How labor analytics can empower your utility to achieve program goals

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E Source

POWERING WHAT'S **NEXT**

Today's webinar

Presenting: Ben Nathan

Utilities must navigate a maze of strategic objectives, including:
- Energy savings and clean energy goals
- Adherence to environmental, social, and governance (ESG); diversity, equity, and inclusion (DEI); and Justice40 directives

But most utilities aren't tying these strategic objectives to clean energy labor force data, leading to inaccurate forecasting and inefficient programs.

This webinar will reveal how strategic labor analytics can be a game-changer in clean energy program execution, community engagement, and workforce development.

E Source

Speakers

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Clean energy workforce lagging

"The U.S. construction industry was short 413,000 workers as of December, while the manufacturing sector was short 764,000, according to the Bureau of Labor Statistics.

The bureau also estimates that there will be about 80,000 job openings for electricians every year until 2031, as environmentalists push to electrify everything — from vehicles to home appliances — to combat climate change."

- The next labor secretary will face a big shortage of clean-energy workers, The Washington Post, 2023

Three-quarters of 14 utilities surveyed by E Source were concerned or very concerned about the pipeline of incoming labor. And nearly all respondents either didn't have a development program or had a program that needed improvement.

- Creating an effective workforce development program for trade allies, E Source, 2020

4

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Energy efficiency workforce demographics

78% white

23% female
24% lower than national average

15% Hispanic or Latino
2% lower that national average

8% African American
4% lower than national average

5% Asian
1% lower that national workforce average

Exploring equitable workforce development initiatives, E Source, 2023

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Why do we need workforce development (WFD) initiatives?

Presenting: Ben Nathan

✓ Without a trained workforce, utilities will fail to meet program goals

📈 Programs can achieve savings goals and meet DEI and equity mandates

$ Federal and state funding opportunities

🏠 Utilities can help and build trust among communities they serve

Exploring equitable workforce development initiatives, E Source, 2023

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Expanding electrification goals and funding

California is investing $435 million in building electrification over the next four years

Xcel (CO) removed 80,000 D. Therms from heat pump installs in 2022. Plans to remove 840,000 D. Therms in 2026

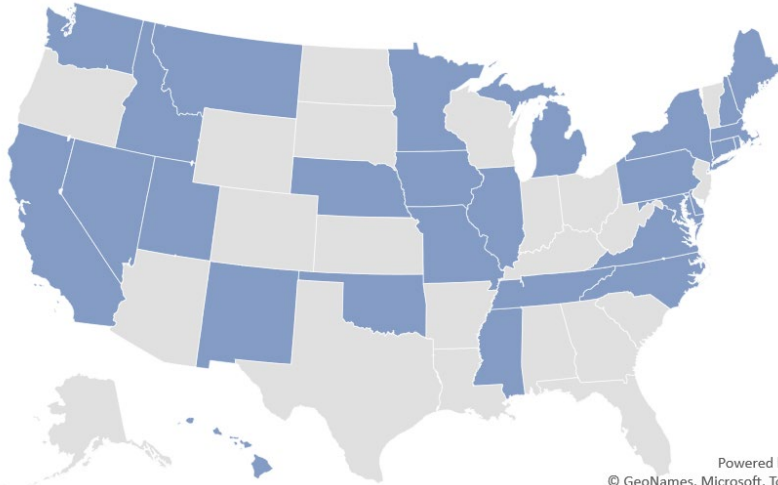$200 million available for contractor training grants through IRA and federal funding

Exploring equitable workforce development initiatives, E Source, 2023

Energy efficiency workforce development

States with energy efficiency workforce development initiatives

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27 states have legislation or mandates that support workforce development:

- **Maryland** currently has a Clean Energy Jobs Act (SB 0732 & HB 1453) that would expand renewable mandates to 50% by 2030 and focus on various workforce development initiatives, specifically for some minority communities

- **Illinois** has the Future Energy Jobs Act, which devotes $750,000,000 to workforce development programs through 2030

- **Massachusetts** implemented the Green Jobs Act of 2008 to "promote programs and investments that lead to pathways towards economic self-sufficiency for low and moderate-income communities in the clean energy industry."

