Supplementary Jobs Impacts Analysis

for the 2025 New York State Energy Plan

August 2026

Key Findings

Building on the "Jobs Impacts Analysis" in the "2025 New York State Energy Plan" ("State Energy Plan" or "Plan"), this supplementary analysis provides additional geographic- and occupation-level insights into the energy sector employment impacts estimated from the Plan's core planning scenario between 2025 and 2035 (New York State Energy Planning Board 2025).

- **Most employment growth is associated with clean energy activities, with 45,000 new building decarbonization, clean electricity, and clean transportation-related jobs projected across New York State.**
- **Energy job growth is expected across all regions in the State over the next decade.** The Upstate Central region and the North Country and Mohawk Valley region are projected to see the highest job growth rates (21% and 25%, respectively). Consistent with the population concentration, the largest number of new jobs is projected in New York City (15,000 jobs), followed by the Upstate Central region (10,000 jobs).
- **Roughly 60% of projected net job growth is concentrated among 15 occupations**, collectively adding more than 26,000 jobs in the energy sector.
    - Most of these growing occupations are in the trades, including heating, ventilation, and air conditioning (HVAC) mechanics, electricians, construction laborers, and carpenters. These roles tend to have **relatively low educational barriers to entry and offer long-term, stable career pathways.** Eight of these occupations also offer apprenticeship programs and a wide range of on-the-job training opportunities.
    - These growing occupations tend to offer **strong long-term earning potential and relatively high union density.**
- Some **occupations are projected to experience displacement in shrinking fossil fuel subsectors; however, these are largely concentrated in highly transferable roles (such as retail, administration, or other services), or are projected to see growth in clean energy subsectors**, presenting opportunities for transition.
    - For example, displacement of key occupations in the fossil fuel generation subsectors is offset by growth in the same occupations in clean generation, as well as in transmission, distribution, and storage.
    - Worker retirements may further minimize job losses. Additional occupational-level research on retirement dynamics and career transitions is useful to inform workforce policy and training in the energy sector.

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Acronyms and Abbreviations

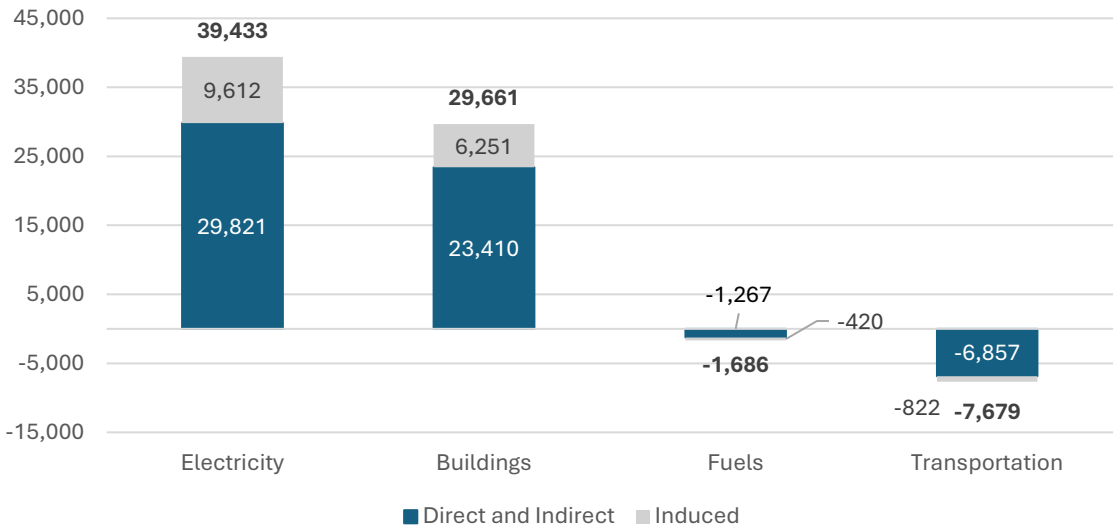
BLS	U.S. Bureau of Labor Statistics
EPA	Environmental Protection Agency
HVAC-R	heating, air conditioning, and refrigeration
LEED	Leadership in Energy and Environmental Design
NYSERDA	New York State Energy Research and Development Authority
OSHA	Occupational Safety and Health Administration
PV	Photovoltaic
OC	Standard Occupational Classification
SST	Site Safety Training

1. Overview

This analysis builds on the "2025 New York State Energy Plan's ("State Energy Plan" or "Plan") Jobs Impact Analysis" (New York State Energy Planning Board 2025). The "Jobs Impact Analysis" projects jobs associated with the Plan's core planning scenario (Additional Action), which assumes the continuation of existing State, local, and federal policies as of October 2025, as well as the implementation of additional policies and programs to drive the adoption of clean energy technologies, such as increased investments in transportation and building efficiency and electrification. This supplementary analysis provides new occupation- and geographic-level insights into job impacts estimated in the Plan, with a focus on the next decade (2025–2035).[1]

The core planning scenario is projected to create net demand for 45,000 new direct and indirect jobs across New York State, with growth concentrated in the buildings and electricity sectors. The fuels and transportation sectors are jointly projected to lose roughly 8,100 direct and indirect jobs over this period (see Figure 1).[2]

Figure 1. Projected Change in Energy Jobs by Sector, 2025 and 2035



This analysis builds on the "Jobs Impact Analysis" by providing insight into: [3]

1. The geographic distribution of the jobs projected in the State Energy Plan
2. Employment growth and displacement trends by occupational groups
3. High-priority, high-growth occupations expected across the energy sector
4. Occupational trends across the four energy sectors

[1] This analysis uses a 10-year timeframe to keep the level of occupational detail grounded in current workforce dynamics. The further occupational-level projections go into the future, the less reliable they may become.
[2] This analysis focuses solely on direct and indirect jobs, while the "New York State Energy Plan: Jobs Impacts Analysis" included induced jobs (i.e., jobs induced from the economic activity that follows new labor income).
[3] NYSERDA partnered with BW Research Partnership, Inc. to conduct this analysis.

2. Methodology

Direct and indirect employment estimates from the "Jobs Impact Analysis" were mapped to occupations using proprietary, technology-specific staffing patterns. These staffing patterns, developed through a nationwide survey of energy employers, estimate how employment is distributed across occupations within energy technologies. The resulting outputs are reported at the six-digit Standard Occupational Classification (SOC) code level and referenced throughout the report using standard occupational titles (e.g., heating, air conditioning, and refrigeration [HVAC-R] mechanics and installers).

The research team used two methods to estimate regional employment changes from 2025 to 2035 in this analysis: (1) direct distribution to New York Independent System Operator (NYISO) zone and (2) distribution to NYISO zone through a county crosswalk. For the direct NYISO distribution, direct and indirect jobs associated with new electric and building sector activities were allocated to the NYISO zone based on electric generating capacity data and building device stock data, which were generated as part of the "State Energy Plan." For the remaining job projections not using the first method, the research team distributed direct and indirect jobs by county, based on the county-level distribution of employment in relevant industries in the broader economy, and then translated the county data to the seven NYISO zones. Appendix A details the crosswalk between the regions used in this analysis and New York State counties and NYISO zones.

