



Michigan Workforce Development Consortium Summit

November 18, 2022



CEWD
Center for Energy
Workforce Development

Who is The Center for Energy Workforce Development (CEWD)?

Non-profit consortium of more than 130 energy companies, contractors, associations, unions, educators, and business partners working together to ensure a skilled, diverse workforce pipeline to meet future industry needs.

Traditionally focusing on electric, gas, and nuclear business, CEWD expanded its umbrella in 2021 to include energy storage, renewables, and EV infrastructure.

Facilitated the formation of state consortiums to create an avenue for members to enhance strategic collaborations in workforce development and career awareness to create a robust talent pipeline.

What do we do?

Career Awareness

Education

Increasing DE & I

Supporting Workforce
Development Professionals



An aerial photograph of a large industrial complex, possibly a power plant or refinery, featuring several tall smokestacks, large storage tanks, and various industrial buildings. The facility is surrounded by greenery and a road. The image is overlaid with a semi-transparent dark blue filter.

Energy Industry Fundamentals Curriculum Modernization

EIF 2.0

Goals of Modernization

- Participants should recognize how THEY will be the future of energy.
- Dynamic, interactive curriculum that is student-centric
- Safety woven throughout
 - Stackable to OSHA-10
- Highlights all types of careers found in the sector
 - Skilled trades, engineering, technical, business, etc.
- Content represents all voices in energy
- Process driven by steering committee and subject matter experts



Overview

■ Present State:

- Curriculum developed over 10 years ago
- 130-hour course
 - 6 modules
- Certificate-based program

■ Future State:

- Ready for pilot locations January 2023
- 120-hour course
 - 4 units, each with 4 chapters
- Stackable certificate program
- Launched to public by August 2023



Course Architecture & Topics (last updated 10/7/2022)

	Unit A: The Power of Energy	Unit B: Energy Past, Present, Future	Unit C: Our Interconnected Grid: Transmission, Distribution, & Resiliency	Unit D: Show Me the Money
Chapter 1	<ul style="list-style-type: none"> The future of energy Introduction, overview, terminology, math for energy High level overview of generation, transmission & distribution Trends in demand for energy Evolution / transformation happening now (decarbonization / renewables) 	<ul style="list-style-type: none"> Brief history of energy 	<ul style="list-style-type: none"> The power transmission system: overview, equipment, processes, and reliability 	<ul style="list-style-type: none"> Math for energy: customer-facing Metering and billing, smart meters Rate schedules: what and why
Chapter 2	<ul style="list-style-type: none"> Advantages and limitations of each electrical generation source 	<ul style="list-style-type: none"> What is an energy company? How do energy companies operate? 	<ul style="list-style-type: none"> The power distribution system: overview, equipment, processes, and reliability 	<ul style="list-style-type: none"> Distributed generation / storage Building electrification EVs - charging and bidirectional storage potential Building automation, load management Energy efficiency Energy-as-a-service
Chapter 3	<ul style="list-style-type: none"> Deeper dive into technical details by source: natural gas, coal, nuclear, wind, hydro, solar, biomass, geothermal. <i>[chronologically ordered]</i> 	<ul style="list-style-type: none"> The energy industry regulatory landscape (deregulation) 	<ul style="list-style-type: none"> What is cybersecurity and why it is critical for the energy industry? Risk management for the energy industry 	<ul style="list-style-type: none"> Energy industry employers: culture, training, "soft skills," career paths, apprenticeships & unions Emerging career highlights
Chapter 4	<ul style="list-style-type: none"> Generation trends: new generation construction & retiring coal plants Focus on storage & hydrogen Other emerging technologies 	<ul style="list-style-type: none"> Future of energy companies SWOT type analysis (global perspective) 	<ul style="list-style-type: none"> Grid modernization & smart grids Microgrids - definition and purpose Reliability and resiliency: power / load balancing, blackouts 	<ul style="list-style-type: none"> The business of energy (global & US)



EIF 2.0 - Course-Level Learning Objectives (DRAFT)

- 1) **Identify** influencing factors and events that are driving trends, transitions, and changes in the U.S. and global energy industries.
- 2) **List** and **describe** career pathways in the energy industry and **evaluate** career requirements.
- 3) **Diagram** and **explain** electricity generation, delivery, and consumption at a systems level.
- 4) **List** the potential benefits of a career in energy and **order** these benefits based on your own career goals and priorities.
- 5) **Explain** the importance of a culture of safety to individuals, families, communities and companies as prioritized throughout the energy industry.
- 6) **Describe** the impact of trends in energy production, generation, transmission, distribution and consumption on energy industry careers.



Questions?





Thank you!

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