Exploring equitable workforce development initiatives, E Source, 2023

Goals Utilities Will Need to Hit 2024
COMMON STRUGGLES FACED

- Electrification

- Energy efficiency

- Navigating electric vehicle (EV) deployment

- Grid reliability

- Renewables

- Enhanced customer engagement and satisfaction

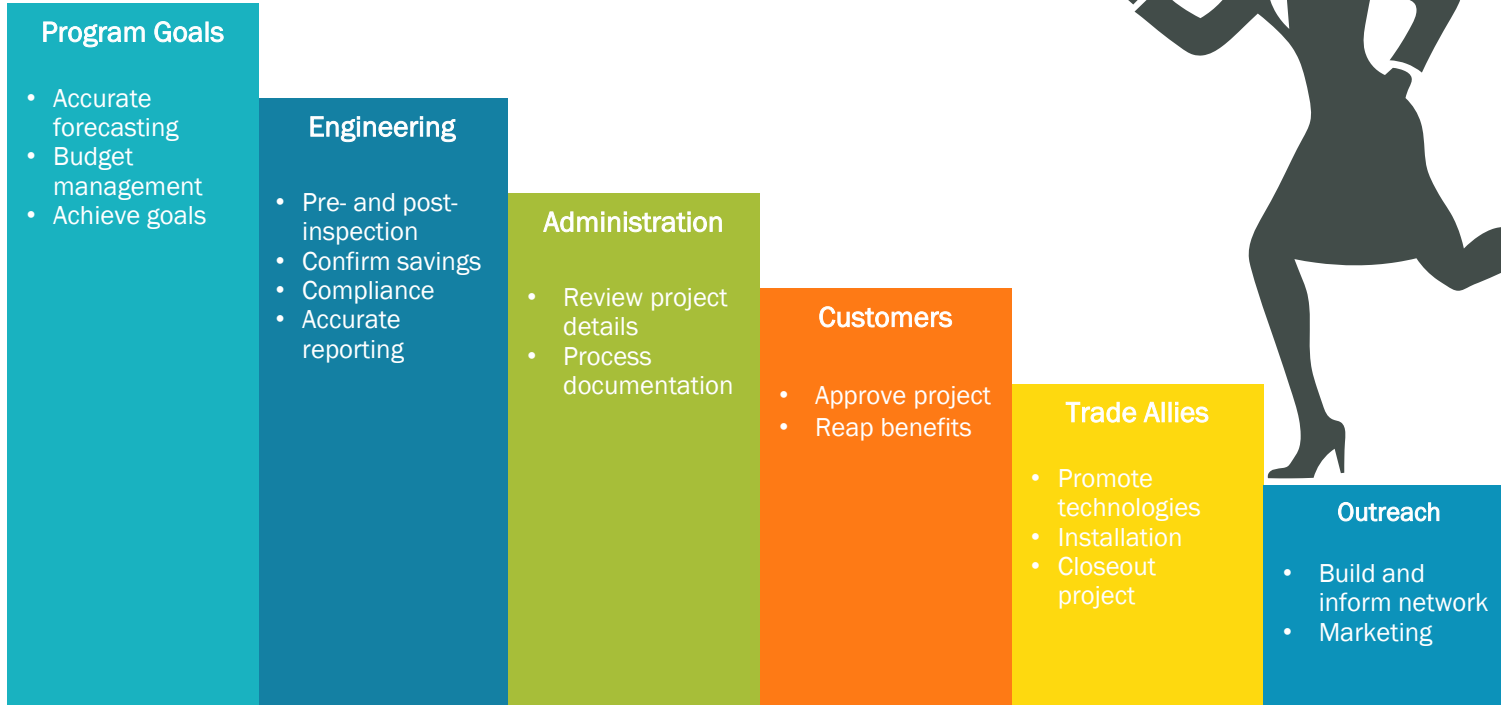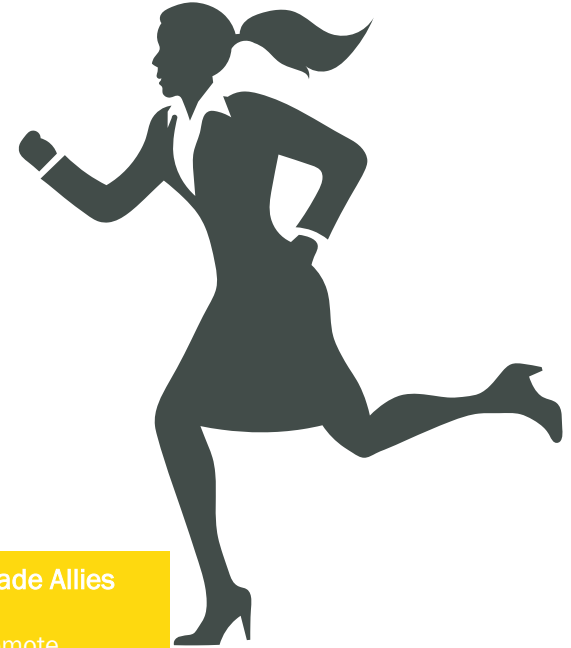- Employee satisfaction and retention