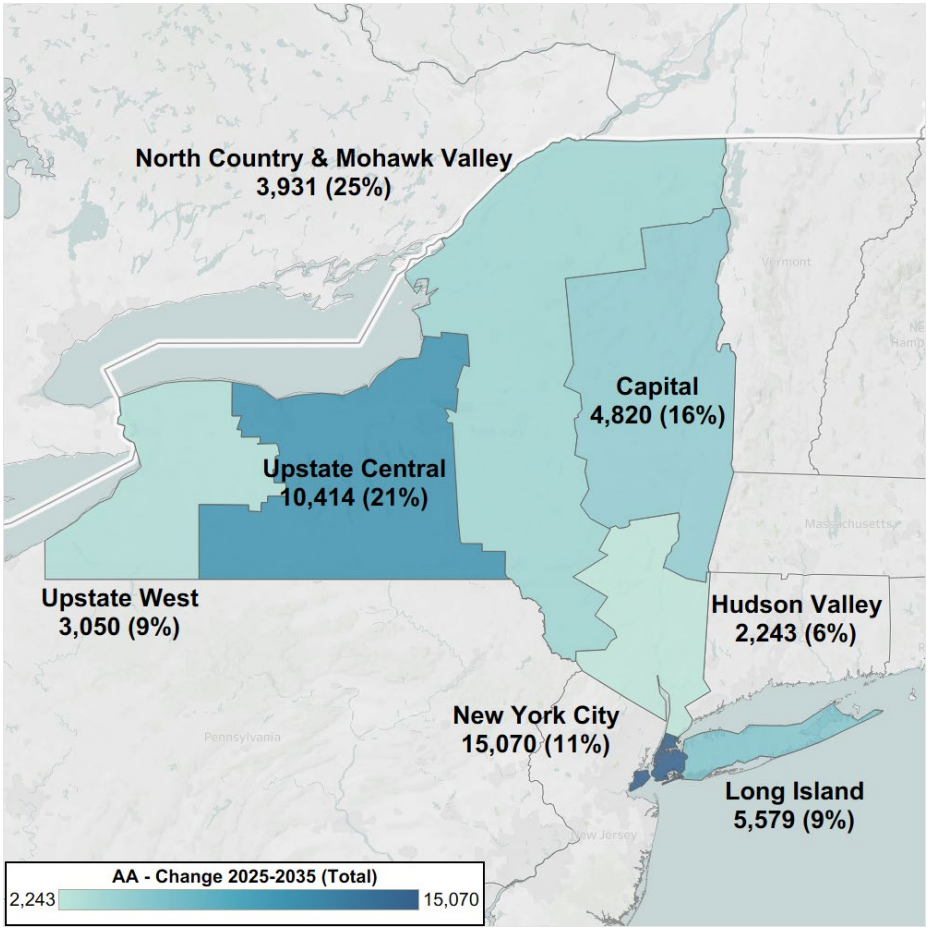
3. Regional Job Impacts

This section assesses the distribution of energy employment outcomes across seven regions:

1. Upstate West
2. Upstate Central
3. North Country
4. Mohawk Valley
5. Capital
6. Hudson Valley
7. New York City
8. Long Island

New York City is projected to experience the greatest net energy job growth, adding roughly 15,000 energy jobs, of which two-thirds are in the buildings sector. The North Country and Mohawk Valley region, as well as the Upstate Central region, have the highest growth rates at 25% and 21%, respectively (see Figure 2).

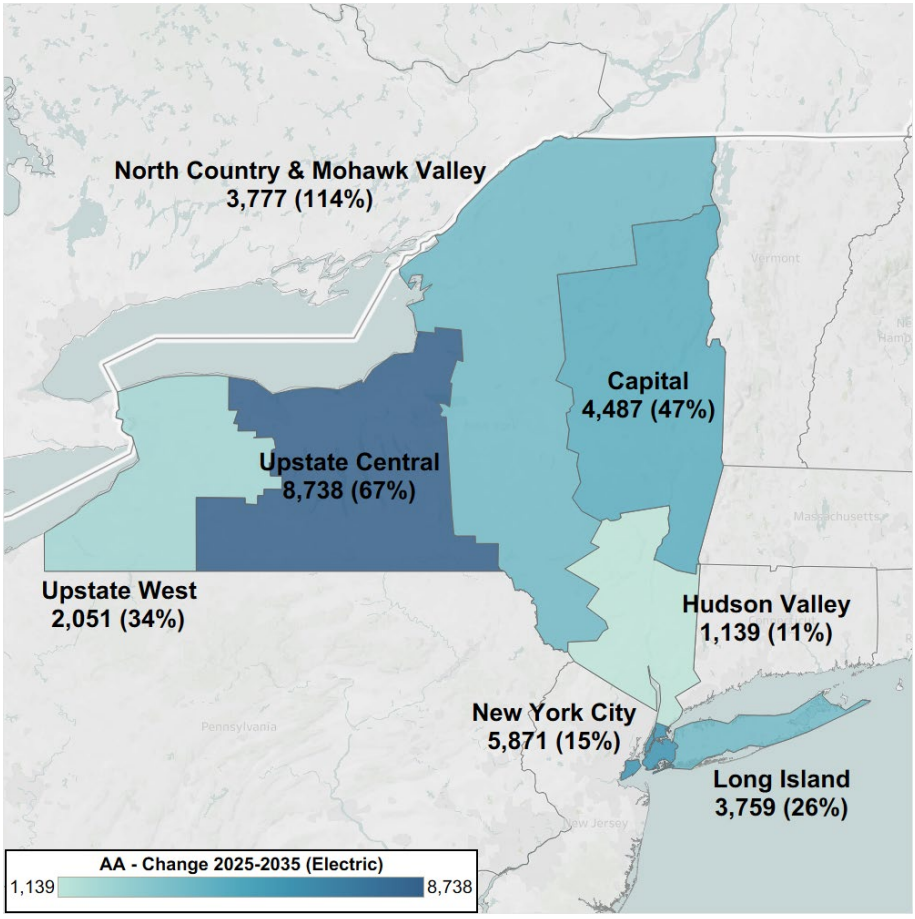
Figure 2. Total Net Energy Job Change by Region, 2025–2035, Additional Action Scenario



3.1. Electricity Sector

The Upstate Central region is projected to add the most electricity sector jobs (8,700) through 2035, experiencing nearly 70% job growth in this sector, driven by investments in new wind, solar, battery storage, and electric utility modernization. Similarly, electricity sector jobs in the North Country and Mohawk Valley region are expected to double, with nearly 4,000 new jobs added. The Capital and Upstate West regions are also expected to see high rates of electricity sector job growth (see Figure 3).

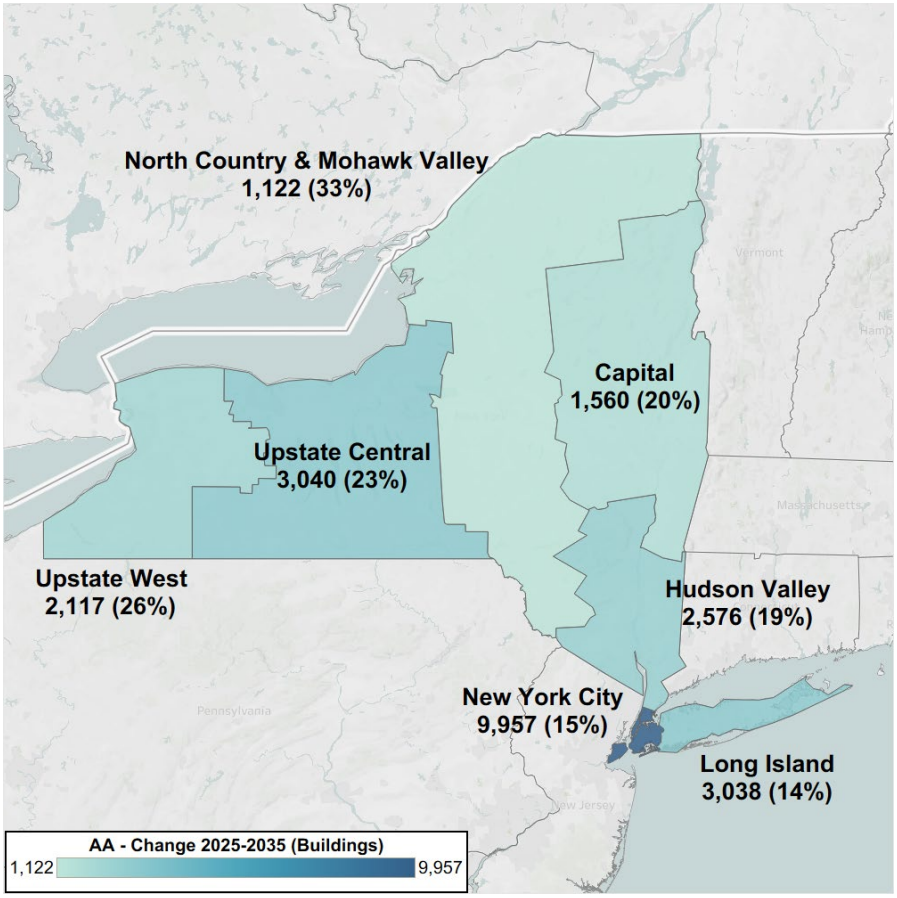
Figure 3. Electricity Sector, Net Job Change by Region, 2025–2035, Additional Action Scenario



3.2. Buildings Sector

Just over half of the 23,000 net jobs added to the buildings sector statewide through 2035 are concentrated in New York City and Long Island, driven by significant building electrification and energy efficiency activity (see Figure 4). On Long Island, jobs in the buildings sector increase by roughly 3,000, accounting for 13% of statewide growth, while New York City adds 10,000 jobs, representing 43% of statewide growth. The remaining half of new jobs is distributed across the rest of the State, where buildings sector jobs grow by 19% to 33%.

