



WILLDAN CLEAN ENERGY ACADEMY

# MEEA Energy Solutions Conference: *Workforce Development Panel*

January 31, 2023

**Antuan Cannon,** CEM, LEED AP, MFBA  
*Director of Talent Development, Willdan*

[cleanenergyacademy.org](https://cleanenergyacademy.org)



# Introduction: Antuan Cannon

## Who is this guy?

- Born in Mexico, raised in Lake Tahoe, Northern California
- Studied Economics & Asian Studies @ Yale University
- In 2006, Co-Founded STEM Education Non-Profit called [Envirolution.org](http://Envirolution.org) out of college dorm
- In 2013 Spun-off, Vocational Training & Staffing Social Enterprise called Envirolution One
- Working with Willdan Energy Solutions (WES) as an Engineering, Staffing and Training Consultant since 2009
- In 2016, joined as High- Profile Project Manager
- 2018, became SMB Deputy Program Manager
- 2020, became Utility Program Development Manager,
- 2022, promoted to Director of Talent Development
- Has various industry certifications: CALT, AEE CEM & CEA, BPI MFBA & BA, LEED AP, GPRO, EPA, OSHA, NCCER etc



Founded in 1964  
Headquarters in  
California, local  
offices in New York,  
New Jersey, and  
Connecticut  
1,500 staff working  
in 61 offices  
nationwide  
Serves utilities,  
commercial,  
government,  
institutional  
customers, higher  
education,  
healthcare,  
pharmaceuticals,  
data centers, and  
hospitality

## Studies

- Condition Assessments
- Life Extension Studies
- Investment Grade Audits
- Feasibility Studies

## Existing Plant Day “2” Services

- Operations and  
Maintenance Support
- Emergency Design/  
Construction Services

## Design

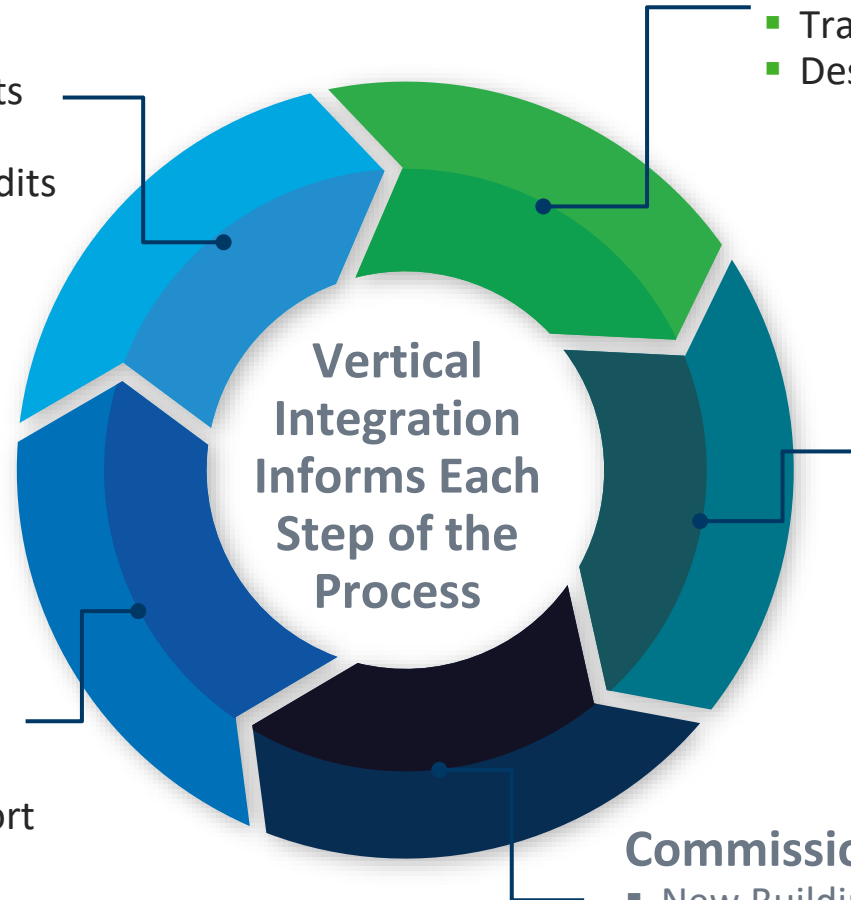
- Traditional Design-Bid-Build
- Design-Build

