DIVERSITY IN THE U.S. ENERGY WORKFORCE

Data Findings to Inform State Energy, Climate, and Workforce Development Policies and Programs

NASEO
National Association of State Energy Officials

[bw] RESEARCH PARTNERSHIP

HBCU CDAC
Clean Energy Initiative
CLEAN ENERGY INNOVATION FUELING CAMPUSES AND EMPOWERING COMMUNITIES

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Disclaimer

About This Report

This report was prepared for the National Association of State Energy Officials (NASEO) by BW Research Partnership in April 2021. Its primary authors and contributors include Sarah Lehmann, Nate Hunt, Cobi Frongillo, and Philip Jordan.

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To learn more about NASEO and its efforts in workforce development policy and program analysis, please visit www.naseo.org or contact sfazeli@naseo.org.

Introduction

Energy technology innovation, private- and public-sector investments, and state, local, and federal energy and climate policies have propelled economic development and supported the creation of millions of jobs across the U.S. economy. Yet data from an array of analyses suggest that these benefits have not extended equitably across the energy sector workforce, which lags on gender and ethnic and racial minority representation particularly within the skilled trades[1], technology innovation and commercialization[2], and upper-level management of high-growth industries such as renewable energy development.[3,4] These demographic groups have faced additional setbacks since the onset of the COVID-19 pandemic in the United States, which has disproportionately impacted Black and Hispanic energy workers.[5]

To better understand the contours of these disparities, and potential policy improvements and solutions to mitigate them, the National Association of State Energy Officials (NASEO) has partnered with BW Research Partnership to produce this foundational analysis, ***Diversity in the Energy Workforce: Data Findings to Inform State Energy, Climate, and Workforce Development Policies and Programs***. The findings in the remainder of this report are informed by data culled from the U.S. Bureau of Labor Statistics (BLS), U.S. Energy and Employment Report (USEER), and BW Research Partnership's own research on the levels of awareness, career satisfaction, and opportunities for advancement in the energy workforce as well as the impacts of the COVID-19 pandemic on energy jobs.

The data findings presented here form the basis of ongoing efforts by NASEO, in partnership with the Historically Black Colleges and Universities Community Development Action Coalition (CDAC) and with support from the U.S. Department of Energy's Office of Economic Impact and Diversity, to inform strategies within government, academia, and the private-sector to cultivate a more representative and inclusive energy workforce. At the state level, NASEO's members, the 56 governor-designated Energy Offices from the states, territories, and District of Columbia play a central role in designing policies and investments that create demand for skilled energy workers and prepare workers for energy jobs. Correspondingly, Historically Black Colleges and Universities (HBCUs) and other Minority-Serving Institutions, including those engaged in CDAC, are uniquely positioned to develop diverse pipelines of students and workers well-versed in Science, Technology, Engineering, and Mathematics (STEM) disciplines. In the spring of 2021, NASEO, CDAC, and BW Research Partnership will hold forums to investigate challenges, opportunities, promising strategies, and partnerships to connect underrepresented and marginalized workers to growing economic opportunities in the energy sector.

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[1] Brookings Institution, Advancing Inclusion through Clean Energy Jobs, 2019. https://www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane.pdf.

[2] Leaky Tech Pipeline. Tech Workforce, accessed January 2021. https://leakytechpipeline.com/pipeline/tech-workforce/.

[3] The Solar Foundation, U.S. Solar Industry Diversity Study, 2019. https://www.thesolarfoundation.org/wp-content/uploads/2019/05/Solar-Industry-Diversity-Study-2019-2.pdf.

[4] National Renewable Energy Laboratory, The Wind Energy Workforce in the United States: Training, Hiring, and Future Needs. https://www.nrel.gov/docs/fy19osti/73908.pdf.

[5] BW Research Partnership, Memorandum: Clean Energy Employment Initial Impacts from the COVID-19 Economic Crisis, November 2020. https://bwresearch.com/covid/docs/BWResearch_CleanEnergyJobsCOVID-19Memo_Nov2020.pdf.

Key Findings

ENERGY WORKFORCE DIVERSITY

Overall, the energy sector has high rates of union members and Veterans but a below-average proportion of women in the workforce. Compared to the national average, there are more unionized workers in the energy sector; 11 percent of energy workers are union members compared to a six percent national average. At the same time, the proportion of Veterans in the energy labor force is three percentage points higher than the national workforce average. However, only 25 percent of energy workers are female, compared to an overall average of 47 percent across the nation.

The energy sector has below-average representation of Hispanic or Latinx workers and Black or African American workers. Eight percent of energy workers are Black or African American compared to a 12 percent national workforce average. Similarly, Hispanic or Latinx individuals comprise 16 percent of energy workers, despite representing 18 percent of the national labor force. In specific sectors like oil and gas extraction, coal mining, and natural gas distribution, Hispanic and Latinx workers are also under-represented by three to 15 points compared to the national average. However, in petroleum and coal products manufacturing and petroleum refining, Hispanic or Latinx individuals account for 21 and 22 percent of the labor force, respectively.[6]

Black or African American workers are underrepresented across energy technology and energy source sectors.[7] Across all five technology sectors, the proportion of Black or African American workers is two to five points lower than the national average. Within the Electric Power Generation sector, however, Black or African American workers account for 12 percent of nuclear electric power generation jobs, which is equivalent to the national average. In the solar and wind sub-sectors, Black or African American workers only account for eight percent each of the labor force—four points below the national average. In coal mining and oil and gas extraction specifically, Black or African American workers account for a respective 0.9 and 6.8 percent of the labor force. However, in natural gas distribution, Black or African American individuals accounts for almost 15 percent of the workforce, or about three points above the national average.[8]

The Electric Power Generation (EPG) sector has the highest proportion of female, Asian, and Hispanic or Latinx workers. Women represent 32 percent of the EPG workforce, which is seven to nine points higher compared to the other technology sectors. At the same time, 18 percent of EPG workers are Hispanic or Latinx, which is comparable to the overall national average. In particular, Hispanic or Latinx employment in the solar and wind sub-sectors is roughly two to three percentage points higher than the national average. Ten percent of EPG workers are Asian, which is four percentage points higher compared to the national workforce.

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[6] Bureau of Labor Statistics, Current Population Survey, Labor Force Statistics, 2019. https://www.bls.gov/cps/cpsaat18.htm.

[7] The five technology and energy source sectors (referred to as "technology sectors") electric power generation; fuels; transmission, distribution, and storage; energy efficiency; and motor vehicles. For a detailed definition of energy technology sectors, please see page 14.

[8] *Id.*

For specific sectors, however, like oil and gas extraction, coal mining, and natural gas distribution, Asian representation falls three to five points below the national average. In petroleum and coal products manufacturing and petroleum refining, Asian workers represent about one percent above the national average.[9]

White energy workers are more likely to report working in leadership roles compared to racial and ethnic minorities. Eight in ten White survey respondents indicated that they are either a company executive or that they supervise employees; about a third (35 percent) noted that they are company executives. By comparison, only 17 percent of Black or African American energy workers reported that they are company executives and only 19 percent of Hispanic or Latinx workers reported the same. Similarly, only 22 percent of Asian energy workers indicated that they are company executives. The overall sample and White respondents in particular had high rates of educational attainment. However, even when accounting for differences in education, these trends still persist.

PERCEPTIONS OF EQUITY, INCLUSION, AND SUPPORT

Fewer than half of surveyed energy workers across race and ethnicity were optimistic about their company's diversity and inclusion in recruitment, hiring, promotion, and leadership roles. Only 31 to 49 percent of energy workers, depending on race or ethnic identity, strongly agreed that their company recruits, hires, or equitably promotes an acceptable number of racial and ethnic minorities. These sentiments are shared regarding management and leadership positions, with only 36 to 48 percent of energy workers indicating that their company's management and executive leadership is racially and ethnically diverse. The specific breakout of these sentiments by race and ethnicity is described in the next key finding below.

Hispanic and Latinx energy workers are most optimistic about overall diversity and inclusion in their workplace, particularly compared to Asian and Black or African American respondents. Hispanic and Latinx energy workers (49 percent) were more optimistic about recruitment and hiring of racial and ethnic minorities compared to Asian (42 percent), Black or African American (42 percent), or White (46 percent) energy workers. Similarly, more Hispanic or Latinx energy workers (48 percent) strongly agreed that their company equitably promotes racial and ethnic minorities, compared to 46 percent of White respondents, 40 percent of Black or African American respondents, and 31 percent of Asian respondents. Hispanic and Latinx energy workers were also most optimistic about diversity in their company's management and leadership roles compared to Asian and Black or African American energy workers. Forty-eight percent of Hispanic and Latinx energy workers strongly agreed that their company's management and executive leadership is racially and ethnically diverse, compared to 46 percent of White energy workers, 45 percent of Black or African American workers, 36 percent of Asian workers, and 36 percent of Native Hawaiian or American Indian energy workers.

Asian energy workers are less likely to feel that their company is supportive of racial and ethnic minorities. Only about a third (35 percent) of Asian respondents strongly agreed that their energy company is a supportive place to work for racial and ethnic minorities, compared

[9] *Id.*

to 47 percent of Black or African American respondents, 47 percent of Hispanic or Latinx individuals, and 50 percent of White energy workers.

White energy workers are more likely to feel accepted and valued at their workplace. Nearly half (49 percent) of White energy workers strongly agreed that their company offers a workplace that is accepting of people of all backgrounds; this is seven to 16 points higher than Asian, Black or African American, and Hispanic or Latinx energy workers. Similarly, 52 percent of White energy workers strongly agreed that they fit in and are valued by their coworkers—seven to 13 points higher than other racial or ethnic subgroups.

Women were less likely to agree across nearly all statements regarding workplace belonging compared to men. The greatest difference between men and women was in recognition of accomplishments. Only about a third of female energy workers (34 percent) indicated that they are recognized for their accomplishments compared to 42 percent of male energy workers. Additionally, women were less likely to feel that their company is for people like them, that they fit in and are valued by their coworkers, and that their company has done a good job of providing training programs to reduce unconscious bias in the workplace.

ENERGY CAREER AWARENESS AND INTEREST

Renewable energy and energy efficiency received higher rates of career interest compared to other energy sectors. While information communications technology and healthcare are the most popular sectors for potential careers among the general population, within the energy sector, more respondents indicated a high level of interest in a career in renewable energy and energy efficiency compared to electric vehicles or fossil energy; this was true across all races and ethnicities. Asian respondents had the highest rates of career interest in renewable energy and energy efficiency compared to other races and ethnicities. Overall, a higher percentage of Asian, Black or African American, Hispanic or Latinx, American Indian and Alaska Natives, and Native Hawaiian and other Pacific Islander[10] expressed interest in energy efficiency careers compared to White respondents; this was also true for the electric vehicle sector. Asian, Black or African American, and Hispanic or Latinx respondents also expressed greater interest than White respondents in renewable energy careers.

White and Native Hawaiian and American Indian respondents were least likely to have considered working in the energy industry. Fifty-four percent of White and 62 percent of Native Hawaiian and American Indian participants reported that they have never considered working in the energy industry, compared to only 45 percent of Asian respondents, 47 percent of Black or African American respondents, and 49 percent of Hispanic or Latinx respondents.

Asian respondents were most likely to have actively searched for work opportunities in the energy industry. Just over a quarter (26 percent) of Asian individuals have actively searched for work opportunities in the energy industry, compared to 20 percent of Hispanic or Latinx respondents, 19 percent of Black or African American respondents, 16 percent of White respondents, and 10 percent of American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander individuals.

[10] For the remainder of the report, American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander are referenced as “other” in all charts and figures. In text, all references to American Indians or Native Hawaiians encompass the whole demographic group.

CAREER SATISFACTION

White energy workers reported higher levels of career satisfaction compared to all other racial and ethnic cohorts. About nine in ten (92 percent) White energy workers reported overall satisfaction, with 68 percent indicating that they are "very satisfied" with their energy career. This compares to 46 percent of Asian respondents, 53 percent of Hispanic or Latinx respondents, and 58 percent of Black or African American respondents that indicated they are "very satisfied" with their energy career. However, when filtering by managerial or supervisory roles, the proportion of "very satisfied" is slightly more homogenous across some races and ethnicities; 60 percent of White supervisors or managers are "very satisfied", followed by Black or African American (57 percent) and Hispanic or Latinx (49 percent).

White energy workers are also more satisfied with employment benefits and professional development support. More than half (54 percent) of White energy workers strongly agreed that they are satisfied with their employer's benefits package; this is seven to 16 points higher compared to all other racial or ethnic groups. Only 42 percent of Asian, 47 percent of Black or African American, 43 percent of Hispanic or Latinx, and 38 percent of American Indian and Native Hawaiian energy workers indicated satisfaction with their benefits package. Similarly, 50 percent of White energy workers strongly agreed that their company supports their professional development; this was higher than Asian (41 percent), Black or African American (44 percent), Hispanic or Latinx (48 percent), and Native Hawaiian or Alaska Native (30 percent) energy workers.

Men report higher levels of overall satisfaction with their energy career compared to women as well as higher satisfaction with specific aspects of their energy job. Eighty-seven percent of men indicated overall satisfaction with their energy career compared to 83 percent of women. Nearly six in ten male energy workers (59 percent) reported that they are "very satisfied" compared to only 52 percent of women. Men were also more likely to indicate satisfaction compared to women with their overall benefits package, opportunity to learn new skills and move up the career ladder, company support for professional development, and opportunities for promotion and higher wages.

CAREER ACCESS, ADVANCEMENT, AND NAVIGATION

White survey respondents are more likely to have been exposed to energy careers at job fairs and networking events. Eighty-eight percent of White respondents in the general student population reported that they had seen an energy-related company while attending a recruitment or networking event at their school. This is significantly higher than the 76 percent of Black or African American, 72 percent of Hispanic or Latinx, and 64 percent of Asian respondents who reported they had seen energy companies at their school-sponsored job fairs.

Asian and Hispanic or Latinx energy workers reported lower rates of access to professional development opportunities. Asian energy workers were least likely to indicate that their company offered professional development opportunities like apprenticeship programs, continuing education programs, on-the-job training, or employee resource groups. Similarly, fewer Hispanic or Latinx energy workers indicated that their company offered internship programs, continuing education programs, mentorship programs, and employee resource groups compared to other racial and ethnic groups.

White energy workers are most likely to report that they know the necessary steps for career advancement. Almost half (47 percent) of White respondents indicated that they know the steps that are necessary for them to get the career they want; this compares to 40 percent

of Black or African American, 37 percent of Asian, and 26 percent of Native Hawaiian and American Indian energy workers.

White energy workers are also slightly more likely to have had access to support networks. Forty-three percent of White respondents reported that they know professionals in their field of interest that they can reach out to for advice; this is three to 12 points higher than Asian, Black or African American, and Hispanic or Latinx individuals and 26 points higher than Native Hawaiian and American Indian respondents. At the same time, 47 percent of White energy workers strongly agreed that they have had good mentors and teachers that have helped them progress in their career compared to less than half of Black or African American (44 percent) respondents and about a third of Asian (34 percent) and American Indian and Native Hawaiian (33 percent) energy workers.

Overcoming bias and prejudice in the workplace is the biggest challenge cited by Black or African American energy workers. Of all challenges to career advancement listed in the survey, Black or African American energy workers selected overcoming prejudice or bias in the workplace as their number one challenge to advancing their energy careers; 38 percent of Black or African American respondents indicated this as a challenge to their energy career advancement.

Women report lower awareness of career navigation support compared to men. Only about a third of female energy workers (34 percent) strongly agreed that they have access to several professionals in their field of interest that they can reach out to for information or advice compared to 42 percent of men. At the same time, women also indicated that they are less likely to be aware of what career options are available to them (35 percent) compared to men (43 percent).

Women are also less likely to feel supported in their career advancement and professional development compared to men. Only 36 percent of female energy workers reported that they are encouraged to apply for advancement opportunities compared to nearly half of male energy workers (48 percent). Similarly, fewer women (37 percent) strongly agreed that they have similar opportunities for professional success as their colleagues compared to male energy workers (44 percent).

WAGES AND BENEFITS

White energy workers are significantly more likely to report both higher starting wages and higher wages overall compared to racial and ethnic minorities. Almost four in ten (38 percent) White energy workers indicated that they earn $100,000 a year or more, compared to only roughly 18 to 19 percent of Asian, Black or African American, or Hispanic or Latinx energy workers. White energy workers were also more than twice as likely to report starting wages of $100,000 or more per year than Black or African American and Hispanic or Latinx energy workers. It is important to note that the sample of White respondents had high rates of educational attainment. However, when accounting for differences in education, these trends still persisted.

Healthcare coverage for energy workers varies by race and ethnicity. Overall, at least 80 percent of energy workers across racial and ethnic subgroups receive some amount of health insurance coverage from their employer. However, White energy workers are more likely to report that their employers cover all health insurance costs for them and their families (62 percent) compared to Black or African American (55 percent) and Hispanic or Latinx (52 percent) energy workers.

White energy workers were also slightly more likely to report receiving retirement contributions from their employers. Eighty-two percent of White energy workers reported receiving retirement contributions from their employers, which is two to five percentage points higher than Black or African American or Hispanic or Latinx energy workers. Asian energy workers (67 percent) were least likely to indicate receiving retirement contributions from their employers.

COVID-19 IMPACTS

Hispanic or Latinx energy workers were hardest hit by the pandemic-induced economic recession. From March through September 2020, the energy sector lost jobs at a rate of 12.7 percent. Over the same time, Hispanic or Latinx energy workers shed jobs at a rate of 14.2 percent, which is above the national average. Job losses for White (12 percent), Black or African American (9.7 percent), and female (9.6 percent) energy workers all fell below the national average of 12.7 percent. Employment declines for Hispanic or Latinx energy workers was largely driven by job losses in the mining and extraction, repair and maintenance, and construction industries.

Energy efficiency and motor vehicles accounted for the majority of job losses. The energy efficiency sector shed almost 321,900 jobs, accounting for 32 percent of total job losses. Motor vehicles firms lost more than 315,300 jobs, comprising 31 percent of all jobs lost.

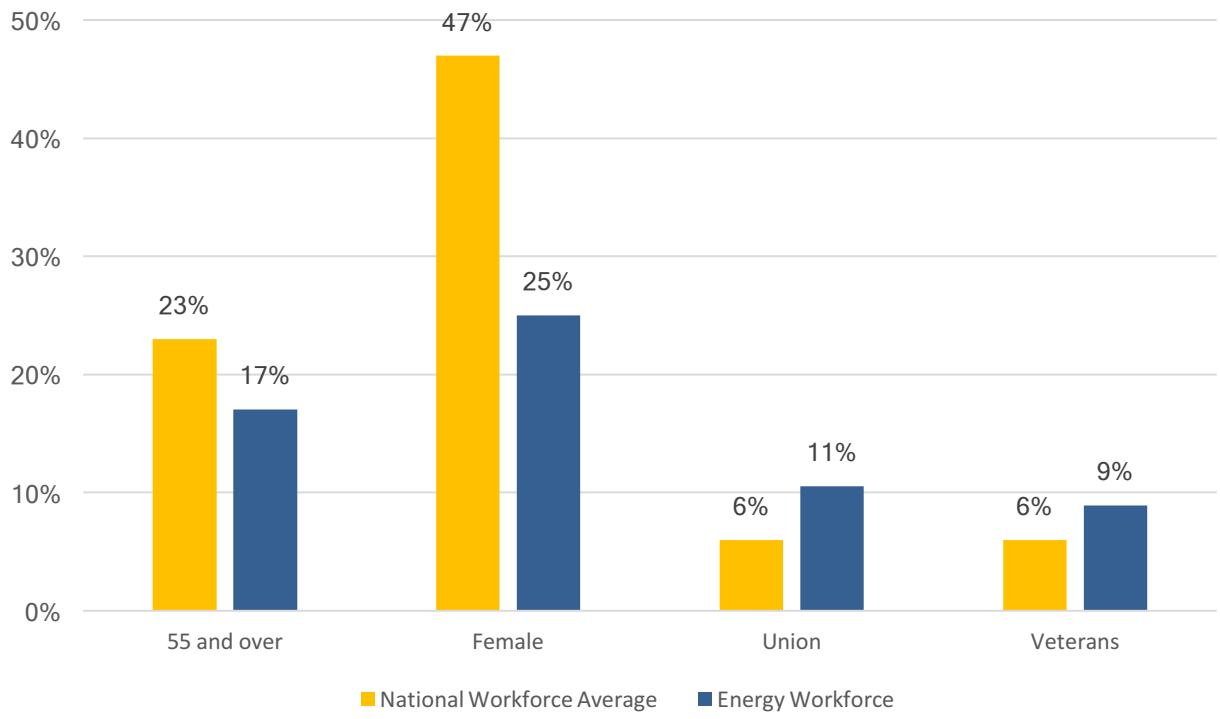
Diversity in the U.S. Energy Workforce

OVERALL ENERGY WORKFORCE DIVERSITY

While the energy workforce has low representation of women and older workers compared to the national workforce average, there are higher rates of unionized workers and workers with Veteran status. The proportion of union members in the energy workforce is five percentage points higher than the national average. At the same time, Veterans represent nine percent of energy workers, yet comprise only six percent of the national workforce.