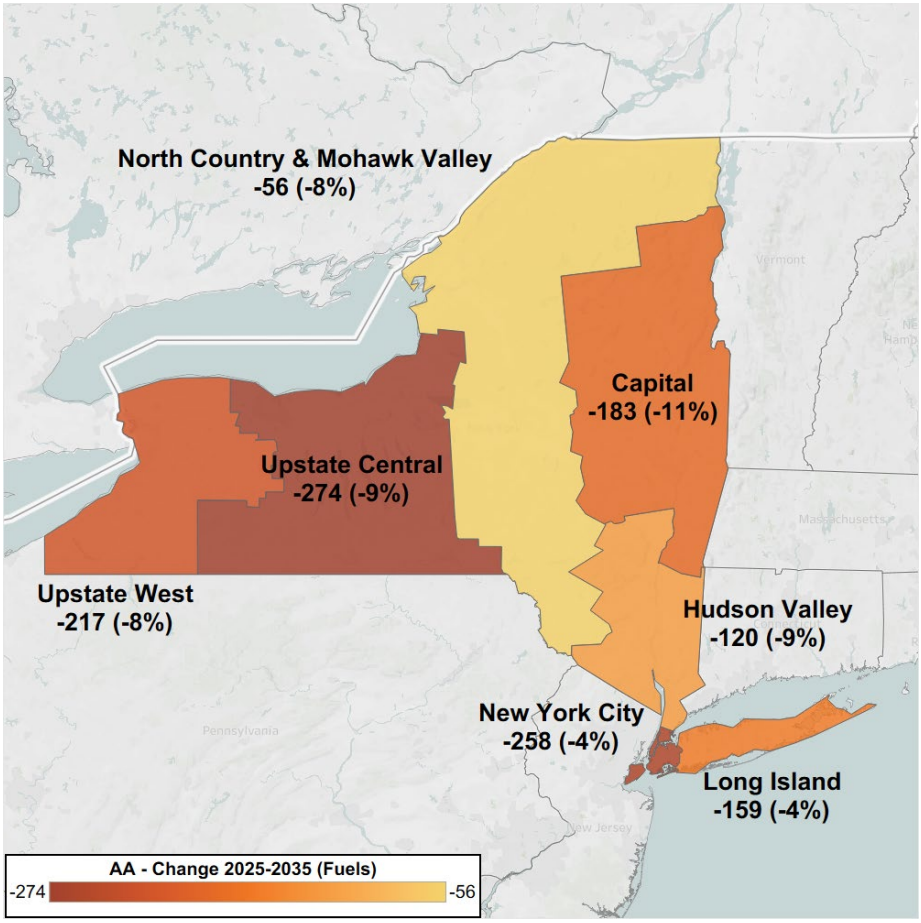
Figure 4. Buildings Sector Net Job Change by Region, 2025–2035, Additional Action Scenario



3.3. Fuels Sector

Net job displacement in the fuels sector is limited, with no region projected to lose more than 300 net fuels jobs by 2035 (see Figure 5). This displacement is concentrated in the petroleum fuels subsectors, while some growth is projected in biofuel, hydrogen fuel, and natural gas distribution subsectors over this period.

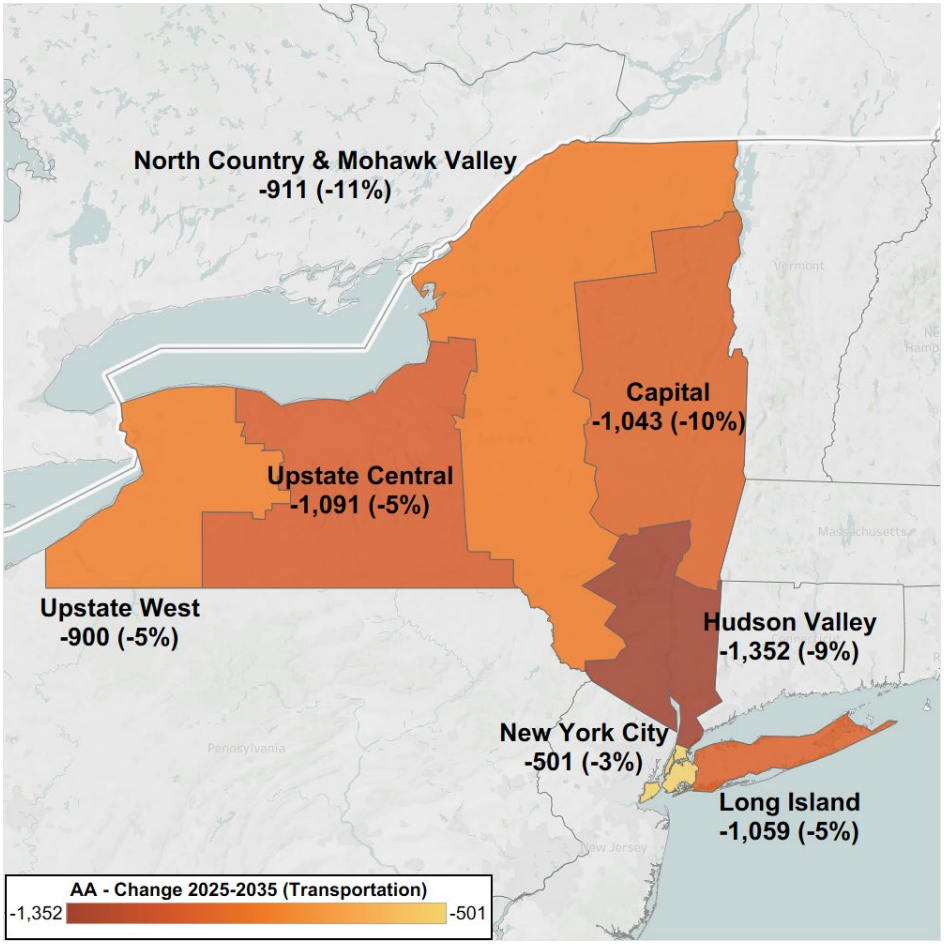
Figure 5. Fuels Sector Net Job Change by Region, 2025–2035, Additional Action Scenario



3.4. Transportation Sector

Job displacement at conventional fueling stations (also known as gas stations) primarily drives regional net job displacement in the transportation sector. However, this is partially offset by job growth in the construction and maintenance of electric vehicle (EV) charging stations. All regions are expected to experience displacement of transportation sector jobs by 2035 (see Figure 6). New York City is projected to have the smallest displacement (500 workers) due to its low fueling-station-jobs-to-population ratio compared with other regions in the State. Across the rest of the State, displacement of conventional fueling jobs is relatively evenly distributed.

Figure 6. Transportation Sector Net Job Change by Region, 2025–2035, Additional Action Scenario



4. Growth and Displacement Trends by Occupational Groups

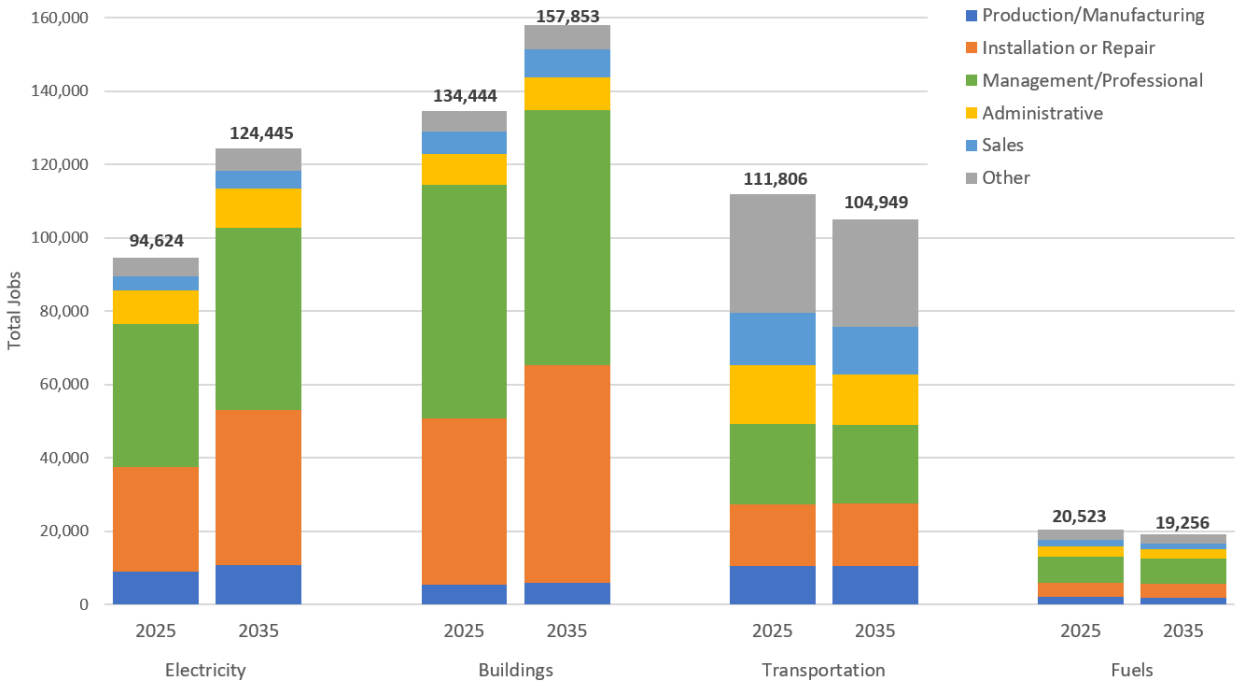
This section presents employment projections by energy sector, organized into six occupational groups:[4]

1. Production and manufacturing
2. Management and professional
3. Construction, installation and repair
4. Administrative
5. Sales
6. Other

Figure 7 shows employment by energy sector and occupational group for 2025 and 2035, illustrating that the overall distribution of jobs remains relatively consistent in each year.