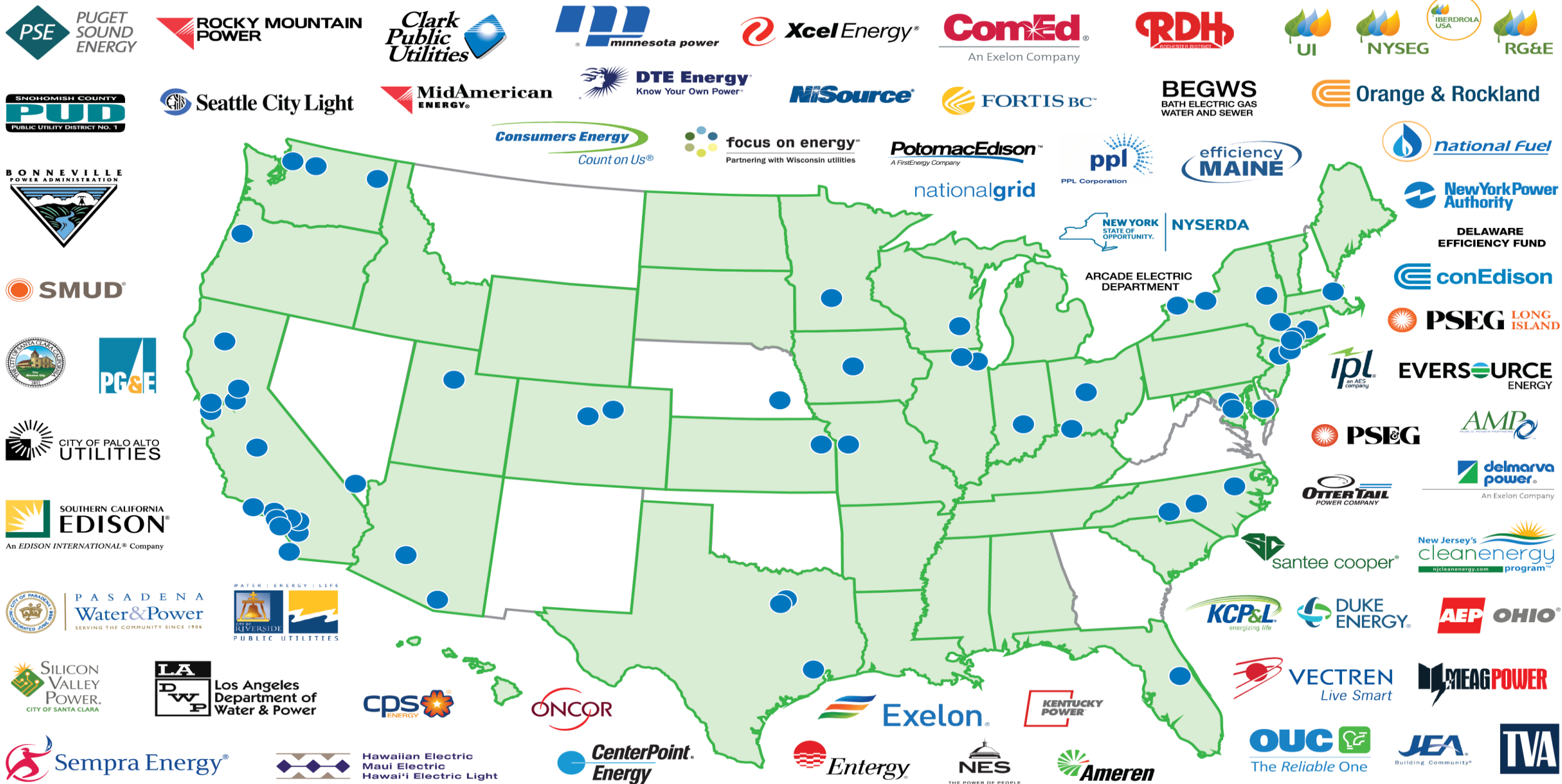
## Construction

- Construction Administration
- Professional Construction  
Management
- Construction Management “At Risk”

## Commissioning

- New Building Utilities Commissioning
- Retro-Commissioning





● Willdan locations

■ States where Willdan has worked with electric utilities

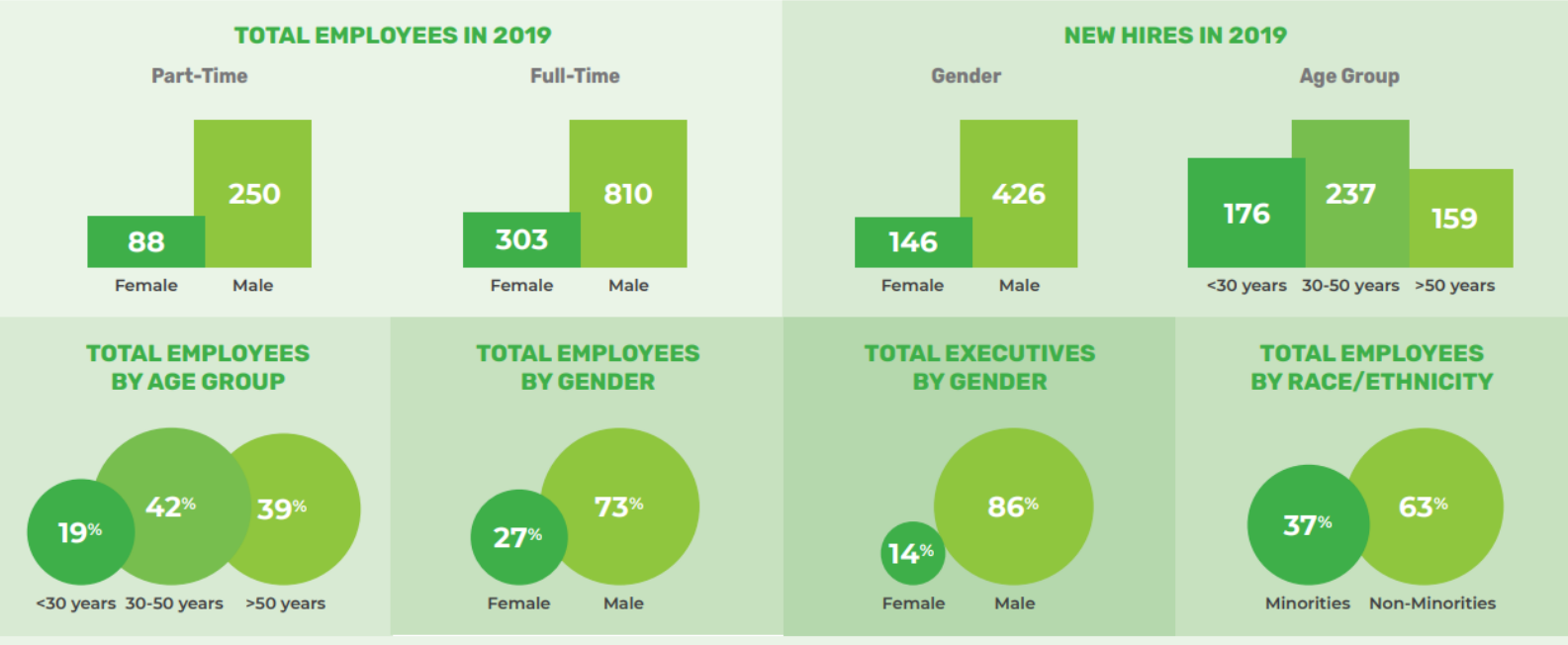
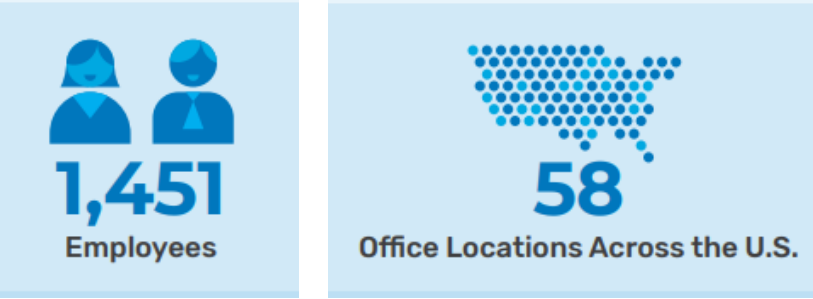