Women account for only 25 percent of energy workers despite representing almost half (47 percent) of the overall national labor force. Similarly, workers 55 years of age and older only account for 17 percent of energy workers compared to a 23 percent national average (Figure 1).

Figure 1. Age, Sex, Union and Veteran Status in the Energy Workforce[11]



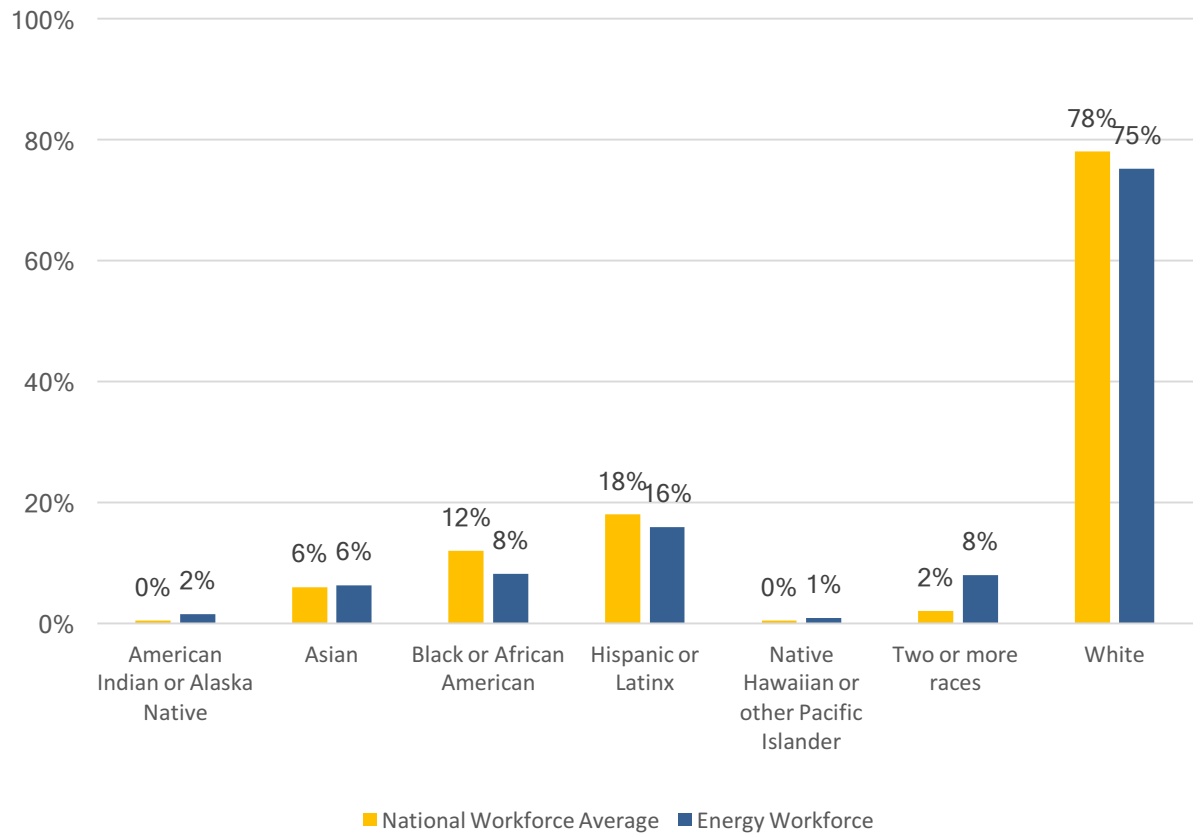
[11] All demographic information in this table and subsequent demographic tables in this report (except union membership) are from the 2019 dataset in "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, U.S. Department of Labor, https://www.bls.gov/cps/demographics.htm. Information on private union membership is from "Table 3: Union affiliation of employed wage and salary workers by occupation and industry, 2018-19 annual averages," in U.S. Department of Labor, Bureau of Labor Statistics, "Union Members Summary," news release, January 22, 2020, https://www.bls.gov/news.release/union2.nr0.htm.

The proportion of White workers in the energy sector is three points below the national average. Despite this, however, some populations still remain underrepresented. In particular, there are fewer Black or African American energy workers (eight percent) in the energy sector compared to the national workforce (12 percent). Though less drastic of a discrepancy, Hispanic or Latinx workers are also underrepresented in the energy sector (16 percent) relative to the national workforce (18 percent) (Figure 2).

This discrepancy is due to the fact that there are more individuals in the energy sector that identify with two or more races; eight percent of energy workers identified as two or more races compared to only two percent in the national workforce. While federal guidelines were followed in administering the demographic questions, respondents may have reported two or more races as including Hispanic or Latino ethnicity, thereby inflating the total for two or more races and deflating other racial and ethnic categories.

The energy sector has a slightly higher representation of American Indian or Alaska Natives and Native Hawaiian or Pacific Islanders compared to the overall U.S. labor force.

Figure 2. Energy Workforce by Race and Ethnicity



ENERGY WORKFORCE DIVERSITY BY TECHNOLOGY AND ENERGY SOURCE SECTOR

This section highlights energy workforce demographics by both energy technology sector and energy sources (referred throughout this report as "technology sectors") and their component sub-technologies. As described in the annual United States Energy and Employment Report (USEER), energy employment is broken out into five key technology sectors, described in Figure 3 below. Within each of these major technology sectors are key sub-technologies, such as solar electric power generation, nuclear electric power generation, petroleum fuels, coal fuels, electric vehicles, ENERGY STAR® appliances, efficient lighting technologies, or smart grid and microgrids.[12]

Figure 3. Five Energy Technology Sectors

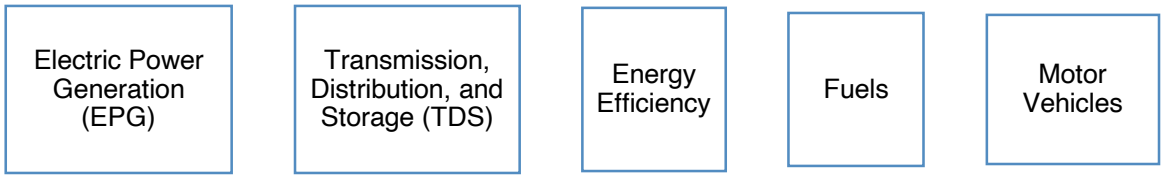


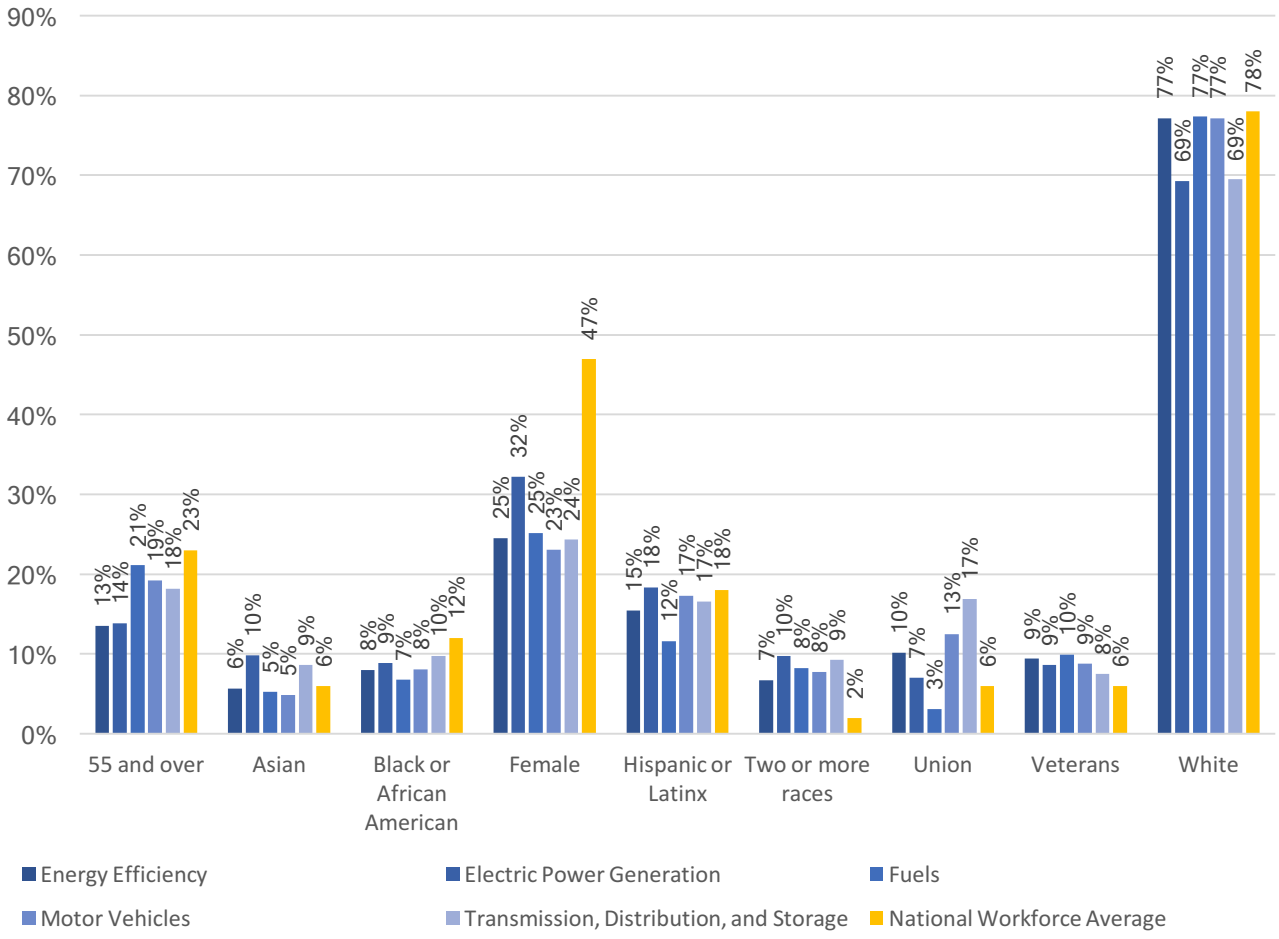
Table 1. Five Energy Technology Sectors & Component Sub-Technologies

Technology Sector	Sub-Technologies
Electric Power Generation	Solar, wind, nuclear, coal, hydroelectric, geothermal, and biomass electric power generation
Fuels	Coal, petroleum, natural gas, nuclear, corn ethanol, and woody biomass fuels
Transmission, Distribution, and Storage	Traditional transmission and distribution, battery storage, smart grid, microgrid
Energy Efficiency	Efficient lighting, traditional HVAC, ENERGY STAR appliances, renewable heating and cooling, advanced and recycled building materials
Motor Vehicles	Gasoline and diesel transportation, electric vehicles, plug-in hybrid vehicles, hydrogen, and fuel cell vehicles

[12] For more information on energy employment by technology sector and sub-technology, please visit https://www.usenergyjobs.org/.

The demographic composition of the energy workforce varies across different technology sectors. All technologies except for Fuels, have higher rates of union membership than the overall national workforce. It is also notable that across technologies, women are significantly underrepresented. Within Electric Power Generation—the technology sector with the greatest share of female workers—only 32 percent of the workforce are women, compared to a 47 percent national average. Black or African American workers are more highly represented in Transmission, Distribution, and Storage as well as Electric Power Generation, yet still fall below the national average across all technology sectors. Hispanic or Latinx workers account for 18 percent of Electric Power Generation workers, which is equivalent to the national average. The Fuels sector has the lowest proportion of Hispanic or Latinx workers compared to all other technology sectors. At 10 percent, the Electric Power Generation also has the highest proportion of Asian workers compared to a national workforce average of six percent.

Figure 4. Energy Workforce Demographics by Technology Sector



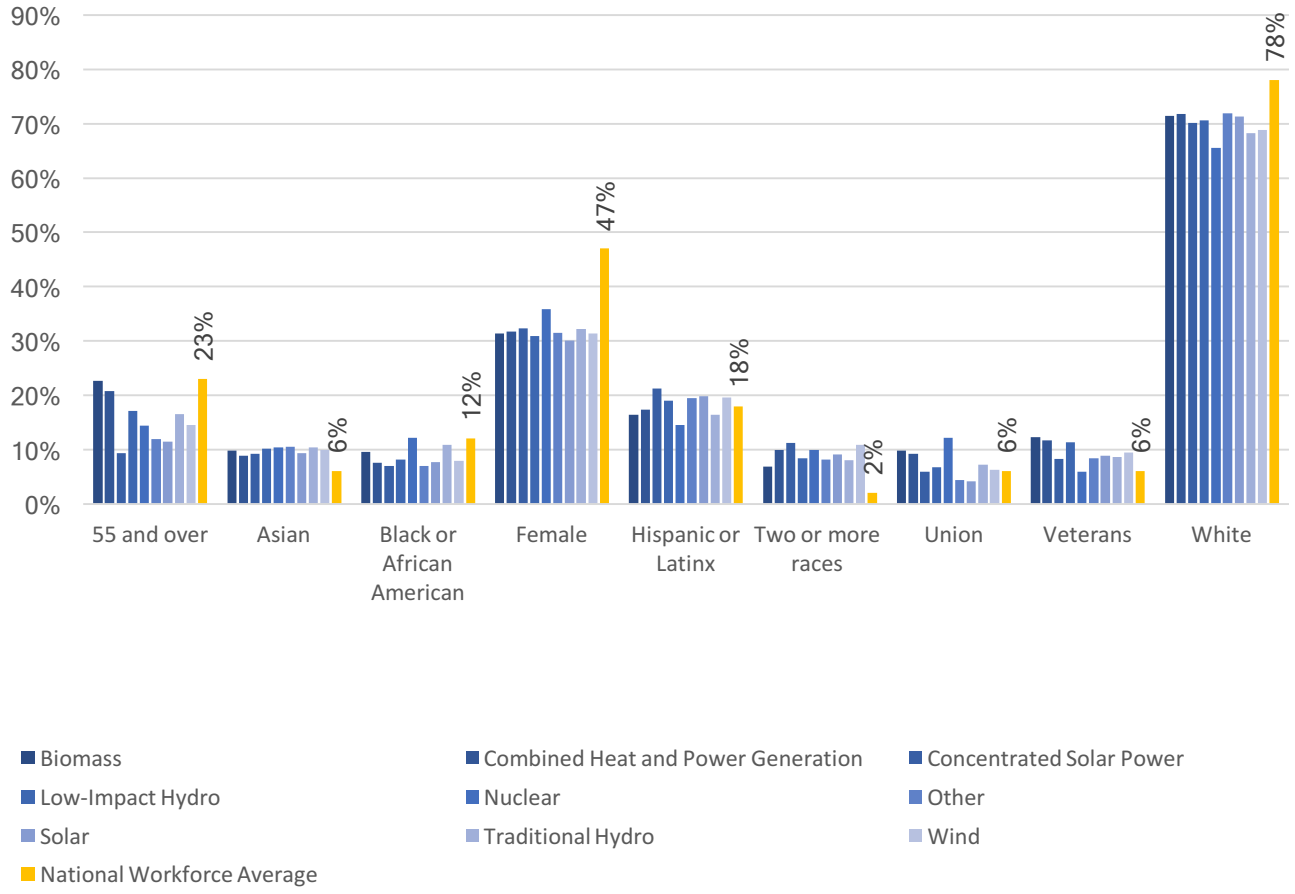
Electric Power Generation -- Non-Fossil Fuel Sub-Technologies

The proportion of White workers is lower across all non-fossil fuel EPG sub-technologies compared to the national average of 78 percent. At the same time, the proportion of two or more races across all the sub-technologies featured in Figure 5 sits between seven and 11 percent—significantly higher than the two percent national workforce average.

Asian workers are more highly represented across all non-fossil fuel EPG sub-technologies, at rates of roughly nine to 11 percent, compared to a six percent national average. The solar and wind sub-sectors have above-average representation of Hispanic or Latinx workers—about two to three percentage points above the national average—and a below-average representation of Black or African American workers. However, Black or African American workers account for 12 percent of the nuclear electric power generation labor force, which is equivalent to the national average.

Unionized workers are more highly concentrated in the biomass and nuclear electric power generation sub-sectors.

Figure 5. Electric Power Generation Sector Workforce Demographics (Non-Fossil Fuels)



Electric Power Generation -- Fossil Fuel Sub-Technologies

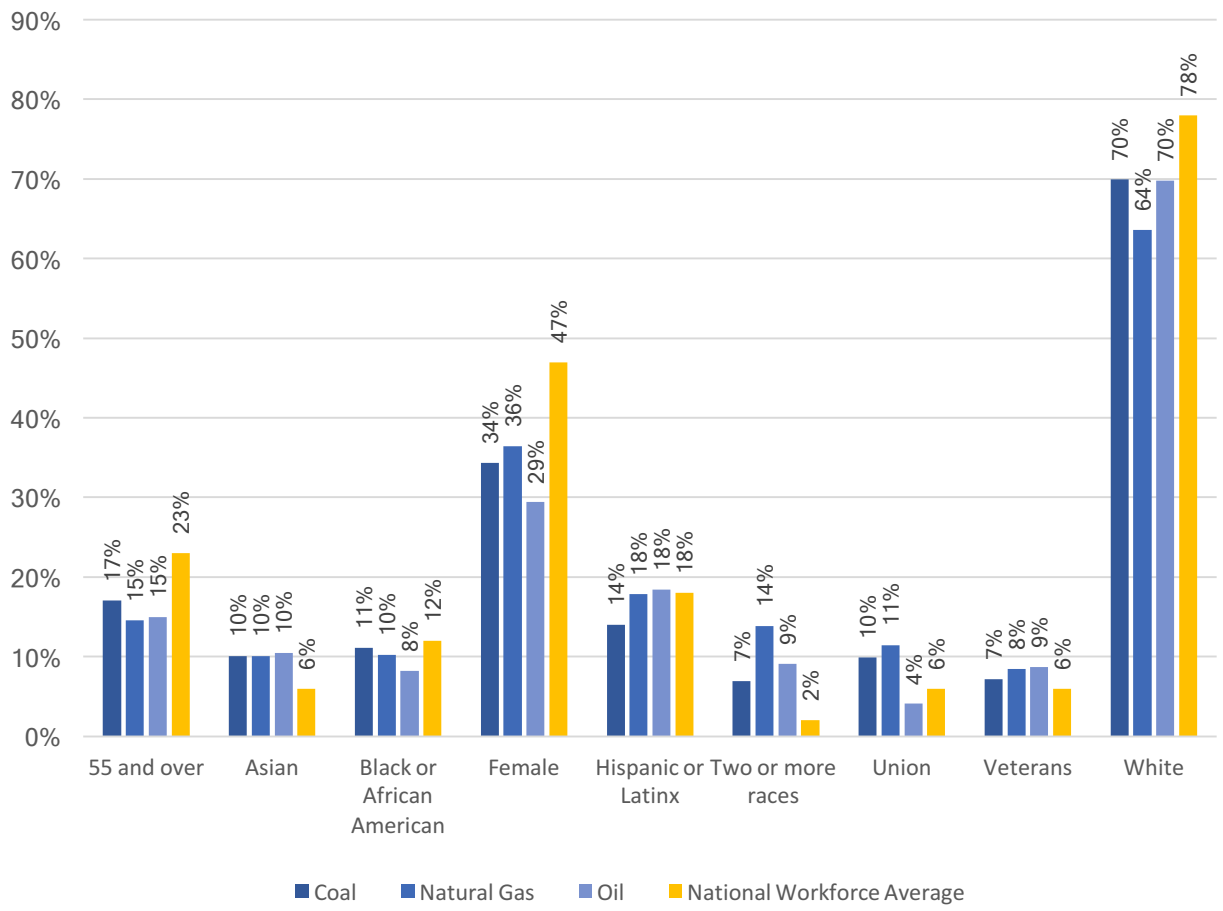
Across fossil fuel EPG sub-technologies, Hispanic or Latinx workers are equally represented in natural gas and oil compared to the national workforce average; in coal electric power generation, Hispanic or Latinx workers are four points below the national average.