[4] Occupational groups are organized using the U.S. Bureau of Labor Statistics (BLS) Standard Occupational Classification (SOC) system. See BLS (2018). The production and manufacturing occupational group includes SOC code 51 (production occupations); management and professional includes SOC codes 11 (management), 13 (business and financial operations), 15 (computer and mathematical), 17 (architecture and engineering), 19 (life, physical, and social sciences), and 23 (legal); installation and repair includes SOC codes 37 (building and grounds cleaning and maintenance), 47 (construction and extraction), and 49 (installation, maintenance, and repair); administrative includes SOC code 43 (office and administrative support); sales includes SOC code 41 (sales and related); and "other" includes SOC codes 21 (community and social service), 25 (educational instruction and library), 27 (arts, design, entertainment, sports, and media), 29 and 31 (healthcare), 33 (protective service), 35 (food preparation and serving), 39 (personal care and service), 45 (farming, fishing, and forestry), and 53 (transportation and material moving).

Figure 7. Employment by Energy Sector and by Occupational Group, 2025 and 2035



4.1. Electricity Sector

Employment in both the buildings and electricity sectors—the two growth sectors—is concentrated in construction, installation, and repair occupations, as well as in management and professional occupations. All other occupational groups comprise 10% or less of employment in these sectors in both 2025 and 2035.

In the electricity sector, installation and repair occupations and management and professional occupations account for 47% and 36% of employment growth over this period, respectively. Roughly 14,000 installation and repair jobs are projected to be added, reflecting the electricity sector's demand for skilled trades to deploy renewable energy, battery storage, and grid upgrades. Approximately 6,000 new professional and managerial jobs will support the technical planning required for these projects.

4.2. Buildings Sector

Similarly, in the buildings sector, 60% of job growth between 2025 and 2035 is driven by increased demand for installation and repair occupations (adding 14,000 jobs), and 25% is driven by management and professional occupations (adding 10,000 new jobs). These projections reflect the buildings sector's need for skilled workers to install building electrification and energy-efficiency measures, as well as for professionals to perform managerial and technical planning for these activities.

4.3. Fuels Sector

In the fuels sector, management and professional occupations are the most prominent occupational group. They will remain so over the decade, likely due to the relatively low concentration of fuel

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In the fuels sector, management and professional occupations are the most prominent occupational group. They will remain so over the decade, likely due to the relatively low concentration of fuel extraction and refining activity and the relatively high concentration of financial and corporate activity in New York State. All occupational groups are projected to experience relatively limited employment displacement by 2035.

4.4. Transportation Sector

In the transportation sector, the “other” occupational group, which includes transportation and material moving occupations, such as various drivers, accounts for roughly one-third of employment in both 2025 and 2035. Net losses in this sector are concentrated in this group, as well as in the administrative and sales groups, largely due to reduced job demand for gas stations and combustion-vehicle maintenance businesses.

5. High-Growth Occupations in New York State's Energy Workforce

Sixteen high-growth occupations were selected for further analysis, with a focus on specialized trades and construction management activities, to better understand projected employment changes, training and educational requirements, and demographic and wage data for these priority occupations.

As shown in Table 1, these priority occupations are projected to add roughly 25,000 jobs in New York State between 2025 and 2035, accounting for more than half of the 45,000 net new jobs estimated for the entire energy sector. Not captured in this table are similarly high-growth occupations within the same training and job progression pipeline (e.g., electrician or pipefitter helpers), or highly transferable, professional roles such as sales or general management. Appendix B provides further details on the selection process. Additionally, this study identifies nonzero employment impacts across more than 400 occupations. The Supplementary Jobs Analysis Data Annex contains a complete list of these results.

Table 1. Priority Occupations and Projected Employment Change by Energy Sector, 2025–2035

Employment ranges are provided by energy sector, and the estimates for "All Energy Sectors" are rounded to the nearest hundred. Estimates with an absolute value below 100 are rounded to zero.

Occupation Title	Net Change, Buildings	Net Change, Electricity	Net Change, Transportation	Net Change, Fuels	Net Change, All Energy Sectors	Percent Change, All Energy Sectors
HVAC-R Mechanics and Installers	4,000–4,500	100–500	—	—	**4,400**	**33%**
Construction Laborers	1,500–2,000	1,500–2,000	—	—	**3,800**	**54%**
Electricians	500–1,000	2,000–2,500	1,000–1,500	—	**3,700**	**47%**
Construction Managers	1,000–1,500	1,000–1,500	—	—	**2,500**	**47%**
Carpenters	500–1,000	100–500	—	—	**1,500**	**73%**
Solar PV Installers	—	1,000–1,500	—	—	**1,400**	**107%**
Operating Engineers and Construction Equipment Operators	500–1,000	500–1,000	—	—	**1,400**	**41%**
Electrical Power-Line Installers and Repairers	—	1,000–1,500	—	—	**1,400**	**28%**
Plumbers, Pipefitters, and Steamfitters	1,000–1,500	100– 500	—	—	**1,300**	**28%**
Cost Estimators	100–500	500–1,000	—	—	**700**	**50%**
Civil Engineers	100–500	100–500	—	—	**600**	**8%**
Painters, Construction, and Maintenance	100–500	—	—	—	**500**	**52%**
Cement Masons and Concrete Finishers	100–500	100–500	—	—	**500**	**43%**
Drywall and Ceiling Tile Installers	100–500	—	—	—	**400**	**69%**
Engineers, All Other	—	100–500	—	—	**400**	**28%**
Electrical Engineers	—	100–500	—	—	**400**	**12%**

Projected growth rates over the next decade vary significantly across these occupations, ranging from 8% to 100% relative to their 2025 employment levels within the New York State energy sector. Newer occupations, such as solar PV installers, exhibit very high growth rates from a relatively small base.[5] Many of these occupations, such as electricians, plumbers, and construction laborers, are likely to be in high demand regardless of changes in State or federal energy policy, including in building construction, public infrastructure development, and growth of New York State's advanced manufacturing sector.

Energy occupations often span multiple sectors—for example, construction laborers, engineers, and maintenance workers are needed across all four energy sectors and in other economic sectors. However, daily tasks differ by sector, so understanding these distinctions helps workers and workforce planners better prepare for role-specific requirements and identify transition opportunities, which may involve reskilling, relocation, or other considerations. Appendix C has detailed descriptions of priority occupations.

5.1. Training and Educational Requirements for Priority Occupations

Most of the priority occupations have relatively low educational barriers to entry—12 of the 16 jobs typically require a high school diploma or completion of a vocational school program—and many offer long-term, stable career pathways. Eight occupations are supported by apprenticeship programs and on-the-job training opportunities, enabling workers to enter the workforce quickly while developing the skills and experience needed for long-term advancement, rather than investing time and resources in a 4-year degree. The remaining four occupations (in engineering and cost estimation roles) typically require a bachelor's degree as the primary pathway to entry (see Table 2).

Table 2. Typical Education, Training, Certification, and Skill Requirements of Priority Occupations

*Typical entry-level education requirements, training, and skills are sourced from O*NET occupation profiles. For more information, see the O*NET Resource Center. .*

Occupation Title	Brief Description	Typical Education & Training	Common Certifications or License Requirements
HVAC-R Mechanics and Installers	Install, maintain, and repair technology that regulates temperature, humidity, and air quality in buildings	Vocational school, related on-the-job experience, or an associate's degree with long-term on-the-job training, such as an apprenticeship	HVAC License, EPA 608 Certification, OSHA 10, EPA Universal Certification. For heat pump installation: North American Technician Excellence (NATE) Certification, Business Professionals of America Certification, Manufacturing Certification

[5] Not all solar PV installation workers are counted as "Solar PV Installers." The Bureau of Labor Statistics (BLS) uses a hierarchical occupational classification system in which installers with an electrical license are typically classified as electricians rather than solar PV installers.