# Utility EE Program Trajectory


EE Programs are moving towards “Deeper” Measure

Category	Lighting	Refrigeration	HVAC	Heating & Gas
<b>Replacements</b>	<ul style="list-style-type: none"> <li>Indoor Lighting Fixture Replacement</li> <li>Outdoor Lighting Fixture Replacements</li> <li>Exit Sign Replacements</li> </ul>	<ul style="list-style-type: none"> <li>Reach-in Refrigerator Replacement</li> <li>Display Case Refrigerator Replacement</li> <li>Ice Machine Replacement</li> </ul>	<ul style="list-style-type: none"> <li>Unitary AC &amp; HP</li> <li>PTAC &amp; PTHP</li> <li>Chiller – Air Cooled &amp; Water Cooled</li> <li>Cooling Tower</li> </ul>	<ul style="list-style-type: none"> <li>Furnace &amp; Boiler</li> <li>Infrared Unit Heater</li> <li>Storage Tank DHW</li> <li>Instantaneous DHW</li> <li>Indirect DHW Heater</li> </ul>
<b>Retrofit</b>	<ul style="list-style-type: none"> <li>LED Tube Re-lamping</li> <li>Re-lamping &amp; Re-ballasting</li> <li>Exit Sign Retrofit</li> <li>Retrofit Kits</li> </ul>	<ul style="list-style-type: none"> <li>EC Motor for Walk-in Cooler or Open Case Refrigerators</li> <li>RACK Compressor Replacement</li> <li>Condenser Replacement (Air-Cooled)</li> </ul>	<ul style="list-style-type: none"> <li>EC Motor Replacement for HVAC Supply &amp; Return Fans</li> <li>VFD - Motor Controls</li> <li>NEMA Premium Motors</li> </ul>	<ul style="list-style-type: none"> <li>TRVs</li> <li>Steam Trap Replacement</li> </ul>
<b>Controls</b>	<ul style="list-style-type: none"> <li>Occupancy Sensors</li> <li>Bi-Level Sensors</li> <li>Daylighting Sensors</li> </ul>	<ul style="list-style-type: none"> <li>Vending Machine Controls</li> <li>Evaporator Fan Control</li> <li>Door Heater Control</li> </ul>	<ul style="list-style-type: none"> <li>Wifi Thermostat</li> <li>Economizers Controls</li> <li>Demand Controlled Ventilation [DCV]</li> <li>Guest Room Energy Management Systems</li> </ul>	<ul style="list-style-type: none"> <li>Wifi Thermostat</li> <li>Demand Controlled Ventilation [DCV]</li> <li>Outdoor Reset Controls</li> <li>Energy Management Systems (EMS)</li> </ul>
<b>Operations &amp; Maintenance (O&amp;M)</b>	<ul style="list-style-type: none"> <li>No Currently Available</li> </ul>	<ul style="list-style-type: none"> <li>Night Covers for Open Case Refrigerators</li> <li>Strip Curtains</li> <li>Door Gaskets</li> </ul>	<ul style="list-style-type: none"> <li>Refrigerant Charge Correction</li> <li>Duct Air Sealing &amp; Insulation</li> <li>Chiller Tune-Ups</li> </ul>	<ul style="list-style-type: none"> <li>Duct Air Sealing &amp; Insulation</li> <li>Boiler &amp; DHW Pipe Insulation</li> <li>Boiler Tune-Ups</li> </ul>

# What gets measured gets done.....



**ENVIRONMENT**




We act as environmental stewards and reduce carbon intensity

**SOCIAL RESPONSIBILITY**

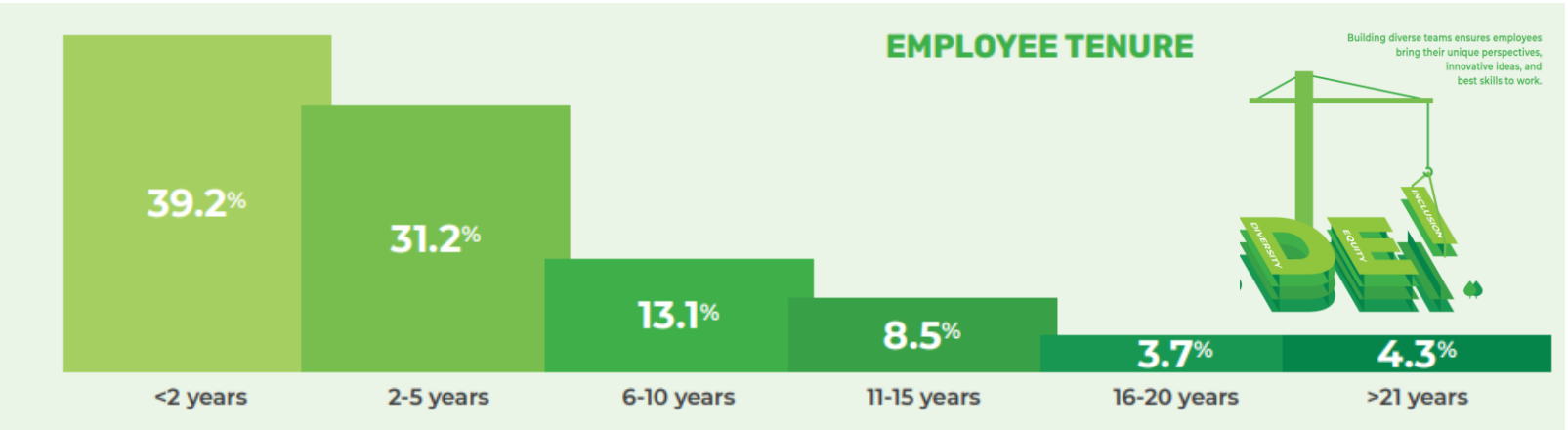


We invest in our people and the communities where we live and work

**GOVERNANCE**



We lead by example, act ethically, and align shareholder and management goals



## THE PLAN



**Goal:** Develop a talent pipeline and workforce development program tailored to industry needs



**Team:** Recruit team of local, small MWBE firms & CBOs to help design, develop and deliver the program



**Funding:** Leverage available funding sources to help offset part of the initial cost to launch this initiative



**Scale:** Pilot the program with Lighting & HVAC systems, and if it is successful, scale to thermal & other tech areas

## THE STRATEGY

*Phase*

1

### Industry Alignment

(i.e., R&D and Pilot phase)