Across all fossil fuel EPG sub-sectors, Black or African American workers are underrepresented compared to the national average of 12 percent.

The proportion of unionized workers varies, with greater unionization rates among the coal and natural gas sub-technologies (

Figure 6).

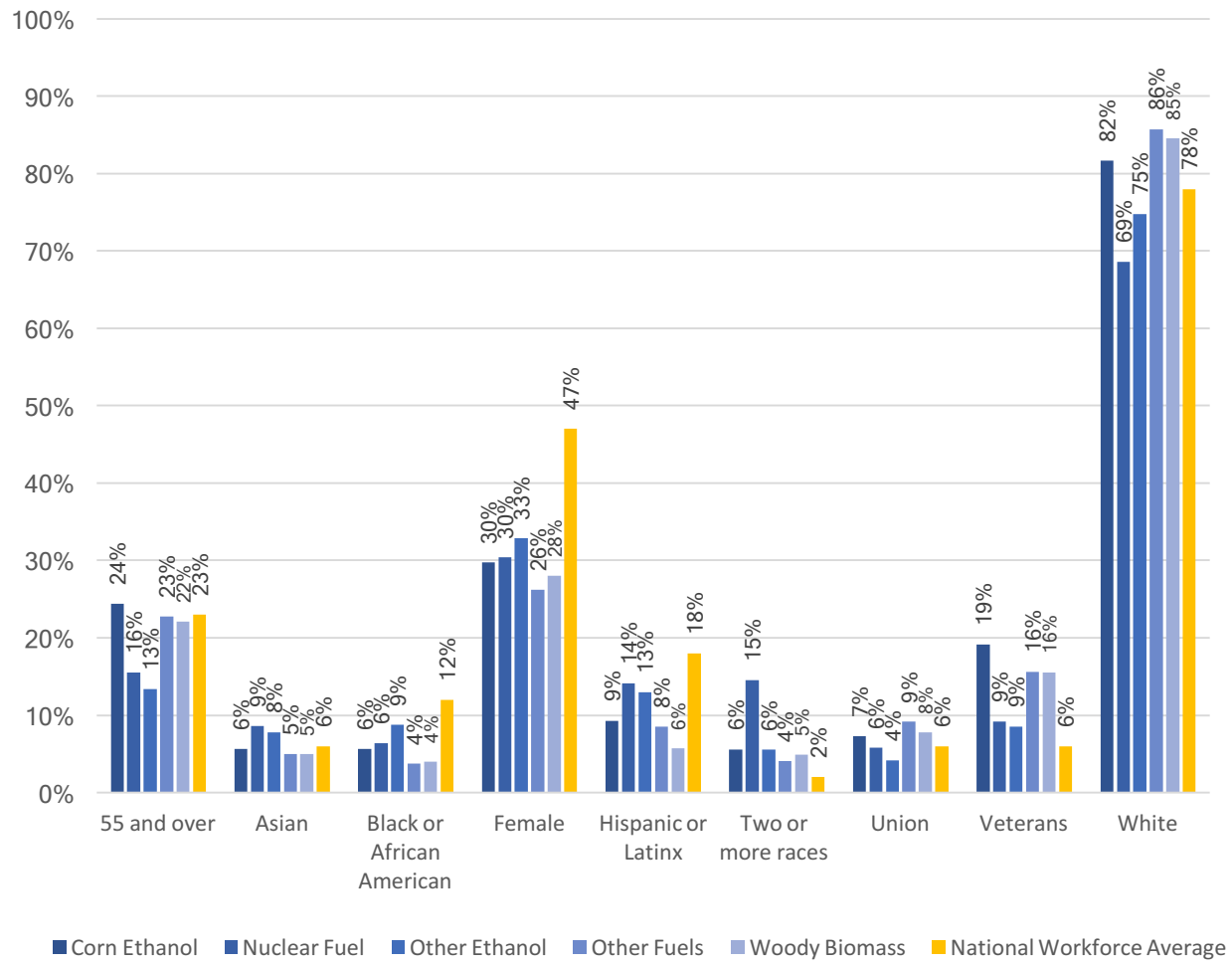
Figure 6. Electric Power Generation Sector Workforce Demographics (Fossil Fuels)



Fuels – Non-Fossil Fuel Sub-Technologies

Black or African American and Hispanic or Latinx workers are underrepresented across all non-fossil fuel sub-technologies. The nuclear fuels and other ethanol sub-sectors have the highest proportion of Hispanic or Latinx workers, at 14 and 13 percent, respectively. The other ethanol sub-sector also has the highest proportion of Black or African American workers, at nine percent (Figure 7).

Figure 7. Fuels Sector Workforce Demographics (Non-Fossil Fuels)

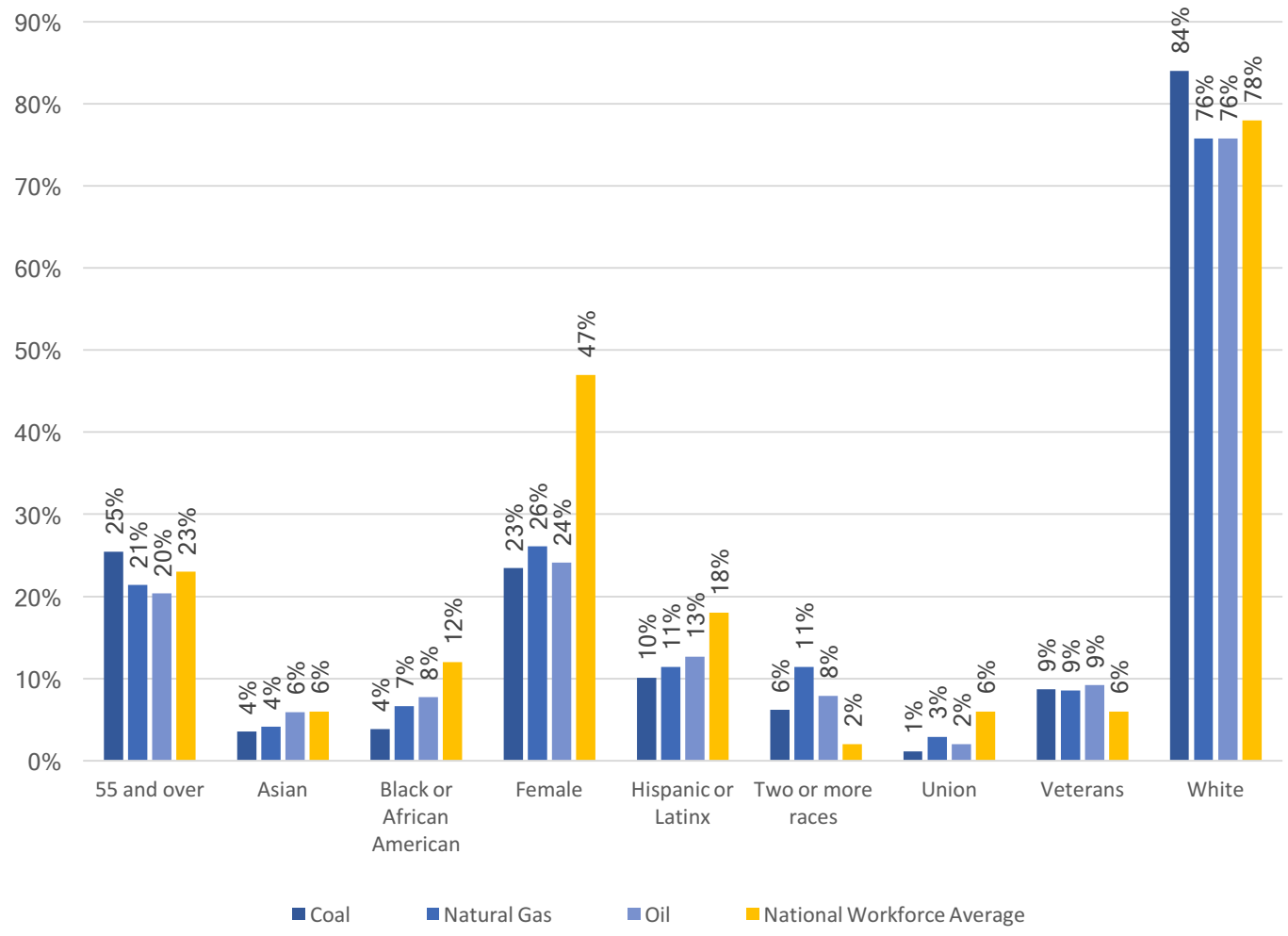


Fuels – Fossil Fuel Sub-Technologies

Similar to the non-fossil sub-technologies, fossil fuel sub-technologies also have below-average representation of Hispanic or Latinx and Black or African American workers. Across coal, natural gas, and oil fuels, Black or African American workers account for roughly four to

eight percent of the workforce. Across these same sub-technologies, Hispanic or Latinx workers represent 10 to 13 percent of the workforce (Figure 8).

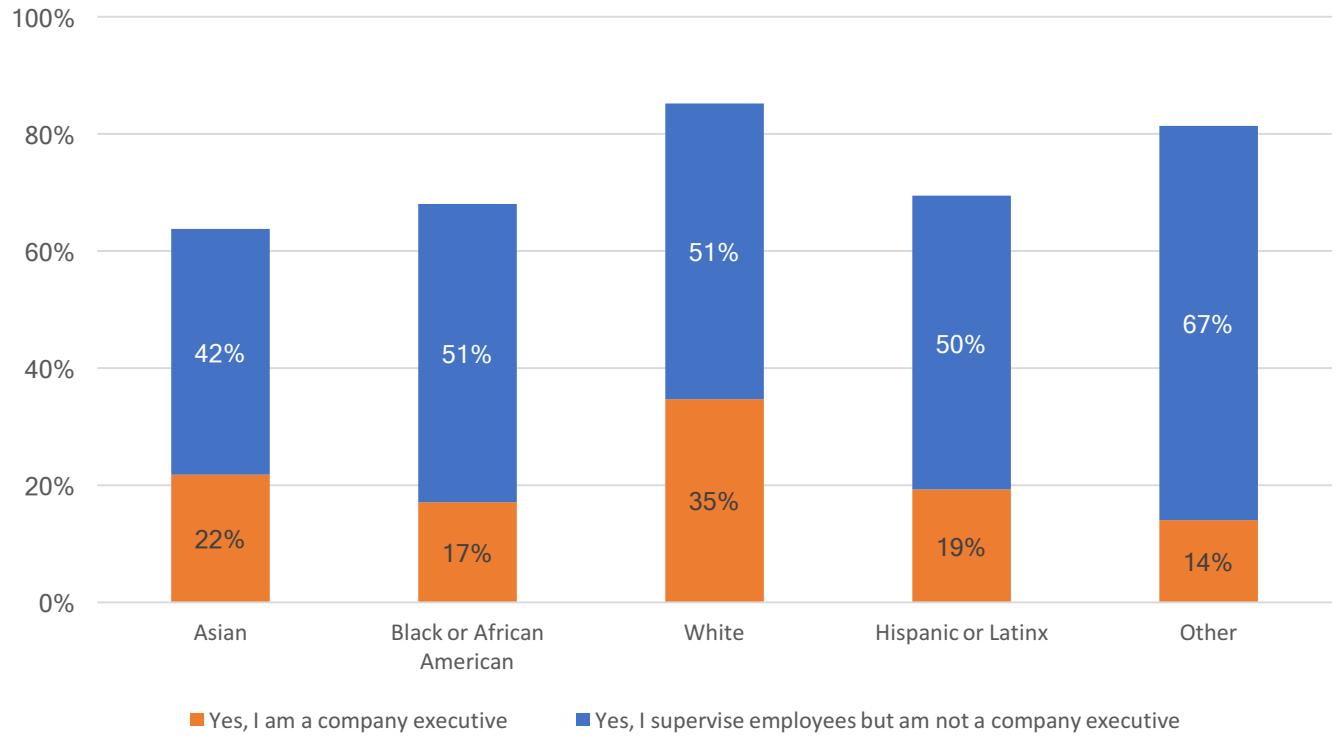
Figure 8. Fuels Sector Workforce Demographics (Fossil Fuels)



DIVERSITY IN MANAGEMENT AND EXECUTIVE LEADERSHIP

White energy workers were more likely to report working in leadership roles. About one third (35 percent) of White respondents reported being a company executive compared to only 17 of Black or African American energy workers and 19 percent of Hispanic or Latinx respondents. Similarly, only 22 percent of Asian respondents indicated that they are company executives (Figure 9). While it should be noted that White energy worker survey respondents tended to have higher levels of education, even when educational attainment was accounted for, White energy workers reported to be company executives more frequently than their non-White peers.

Figure 9. Supervisory and Executive Leadership Roles Among Energy Worker Respondents[13]



[13] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

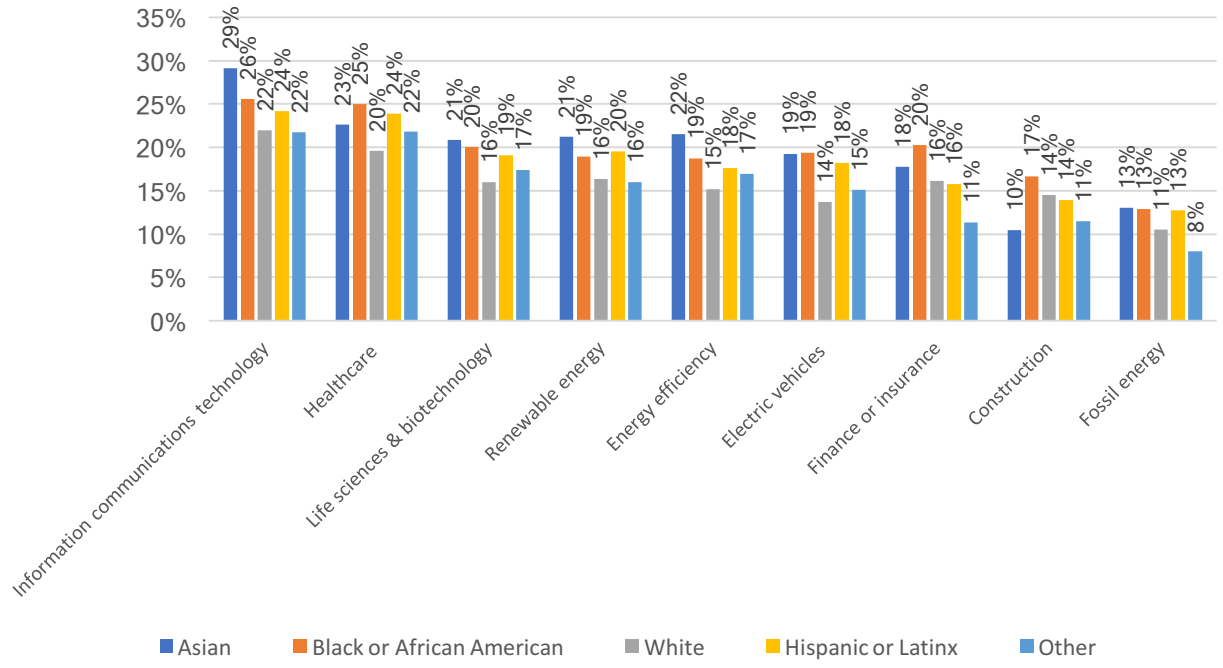
Energy Career Perceptions, Awareness, and Satisfaction

INTEREST AND AWARENESS

Information communications technology and healthcare are the most popular sectors for potential careers among the general population. Career interest in these two industries was highest across all races and ethnicities. By contrast, the construction and fossil energy sectors had the lowest rates of career interest amongst respondents.

Of the energy sectors tested, renewable energy and energy efficiency received higher rates of interest compared to electric vehicles or fossil energy. A higher percentage of Asian, Black or African American, Hispanic or Latinx, American Indian and Alaska Natives, and Native Hawaiians expressed interest in energy efficiency careers compared to White respondents; this is also true for careers in the electric vehicles sector. For renewable energy, Asian, Black or African American, and Hispanic or Latinx individuals expressed more interest in these careers than White respondents. Overall, Asian respondents had the highest rates of career interest in renewable energy and energy efficiency careers (Figure 9).

Figure 10. Career Interest by Industry[14]



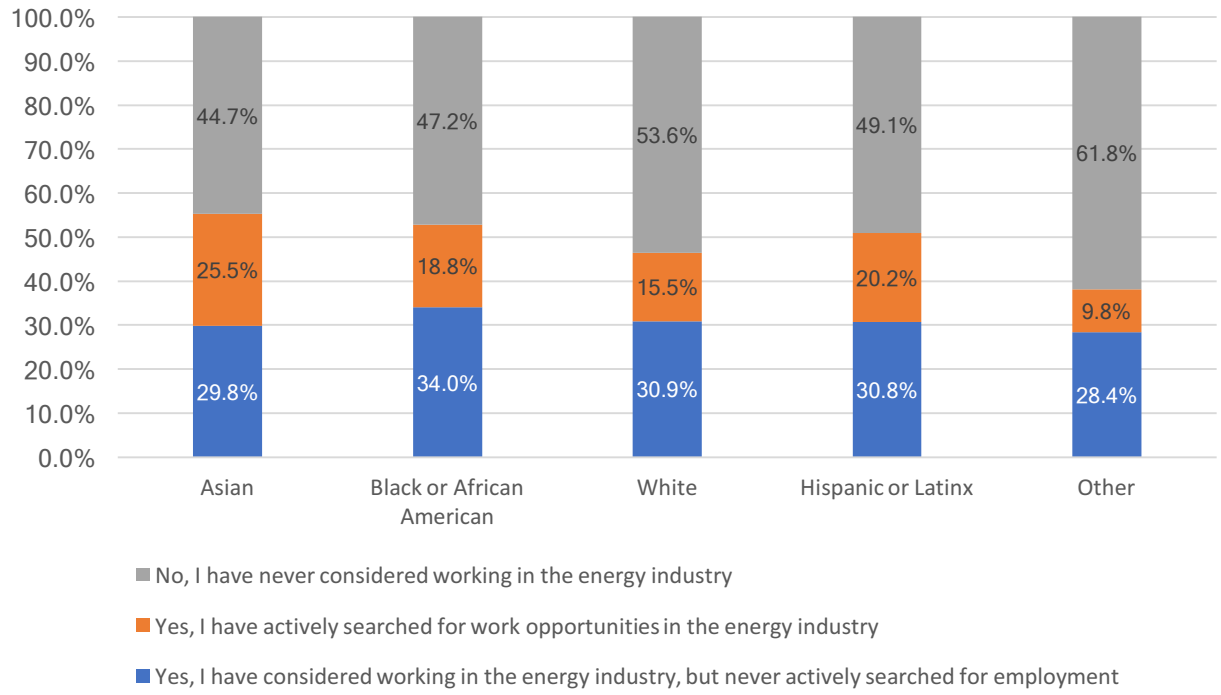
[14] Figure 10 displays the percentage of individuals that selected "very interested" and does not include those that selected "interested" or "somewhat interested". "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Half of the general population of survey respondents (non-energy workers) noted they had not considered working in the energy industry. Another third (31 percent) reported considering working in the energy industry but never actively searching for employment.

Black or African American respondents were most likely to have considered working in the energy industry, while Asian respondents were most likely to have actively searched for work opportunities in the energy industry. Just over a third (34 percent) of Black or African American individuals indicated that they have considered working in the energy industry, but have never actively searched for employment. Another 19 percent of Black or African American survey respondents indicated that they have actively searched for work opportunities in the energy industry (Figure 11).

Three in ten Asian respondents have considered working in the energy industry, while just over a quarter (26 percent) indicated that they have actively searched for work opportunities; this compares to 20 percent of Hispanic or Latinx individuals, 19 percent of Black or African American, and 16 percent of White individuals who have actively searched for work in the energy industry.

Figure 11. Consideration for Working in the Energy industry[15]



[15] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

For individuals who expressed that they have never considered working in the energy industry, a lack of interest was most frequently cited across respondents of all racial and ethnic backgrounds. Lack of relevant skills was another common reason why respondents did not pursue a career in energy. Many respondents also cited that they had never thought to consider an energy career or that they were content in their current field (Table 2).

