn, weaker job security and lower pay.[41]

In addition to training barriers, differences in job quality may make re-employment in clean energy less attractive for displaced fossil fuel workers. According to a 2021 report by the Illinois Economic Policy Institute, workers in the nuclear and fossil fuel generation subsectors earn 21% more on average than workers in wind and solar. This gap reflects, in large part, differences in unionization rates. Nationally, 17% of workers in natural gas electric power generation (EPG) are represented by a union, compared with 13% across the EPG sector overall. Union representation is noticeably lower in wind (13%), solar (12%), and geothermal generation (5%).[42] The fossil fuel sector's history of collective bargaining has steadily raised wages and secured strong benefits for its workforce. The clean energy sector lacks that history. Wind and solar work tend to be organized around smaller firms and shorter-term projects, which results in lower unionization rates and, in turn, weaker job security and lower pay.[43]

Challenges extend beyond wages. One year after the Marathon refinery closure, 26% of the 345 laid-off workers remained unemployed, more than three times California's statewide unemployment rate in 2021. Among workers who did find employment, interviews revealed declines in job quality across several dimensions beyond pay, including broader job responsibilities, fewer advancement opportunities, and a faster work pace. The most common complaint, even among workers whose wages increased in their new jobs, was poorer working conditions and weaker safety standards.[44]

Workforce transition strategies following a gas phase-out must consider industries that best align with the existing experience and needs of fossil fuel workers. Among Marathon workers who found re-employment, the most common destination sectors were other oil and gas facilities and utilities, accounting for 28% and 19% of workers, respectively. Other common destinations included chemical

[41] Manzo IV, Frank. *Building Good Jobs on Clean Energy Projects: A Primer on the Economics of Unions and Prevailing Wage Standards in Illinois*. Illinois Economic Policy Institute, April 1, 2021. https://illinoisupdate.com/wp-content/uploads/2021/03/ilepi-building-good-jobs-on-clean-energy-projects-final.pdf

[42] *2026 United States Energy & Employment Report*. U.S. Department of Energy, 2026. https://www.energy.gov/documents/2026-useer-national-report

[43] Manzo IV, Frank. *Building Good Jobs on Clean Energy Projects: A Primer on the Economics of Unions and Prevailing Wage Standards in Illinois*. Illinois Economic Policy Institute, April 1, 2021. https://illinoisupdate.com/wp-content/uploads/2021/03/ilepi-building-good-jobs-on-clean-energy-projects-final.pdf

[44] Parks, Virginia, and Ian Baran. *Fossil Fuel Layoff: The Economic and Employment Effects of a Refinery Closure on Workers in the Bay Area*. University of California, Berkeley Labor Center, April 2023. https://laborcenter.berkeley.edu/wp-content/uploads/2023/04/Fossil-Fuel-Layoff.pdf

treatment (12%), manufacturing—including steel, auto, and food production— (9%), and emergency services (6%).[45]

Among these potential pathways, manufacturing shows particular promise in Illinois. RMI's 2024 "Clean Growth Tool" assessed the feasibility of clean energy manufacturing at the state, city, and regional levels and found that the Chicago–Naperville–Michigan City economic area ranked among the most competitive in the country.[46] Additionally, statewide employment in energy transmission component manufacturing and EV manufacturing grew approximately 8% and 7%, respectively, over the past five years.[47] Building on this momentum could expand re-employment opportunities for displaced fossil fuel workers.

[45] Ibid.

[46] *Top States and Cities for US Cleantech Manufacturing Revealed by RMI Analysis,* RMI, July 2024, https://rmi.org/press-release/top-states-and-cities-for-us-cleantech-manufacturing-revealed-by-rmi-analysis/.

[47] *Clean Growth Tool,* RMI, accessed April 2026, https://cleangrowthtool.rmi.org/?_gl=1*mruyzw*_gcl_au*OTM4NDk0MzgyLjE3NzU0OTAxNzk..