Table 2. (continued)

Occupation Title	Brief Description	Typical Education & Training	Common Certifications or License Requirements
Construction Laborers	Perform physically demanding tasks on construction and maintenance sites, including material handling, site cleanup, and demolition	High school diploma with short-term on-the-job training	No requirements
Electricians	Install, maintain, and repair the infrastructure that generates, stores, and distributes electricity within buildings and across the grid	Vocational school, related on-the-job experience, or an associate's degree with long-term on-the-job training, such as an apprenticeship	Master Electrician License, OSHA 30, OSHA 10, Certified Welder. For heat pump installation: EPA 608 Certification, NATE Certification, Business Professionals of America Certification, Manufacturing Certification
Construction Managers	Manage schedules, budgets, and contractors, and ensure compliance with building codes and safety regulations	Four-year bachelor's degree with related experience	Project Management Professional (PMP), Certified Construction Manager, Licensed Professional Engineer, OSHA 30, OSHA 10, SST Supervisor Card
Carpenters	Build, assemble, install, and repair structures and fixtures made of wood and similar materials required for energy infrastructure; may also install insulation and air-sealing	High school diploma with short-term on-the-job training or an apprenticeship	OSHA 10, OSHA 30, SST Worker Card
Solar PV Installers	Assemble, install, and maintain solar panel systems on ground-mounted sites and on residential and commercial rooftops	High school diploma with short-term on-the-job training or an apprenticeship	North American Board of Certified Energy Practitioners (NABCEP) PV Installation Professional Certification, NABCEP Associate Credential OSHA 10, OSHA 30, SST Worker Card
Operating Engineers and Other Construction Equipment Operators	Operate and maintain heavy equipment such as bulldozers, excavators, cranes, and loaders used in construction, mining, and infrastructure projects	High school diploma with short-term on-the-job training or an apprenticeship	Crane Operator License, Commercial Driver's License, OSHA 10, Forklift Certified, OSHA 10, OSHA 30, SST Worker Card
Electrical Power-Line Installers and Repairers	Install, maintain, and repair the high-voltage lines that transmit electricity from power plants to homes and businesses	High school diploma with short-term on-the-job training or an apprenticeship	Commercial Driver's License, Crane Operator License, OSHA 10, OSHA 30, SST Worker Card

Table 2. (continued)

Occupation Title	Brief Description	Typical Education & Training	Common Certifications or License Requirements
Plumbers, Pipefitters, and Steamfitters	Install, maintain, and repair piping systems that carry water, steam, chemicals, gas, and waste throughout buildings to support sanitation, heating, cooling, and energy systems	Vocational school, related on-the-job experience, or an associate's degree with long-term on-the-job training, such as an apprenticeship	Master Plumber License, Journeyman Plumber License, SST Worker Card. For heat pump installation: EPA 608 Certification, NATE Certification, Business Professionals of America Certification, Manufacturing Certification
Cost Estimators	Prepare detailed cost estimates for infrastructure and building projects including materials, labor, equipment, and other components	Four-year bachelor's degree with related experience	American Society of Professional Estimators-Certified Professional Estimator, PMP, CEP, Certified Cost Professional
Civil Engineers	Plan, design, supervise, and maintain public and private infrastructure projects	Four-year bachelor's degree with related experience	Licensed Professional Engineer, OSHA 10, OSHA 30, Leadership in Energy and Environmental Design (LEED) Accredited Professional, Engineer in Training, PMP
Painters, Construction and Maintenance	Apply paint and coatings to structural surfaces, important for weatherization to protect wood walls from climate damage and to improve insulation by sealing any remaining gaps and cracks	High school diploma with short-term on-the-job training	OSHA 10, OSHA 30, EPA Lead-Safe (renovation, repair, and painting) certification, SST Worker Card
Cement Masons and Concrete Finishers	Shape, level, and smooth concrete for floors, sidewalks, roadways, and curbs; Form and finish the concrete that supports critical infrastructure in power plant construction	High school diploma with short-term on-the-job training	OSHA 10, OSHA 30, SST Worker Card, American Concrete Institute Concrete Flatwork Finisher certification
Drywall and Ceiling Tile Installers	Cut, hang, and secure wallboard; install insulated wall systems and seal gaps to minimize heating and cooling loss and improve overall energy efficiency	High school diploma with short-term on-the-job training	OSHA 10, OSHA 30, EPA Lead-Safe (renovation, repair, and painting) certification, SST Worker Card

Table 2. (continued)

Occupation Title	Brief Description	Typical Education & Training	Common Certifications or License Requirements
Engineers, All Other	A broad occupational category that includes engineers who are not classified within a specific engineering specialty, such as civil, mechanical, or electrical engineering	Four-year bachelor's degree with related experience	Professional Engineer license, Engineer in Training, PMP, CEM
Electrical Engineers	Design, develop, test, and oversee the manufacturing of electrical equipment and components, including power generation systems, wiring, circuit boards, and control infrastructure	Four-year bachelor's degree with related experience	Professional Engineer license, OSHA 30, LEED Accredited Professional, Engineer in Training, PMP, CEM

5.2. Demographic Composition and Wages of Priority Occupations

Current demographic patterns across priority occupations generally match the occupational data highlighted in the "2025 Clean Energy Industry Report" (NYSERDA 2025). Growth in the priority occupations is concentrated in installation and construction roles, which are less diverse than the overall New York State workforce: racial and ethnic minorities and women are underrepresented in these roles, although they are comparable to the overall construction and trades workforce.[6] Wage trends for these priority occupations demonstrate opportunities for strong wage progression. In general, New York State workers in key clean energy-related occupations earn wage premiums over workers in the same roles outside the clean energy industry, regardless of experience.[7] New York State's energy workers also have higher rates of union membership than national energy workers (NYSERDA 2025, BLS n.d.).

Detailed tables with demographic and wage data for these priority occupations are available in Appendix D: Detailed Demographic Data Tables for Priority Occupations. The "2025 Clean Energy Industry Report" (NYSERDA 2025) has more information about the State's clean energy industry demographics and wages.

6. Occupational Impacts by Sector

Employment projections indicate growth opportunities across most occupations in the energy industry, even after accounting for displacement within certain sectors. This section examines the occupational impacts in additional detail for each energy sector over the 2025 to 2035 period. Many of the priority occupations captured in Table 1 appear in Tables 3 and 5 as the highest growth occupations in the electricity and buildings sectors. The fuels and transportation sectors will see displacement of specific

[6] Demographic data for priority New York State occupations is drawn from JobsEQ (data as of 2025 Q3). For more information, see Chmura (n.d.).
[7] NYSERDA (2025). See tables 7 and 8. Note that not all of the priority occupations in this table are explicitly specified in the NY CEIR survey.

roles, but this is confined to a limited set of occupations and offset somewhat by growth in occupations related to electric vehicles.

6.1. Electricity Sector

Just over a quarter of the net direct and indirect jobs added in the electricity sector are concentrated within the five occupations shown in Table 3. All five of these occupations—electricians, construction laborers, construction managers, power-line installers, and solar PV installers—are included among the priority occupations discussed earlier.

Table 2. Five Growth Occupations, Electricity Sector, 2025–2035

Values may not add up due to rounding.

Occupation Title	Fossil Fuel Generation	Clean Generation	Transmission, Distribution, Storage	Net Growth Electricity Sector*	% Growth Electricity Sector
Electricians	-70	1,040	1,060	**2,030**	**47%**
Construction Laborers	—	1,200	650	**1,845**	**102%**
Construction Managers	-30	1,107	330	**1,400**	**104%**
Electrical Power-Line Installers and Repairers	-120	925	590	**1,390**	**29%**
Solar PV Installers	—	1,350	35	**1,385**	**111%**

While the electricity sector sees meaningful overall growth, a displacement of 2,300 jobs is estimated across the fossil fuel generation subsectors (gas, oil, and other fuels), comprising relatively small changes across a broad range of occupations. Table 4 displays the five occupations projected to lose the most jobs in fossil fuel generation, from electrical power-line installers and repairers, who are projected to lose nearly 120 jobs, to sales representatives who are projected to lose just over 60 jobs. Approximately 20% of the overall displacement in the fossil fuel generation subsector is concentrated among these occupations.