*Willdan  
to lead*

*Phase*

2

### Educational Alignment

(i.e., Credentialing phase)

*NYIT  
to lead*

*Phase*

3

### Workforce Alignment

(i.e., Train the trainers phase)

*Energy EDC  
to lead*



# Willdan Clean Energy Academy Workflow & Partners



## Turnkey Process & Workflow

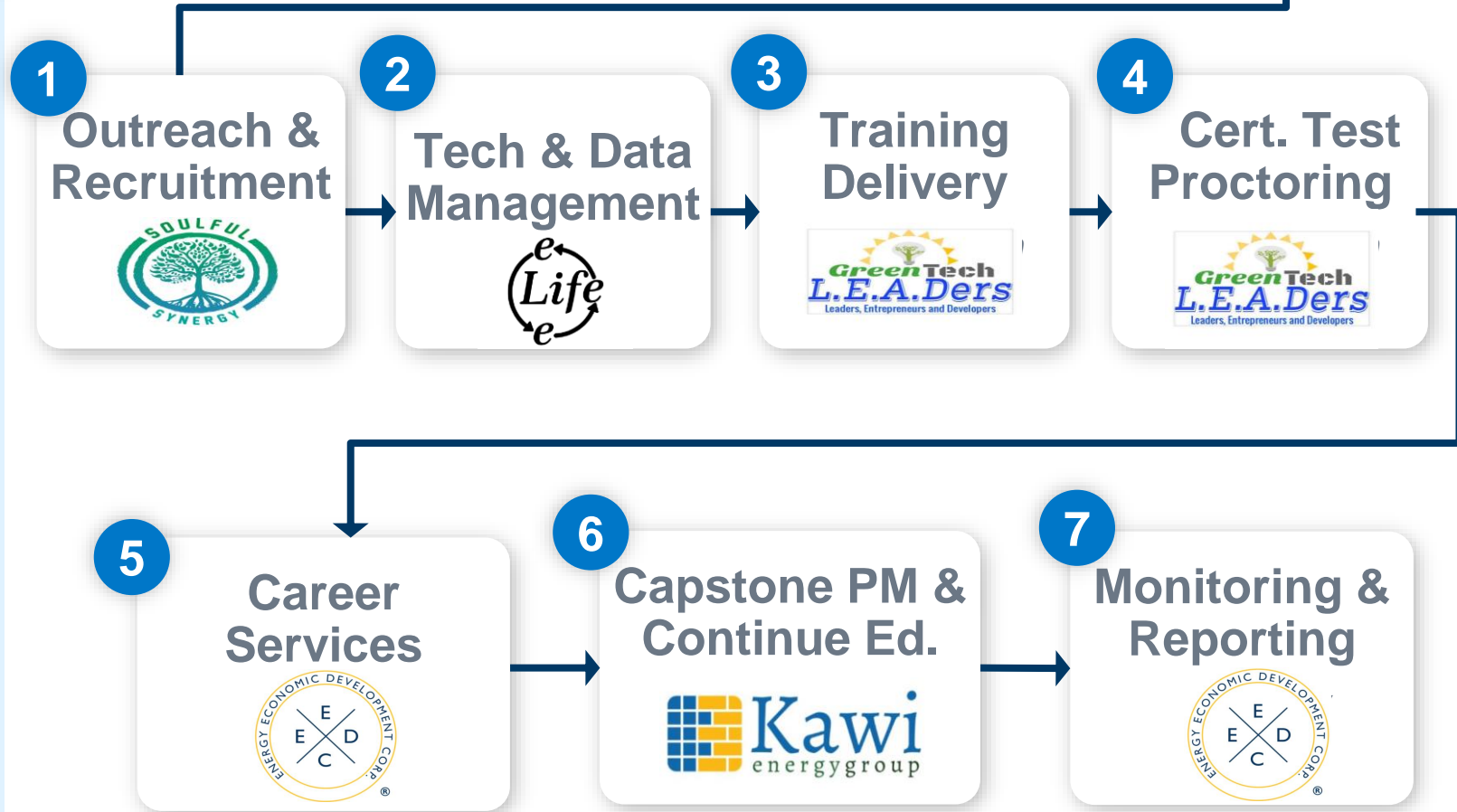
The WCEA Program offers a turn-key, full-service Job training and staffing services, including:

### Program Components:

- Classroom Training [Virtual]
- Hands-On, Real-World Field Training
- Certification Test Preparation & Facilitation
- Capstone Service-Learning Projects
- Career Services, and Job & Internship Placement
- Continuing Engagement & Education