Presenting: Nikole DiPillo

Labor Analytics

Impact of Delay
THE CASE FOR LABOR ANALYTICS

Presenting: Nikole DiPillo

Program Goals
- Accurate forecasting
- Budget management
- Achieve goals

Engineering
- Pre- and post-inspection
- Confirm savings
- Compliance
- Accurate reporting

Administration
- Review project details
- Process documentation

Customers
- Approve project
- Reap benefits

Trade Allies
- Promote technologies
- Installation
- Closeout project

Outreach
- Build and inform network
- Marketing

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What Would I Do Differently Next Time?

OPTIMIZING PROGRAM PERFORMANCE

Presenting: Nikole DiPillo

Assess
Program and portfolio goals

Analyze
Talent

Review
Economy

Plan
Workforce Development

Invest
Funding

Train
Certify and educate

Staff
Build qualified and productive teams

Reinforce
Employee and customer satisfaction

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Why Utility Leaders Need to Use Labor Analytics

Presenting: Paul Douglas

- Significant competition for labor supporting utility programs.

- Critical low unemployment rates for key skill sets needed to execute projects.

- Difficult to support diversity hiring and retention without visibility of data.

- Labor data in conjunction with other data points can increase program success.

- Allows our industry to create innovative solutions.

- Potential internal industry competition.

Behaviors That Drive Our Use of Data in The Utility Sector

Why Data is Not Used Consistently

- **Comfort with Status Quo:** Resistance to change and preference for familiar practices.

- **Data Overwhelm:** Feeling overwhelmed by the volume and complexity of data.

- **Skill Gaps:** Lack of confidence in interpreting and applying labor analytics.

- **Underestimating Value:** Not fully recognizing the impact of labor data on decision-making.

- **Organizational Silos/Data Integration:** Limited cross-departmental communication hinders comprehensive data usage.

- **Risk Aversion:** Fear of making wrong decisions based on data analysis.

Ideas How to Change Behaviors

- **Growth Mindset:** Promoting a culture of learning and improvement, where data is seen as a tool for feedback and development, rather than a threat or a judgment.

- **Nudges:** Providing subtle cues or prompts that guide utility leaders to make data-driven decisions, such as defaults, reminders, or social norms.

- **Incentives:** Offering rewards or recognition for using data effectively, such as bonuses, badges, or praise.

3 Core Labor Data Categories

Current and Forecasted Workforce Analytics

- Skills gap data analysis
- Training/development gap data analysis
- Project status and labor report
- Team diversity report

Pipeline Analytics

- Workforce development analysis
- Time to fill
- Diversity recruitment in targeted markets

Labor Market Analytics

- Supply Demand in Market for Current and Future Skills
- Competition landscape
- Demographic data of recruiting markets
- Diversity data of hiring markets