Notably, the displacement in this subsector is offset by growth in clean generation, as well as transmission, distribution, and storage. Overall, these occupations will see net growth over the next decade in New York State's electricity sector, with growth ranging from 5% among power plant operators to 60% among engineers.

Table 3. Overall Growth in Top Five Displaced Fossil Fuel Generation Occupations, 2025–2035

Values may not add up due to rounding.

Occupation Title	Fossil Fuel Generation	Clean Generation	Transmission, Distribution, Storage	Net Growth Electricity Sector*	% Growth Electricity Sector
Electrical Power-Line Installers and Repairers	-120	925	590	**1,390**	**29%**
Power Plant Operators	-120	20	220	**120**	**5%**
General and Operations Managers	-75	1,010	430	**1,365**	**36%**
Electricians	-70	1,040	1,060	**2,030**	**47%**
Sales Representatives, Wholesale and Manufacturing	-65	335	50	**320**	**23%**

6.2. Buildings Sector

Nearly half of the buildings sector job growth is concentrated among its six highest-growth occupations, shown in Table 5. HVAC-R mechanics and installers are expected to add 4,000 workers over the next decade, with growth projected in both the residential and commercial sectors. They will require significant investments in high-efficiency HVAC equipment. Building efficiency and electrification will also create demand for construction laborers, especially to support residential upgrades. Similarly, nearly 1,000 new plumbers, pipefitters, and steamfitters will be needed to support these decarbonization activities.

Table 4. Top Six Growth Occupations, Buildings Sector, 2025-2035

**Values may not add up due to rounding.*

Occupation Title	Residential	Commercial	Net Growth Buildings Sector*	% Growth Building Sector
HVAC-R Mechanics and Installers	2,930	1,145	**4,080**	**33%**
Construction Laborers	1,490	460	**1,955**	**41%**
General and Operations Managers	1,225	370	**1,595**	**22%**
First-Line Supervisors of Mechanics, Installers, and Repairers	945	330	**1,275**	**36%**
Construction Managers	738	310	**1,045**	**27%**
Plumbers, Pipefitters, and Steamfitters	715	320	**1,035**	**28%**

6.3. Transportation and Fuels Sectors

The transportation and fuels sectors are jointly projected to shrink by roughly 8,000 net jobs between 2025 and 2035 (see Figure 1), with all of this displacement occurring in combustion-vehicle-related activity and the petroleum fuels subsector. The majority of displacement is in the transportation

workforce, where a net decrease of 6,900 jobs is projected. Within the transportation sector, decreases are concentrated in conventional fueling stations (a decrease of 6,900 jobs) and vehicle maintenance (a decrease of 4,000 jobs). However, this displacement is offset somewhat by an increase of 4,300 jobs in the charging stations workforce, which includes electric vehicle (EV) charging stations and hydrogen fuel cell vehicle fueling stations. Similarly, job losses in the petroleum fuels subsector are offset in part by modest projected growth in natural gas distribution, hydrogen, and biofuels (New York State Energy Planning Board 2025).

Table 6 highlights the five highest growth occupations across the transportation and fuels sectors, including skilled electrical workers and construction and manufacturing roles relevant to electric vehicles.

Table 5. Top Five Growth Occupations, Transportation and Fuels Sector Combined, 2025–2035

Occupation Title	Net Growth, Transportation and Fuels Sectors	% Growth Transportation and Fuels Sectors
Electricians	1,070	101%
First-Line Supervisors of Construction Trades and Extraction Workers	150	39%
Electrical, Electronic, and Electromechanical Equipment Assemblers	150	26%
Helpers—Electricians	135	133%
Miscellaneous Assemblers and Fabricators	65	<1%

In the transportation sector, the large majority of displaced roles are concentrated in administrative, sales, service, and professional jobs. For example, the five most displaced occupations (janitors, security guards, salespeople, customer service representatives, and cashiers) are expected to decrease by 460 each over the next decade (see Appendix B: Net Growth, Net Displacement, and Priority Occupations in New York State's Energy Workforce). While these displacements are important considerations for the energy sector, they occur in highly transferable occupations and at a gradual pace. Additional displacement results from electric vehicles comparatively lower maintenance needs compared to combustion vehicles. Some displaced jobs include skilled bus and truck mechanics (93 jobs lost over the next decade) and automotive mechanics (139 jobs lost over the next decade). However, these losses are small when spread over the analysis period and are likely consistent with the natural turnover rate of these occupations.

In the fuels sector overall, a negligible number of occupations show net growth, while a broad range of occupations experience net displacement. Among the most displaced occupations, changes are small (fewer than 70 jobs lost per occupation statewide over a decade). They are concentrated in office and administrative roles, transportation and material moving (such as truck drivers), and professional services fields related to fossil fuel production and delivery. Demand for some of these same occupations is expected to grow in the buildings and electricity sectors.

Notably, the Plan's projections include an increase of 400 natural gas distribution workers over the next decade. By 2040, the number of natural gas distribution workers is projected to return to roughly current levels. The Plan's "Jobs Impact Analysis" estimates demand for more than 2,000 new natural gas distribution workers by 2040—roughly 15% of the existing workforce—to maintain safety and reliability as aging workers retire. The timing and dynamics of such worker turnover require additional modeling at the occupational level and are an important consideration for future research.

7. Conclusion

This analysis offers new occupation-level insights through 2035 for the Plan's core planning scenario, focusing on the highest-growth, priority occupations within the clean energy industry. As outlined in the Plan, New York State can support this growth by building on its successful workforce development ecosystem to increase participation in workforce training for key occupations (see "2025 State Energy Plan," Chapter 12, Clean Energy Jobs and a Just Transition). The priority roles identified in this analysis are concentrated primarily in building electrification and efficiency, as well as clean electricity generation. These roles frequently provide structured advancement opportunities, enabling relatively rapid wage progression.

Some occupations in fossil fuel–related industries, such as fossil fuel electricity generation and combustion vehicles, are projected to decline. However, this displacement is largely offset by increased demand for the same occupations in clean energy sectors (e.g., electricians, laborers), is concentrated in highly transferable occupations (e.g., janitors, retail clerks), or occurs gradually over the next decade (e.g., mechanics). Additionally, workforce retirement dynamics may further minimize job losses. The State can support reskilling and other training or education to help workers in displaced occupations transition to the clean energy sector. As discussed in the Plan, the State may also consider safety-net measures to support workers affected by climate mitigation policies, as appropriate (see Chapter 12, Clean Energy Jobs and a Just Transition). Further analysis is needed to provide more detailed information on the timing and location where occupational transitions could occur to inform policy.

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Appendix A: Analytic Regions

Table A-1. Crosswalk Between New York State Counties, New York Independent System Operator (NYISO) Zones, and State Energy Plan Jobs Regions

SEP Jobs Region	NYISO Zone	County
Upstate West	A	Cattaraugus
Upstate West	A	Chautauqua
Upstate West	A	Erie
Upstate West	A	Genesee
Upstate West	A	Livingston
Upstate West	A	Niagara
Upstate West	A	Orleans
Upstate West	A	Wyoming
Upstate Central	B	Allegany
Upstate Central	B	Monroe
Upstate Central	B	Ontario
Upstate Central	B	Wayne
Upstate Central	C	Broome
Upstate Central	C	Cayuga
Upstate Central	C	Chemung
Upstate Central	C	Cortland
Upstate Central	C	Onondaga
Upstate Central	C	Oswego
Upstate Central	C	Schuyler
Upstate Central	C	Seneca
Upstate Central	C	Steuben
Upstate Central	C	Tioga
Upstate Central	C	Tompkins
Upstate Central	C	Yates
North Country & Mohawk Valley	D	Clinton
North Country & Mohawk Valley	E	Chenango
North Country & Mohawk Valley	E	Delaware
North Country & Mohawk Valley	E	Franklin
North Country & Mohawk Valley	E	Herkimer
North Country & Mohawk Valley	E	Jefferson
North Country & Mohawk Valley	E	Lewis
North Country & Mohawk Valley	E	Madison
North Country & Mohawk Valley	E	Oneida
North Country & Mohawk Valley	E	Otsego
North Country & Mohawk Valley	E	St. Lawrence
North Country & Mohawk Valley	E	Sullivan
Capital	F	Albany
Capital	F	Columbia
Capital	F	Essex
Capital	F	Fulton
Capital	F	Hamilton
Capital	F	Montgomery
Capital	F	Rensselaer
Capital	F	Saratoga
Capital	F	Schenectady

SEP Jobs Region	NYISO Zone	County
Capital	F	Schoharie
Capital	F	Warren
Capital	F	Washington
Hudson Valley	G	Dutchess
Hudson Valley	G	Greene
Hudson Valley	G	Orange
Hudson Valley	G	Putnam
Hudson Valley	G	Rockland
Hudson Valley	G	Ulster
Hudson Valley	H & I	Westchester
New York City	J	Bronx
New York City	J	Kings
New York City	J	New York
New York City	J	Queens
New York City	J	Richmond
Long Island	K	Nassau
Long Island	K	Suffolk

Appendix B: Net Growth, Net Displacement, and Priority Occupations in New York State's Energy Workforce

A comprehensive list of the modeled occupations, their SOC codes, and projected demand can be found in **the Supplementary Jobs Analysis Data Annex.** The occupations in Table 2 were selected from the top 25 occupations with the highest net employment growth, measured by the number of jobs added across all energy sectors in New York State from 2025 to 2035. Table B-1 highlights the top 25 occupations by net growth and net displacement.