\* Program Mgmt & Administration



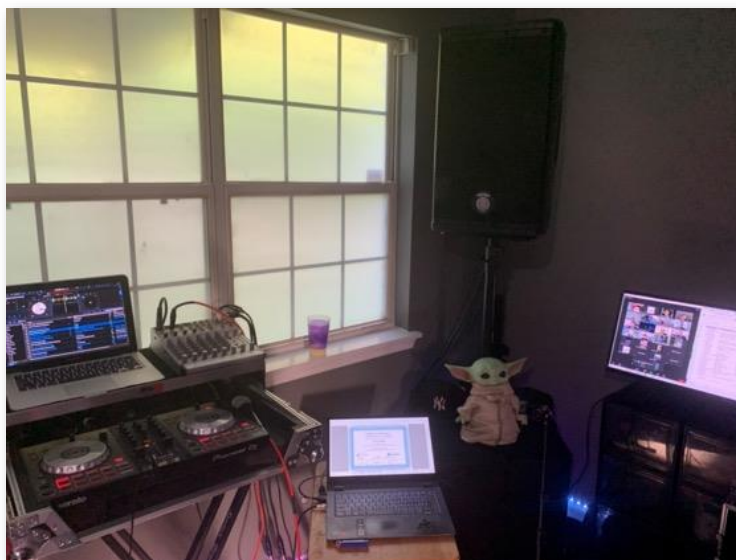
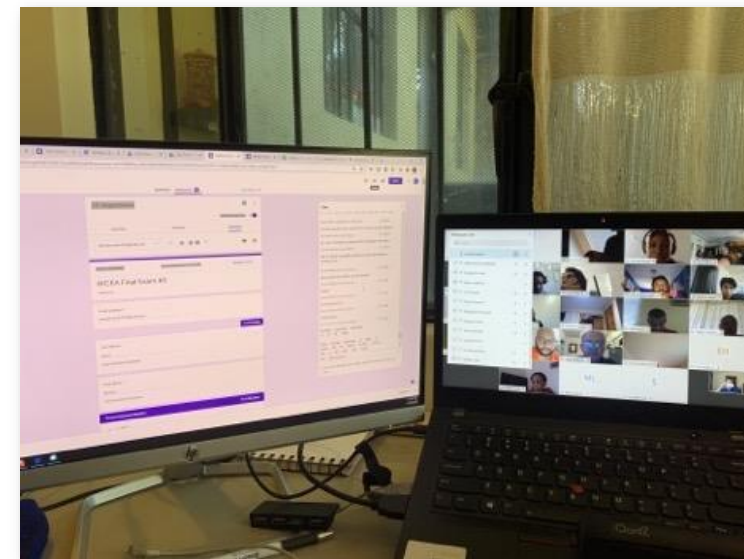
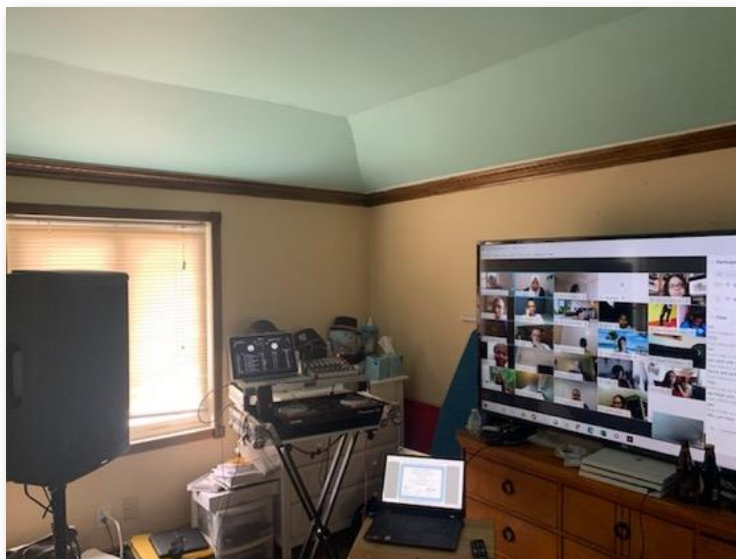


# WCEA Program – In Action (Pre-COVID)





# WCEA Program – In Action (Post-COVID)



# THE VILLAGE



They say it takes a Village; well, our village included:

- 73 Total # of Companies Involved
- 61 Clean Energy Companies
- 49 Total Employers
- 29 SMB Market Partners
- 20 Recruitment Partners
- 20 Non Profits Organizations
- 12 MWBE Certified Firms
- 6 Subcontractors
- 4 Willdan companies, so far



## • Workforce Partners:

- WeACT
- JCC of SI
- WestCOP
- UGC
- MEEA



## • Outreach & Recruitment Partners

- Green City Force & YouthBuild
- WestCOP & WestHAB
- Fortune Society & Strive International
- Non-Traditional Employment for Women
- Goodwill Industries
- Childrens Village & The Pillars
- 2030 District & Sustainable Westchester
- CUNY CCNY BPL & Engineers w/o Borders
- United Way of Westchester



# Training Services: Courses Design

## KEY Training Topics:

1. Lighting Systems
2. HVAC Systems
3. Heating Systems
4. Building Envelope
5. Heat Pumps

## KEY Training Elements:

1. Certification & Credentials
2. Job Specific Functions
3. Software & Applications
4. Standards & Codes
5. Sector Specific
6. Technology Specific

SIZE	CATEGORY	RESIDENTIAL	COMMERCIAL
Small Buildings	Incentive Program (Market Driver)	NYSERDA: Home Performance w/ Energy Star	ConEdison: Small & Medium Business (SMB) Direct Installation; NYSERDA: Small Business Audit
	Size	1-4 Units	300 kW of Ave Monthly Demand or Lower
	Certification	BPI Building Analyst (BA); Envelope Specialist	None Currently – Looking at AEE's Certified Energy Auditor
	Energy System Focus	Thermal (Primarily)	Electrical (Primary); Gas (Growing); ASHP (Future)
	Job Types	Energy Auditor; Weatherization Crew	Sales Auditor; Inspectors, Project Coordinator, Engineers
Large Buildings	Incentive Program (Market Driver)	ConEdison: Multi-family Energy Efficiency (Med) NYSERDA: Multi-family Performance (Large)	ConEdison: Commercial & Industrial Program NYSERDA: FlexTech & Existing Facilities
	Size	5+ Dwelling Units	300KW (Ave Monthly Demand) or Higher
	Certification	BPI Multi-Family Building Analyst (MFBA)	AEE Certified Energy Auditor (CEA) or Certified Energy Manager (CEM)
	Energy System Focus	Thermal (Primarily); Electrical (Secondary)	Electrical (Primarily)
	Job Types	Energy Auditor; Weatherization Crew	Energy Analyst; Energy Manager; Retro-commissioning Agent

	TYPE	ELECTRIC	THERMAL
Efficiency		Lighting	Heating
		HVAC	Hot Water
		Refrigeration	Building Envelope
		Motors & Drives	Combustion Appliances
Renewables		Solar PV	Solar Thermal
		Wind	Geothermal
		Co-Generation	Heat Recovery Systems
		Green Power	Biofuels
Trades		Electrician	Plumbing
		Mechanical	Carpentry