Table 2. Top Reasons Why an Energy Career Was Never Considered[16]

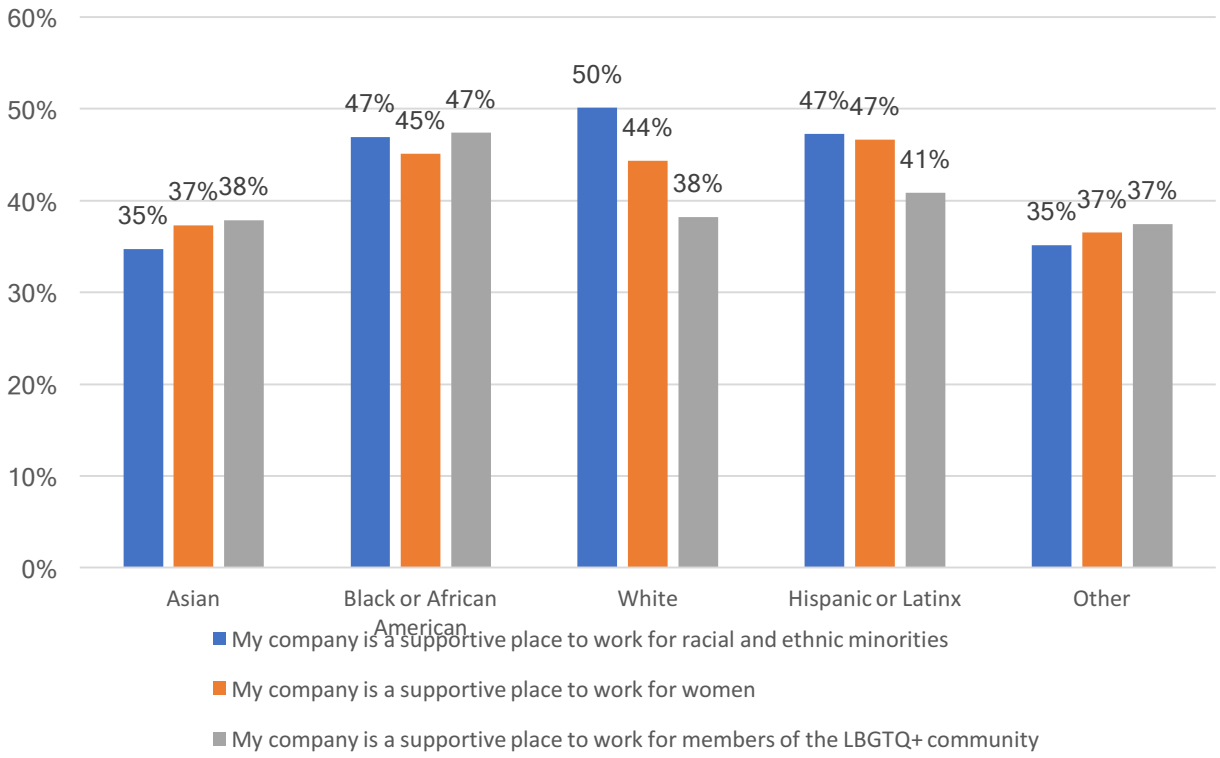
Asian	Black or African American	White	Hispanic or Latinx	Other
Not interested (39%)	Not interested (52%)	Not interested (39%)	Not interested (38%)	Not interested (38%)
Lack of relevant background, skills, education, or experience (18%)	Never thought of it (18%)	Content in current field (20%)	Lack of relevant background, skills, education, or experience (19%)	Lack of relevant background, skills, education, or experience (19%)
Content in current field (15%)	Content in current field (12%)	Lack of relevant background, skills, education, or experience (18%)	Never thought of it (15%)	Content in current field (18%)

PERCEPTIONS OF EQUITY, INCLUSION, AND SUPPORT

Across all races and ethnicities, fewer than half of all energy worker respondents strongly agree that their company is supportive for racial and ethnic minorities, women, and members of the LGBTQ+ community. Asian, American Indian and Alaska Native, and Native Hawaiian respondents were least likely to strongly agree with these statements. Roughly a third (35 percent) of Asian respondents strongly agreed that their company is a supportive place to work for racial and ethnic minorities, compared to 47 percent of Black or African Americans, 47 percent of Hispanic or Latinx individuals, and 50 percent of White energy workers (Figure 12).

[16] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Figure 12. Energy Workers Who 'Strongly Agree' That Their Workplace is Supportive[17]



Fewer than half of respondents across race and ethnicity strongly agreed that their company has equitable diversity practices regarding recruitment, hiring, and promotion. Across race and ethnicity, Hispanic and Latinx energy workers were more optimistic about recruitment, hiring, and promotion of racial and ethnic minorities at their companies compared to Asian, Black or African American, or White energy workers. Just under half (49 percent) of Hispanic or Latinx energy workers indicated that they strongly agree their company recruits and hires an acceptable number of racial and ethnic minorities, compared to 46 percent of White energy workers, 42 percent of Black or African American workers, 42 percent of Asian workers, and 36 percent of American Indian and Native Hawaiians.

At the same time, 48 percent of Hispanic or Latinx energy workers strongly agreed that their company equitably promotes racial and ethnic minorities, compared to 46 percent of White respondents, 40 percent of Black or African American respondents, and 31 percent of Asian respondents.

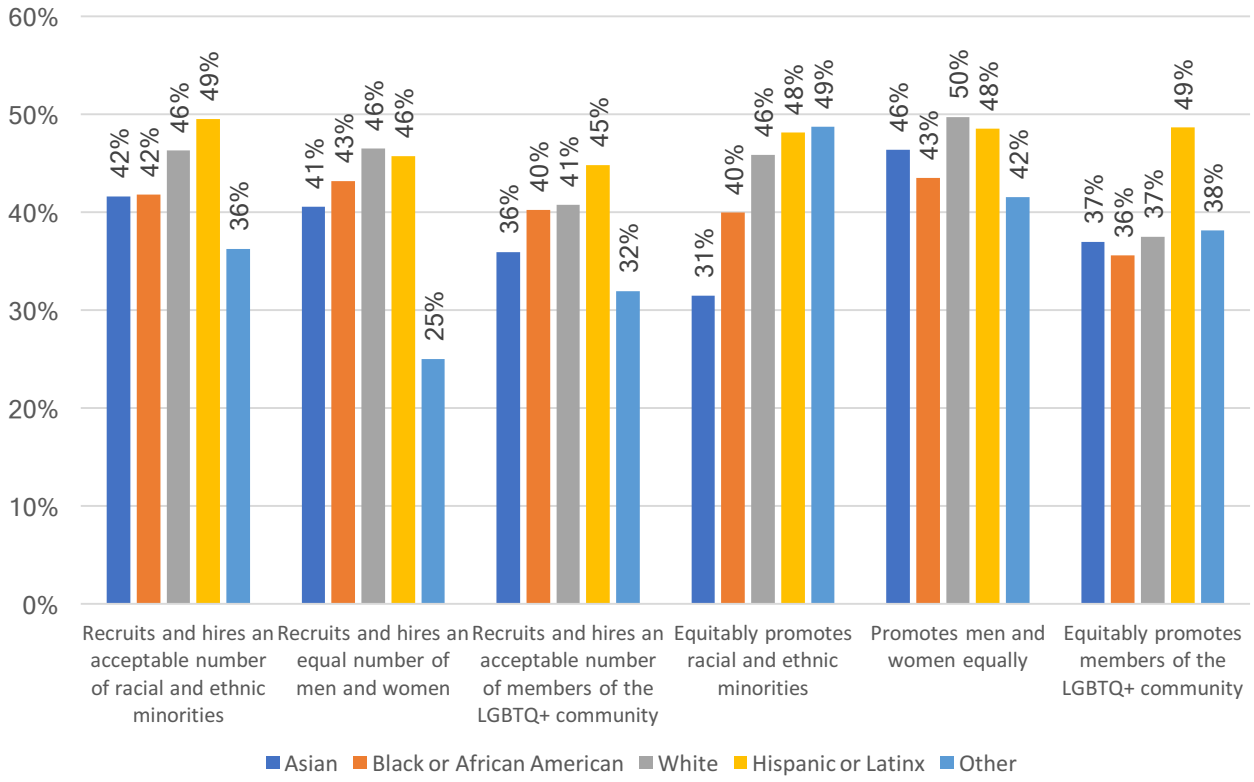
Overall, Black or African American and Asian energy workers are more likely to feel that the recruitment, hiring, and promotion of racial and ethnic minorities needs improvement compared to other racial and ethnic cohorts.

[17] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Energy workers that identified as American Indian and Alaska Native or Native Hawaiian and other Pacific Islander were least likely to strongly agree—about 16 to 21 points lower compared to other racial and ethnic groups—that their company recruits and hires an acceptable number of men and women. White energy workers were most likely to strongly agree that their company promotes men and women equally, especially compared to Black or African American and American Indian or Native Hawaiian respondents.

In terms of equitable recruitment and hiring by gender, race and ethnicity, and gender identity, energy workers were least positive about company recruitment and hiring practices for LGBTQ+ individuals. Hispanic and Latinx respondents were slightly more optimistic that their company recruits and hires an acceptable number of members of the LGBTQ+ community and significantly more optimistic that their company equitably promotes members of the LGBTQ+ community compared to other racial and ethnic cohorts (Figure 13).

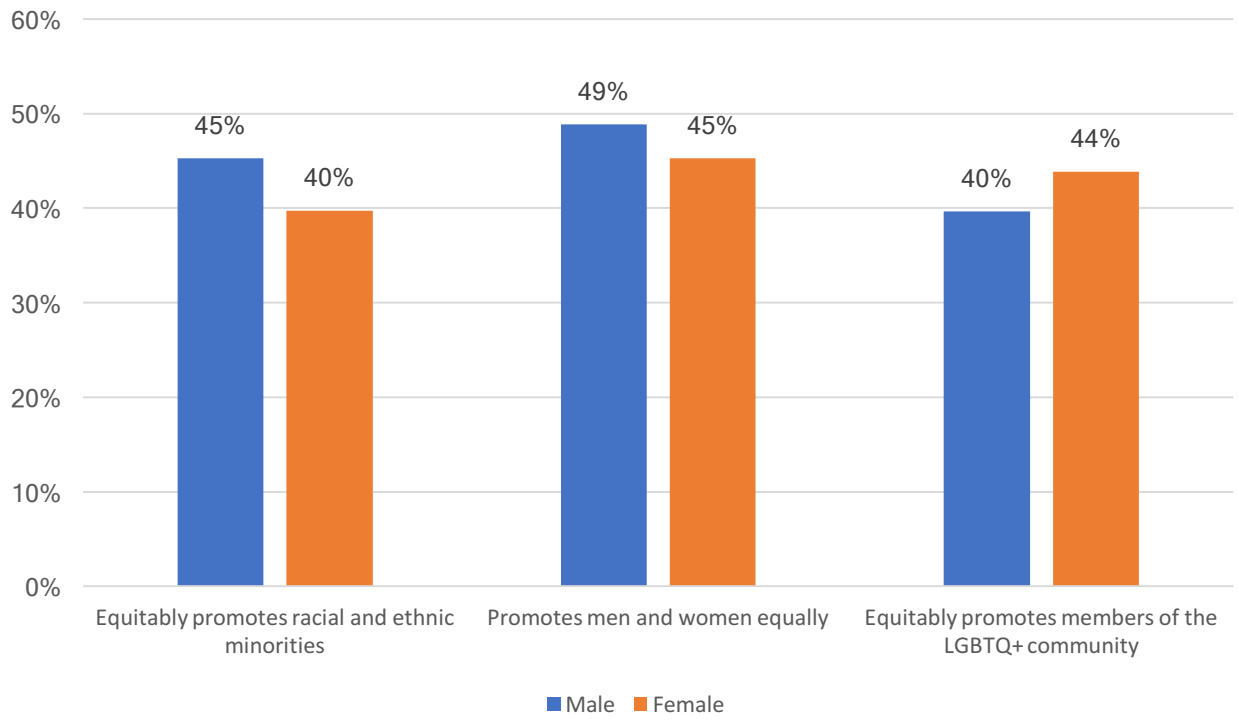
Figure 13. Energy Workers Who 'Strongly Agree' With Company Diversity Practice by Race and Ethnicity[18]



[18] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Female energy workers are less likely to strongly agree that their company equitably promotes racial and ethnic minorities or men and women. However, a greater share of female energy workers feel that LGBTQ+ members are equitably promoted (Figure 14).

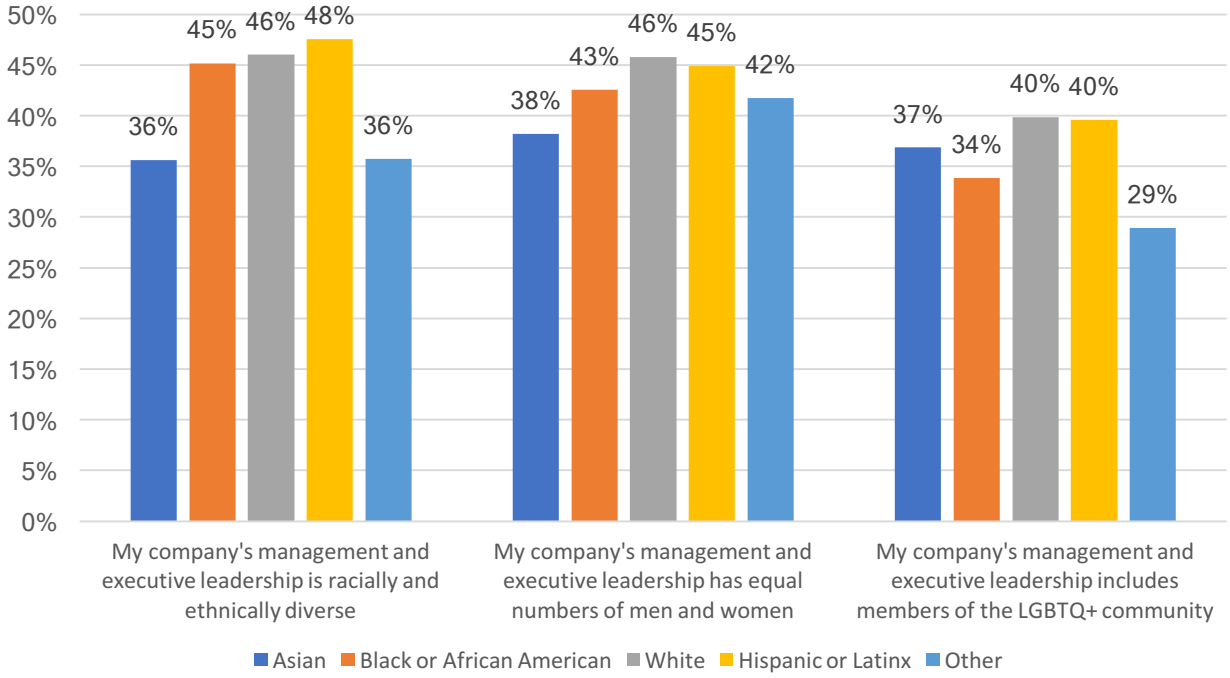
Figure 14. Energy Workers Who 'Strongly Agree' With Company Diversity Practice by Gender



Overall, fewer than half of respondents across all race and ethnic cohorts strongly agreed that their company's leadership exhibits diversity across gender, race and ethnicity, and gender identity. Of the statements tested in Figure 15 below, energy workers were least likely to strongly agree that their company's management and executive leadership includes members of the LGBTQ+ community.

Similar to the findings in Figure 13 regarding overall recruitment, hiring, and promotion of racial and ethnic minorities, Hispanic and Latinx energy workers were also most optimistic about diversity in their company's management and leadership roles compared to Asian and Black or African American energy workers. Forty-eight percent of Hispanic and Latinx energy workers strongly agreed that their company's management and executive leadership is racially and ethnically diverse, compared to 46 percent of White energy workers, 45 percent of Black or African American workers, 36 percent of Asian workers, and 36 percent of Native Hawaiian or American Indian energy workers (Figure 15).

Figure 15. Energy Workers Who 'Strongly Agree' that Company Leadership is Diverse[19]

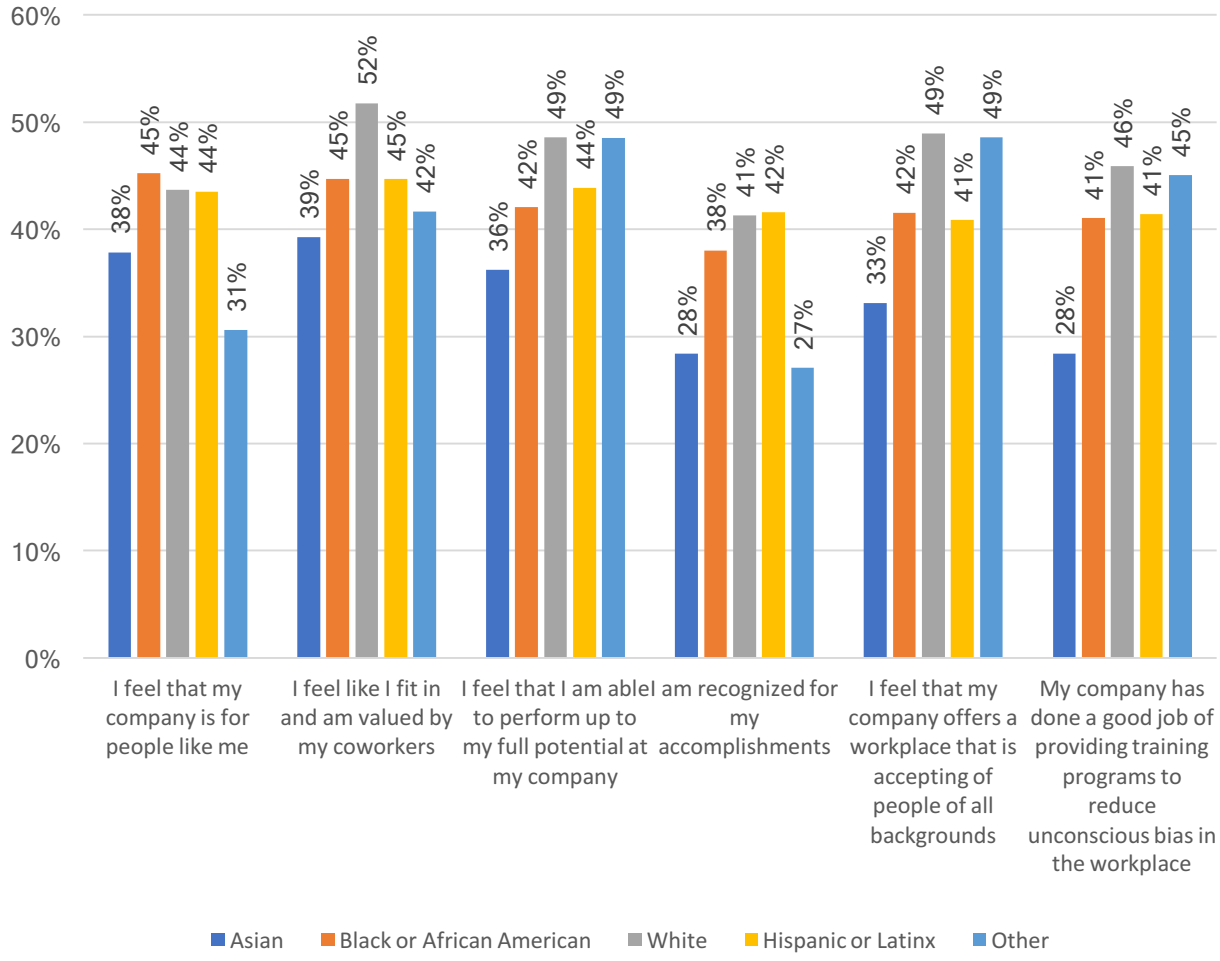


Asian, American Indian, and Native Hawaiian energy workers reported the lowest sense of fit and value at their company and were least likely to say that they are recognized for their accomplishments. It is also notable that Black or African American and Hispanic or Latinx respondents were less likely to agree that they fit in, are valued, and are able to perform up to their full potential at their company compared to White energy workers (Figure 16).

Fewer Asian, Black or African American, and Hispanic or Latinx energy workers indicated that they strongly agree their company offers a workplace that is accepting of people of all backgrounds—seven to 16 points lower than White respondents—or that their company has done a good job of providing training programs to reduce unconscious bias in the workplace.