Several occupations with strong projected growth from 2025 to 2035 were not designated as priority occupations:

- **General and operations managers, managers, all other, and project management specialists** were excluded due to their broad applicability across multiple industries.
- **Sales representatives** of services (except advertising, insurance, financial services, and travel) were not chosen because this role is highly transferable across industries.
- **Helpers—electricians and helpers—pipelayers, plumbers, pipefitters, and steamfitters** were excluded because these feeder roles into the electrician and plumber, pipefitter, and steamfitters occupations, which are already included in the priority list. Because these roles are part of the pipeline for electricians, pipelayers, plumbers, pipefitters, and steamfitters, they will be captured in the transition analysis.
- **First-line supervisors of construction trades and extraction workers** were not included because these positions typically represent a career progression from construction laborers, who can advance into supervisory roles with sufficient experience.

Table B-1. Top 25 Occupations with Greatest Projected Employment Growth, 2025–2035

Net Growth Occupations (NYS Energy Sectors)	Priority Occupation?	Projected Change 2025-2035	Percent Change 2025-2035
HVAC-R Mechanics and Installers	✓	4374	33%
Construction Laborers	✓	3819	54%
Electricians	✓	3664	47%
General and Operations Managers	Professional, highly transferable	2727	18%
First-Line Supervisors of Mechanics, Installers, and Repairers	Part of the HVAC-R installer and repairer career pathway	2584	38%
Construction Managers	✓	2491	47%
First-Line Supervisors of Construction Trades and Extraction Workers	Part of the construction laborers career pathway	2067	48%
Managers, All Other	Professional, highly transferable	1775	36%
Project Management Specialists	Professional, highly transferable	1516	22%
Carpenters	✓	1478	73%

Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	Professional, highly transferable	1410	22%
Solar PV Installers	✓	1407	107%
Operating Engineers and Other Construction Equipment Operators	✓	1404	41%
Electrical Power-Line Installers and Repairers	✓	1386	28%
Plumbers, Pipefitters, and Steamfitters	✓	1285	28%
Helpers—Electricians	Part of the electrician career pathway	1138	48%
Cost Estimators	✓	740	50%
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	Part of the pipefitter career pathway	703	27%
Civil Engineers	✓	601	8%
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	Professional, highly transferable	547	9%
Cement Masons and Concrete Finishers	✓	531	43%
Painters, Construction and Maintenance	✓	454	52%
Electrical Engineers	✓	437	12%
Engineers, All Other	✓	426	28%
Drywall and Ceiling Tile Installers	✓	386	69%

Table B-2 below highlights the top 25 occupations that see net displacement across New York State's energy sectors over the next decade.

Table B-2. Top 25 Occupations with Greatest Projected Employment Displacement, 2025–2035

Net Displacement Occupations (NYS Energy Sectors)	Projected Change 2025–2035	Percent Change 2025–2035
Janitors and Cleaners, except Maids and Housekeeping Cleaners	-487	-11%
Retail Salespersons	-478	-9%
Security Guards	-436	-9%
Cashiers	-326	-16%
First-Line Supervisors of Retail Sales Workers	-190	-12%
Postal Service Mail Carriers	-182	-18%
Bus Drivers, School	-166	-12%
Shuttle Drivers and Chauffeurs	-144	-11%
Landscaping and Groundskeeping Workers	-140	-8%
Customer Service Representatives	-134	-2%
Automotive Service Technicians and Mechanics	-118	-6%
Bus Drivers, Transit and Intercity	-107	-14%
Dispatchers, Except Police, Fire, and Ambulance	-99	-10%
Postal Service Mail Sorters, Processors, and Processing Machine Operators	-97	-23%
Self-Enrichment Teachers	-93	-16%
Taxi Drivers	-81	-6%
School Bus Monitors	-72	-11%
Bus and Truck Mechanics and Diesel Engine Specialists	-63	-3%
Maids and Housekeeping Cleaners	-60	-9%
Cleaners of Vehicles and Equipment	-60	-9%
First-Line Supervisors of Housekeeping and Janitorial Workers	-53	-13%
Light Truck Drivers	-52	-1%
Postal Service Clerks	-47	-18%
Tutors	-43	-20%
Automotive Body and Related Repairers	-42	-10%

Appendix C: Typical Tasks of Priority Occupations

The 16 priority occupations are concentrated in specific occupational categories: nine are construction roles; two are installation, maintenance, and repair roles; three are engineering roles; one is a management role; and one is a financial services role.

HVAC-R Mechanics and Installers (HVAC technicians) install, maintain, and repair systems that regulate temperature, humidity, and indoor air quality in buildings. In the energy sector, HVAC technicians are responsible for installing high-efficiency systems that optimize electricity and gas consumption, playing a central role in energy efficiency and the buildings sector by ensuring mechanical systems are properly sized, installed, and operating as designed.

Construction Laborers perform physically demanding tasks on construction and maintenance sites, including material handling, site cleanup, and demolition. Their responsibilities may include using hand and power tools to prepare work areas, assisting with insulation and air-sealing activities, setting up ladders or scaffolding, and supporting skilled workers during installation.

Electricians play a critical role in New York State's energy sector by installing, maintaining, and repairing the infrastructure that generates, stores, and distributes electricity within buildings and across the grid. As energy demand continues to grow, the need for skilled electricians rises accordingly. In addition to installing and servicing wiring, lighting, and control systems in compliance with strict safety and building codes, electricians support grid modernization and building automation efforts.

Construction Managers plan, coordinate, and supervise construction projects from preconstruction through completion. They are responsible for scheduling, budget management, contractor oversight, and ensuring compliance with building codes and safety regulations. In the energy sector, they direct the planning and execution of large-scale energy infrastructure projects.

Carpenters build, assemble, install, and repair structures and fixtures made of wood and similar materials, including partitions, joists, studs, rafters, and concrete forms. Additionally, carpenters play a critical role in supporting New York State's energy economy by constructing and maintaining the structural components required for energy infrastructure. They also contribute to energy-efficiency efforts by installing and repairing insulation and air-sealing materials to prevent air leakage through doors, windows, and vents. Carpenters also modify structural frameworks to accommodate energy-efficient systems such as solar panels and high-efficiency HVAC systems.

Solar PV Installers assemble, install, and maintain solar panel systems on ground-mounted sites and on residential and commercial rooftops. Their typical activities include assessing and reviewing site locations, mounting panels, setting up racking systems, connecting panels to electrical systems, testing and verifying performance, and conducting the necessary repairs.

Operating Engineers and Other Construction Equipment Operators operate and maintain heavy equipment, including bulldozers, excavators, cranes, and loaders, used in construction, mining, and infrastructure projects. They are essential to the energy sector because they operate the equipment that builds out the necessary infrastructure for energy generation and distribution.

Electrical Power-Line Installers and Repairers install, maintain, and repair the high-voltage lines that transmit electricity from power plants to homes and businesses. Additionally, they support the expansion, modernization, and reliability of the electric grid by connecting new power generation sources to the broader transmission and distribution system.

Plumbers, Pipefitters, and Steamfitters install, maintain, and repair piping systems that carry water, steam, chemicals, gas, and waste throughout buildings. Their work supports sanitation, heating, cooling, and energy systems, making them critical to both occupant health and building efficiency. Additionally, they play an integral role in constructing and maintaining piping systems in both traditional and renewable power plants, thereby driving strong demand across the energy sector.

Cost Estimators involved in construction projects prepare detailed cost estimates for infrastructure and building projects, such as bridges, roads, and buildings. They identify and analyze the costs of materials, labor, equipment, and other components to calculate total project expenses. Cost estimators also consider factors that may affect costs, such as transportation delays, site conditions, and changes in material prices. They often work with engineers, architects, contractors, and other construction professionals to develop accurate estimates that support project planning, budgeting, and business decision-making.