## Related Certifications

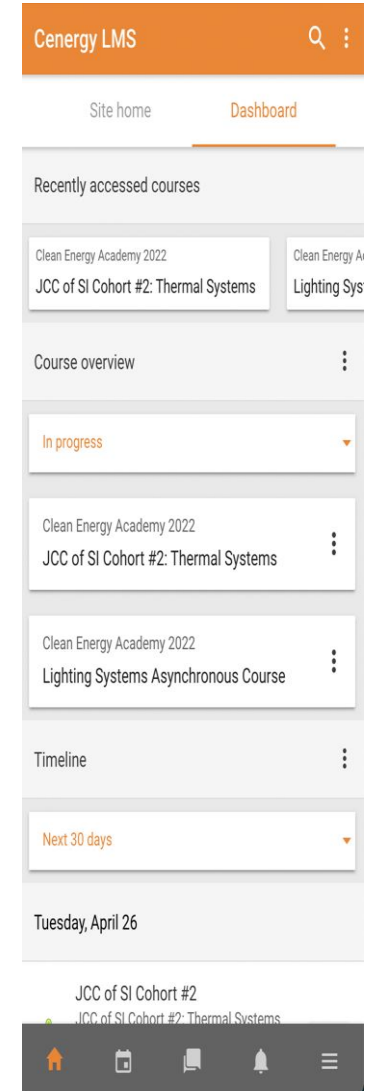
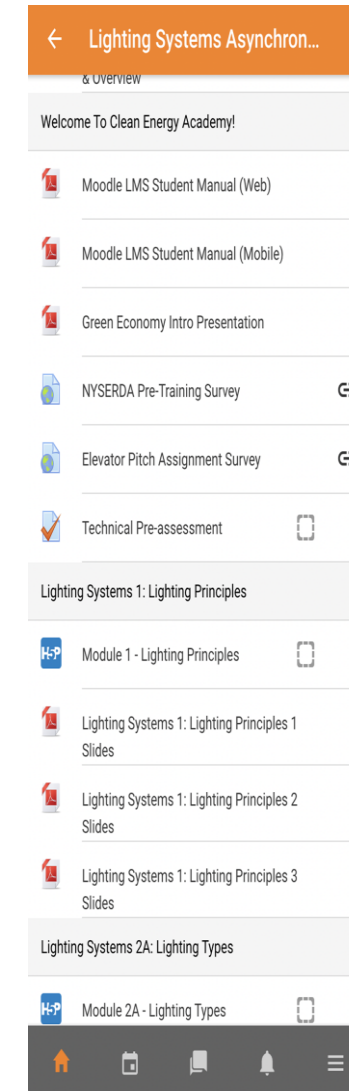
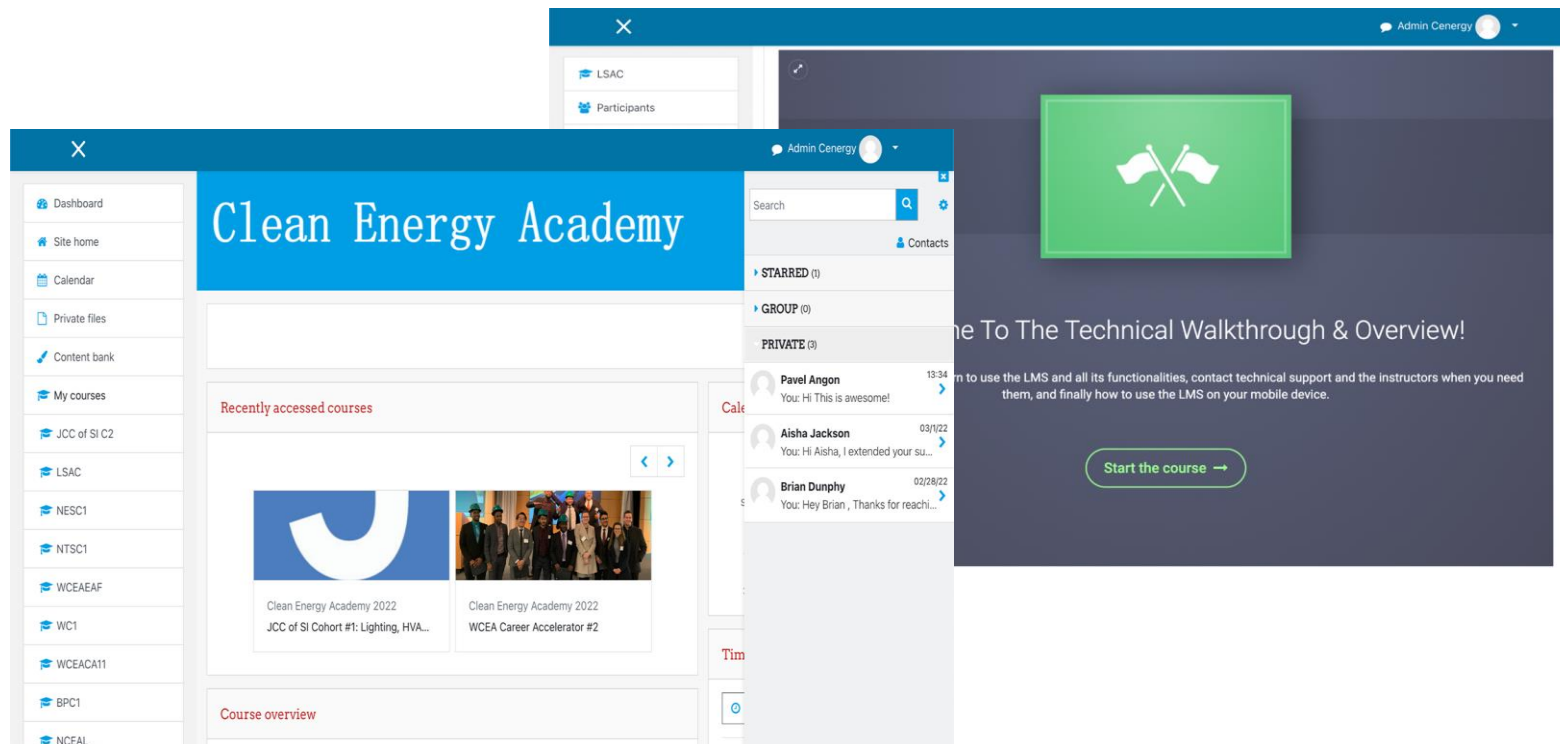
- **EPA 608**
  - Type 1 – Small Appliances
  - Type 2 – High Pressure Appliances
  - Type 3 – Low Pressure Appliances
  - Universal
- **AEE**
  - Certified Energy Auditor (CEA)
  - Certified Energy Manager (CEM)
- **BPI**
  - Building Science Fundamentals (BSF)
  - Building Analyst (BA)
  - Multi Family Building Analyst (MFBA)
- **NALMCO**
  - Certified Apprentice Lighting Technician
  - Certified Senior Lighting Technician
- **OSHA**
  - OSHA 10
  - OSHA 30
  - Site Safety Training (SST)