[19] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Figure 16. Energy Workers Who 'Strongly Agree' With Statements on Workplace Belonging by Race and Ethnicity[20]

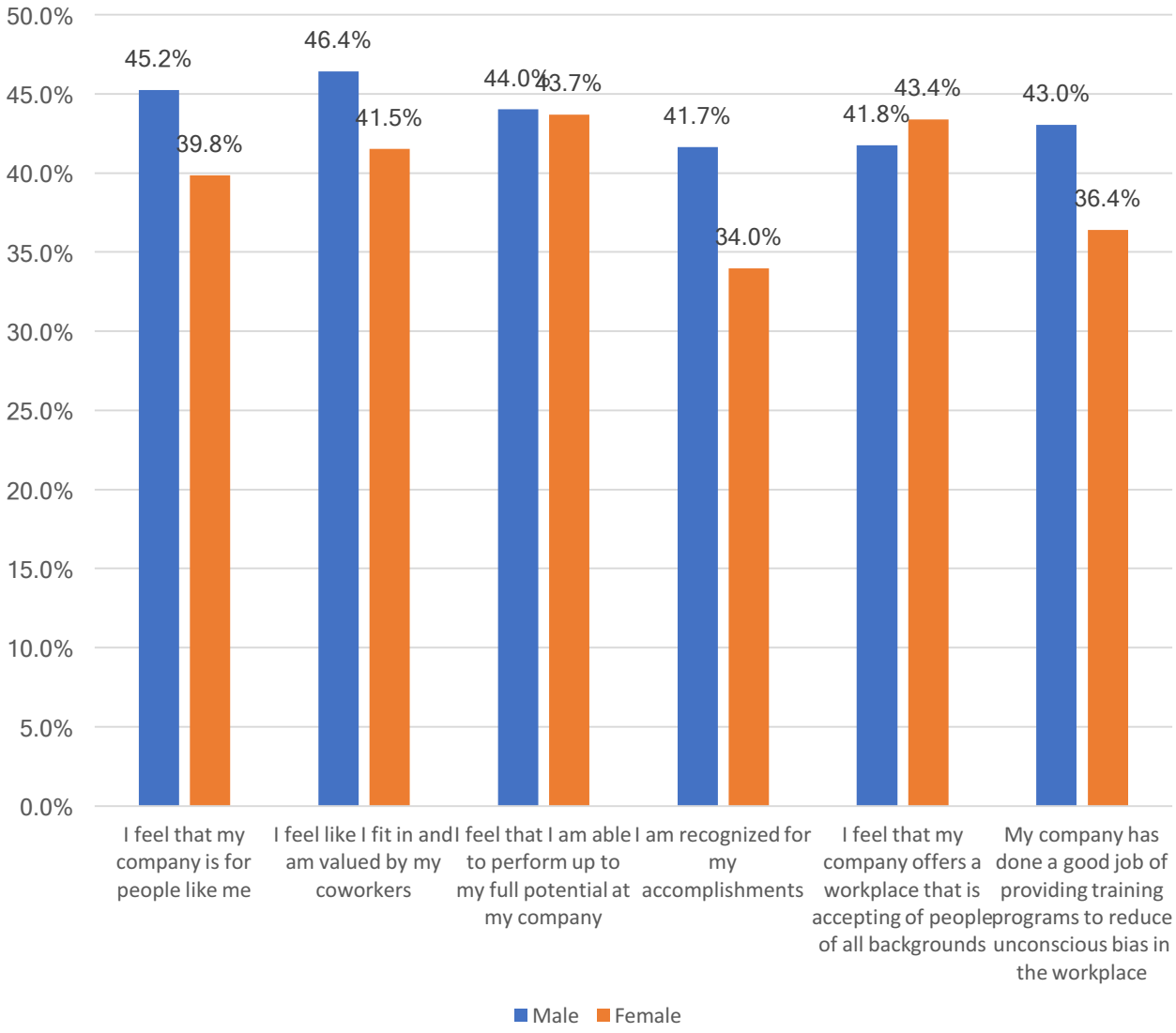


Women were less likely to agree across nearly all statements regarding workplace belonging compared to men. In particular, female energy workers were less likely to strongly agree that they feel their company is for people like them, that they fit in and are valued by their coworkers, that they are recognized for their accomplishments, and that their company has done a good job of providing training programs to reduce unconscious bias in the workplace.

The greatest difference between men and women was in recognition of accomplishments. Only about a third of female energy workers (34 percent) indicated that they are recognized for their accomplishments compared to 42 percent of male energy workers (Figure 17).

[20] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

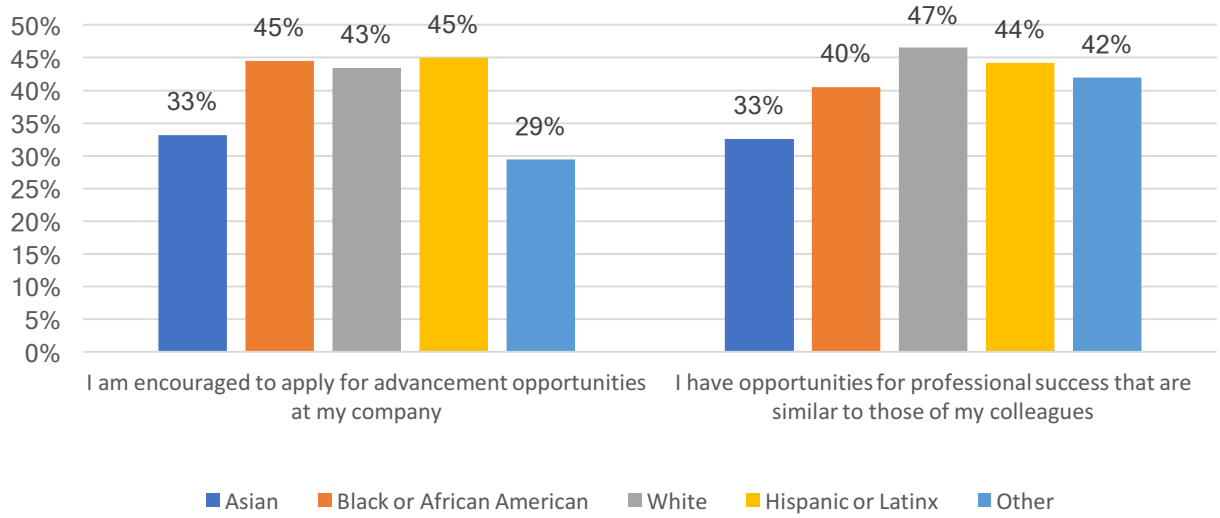
Figure 17. Energy Workers Who 'Strongly Agree' With Statements on Workplace Belonging by Race and Ethnicity by Gender



White respondents were most likely to strongly agree (47 percent) that they have opportunities for professional success that are similar to those of their colleagues. Black or African American (40 percent) and Asian (33 percent) respondents were least likely to strongly agree with this statement.

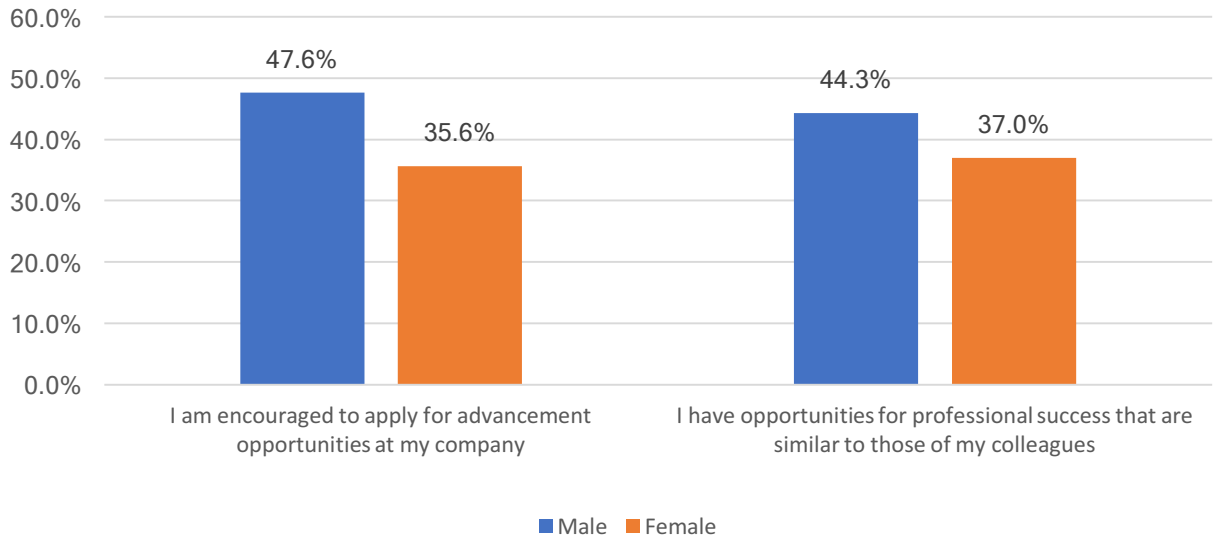
About 45 percent each of Black or African American energy workers and Hispanic or Latinx energy workers strongly agreed that they are encouraged to apply for advancement opportunities at their company; this is a higher proportion compared to Asian and White respondents (Figure 18).

Figure 18. 'Strongly Agree' with Career Advancement Statements by Race and Ethnicity[21]



Women are less likely to feel supported in their career advancement and professional development compared to men. Less than 40 percent of female energy workers reported that they are encouraged to apply for advancement opportunities or that they have similar opportunities for professional success as their colleagues. The proportion of women that strongly agreed with these statements was seven to 12 points lower than male respondents (Figure 18).

Figure 19. 'Strongly Agree' with Career Advancement Statements by Gender



[21] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

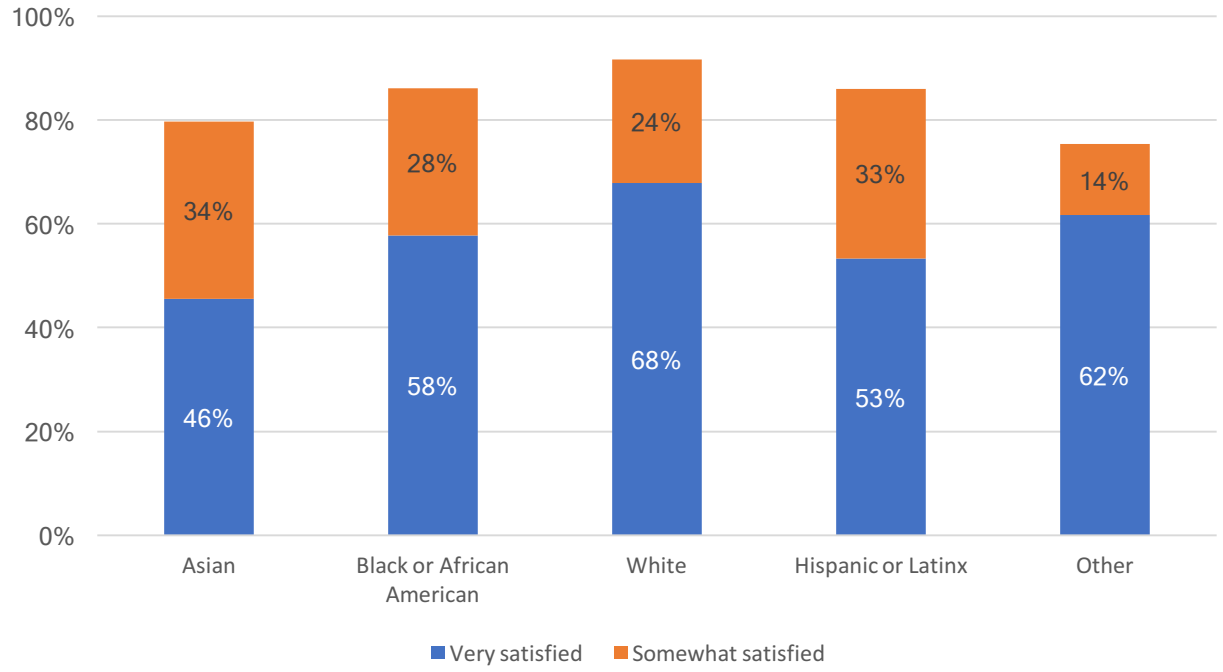
ENERGY CAREER SATISFACTION

White energy workers are more likely to report feeling very satisfied with their energy career than their non-White peers. About nine in ten (92 percent) White survey respondents indicated overall career satisfaction, both "very" and "somewhat satisfied"; seven in ten (68 percent) White energy workers are "very satisfied" with their energy career.

By comparison, 80 percent of Asian respondents reported overall career satisfaction, and 86 percent each of Black or African American and Hispanic or Latinx respondents reported overall satisfaction with their energy career (Figure 20).

Across managerial or supervisory roles specifically, overall satisfaction is higher for Hispanic or Latinx energy workers (93 percent), followed by Black or African American (90 percent), Asian (85 percent), and White (83 percent) energy workers. The proportion of "very satisfied" is slightly more homogenous across some races and ethnicities when filtering responses by supervisors and managers. Sixty percent of White supervisors or managers are "very satisfied", followed by Black or African American (57 percent), Hispanic or Latinx (49 percent), and Asian (38 percent).

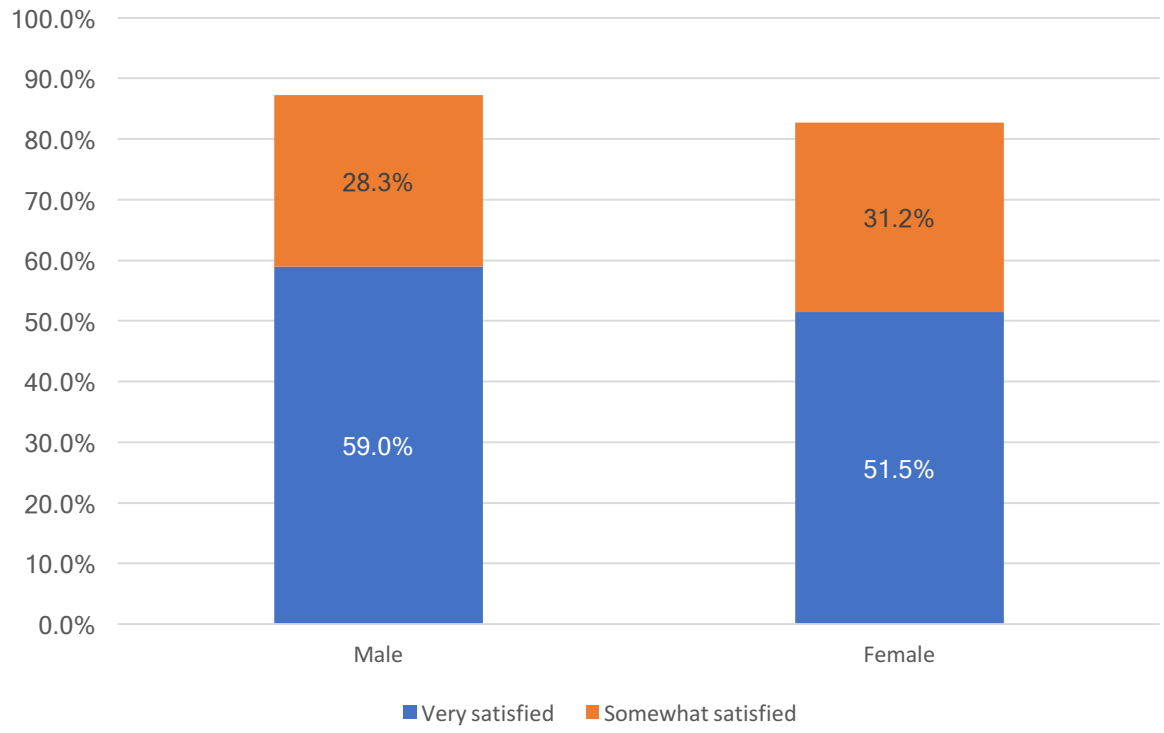
Figure 20. Energy Career Satisfaction by Race and Ethnicity[22]



[22] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Men in the energy industry are slightly more satisfied overall compared to women. Eighty-seven percent of male energy workers reported overall satisfaction, both "very" and "somewhat", with their energy career compared to 83 percent of female energy workers. Furthermore, a higher proportion of men also indicated that they are "very satisfied" (59 percent) compared to women (52 percent) (Figure 21).

Figure 21. Energy Career Satisfaction by Gender



White energy workers were most likely to strongly agree that they are satisfied with their company's overall benefits package (54 percent) and support for professional development (50 percent). Other racial and ethnic cohorts are seven to 16 points less likely to strongly agree that they are satisfied with their company's benefits package compared to White energy workers.

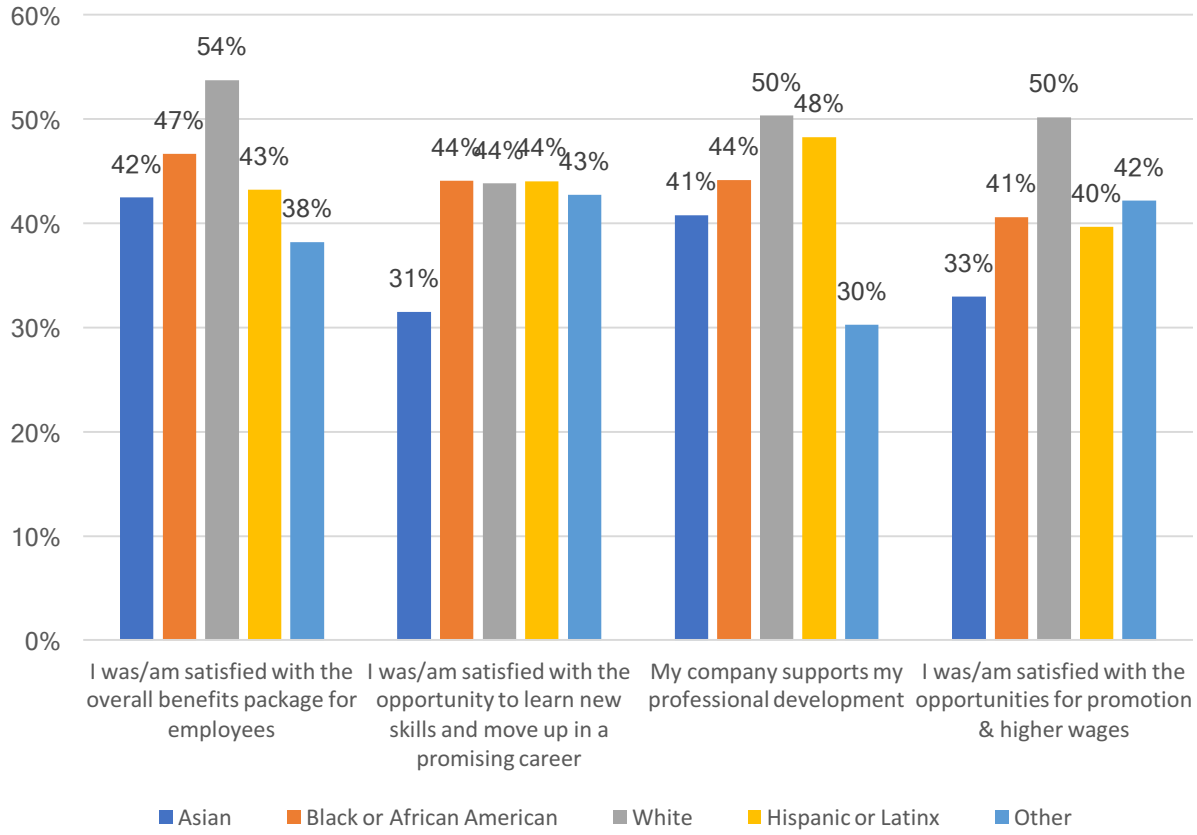
Similarly, White energy workers were more likely to indicate that their company supports their professional development (50 percent) compared to Asian (41 percent), Black or African American (44 percent), Hispanic or Latinx (48 percent), and American Indian or Native Hawaiian (30 percent) energy workers.

Black or African American, White, and Hispanic or Latinx energy workers are similarly satisfied with their opportunities to learn new skills and move up in a promising career. Asian, Native Hawaiian, and American Indian energy workers were less likely to strongly agree with this statement. Asian workers were the least likely to agree with any of the statements tested in Figure 22.

White energy workers were most likely to strongly agree that they are satisfied with their opportunities for promotion and higher wages (50 percent) compared to Black or African

American energy workers (41 percent), Hispanic or Latinx workers (40 percent), and Asian workers (33 percent).