Civil Engineers plan, design, supervise, and maintain public and private infrastructure projects, including roads, bridges, buildings, dams, tunnels, water systems, and sewage treatment facilities. They also help ensure projects comply with safety standards, regulatory requirements, and permitting processes at the local, State, and federal levels. They may also conduct feasibility studies to assess project practicality, costs, site conditions, environmental impacts, and resource requirements.

Drywall and Ceiling Tile Installers cut, hang, and secure wallboard and install ceiling tile within buildings. In the energy sector, they help improve thermal performance in power plants and other energy facilities. They install insulated wall systems that minimize heating and cooling losses and seal gaps around walls and ceilings to improve airtightness, thereby increasing the overall energy efficiency of these sites.

Cement Masons and Concrete Finishers shape, level, and smooth freshly poured concrete for surfaces such as floors, sidewalks, roadways, and curbs, using both hand tools and power equipment to create durable, finished surfaces. In the energy sector, they play a key role in power plant construction by forming and finishing the concrete beams, columns, foundations, and panels that support critical infrastructure.

Engineers, All Other is a broad occupational category that includes engineers not classified under a specific engineering specialty, such as civil, mechanical, or electrical engineering. In the energy sector, common roles include energy engineers, solar engineers, and wind engineers, who support the design and optimization of energy generation, transmission, and distribution systems.

Electrical Engineers design, develop, test, and oversee the manufacturing of electrical equipment and components, including power generation systems, wiring, circuit boards, and control infrastructure.

They play a critical role in developing and integrating new energy generation sources into the electrical grid across commercial and residential areas.

Painters, Construction, and Maintenance Workers apply paint and coatings to structural surfaces using brushes, rollers, or spray equipment. Tasks may include surface preparation, removal of old coatings, and mixing paints or additives to achieve the desired consistency. Painting and coating are important for weatherization, protecting wood walls from climate-related damage, and improving insulation by sealing any remaining gaps and cracks.

Appendix D: Detailed Demographic Data Tables for Priority Occupations

Table D-1. Selected Age and Gender Demographics of Priority Occupations, 2025

Gender and age data for priority New York State occupations are sourced from JobsEQ (data as of 2025 Q3). For more information, see Chmura (n.d.).

Occupation Title	SOC Code	Percent Female	Percent Male	Percent Aged 24 and Below	Percent Aged 55 and Over
New York State Overall Workforce		49%	51%	10%	25%
HVAC-R Mechanics and Installers	49-9021	3%	97%	10%	16%
Construction Laborers	47-2061	3%	97%	11%	18%
Electricians	47-2111	3%	97%	11%	20%
Construction Managers	11-9021	9%	91%	3%	26%
Carpenters	47-2031	4%	96%	7%	21%
Solar PV Installers	47-2231	4%	96%	17%	6%
Operating Engineers and Other Construction Equipment Operators	47-2073	2%	98%	7%	27%
Electrical Power-Line Installers and Repairers	49-9051	2%	98%	12%	14%
Plumbers, Pipefitters, and Steamfitters	47-2152	3%	97%	9%	22%
Cost Estimators	13-1051	18%	82%	5%	33%
Civil Engineers	17-2051	14%	86%	9%	25%
Painters, Construction, and Maintenance	47-2141	10%	90%	10%	22%
Cement Masons and Concrete Finishers	47-2051	2%	98%	7%	18%
Drywall and Ceiling Tile Installers	47-2081	4%	96%	9%	15%
Engineers, All Other	17-2199	13%	87%	5%	25%
Electrical Engineers	17-2071	10%	90%	5%	24%

Table D-2. Selected Ethnicity and Race Demographics of Priority Occupations, 2025

Race and ethnicity data for priority New York State occupations are sourced from JobsEQ (data as of 2025 Q3). For more information, see Chmura (n.d.).

Occupation Title	SOC Code	Percent Hispanic or Latino/a	Percent White	Percent Black	Percent American Indian Workers	Percent of Asian Workers	Percent Two or More Races
New York State Overall Workforce		19%	62%	17%	1%	11%	10%
HVAC-R Mechanics and Installers	49-9021	25%	67%	17%	1%	7%	8%
Construction Laborers	47-2061	49%	70%	13%	1%	5%	11%
Electricians	47-2111	26%	64%	15%	1%	4%	15%
Construction Managers	11-9021	18%	74%	9%	1%	8%	9%
Carpenters	47-2031	42%	67%	13%	2%	4%	14%
Solar Photovoltaic Installers	47-2231	46%	57%	21%	2%	4%	16%
Operating Engineers and Other Construction Equipment Operators	47-2073	22%	72%	17%	1%	1%	8%
Electrical Power-Line Installers and Repairers	49-9051	15%	74%	18%	1%	2%	6%
Plumbers, Pipefitters, and Steamfitters	47-2152	32%	67%	19%	1%	7%	7%
Cost Estimators	13-1051	12%	76%	5%	0%	8%	11%
Civil Engineers	17-2051	10%	73%	5%	0%	15%	6%
Painters, Construction and Maintenance	47-2141	60%	62%	15%	2%	2%	19%
Cement Masons and Concrete Finishers	47-2051	57%	68%	6%	3%	0%	23%
Drywall and Ceiling Tile Installers	47-2081	64%	51%	9%	3%	4%	31%
Engineers, All Other	17-2199	6%	71%	4%	0%	21%	4%
Electrical Engineers	17-2071	7%	68%	4%	0%	26%	2%

Table D-3. Wages and Benefits of Priority Occupations

Hourly wage data is from JobsEQ (data as of 2025 Q2). For more details, see Chmura (n.d.). Clean energy wage premium data is from the NY CEIR survey (data as of 2025 Q1) and is reported at the five-digit SOC code level. Note that the last five occupations in this table were not explicitly specified in the NY CEIR survey at the five-digit SOC level; therefore, the wage premiums shown reflect the closest available SOC code reported in the survey. Healthcare coverage data is drawn from the BLS's "Annual Summaries of Benefits Coverage" (2025), which provide national-level estimates at the 2-digit SOC code level. For more information, see (BLS 2025).

Occupation Title	SOC Code	Hourly 25th Percentile Wage	Hourly Median Wage	Hourly 75th Percentile Wage	Clean Energy Premium			National Union Density[a]	Healthcare Coverage
					Hourly 25th Percentile Wage	Hourly Median Wage	Hourly 75th Percentile Wage		
HVAC-R Mechanics and Installers	49-9021	$26.96	$34.33	$42.63	23%	13%	4%	13%	88%
Construction Laborers	47-2061	$23.41	$29.66	$42.31	11%	14%	4%	8%	87%
Electricians	47-2111	$29.99	$38.73	$53.58	19%	15%	6%	34%	87%
Construction Managers	11-9021	$49.70	$66.45	$87.58	-8%	-14%	-21%	5%	97%
Carpenters	47-2031	$26.86	$33.46	$43.97	14%	15%	-1%	15%	78%
Solar PV Installers	47-2231	$23.90	$28.49	$36.77	0%	0%	0%	10%	87%
Operating Engineers and Other Construction Equipment Operators	47-2073	$31.45	$43.22	$59.19	13%	11%	3%	21%	87%
Electrical Power-Line Installers and Repairers	49-9051	$43.32	$57.00	$63.81	15%	1%	3%	50%	92%
Plumbers, Pipefitters, and Steamfitters	47-2152	$30.34	$39.00	$51.13	-2%	-7%	-3%	22%	87%
Cost Estimators	13-1051	$32.59	$42.14	$56.77	8%	0%	-16%	6%	94%
Civil Engineers	17-2051	$43.68	$54.01	$68.93	-2%	-9%	1%	7%	84%
Painters, Construction and Maintenance	47-2141	$23.46	$28.04	$34.98	27%	13%	22%	4%	73%
Cement Masons and Concrete Finishers	47-2051	$27.27	$33.08	$43.25	27%	13%	22%	15%	73%
Drywall and Ceiling Tile Installers	47-2081	$25.65	$31.79	$39.23	27%	13%	22%	8%	73%
Engineers, All Other	17-2199	$47.52	$62.19	$79.03	-2%	-9%	1%	8%	84%
Electrical Engineers	17-2071	$46.95	$59.61	$72.30	-2%	-9%	1%	5%	84%

[a] Labor union membership data for all occupations in this section is from the Current Population Survey conducted by the BLS. For more information, see Unionstats (n.d.).