Training and "Technical" Skills Gap Data Analysis

Presenting: Paul Douglas

Role	Required Skills	Current Team Skills	Skills Gap	Training Needed	Training Type
Energy Auditor	• Advanced energy auditing techniques • Knowledge of latest insulation materials	• Basic energy auditing Limited knowledge of new materials	• Advanced auditing techniques Up-to-date materials knowledge	• Advanced energy auditing course • Workshop on new insulation materials	• External Trainers/Courses • Internal Training/Courses • OJT – On Job Training • Online Free Courses
HVAC Technician	• Installation of energy-efficient systems • Smart home integration	• Traditional HVAC systems experience • No smart home integration experience	• Energy-efficient system installation • Smart home skills	• Training in energy-efficient HVAC systems • Smart home technology integration course	• External Trainers/Courses • OJT – On Job Training • CEU
Electrician	• Electrical upgrades for energy efficiency • Solar panel installation	• General electrical skills • No solar installation experience	• Energy efficiency upgrade skills Solar panel installation • EV charger installation	• Energy efficiency electrical upgrades course • Solar panel installation training	• External Trainers/Courses • OJT – On Job Training • CEU
Energy Efficiency Engineer	• Design and implementation of energy efficiency projects • Data analysis and optimization of energy performance	• Basic engineering skills • Some data analysis experience	• Project design and implementation skills • Advanced data analysis and optimization skills	• Energy efficiency project management course • Data analysis and optimization course	• OJT – On Job Training • CEU • SOP creation

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Sample Project Labor Impact report

Project Name	Estimated Completion	Current Status	Required Workforce	Current Workforce	Gap	Impact on Project	Actual Impact
Home Energy Efficiency Retrofit	Q2 2024	50% Complete	20 Technicians	15 Technicians	5	Minor Delay	Slowed retrofit completion, increased project costs
EV Charging Infrastructure	Q3 2023	70% Complete	25 Electricians	20 Electricians	5	On Schedule	Delay in specific site readiness, overall schedule intact
Smart Grid Upgrade for EV Integration	Q4 2023	40% Complete	30 Engineers	25 Engineers	5	At Risk	Potential delays in grid readiness for EV surge

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Workforce Pipeline Analytics

Workforce Development (WFD) Analysis

Collaborate with community organizations, educational institutions, and government bodies to create a diverse talent pipeline.

Time to Fill Analysis

Track the time from job posting to hiring to gauge recruitment efficiency.
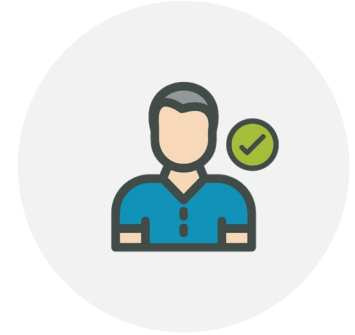
Recruitment Pipeline in Low-Moderate Income (LMI) Communities

Monitor the recruitment conversion rate in LMI areas to evaluate the effectiveness of targeted recruitment strategies.

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Time to Fill Impact on Program

Position	Avg Time to Fill (Days)	Program Total Cost of Role Not Filled (USD)	Impact on Other Departments	Financial Impact on Program
HVAC Technician	45	$5,302.88	Project Management (Delays in Installations)	Building Fines Trade-Ally Relationship Customer Service Bonus Potential
Energy Efficiency Engineer	60	$7,433.44	Design and Planning (Delayed Assessments)	Compliance Cost Effectiveness of Program Bonus Potential
Electrician	30	$5,454.24	Project Installation (Delayed Wiring)	Building Fines Trade-Ally Relationship Customer Service Bonus Potential

WFD Ecosystem

WFD Data Point Demographics

- Population age, education level, and diversity.

Labor Market Data

- Skills in demand, unemployment rates.

Education and Training Programs

- Available courses, certifications, and degrees.

Industry Partnerships

- Collaboration with local businesses.

Employment Outcomes

- Success rates of graduates, job placements.

Financial Resources

- Funding available for training programs.