# Tech Overview: Learning Management System

- Ability to make module based learning to let students take the course whenever they want
- Pre-upload content and slides for students to go over after they complete a module
- mobile and web application LMS platform, with multi-channel communications via email & messaging directly on the platform



# Career Services: Overview

All Graduates of the Academy are eligible to received Employment and career advancement support services are well as Continual Professional Development

Our Career Services are split into five main components:

- (1) the Career Accelerator
- (2) Mock Interview(s)
- (3) Capstone Projects
- (4) Job Placement Support
- (5) Continuing Education

## Professional Development Strategies

- Career pathways
- Capstone labs & projects
- Job search strategies
- Interview preparation
- Salary Negotiations
- Professional etiquette

## Deliverables

- Elevator Pitch
- Professional Resume
- Cover Letter
- Professional Correspondence
- Interview Readiness:
- Mock Interviews
- Interview Skills

Graduates who participate in this the Career Accelerator find jobs!







WCEA Celebrates  
**500 Graduates** and  
**200 Job Placements!**



**Total Participants**

Disadvantaged  
Communities/  
Priority  
Populations



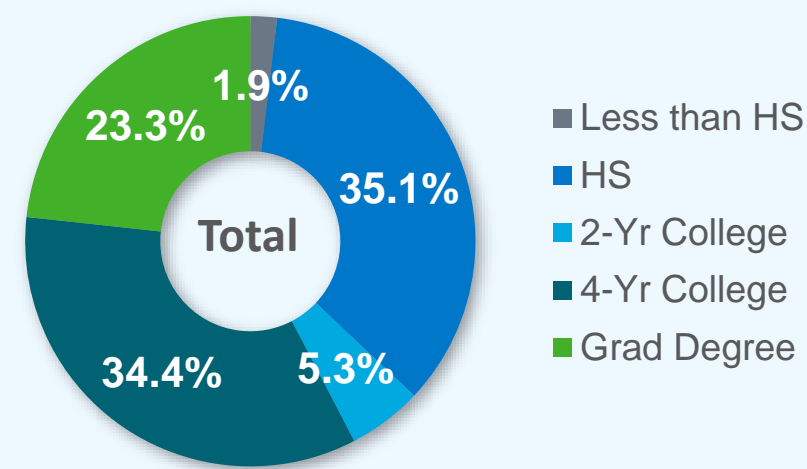
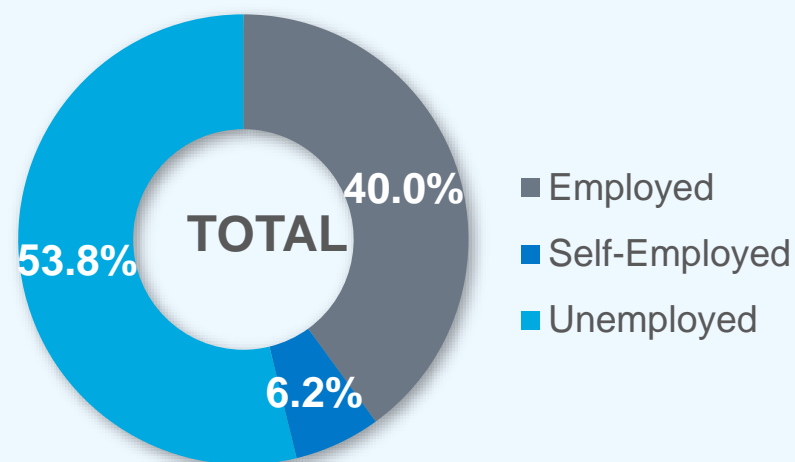
**Total Graduates**