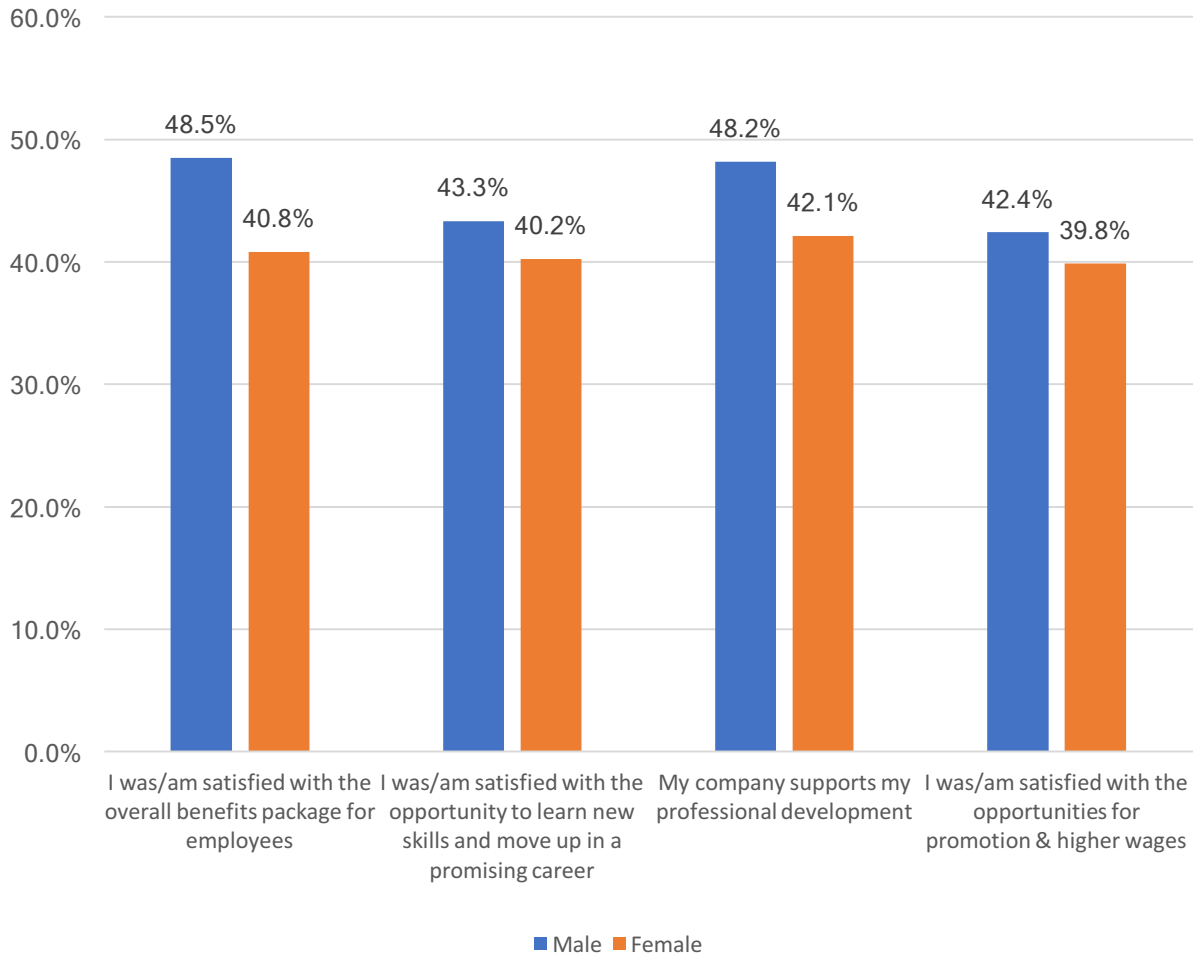
Figure 22. Energy Workers Who 'Strongly Agree' With Reasons for Satisfaction by Race and Ethnicity[23]



Men were more likely to strongly agree with all the statements tested in Figure 23. In particular, male energy workers are more satisfied with their benefits package (49 percent) compared to women (41 percent). Male respondents are also more satisfied with their opportunities to learn new skills and move up the career ladder, company support for professional development, and opportunities for promotion and higher wages.

[23] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Figure 23. Energy Workers Who 'Strongly Agree' With Reasons for Satisfaction by Gender

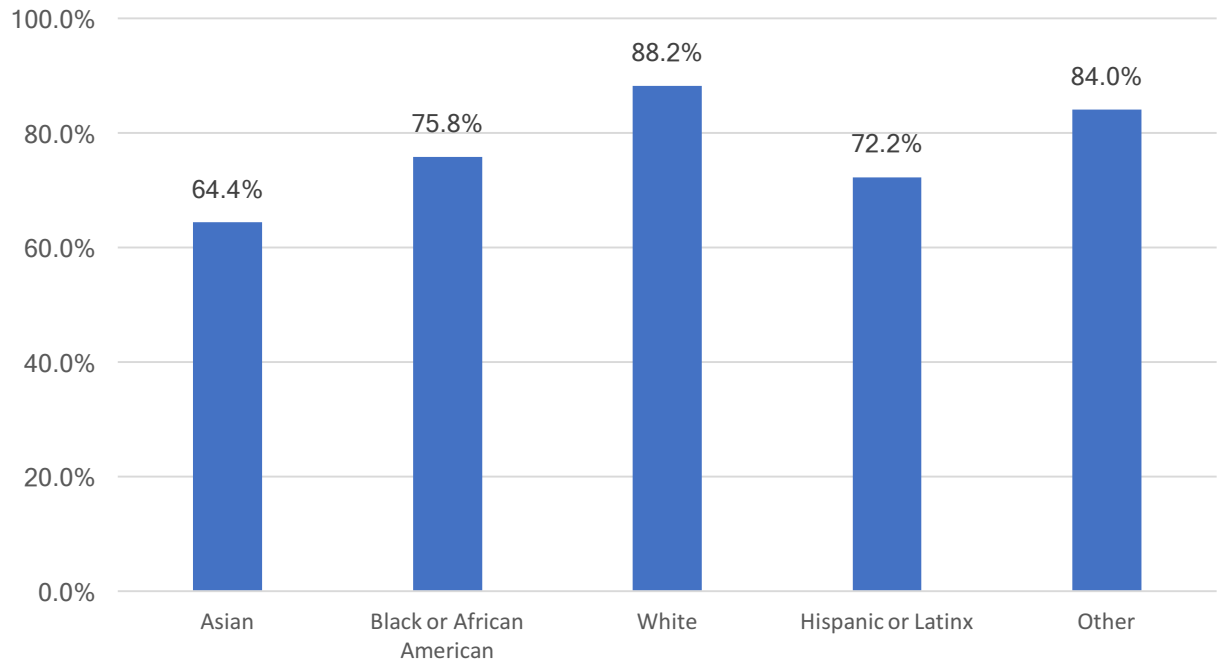


Energy Career Access, Navigation, and Support

EARLY EXPOSURE TO ENERGY CAREERS

Among the general population currently attending an educational institution, White respondents were much more likely (88 percent) to report that they had seen an energy-related company while attending a job fair or networking event at their school. Only 76 percent of Black or African American, 72 percent of Hispanic or Latinx, and 64 percent of Asian students had similarly seen energy-related firms at school-sponsored job fairs or networking events (Figure 24).

Figure 24. Presence of Energy-Related Companies at Job Fairs or Networking Events[24]



CAREER SUPPORT

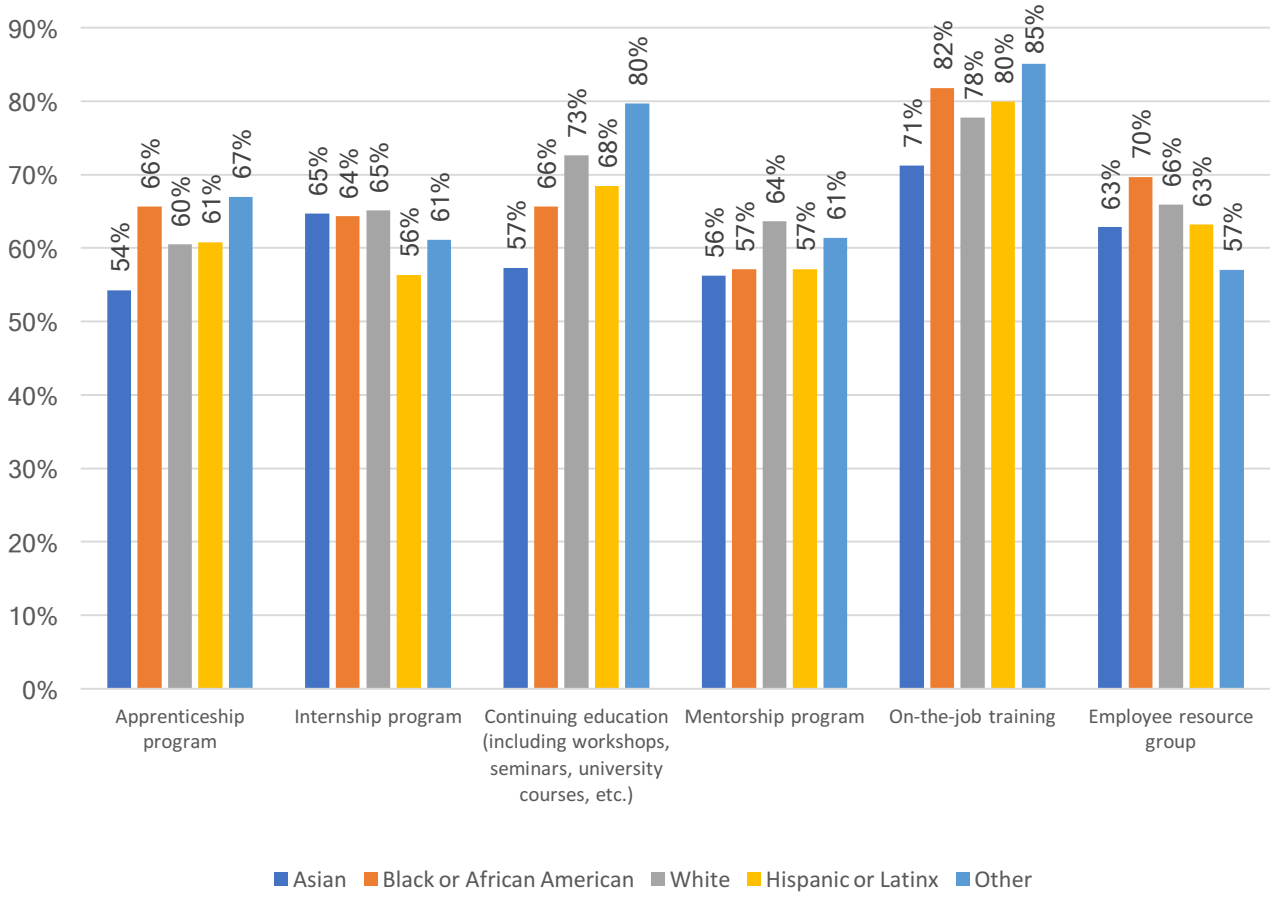
A majority of energy workers—of all racial and ethnic backgrounds of respondents—are offered a range of professional development opportunities. Overall, on-the job training was available for nearly eight-in-ten respondents (79 percent) and two-thirds of employers offer continuing education (67 percent) and employee resource groups (66 percent).

[24] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

There is some variation in availability of these opportunities across race and ethnicity, as Asian and Hispanic or Latinx respondents reported slightly lower rates of access to some of these opportunities. Hispanic and Latinx workers were least likely to indicate that their employers offer internship or mentorship programs while Asian workers were least likely to report that their company provides apprenticeship or mentorship programs.

Black or African American workers were also least likely to indicate that their company provides a mentorship program. (Figure 24)

Figure 25. Professional Development Opportunities for Energy Workers[25]



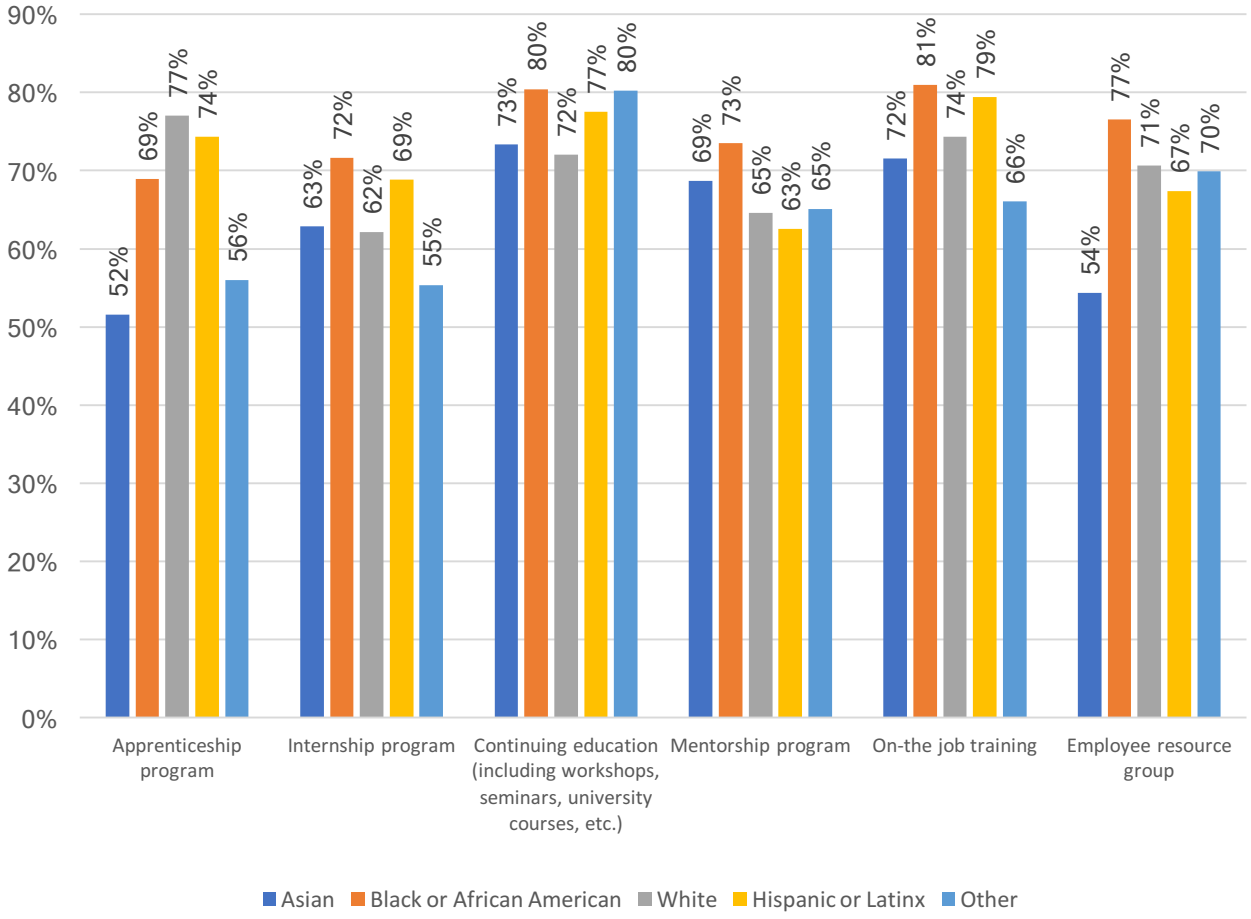
On average, more than two-thirds of those who reported professional development opportunities available through their employer also participated in those opportunities. On-the-job training and continuing education are the most often participated in opportunities.

Black or African American workers are most likely to participate in these opportunities—about 75 percent participation on average. White and Hispanic or Latinx workers are also among the

[25] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

most likely to participate. Asian and Native Hawaiian or Alaska Native energy workers are the least likely to participate in these professional development programs (Figure 26).

Figure 26. Energy Worker Participation in Professional Development Opportunities[26]



CAREER NAVIGATION & ADVANCEMENT

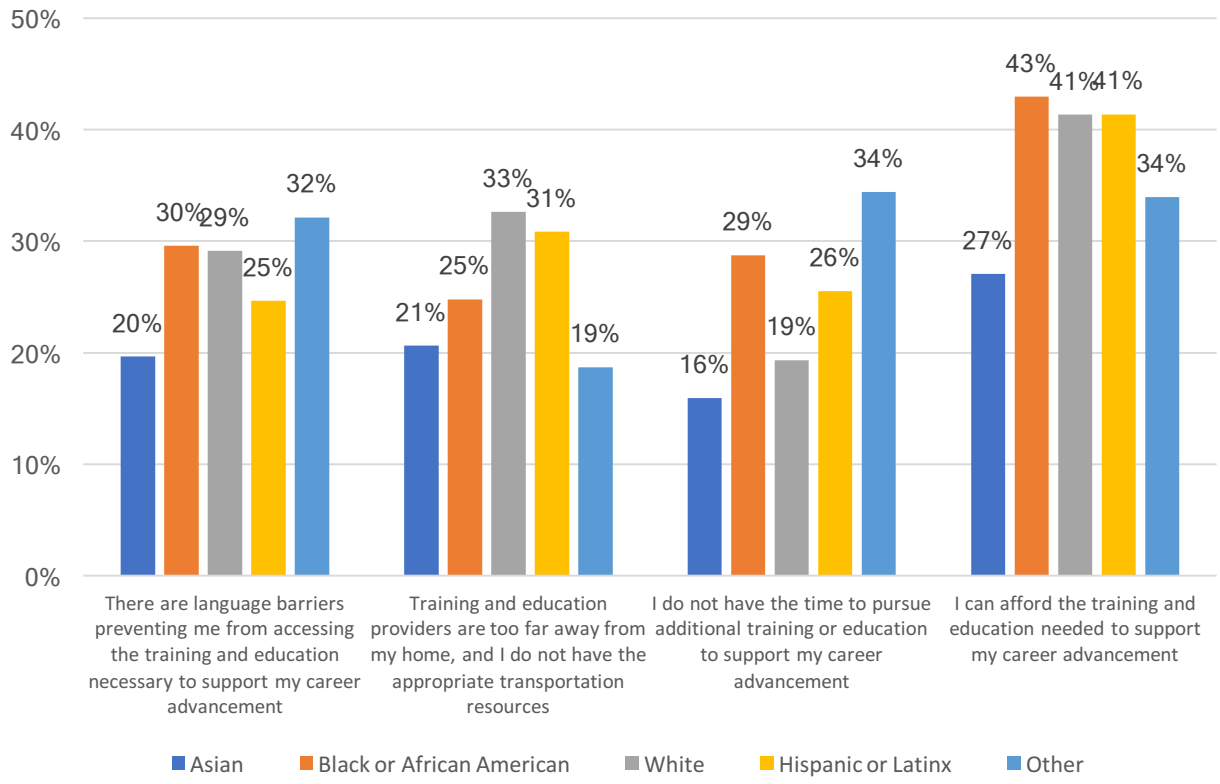
Overall, nearly three in ten (28 percent) energy workers reported they strongly agree that training and education opportunities are too far away from their home. This issue was of larger concern for White and Hispanic or Latinx energy workers; a third of White energy workers (33 percent), and 31 percent of Hispanic or Latinx energy workers cited distance of education providers as a challenge compared to only 25 percent of Black or African American, 21 percent of Asian, and 19 percent of Native Hawaiian and American Indian energy workers.

[26] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Language barriers and a lack of time were the next most commonly cited challenges to career advancement. Black or African American and American Indian and Native Hawaiian energy workers were most likely to indicate language barriers as a challenge to career advancement.

About four in ten Black or African American, White, and Hispanic or Latinx energy workers indicated that they can afford the training and education needed to support their career advancement. Asian, Native Hawaiian, and American Indian energy workers were less likely to agree with this statement (Figure 27).