Feedback Mechanisms

- Continuous improvement based on employer and learner feedback.
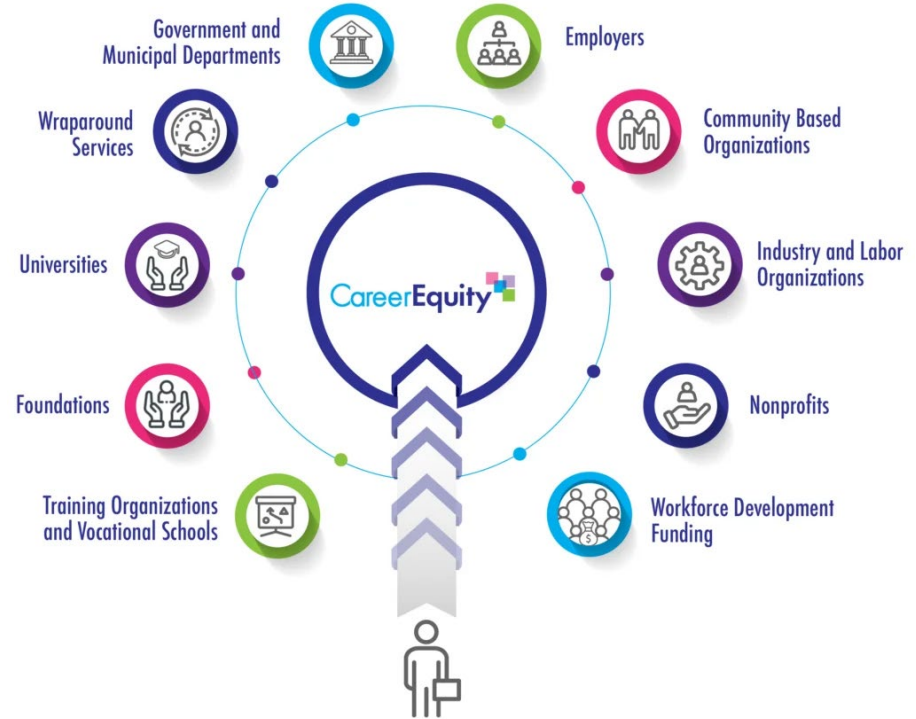
Government and Municipal Departments · Employers · Community Based Organizations · Industry and Labor Organizations · Nonprofits · Workforce Development Funding · Training Organizations and Vocational Schools · Foundations · Universities · Wraparound Services · CareerEquity

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Labor Market Analytics

Presenting: Paul Douglas

- Supply demand in market for current and future skills

- Competition landscape

- Demographic data of hiring markets

- Diversity data of hiring markets

Jobs Data| National Overview

Presenting: Paul Douglas

Job Creation by 2030

IRA	1.1M
IIJA	660K
CHIPS	700K

US Population

6.4M people Available today to work

2M Worker gap today

8.4M jobs

New Energy Workforce

2.5M NEW jobs PROJECTED Just for energy sector

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Market Snapshot

Presenting: Paul Douglas

19,980,439
Population (2022)

Population grew by 386,590 over the last 5 years and is projected to grow by 556,468 over the next 5 years.

10,242,197
Total Regional Employment

Employment decreased by 46,172 over the last 5 years but are projected to grow by 1,055,767 over the next 5 years.

$75.2K
Median Household Income (2021)

Median household income is $6.1K above the national median household income of $69.0K.

4.13M
Millennials

New York has 4,127,594 millennials (ages 25-39). The national average for an area this size is 4,051,792.

6.17M
Retiring Soon

Retirement risk is about average in New York. The national average for an area this size is 5,895,962 people 55 or older, while there are 6,165,719 here.

8.98M
Racial Diversity

Racial diversity is high in New York. The national average for an area this size is 8,071,995 racially diverse people, while there are 8,977,024 here.

665,257
Veterans

New York has 665,257 veterans. The national average for an area this size is 1,041,796.

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Occupation Snapshot
ENERGY AUDITORS | STATE EXAMPLE

Presenting: Paul Douglas

Light Postings Competition Over a Thin Supply of Regional Talent

USA

38,625
Job Family Employment

New York is not a hotspot for Energy Auditors. The national average for an area this size is 70,715* employees, while there are 38,625 here.

USA

$80,564
Compensation

The cost for talent is about average in New York. The national median salary for Energy Auditors is $75,982, while you'll pay $80,564 here.

USA

3,022
Postings Competition

Competition from online job postings is low in New York. The national average for an area this size is 3,915* job postings annually, while there are 3,022 here.

### Job Family: Retirement Risk Is About Average, While Overall Diversity Is About Average
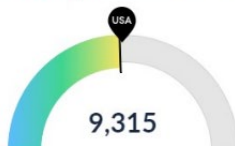
USA

9,315
Retiring Soon

Retirement risk is about average in New York. The national average for an area this size is 9,590* employees 55 or older, while there are 9,315 here.