Clean  
Energy  
Jobs

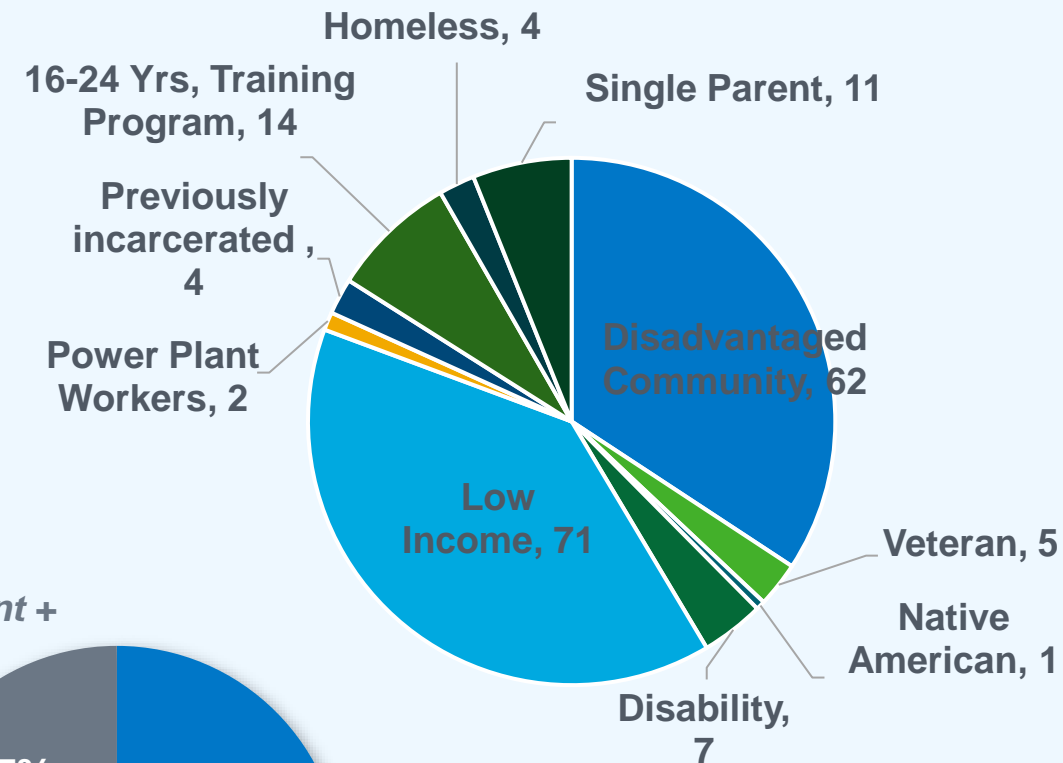


# Program Outcomes:

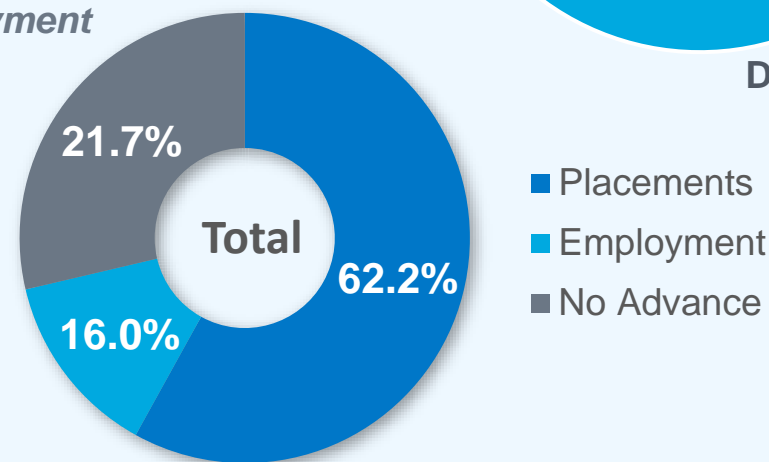
Participant by Pre-Course Employment



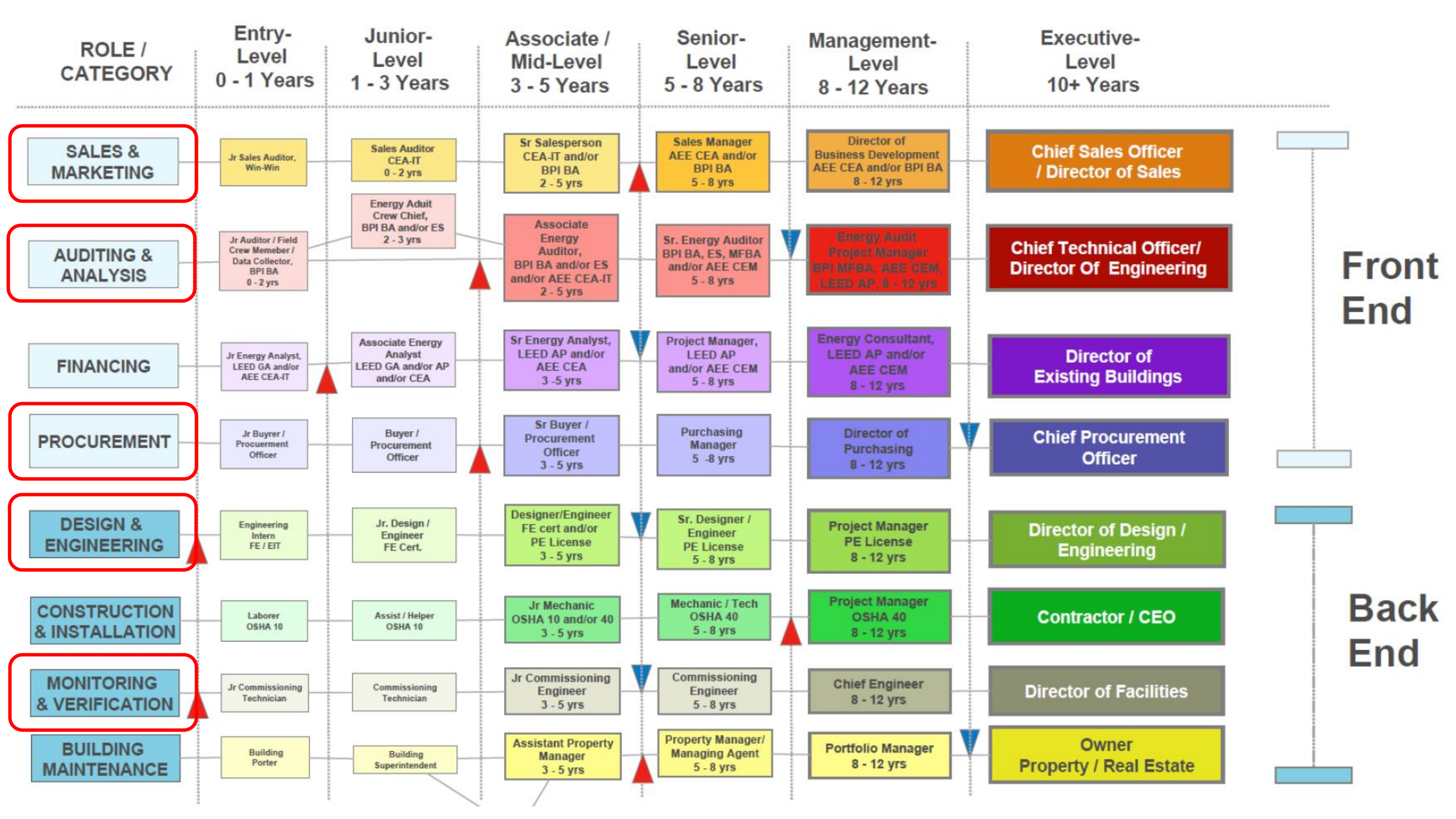
Participant by Priority Population



**78.2%**  
*Total Placement + Employment*









# THANK YOU!



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*Willdan, Director of Talent Development & Innovation*

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