Figure 27. Energy Workers Who 'Strongly Agree' with Career Navigation Barriers[27]



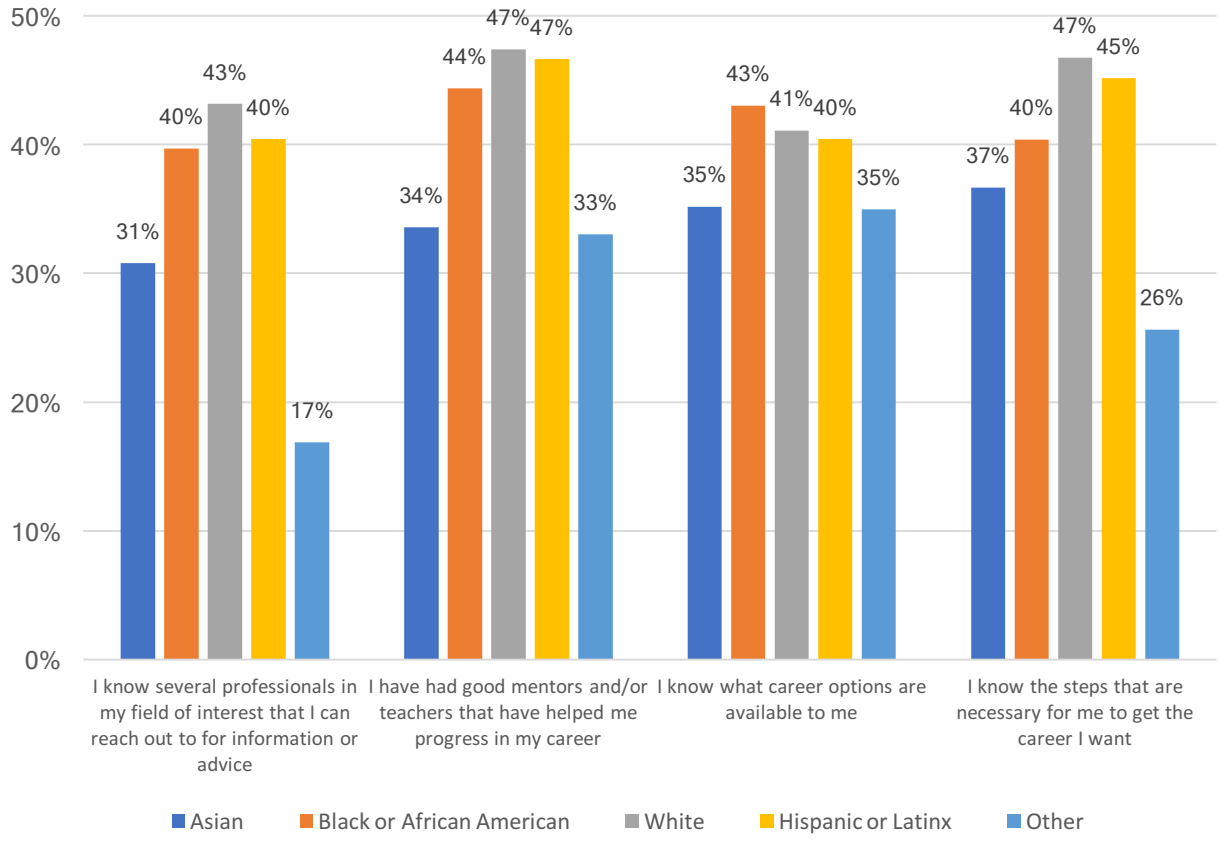
White and Hispanic or Latinx energy workers were most likely to strongly agree they had access to mentors, teachers, and relevant professionals as well as knowing the steps necessary to get the career they desire. Forty-seven percent each of White and Hispanic or Latinx energy workers strongly agreed that they had good mentors or teachers that have helped them progress in their careers compared to less than half of Black or African American (44 percent) respondents and about a third of Asian (34 percent) and American Indian and Native Hawaiian (33 percent) energy workers.

[27] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

White energy workers were also more likely to indicate that they are aware of the necessary steps to get the career they want. Almost half (47 percent) of White respondents strongly agreed with this statement compared, which was higher than any other racial or ethnic subgroup.

Asian, American Indian, and Native Hawaiian energy workers and were least likely to agree they had these resources at their disposal (Figure 28).

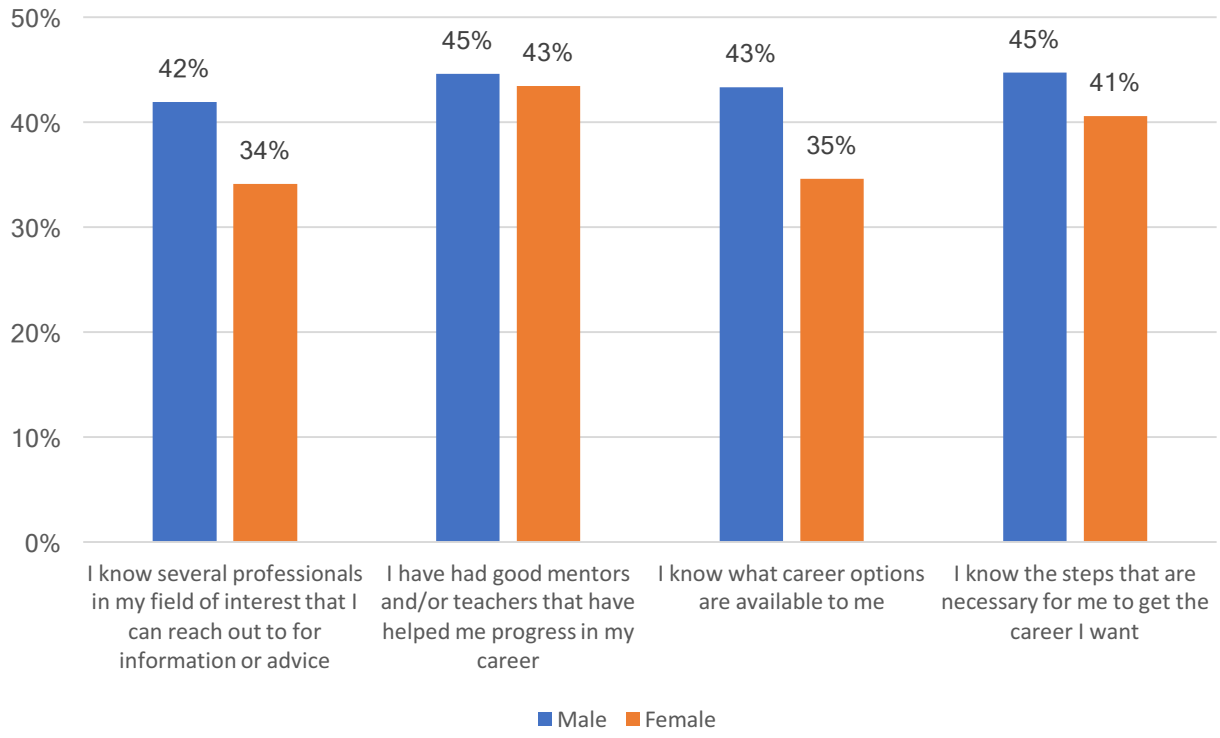
Figure 28. Energy Workers Who 'Strongly Agree' with Access to Career Navigation Supports by Race and Ethnicity[28]



Men in the energy industry were eight percentage points more likely to strongly agree compared to women that they have access to professionals in their field of interest for information or advice. Male energy workers were also more likely to report awareness of what career options are available to them and the steps needed to accomplish their career goals (Figure 29). Lower rates of strong professional networks among women may constrain career opportunities and mobility.

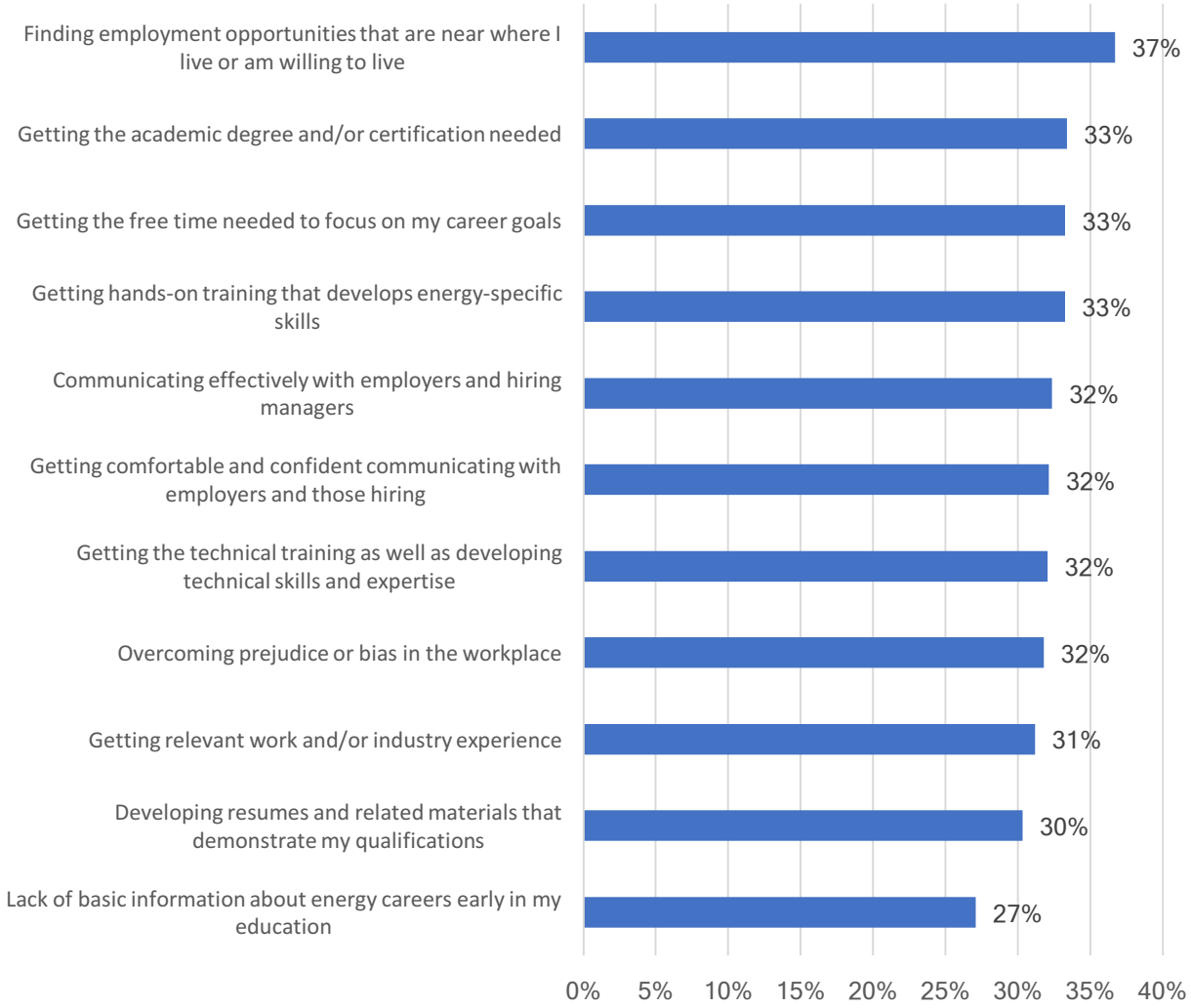
[28] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Figure 29. Energy Workers Who 'Strongly Agree' with Access to Career Navigation Supports by Gender



Among all energy workers, finding employment opportunities near workers live or are willing to live was the most common challenge; this was cited as a challenge by almost four in ten energy workers (37 percent). Exactly a third of respondents also indicated that getting the required academic degree or certification, the free time to focus on career goals, and hands-on training for energy-specific skills are challenges to advancing their energy career (Figure 30).

Figure 30. Greatest Challenges to Advancing Energy Career Advancement



Energy workers of different races and ethnicities identified different challenges as the primary barriers to career advancement. Most notably, Black or African American respondents most frequently stated that overcoming prejudice or bias in the workplace was a considerable workplace challenge. It is also noteworthy that finding employment opportunities near where workers currently live or are willing to live were the most frequently cited reasons for White, Hispanic or Latinx, and American Indian and Native Hawaiian energy workers (Table 3).

Table 3. Greatest Challenges to Advancing Energy Career Advancement by Race and Ethnicity[29]

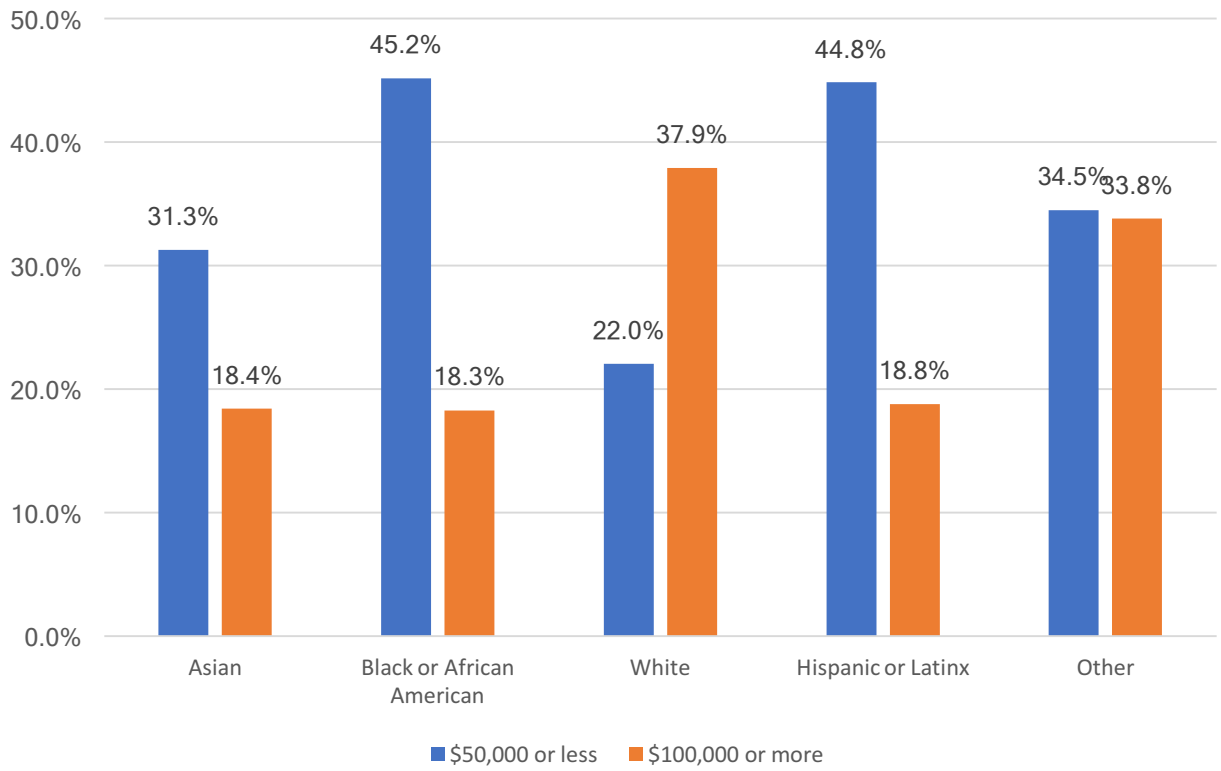
Asian	Black or African American	White	Hispanic or Latinx	Other
Getting the technical training as well as developing technical skills and expertise (41%)	Overcoming prejudice or bias in the workplace (38%)	Finding employment opportunities that are near where I live or am willing to live (42%)	Finding employment opportunities that are near where I live or am willing to live (37%)	Finding employment opportunities that are near where I live or am willing to live (48%)
Communicating effectively with employers and hiring managers (37%)	Getting comfortable and confident communicating with employers and those hiring (32%)	Getting hands-on training that develops energy-specific skills (42%)	Getting the academic degree and/or certification needed (36%)	Getting the academic degree and/or certification needed (39%)
Finding employment opportunities that are near where I live or am willing to live (37%)	Getting the academic degree and/or certification needed (32%)	Getting the academic degree and/or certification needed (39%)	Getting the free time needed to focus on my career goals (35%)	Getting hands-on training that develops energy-specific skills (36%)

[29] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Energy Career Wages and Benefits

More than two-thirds (38 percent) of White energy worker survey respondents reported making $100,000 or more per year at their job compared to 18 percent of Black or African American respondents and 19 percent of Hispanic or Latinx respondents. Conversely, Black or African American and Hispanic or Latinx respondents were much more likely to report making $50,000 or less per year (Figure 31).

Figure 31. Current Annual Wages of Energy Workers[30]

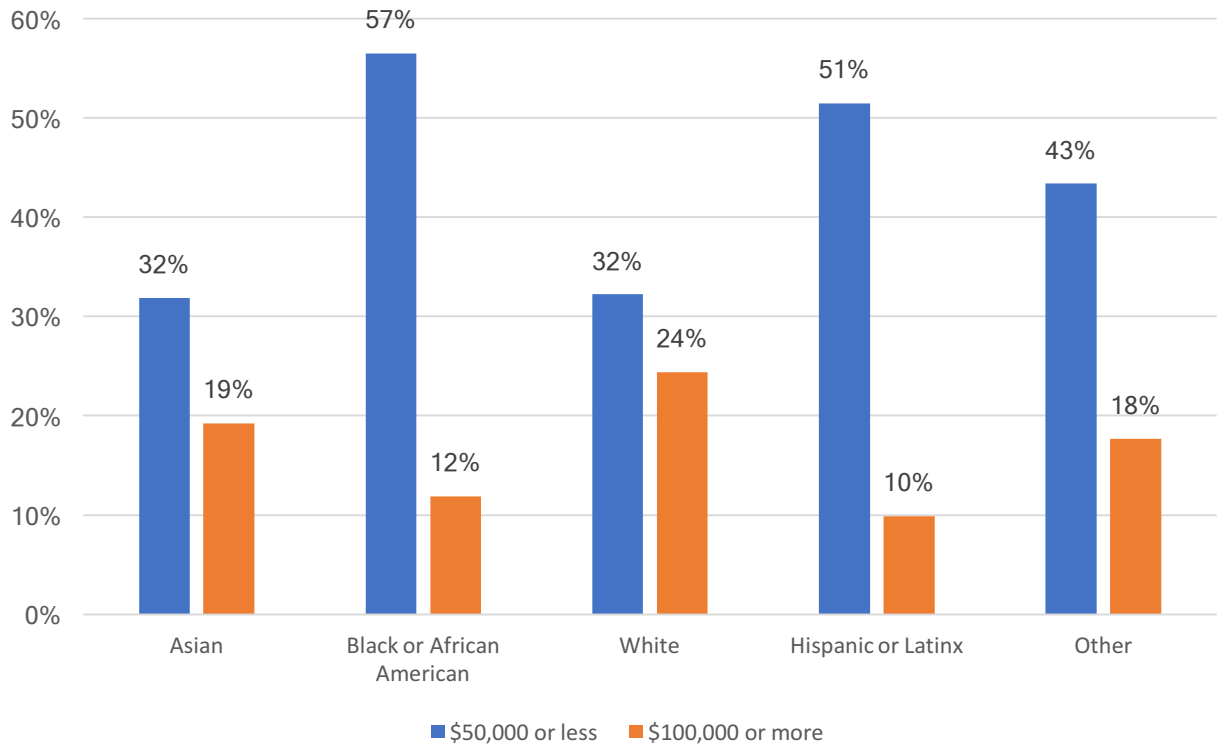


Starting wages for energy workers at their current positions also reveal disparity across race and ethnicity. White energy workers (24 percent) were more than twice as likely to report starting wages of $100,000 or more per year than Black or African American (12 percent) and

[30] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Hispanic or Latinx (10 percent) respondents (Figure 32). Even after accounting for differences in educational attainment, these trends hold true.

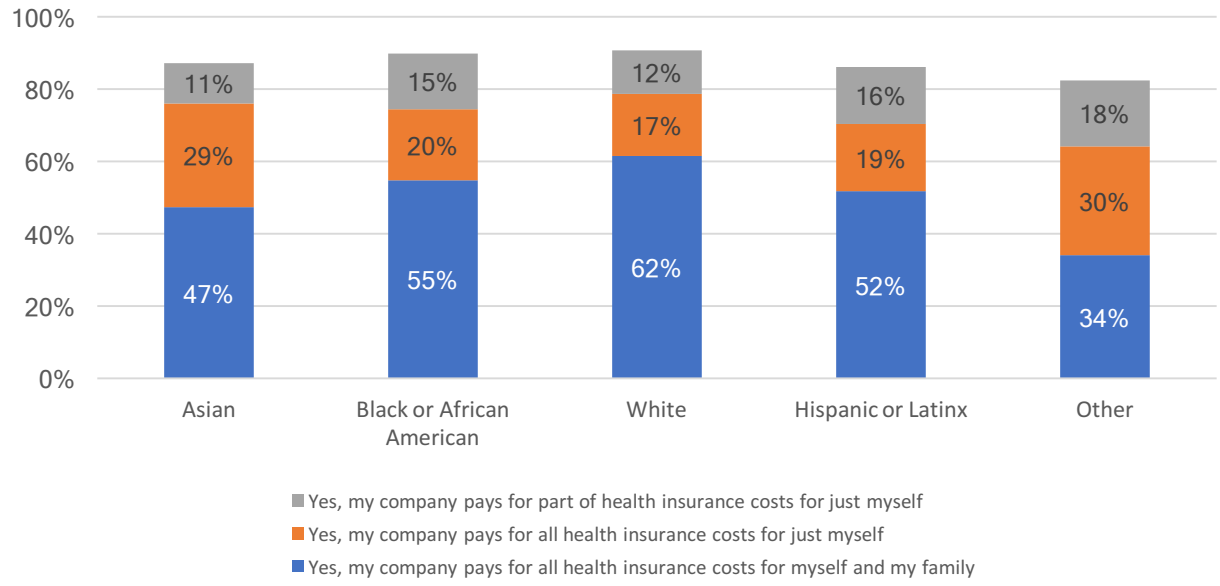
Figure 32. Starting Annual Wages of Energy Workers at Their Current or Most Recent Position[31]



Eighty percent or more of employers cover at least part of healthcare insurance costs for energy workers of all races and ethnicities. However, breadth of employer-provided coverage varied among different races and ethnicities. White energy workers were more likely (62%) to report that their employers covered all health insurance costs for them and their families than other workers, including Black or African American (55%) and Hispanic or Latinx workers (52%) (Figure 33).