USA
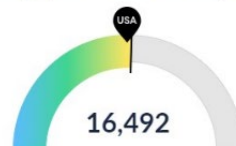
16,492
Racial Diversity

Racial diversity is about average in New York. The national average for an area this size is 16,030* racially diverse employees, while there are 16,492 here.
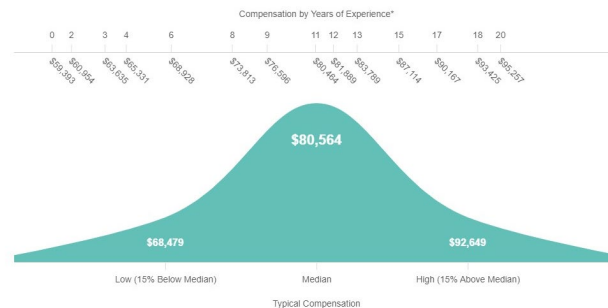
USA
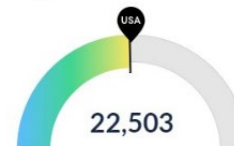
22,503
Gender Diversity

Gender diversity is about average in New York. The national average for an area this size is 22,980* female employees, while there are 22,503 here.

*National average values are derived by taking the national value for Energy Auditors and scaling it down to account for the difference in overall workforce size between the nation and New York. In other words, the values represent the national average adjusted for region size.

Typical Compensation Ranges From $68,479 to $92,649

Typical compensation for Energy Auditors in New York ranges from $68,479 to $92,649. The median wage is $80,564, which is about the same as the national median. When you adjust the median wage for regional cost of living (which is 12.4% above the average) workers "feel like" they only make $71,676.

Compensation by Years of Experience*

0	2	3	4	6	8	9	11	12	13	15	17	18	20
$56,363	$60,964	$63,635	$65,331	$69,928	$73,813	$76,596	$80,464	$81,669	$83,789	$87,114	$90,167	$93,425	$95,257

$80,564

$68,479 $92,649

Low (15% Below Median)   Median   High (15% Above Median)

Typical Compensation

*Only the median compensation for each cohort is plotted. In reality, compensation for a cohort will range above and below the plotted point.

Region	10th Pct.	25th Pct.	50th Pct.	75th Pct.	90th Pct.
New York	$47,483	$60,716	$80,564	$105,800	$135,589
Nation	$40,310	$54,725	$75,982	$101,088	$131,269
COL Adjusted New York	$42,245	$54,018	$71,676	$94,128	$120,631

1,363 Employers Competing

All employers in the region who posted for this job over the last 12 months.

3,022 Unique Job Postings

The number of unique postings for this job over the last 12 months.

More Hires Than Postings

More hires than postings may mean this position is filled via other methods.

Source: Analyst provides data as a hybrid dataset derived from official government sources including the US Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics, in addition to data available from online profiles and job postings.

Conclusion

- Competition requires collaboration
- Diversity in action
- Career development
- Challenging the status quo

THANK YOU

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Questions?

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Appendix: Workforce development programs

Equitable workforce development

Key strategies:

- Define what energy equity means for your utility's business, customers, and business partners.

- Create measurable goals for workforce development programs that address equity.

- Emphasize outreach and engagement with key stakeholder groups, like chambers of commerce and schools.

- Consider the wide variety of approaches to foster equitable workforce development, such as direct training and grant programs.

Case studies:

- ComEd
- DTE Energy
- Duke Energy
- Energy Trust
- FortisBC

- PECO
- PG&E
- PSE&G
- PNM
- SMUD

Designing workforce development programs that advance energy equity, E Source, 2022

E Source

Workforce development program models

Community-action agency partnership programs	Incubator programs	School vocational programs and scholarships
Apprenticeship and internship programs	Community college partnership programs	Training centers

Exploring equitable workforce development initiatives, E Source, 2023

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Workforce development initiatives

Incubator programs

ComEd runs its Diverse Energy Efficiency Service Provider Incubator Program

- Attendees go through course together

- Creates opportunities for minority, women, and veteran contractors

- Graduates enter right into ComEd trade ally network

Community action agency partnerships

TVA partnered with Urban League of Chattanooga's "Building Futures" initiative

Entergy New Orleans partners with Louisiana Workforce Commission

- Trains youth and unemployed residents of Orleans Parish

- Utility connects recent graduates with contractors

- Reduces utility cost by including state funding

Training centers

Alabama Power's HVAC Training Center offers several training and certification courses

ComEd developed two state-of-the-art education and training facilities in its territory

Vocational programs and scholarships

The Massachusetts Clean Energy Center has an entire curricula of over 30 lesson plans of courses in clean energy

PECO offers scholarships and grants

- $100,000 per year in STEM scholarships

- $25,000 grants for two students at Williamson College of Trades

Exploring equitable workforce development initiatives, E Source, 2023

Comfortably California plan

- Statewide midstream program offering rebates on high efficiency HVAC

- Plan includes initiative to serve hard-to-reach and disadvantaged customers

- Workforce development program to train and include distributors within these communities

- Will use CalEnviroScreen to locate disadvantaged communities

"…support job access for Disadvantaged Workers by ensuring participating Distributors and Retailers serve zip codes in the top 25% of the CalEnviroScreen Tool."

"Engage HTR customers and those in DACs by developing messaging to convey the benefits of high-efficiency equipment in culturally appropriate terms for diverse communities."

"Coordinate with community-based organizations (CBOs) serving HTR customers and DACs. Utilize CBO partnerships throughout the state to help with education and in-moment support for technology upgrades."

Exploring equitable workforce development initiatives, E Source, 2023

Evaluating program goals

- Use clear, quantitative, metrics

- Set goals with defined near-, mid-, and long-term implementation action items

- Use tracking software to manage and track all program metrics:

  - Spending, savings, hiring/personnel data

Goal 5: Increase the number of contracts with Black-owned, BIPOC-owned and women-owned businesses and improve contract tracking systems to support increased supplier diversity.

| 2021 Targets	Results	Status
Enter into 25 new contracts with BIPOC-owned or women-owned businesses and 10 new contracts with Black-owned businesses in Oregon, a 20% increase	Entered into 21 new contracts with BIPOC-owned or women-owned businesses and 7 Black-owned businesses in Oregon	(red)
Track number of contracts with community-based organizations to establish a baseline for comparison for future contracting goals	Established system to track number of contracts with community-based organizations to establish a baseline for comparison for future contracting goals	(green)
Establish a system for tracking community-based organizations by March 1, 2021	Established in quarter one 2021 a system for tracking community-based organization contracts	(green)

- In 2021, Energy Trust entered into contracts with eight BIPOC-owned businesses, seven Black-owned businesses, three women-owned businesses and three community-based organizations. As these numbers fell short of the 2021 target, they indicate that Energy Trust has work to do in identifying and reaching out to Black-owned, BIPOC-owned and women-owned businesses.
- Energy Trust is working to contract with more BIPOC- and women-owned suppliers. As part of this effort, Energy Trust has expanded support for COBID-certified firms.
- Energy Trust developed a supplier diversity program in 2021 to guide development of a supplier diversity tracking system in 2022. The policy will require all competitive solicitations for new contracts to require a minimum spend for COBID-certified BIPOC- and women-owned businesses beginning in 2022.

Going forward:
- Energy Trust does not yet have all processes and systems in place to engage and recruit services from BIPOC- and women-owned businesses. Energy Trust is currently working on identifying, developing and implementing a supplier diversity tracking system to improve visibility and tracking of contracts with BIPOC businesses.
- The organization's work to develop a supplier diversity tracking system will standardize tracking and improve visibility on our procurement and contracting practices.

Energy Trust of Oregon's 2021 Progress toward diversity, equity and inclusion goals

Exploring equitable workforce development initiatives, E Source, 2023

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Collaboration is key!
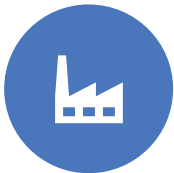
UTILITIES