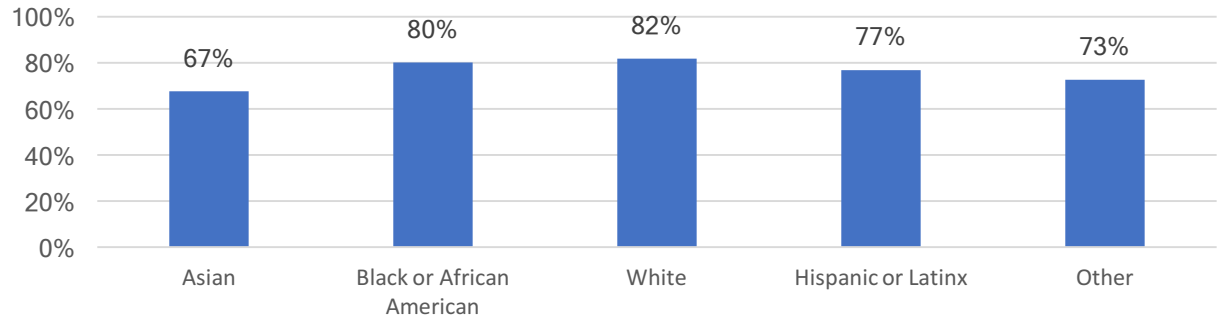
[31] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Figure 33. Healthcare Insurance Provided by Energy Employers[32]



White energy workers reported slightly higher rates of receiving retirement contributions from their employers (82 percent), though Black or African American (80 percent) and Hispanic or Latinx (77 percent) energy workers reported similar rates of retirement benefits. Asian, American Indian, and Native Hawaiian energy workers reported the lowest rates of retirement contributions from their employers (Figure 34).

Figure 34. Energy Workers That Receive Retirement Contributions From Their Employers[33]

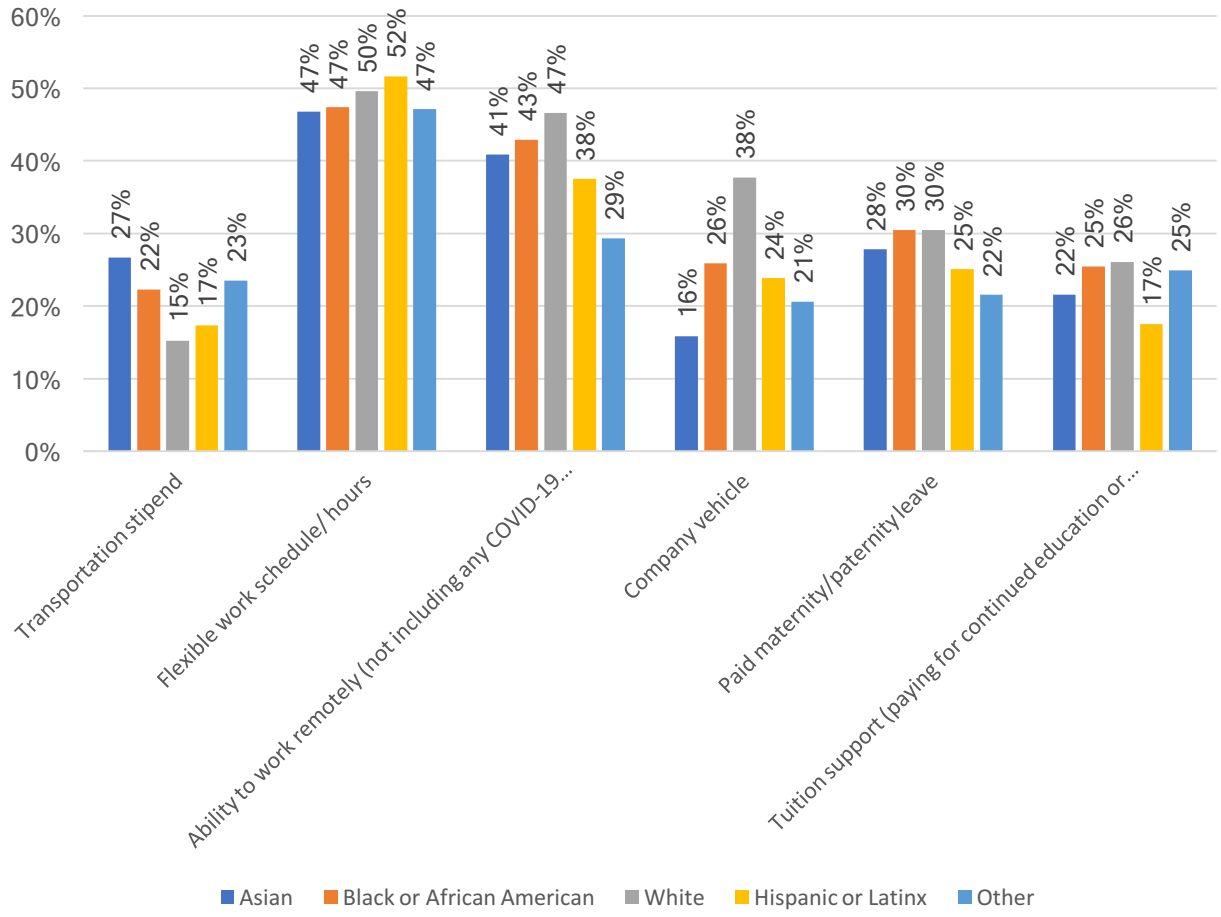


[32] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

[33] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

In general, flexible work schedules and the ability to work remotely are the two most common benefits energy workers receive. White energy workers are more likely to have the ability to work remotely as well as be provided with a company vehicle. Hispanic and Latinx energy workers reported lower rates of receiving tuition support, ability to work remotely, and transportation stipends (Figure 35).

Figure 35. Additional Benefits Provided to Energy Workers[34]

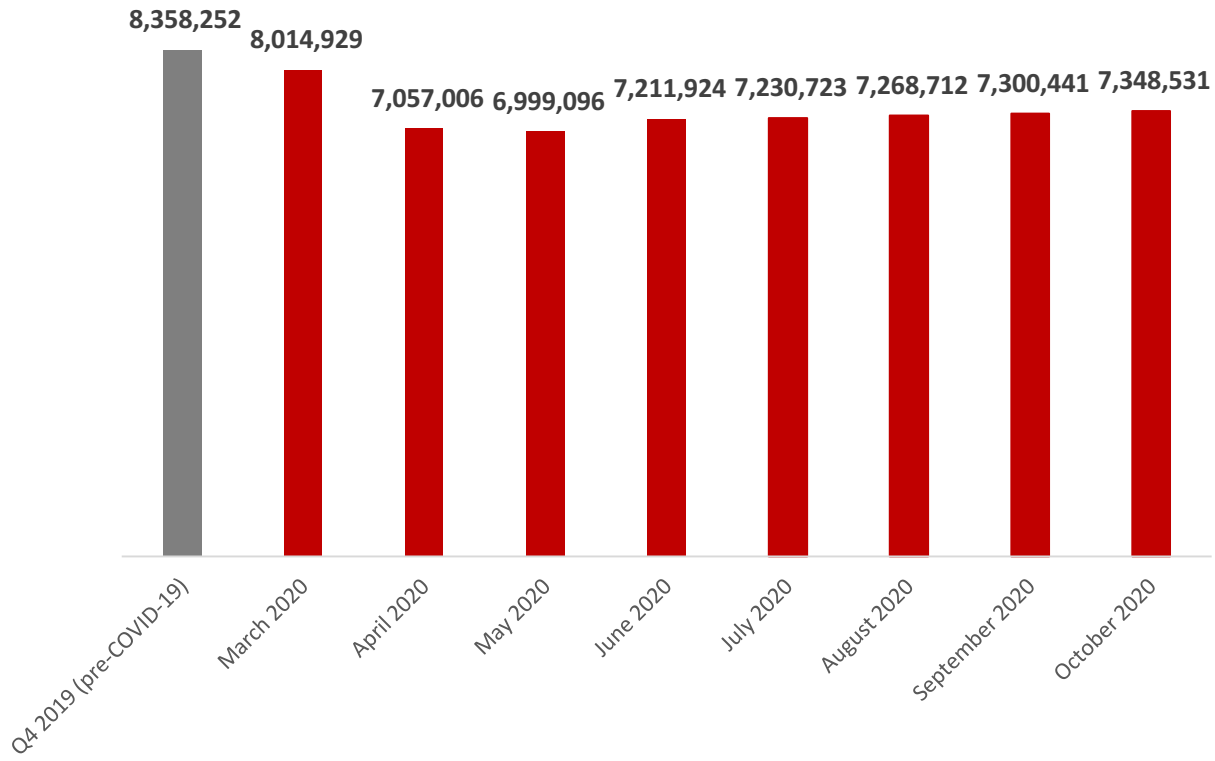


[34] "Other" includes American Indian and Alaska Native as well as Native Hawaiian and other Pacific Islander.

Impacts of COVID-19 on the Energy Workforce

As of October 2020, energy employment is 12 percent below the 2019 pre-pandemic baseline. The nation's energy industry has shed a cumulative one million workers from March through October. Most of these job losses were experienced from March through May. Between June and October, the energy sector saw slight gains in job numbers, but jobs remain significantly below peak employment levels at the end of 2019 (Figure 35).

Figure 36. Energy Job Losses, 2019 – October 2020

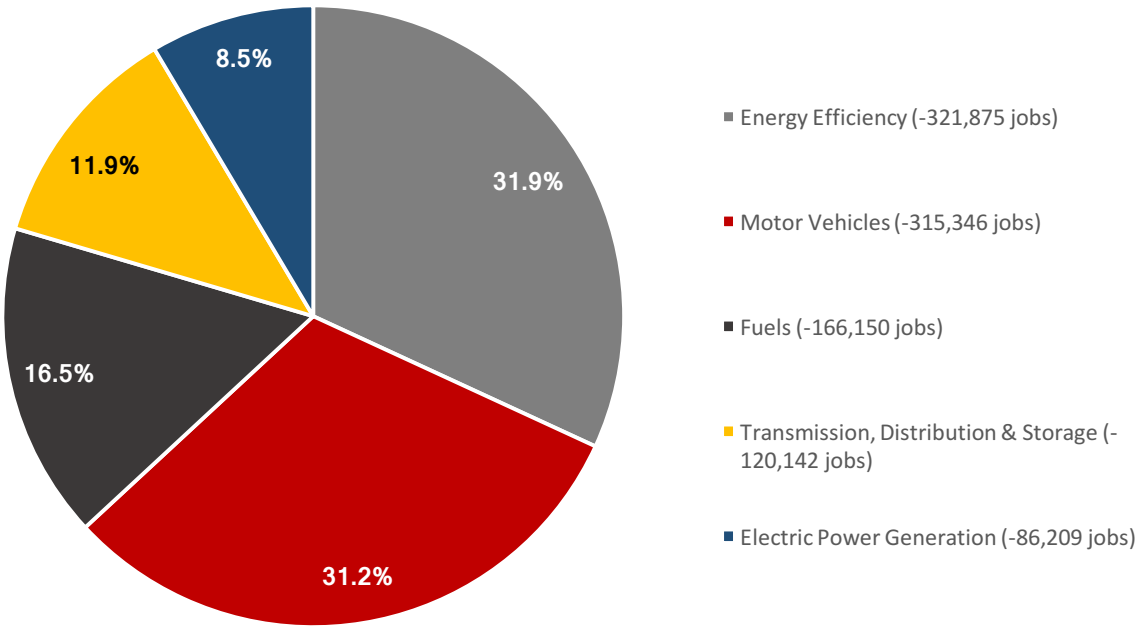


JOB LOSSES BY TECHNOLOGY SECTOR

Energy efficiency and motor vehicles accounts for the majority of employment losses, at roughly a third each (Figure 36). The energy efficiency sector lost nearly 321,900 jobs, representing 32 percent of all job losses. This was followed by motor vehicles, which shed more than 315,300 jobs—31 percent of total job losses.

Job losses in the fuels sector accounted for 17 percent of total employment losses, followed by transmission, distribution, and storage (12 percent), and electric power generation (nine percent).

Figure 37. Cumulative Energy Job Losses by Technology Sector, March – October 2020

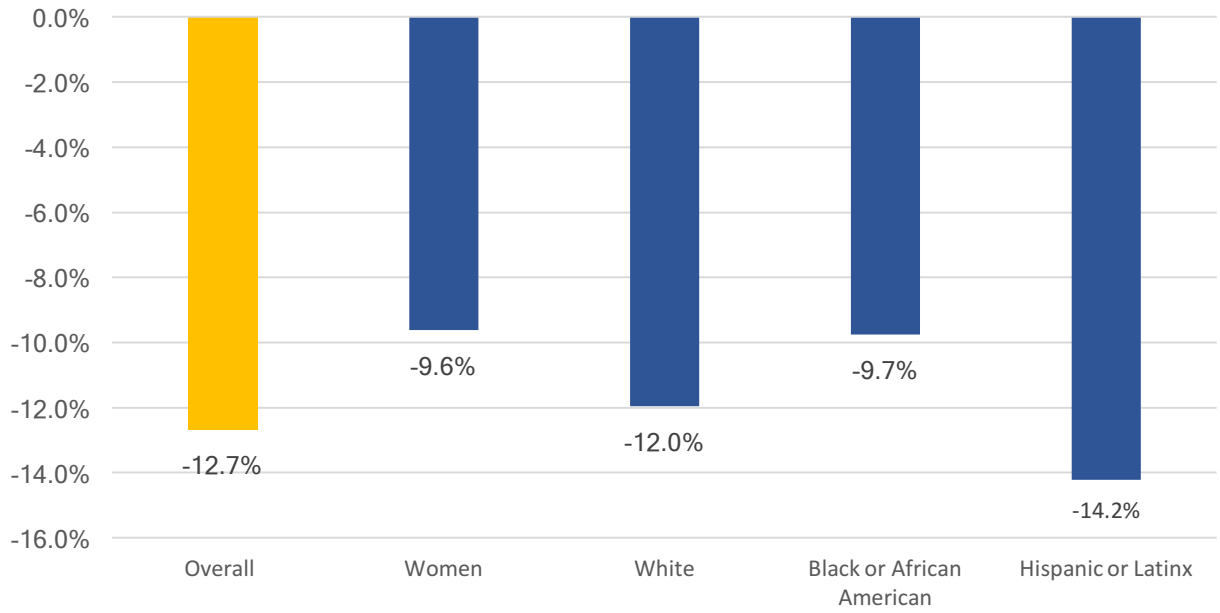


JOB LOSSES BY DEMOGRAPHICS

Hispanic or Latinx energy workers were harder hit by the COVID-19 pandemic compared to other demographic subgroups. From March through September, the energy sector shed roughly 13 percent of jobs. Over this same time, employment for Hispanic or Latinx energy workers declined by 14 percent—higher than the national average. Employment declines for Hispanic or Latinx energy workers was largely driven by job losses in the mining and extraction, repair and maintenance, and construction industries (Figure 37).

White, Black or African American, and female energy workers all shed jobs at a rate that was below the national average, with women and Black or African American workers roughly six percentage points below the national average.

Figure 38. Percent Job Losses by Demographics, March – September 2020[35]



JOB LOSSES BY STATE

States that saw the greatest relative decline in energy employment from March through October include Georgia, Kentucky, Louisiana, Hawaii, and Alaska. Individually, these states saw energy employment decline by roughly 20 to 26 percent each, resulting in a collective loss of just over 139,000 energy jobs.

In terms of absolute values, California, Texas, Michigan, Georgia, and Pennsylvania shed the largest number of energy jobs. California saw its energy industry decline by more than 122,000 workers while Texas shed more than 88,100 energy jobs.

Every state in the nation shed energy jobs, though states like South Dakota, New Hampshire, Vermont, and Delaware all lost less than 2,500 workers total from March through October (Table 3).

[35] Though energy job losses by technology sector and state are through October, the underlying Bureau of Labor Statistics dataset used to calculate energy job losses by gender, race, and ethnicity is only available through Q3 2020. As such, job losses by demographic subgroup are only through September—a month behind the other job losses featured in this section.

Table 4. Cumulative Energy Job Losses by State, March – October 2020

State	Jobs Lost	Percent Decline	State	Jobs Lost	Percent Decline
Alabama	20,360	13.6%	Montana	3,762	12.3%
Alaska	5,645	19.7%	Nebraska	5,950	10.4%
Arizona	11,311	9.1%	Nevada	6,278	10.3%
Arkansas	5,719	8.9%	New Hampshire	2,173	7.0%
California	122,015	12.8%	New Jersey	19,246	13.1%
Colorado	12,183	7.6%	New Mexico	10,417	17.9%
Connecticut	7,839	10.3%	New York	23,641	6.9%
Delaware	2,478	10.8%	North Carolina	31,112	14.3%
District of Columbia	2,827	13.7%	North Dakota	7,738	15.5%
Florida	42,278	12.4%	Ohio	39,073	11.2%
Georgia	54,314	26.3%	Oklahoma	23,246	16.8%
Hawaii	5,338	20.8%	Oregon	9,450	9.8%
Idaho	2,879	8.7%	Pennsylvania	45,763	17.0%
Illinois	19,747	6.4%	Rhode Island	4,106	17.2%
Indiana	31,198	10.9%	South Carolina	17,064	12.1%
Iowa	8,354	9.6%	South Dakota	1,038	3.9%
Kansas	7,899	9.2%	Tennessee	15,998	7.5%
Kentucky	38,101	25.1%	Texas	88,138	9.2%
Louisiana	35,673	21.0%	Utah	4,788	5.5%
Maine	2,742	10.8%	Vermont	2,377	10.5%
Maryland	12,767	9.7%	Virginia	17,669	9.4%
Massachusetts	20,029	10.6%	Washington	27,995	18.0%
Michigan	63,691	15.2%	West Virginia	8,318	12.7%
Minnesota	15,421	12.0%	Wisconsin	14,082	9.2%
Mississippi	8,581	12.3%	Wyoming	4,378	9.9%
Missouri	16,531	10.2%	US TOTAL	1,009,721	12.1%

Appendix A: Research Methodology

SURVEY METHODOLOGY

BW Research conducted general population interviews with individuals 18 years and older throughout the United States. Respondents were recruited through third party online panels. The survey was programmed in-house by BW Research in both English and Spanish. The survey was fielded between October 30th and December 28th, 2020. There were 5,403 respondents in total. BW Research initiated quotas by race and ethnicity (Hispanic or Latinx, Black or African American, Asian, Native Hawaiian or Pacific Islander, White, American Indian or Alaska Native, and Two or More Races) as well as gender in order to ensure desired representation of survey respondents. The combined margin of error for the general population survey is +/- 1.33 percent at the 95 percent confidence interval for questions answered by all respondents. For energy-specific questions answered by all respondents with energy jobs, the margin of error is +/- 3.40% at a 95% confidence interval.

COVID-19 DEMOGRAPHIC IMPACTS

COVID-19 job losses by demographic group are derived using a combination of Bureau of Labor Statistics (BLS) Current Population Survey (CPS) quarterly (measured from Q1 of 2020 through Q3) and annual employment by demographics and industry along with the COVID-19 energy job loss data developed by BW Research.[36] From BW Research's COVID-19 energy jobs data, premiums or discounts are created for each demographic group and each industry over the overall energy industry employment change from March through September. The premiums or discounts identify what percent above or below the overall average energy industry job loss that each demographic group falls.

Premiums and discounts are merged to create employment percent declines for the intersection of each demographic group and industry. The data is weighted on the BLS CPS quarterly employment by demographics and industry data to arrive at final COVID-19 energy job losses by demographic group.

[36] For more information on energy job losses and COVID-19, please visit https://bwresearch.com/covid/.