GOVERNMENT AND MUNICIPAL DEPARTMENTS

EDUCATIONAL INSTITUTIONS

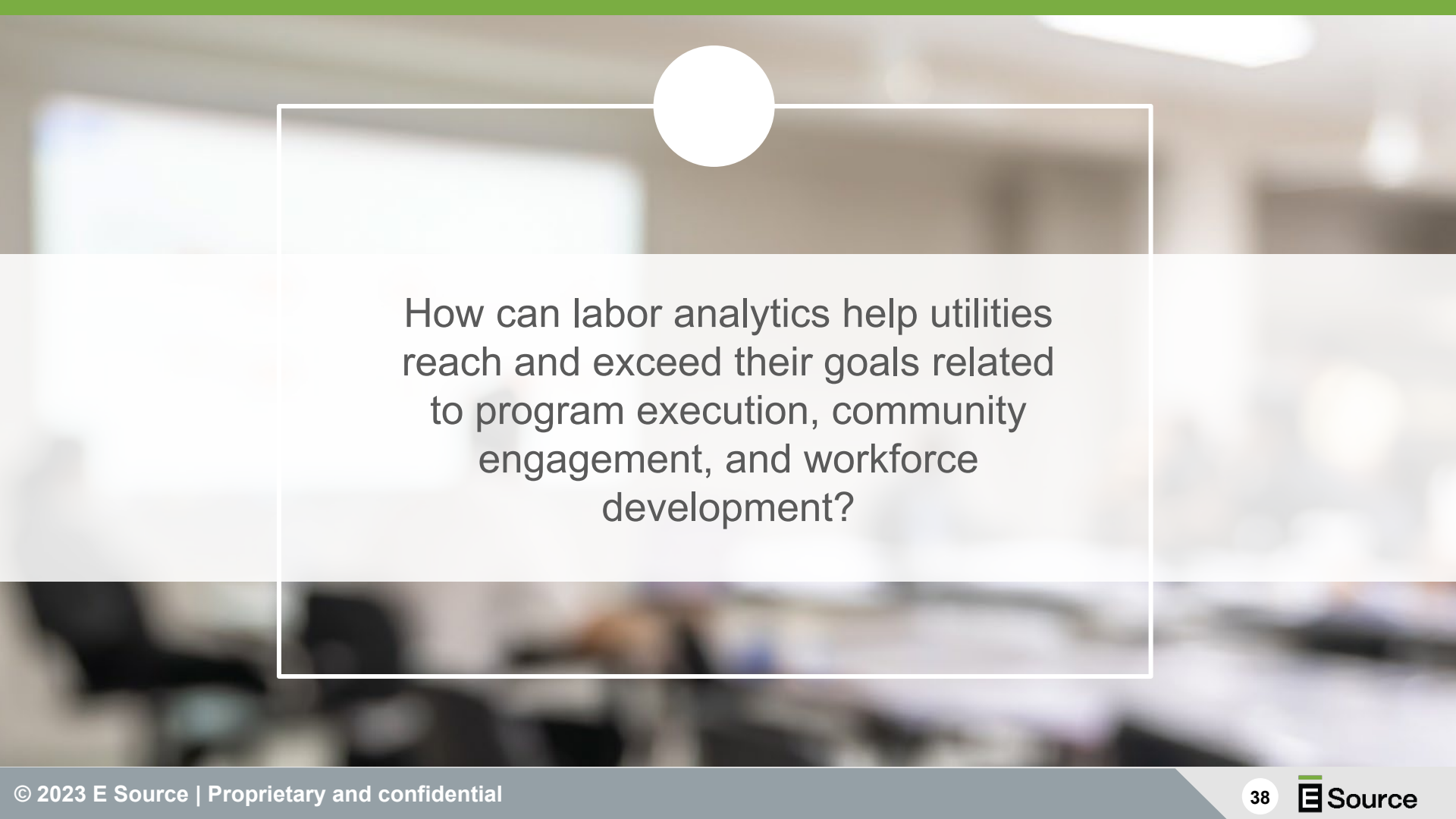COMMUNITY-BASED ORGANIZATIONS

INDUSTRY AND LABOR ORGANIZATIONS

Exploring equitable workforce development initiatives, E Source, 2023

Key Labor Analytics Needed For Utility Programs

Presenting: Nikole DiPillo

- US & Energy Labor Landscape
- Available Talent for Critical Roles
- Labor Market Trends Impacting Utility programs
- Internal/Market Skills Analysis
- Geographical labor analysis
- Skills inventory and gap analysis
- Workforce diversity and inclusion metrics
- Correlation between program success and availability of workforce
- WFD Echo System Data Points

How can labor analytics help utilities reach and exceed their goals related to program execution, community engagement, and workforce development?