

Advancing the Energy Efficiency Workforce

November 15th, 2:40-3:55 pm



AGENDA

Advancing the
EE Workforce

- Workforce Development Overview
- Virginia Energy Workforce Consortium
- Community Housing Partners' Training
Program and Facility
- Q&A





Brandi Frazier Bestpitch
Virginia Energy



Matt Kellam
Virginia Energy
Workforce Consortium



Kim Strahm
Community Housing
Partners



Carrie Webster
Henrico County
Moderator





VAEEC 2021 Energy Efficiency Forum

Advancing the Energy Efficiency Workforce

Brandi Frazier Bestpitch (she/her)

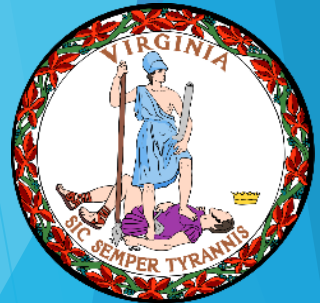
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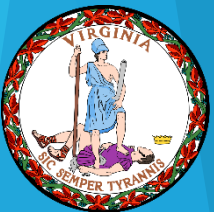
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[Lead By Example | Energy Data Warehouse](#)



VIRGINIA ENERGY WORKFORCE

- ▶ CLEAN ENERGY VIRGINIA = JOBS
 - ▶ Clean Energy Jobs provide environmental and economic benefits with a growing impact on the economic development of small cities and rural communities
 - ▶ Increased demand for Clean Energy supports the growing need for trained workforce
 - ▶ From the [E2 Clean Jobs America 2021 Report](#) Virginia is in the top ten nationwide for clean energy hiring

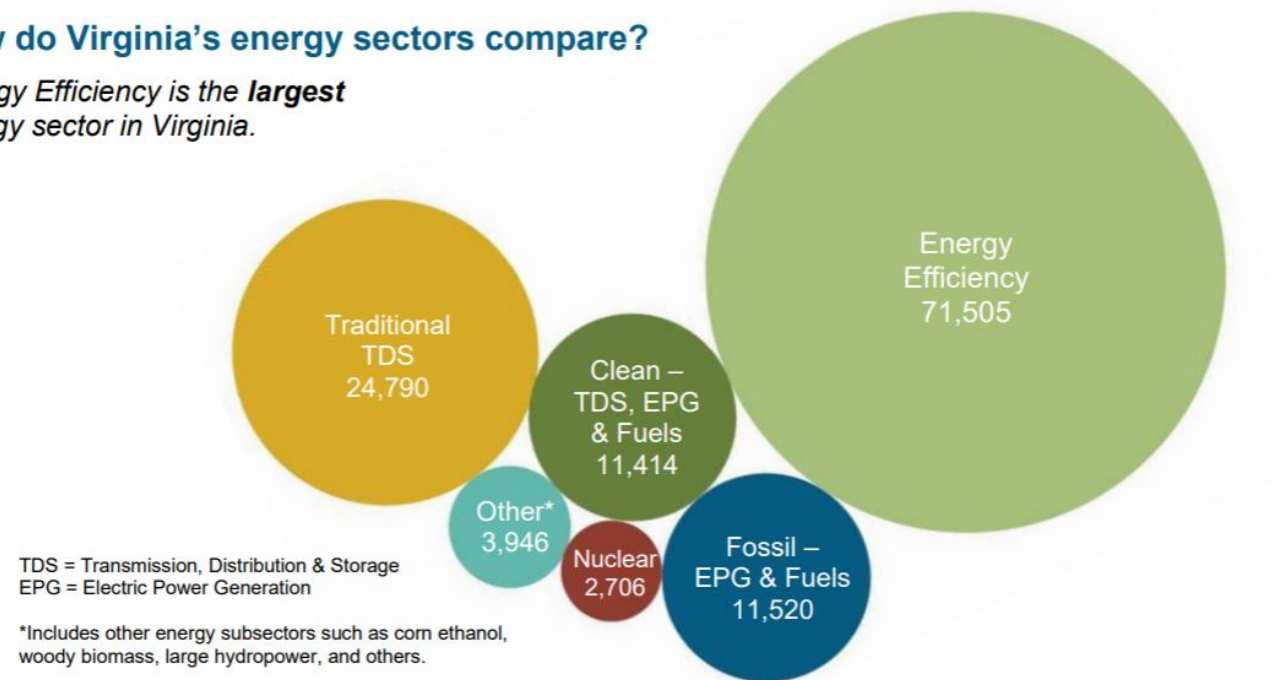


VIRGINIA ENERGY WORKFORCE

- ▶ Energy Efficiency Workforce in Virginia
 - ▶ From [E4 The Future](#) the energy efficiency workforce represents the largest workforce group in the energy sector

How do Virginia's energy sectors compare?

*Energy Efficiency is the **largest** energy sector in Virginia.*



https://e4thefuture.org/wp-content/uploads/2021/08/Virginia_2021.pdf

VIRGINIA ENERGY WORKFORCE

- ▶ Energy Efficiency Workforce in Virginia
 - ▶ Energy Efficiency savings create jobs and help local economies
 - ▶ 100% of Virginia Counties have Energy Efficiency Jobs
 - ▶ 95.2% of Virginia Energy Efficiency Businesses have less than 100 employees with almost 40% of those having only 1-5 employees

https://e4thefuture.org/wp-content/uploads/2021/08/Virginia_2021.pdf



VIRGINIA ENERGY WORKFORCE

- ▶ Finding Solutions to Inequities in the Energy Workforce
 - ▶ Limited access to opportunity
 - ▶ Lack of access to funding
 - ▶ Limited access to training certification & development opportunities
 - ▶ No office
 - ▶ Limited access to workers
- ▶ Ensuring workforce diversity



VIRGINIA ENERGY WORKFORCE

Policy & Legislation

- Virginia Energy Plan
- SB 1348 Energy Career Cluster
- Executive Order 43
- Virginia Clean Economy Act

Workforce

- Education & Training
- Career Awareness
- Workforce Planning
- Structure and Supports

Jobs

- Energy Efficiency
- Generation (Wind/Solar/Nuclear)
- EV
- Grid Modernization & Clean Storage

Virginia Energy Workforce Resources

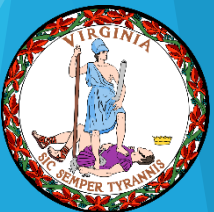
[Virginia Energy Workforce Consortium](#)

[Virginia Department of Education Energy Career Cluster](#)

[NASEO - Energy Jobs](#)

[Virginia Department of Labor and Industry - Apprenticeship Programs](#)

[Virginia Chamber of Commerce - Blueprint Virginia 2030](#)





“Powering Forward Together”

Topics

VEWC Overview & Accomplishments

Energy Education & Training Pathways

Partnerships & Pipeline Programs

Workforce Demand,
Work-based Learning
& Opportunities



Introduction

- 23+ years of Talent Acquisition and Workforce Development
 - 13+ years with Dominion Energy
 - 10 of 3rd Party Staffing
- Served in the Marine Corps Reserves from 1994 – 2000
 - Enlisted in the Marine Corps as a senior in high school
- Majored in Public Relations at Virginia Commonwealth University



Virginia Energy Workforce Consortium

Vision: To ensure a sustainable, qualified workforce in order to support the energy needs of the Commonwealth of Virginia.

Mission: Create an organized approach to leverage the resources of government, industry, education, and labor to develop the best skilled workers for all stakeholders in the energy sector in the Commonwealth of Virginia.



Accomplishments

State Level Alignment & Partnerships

Increased Membership

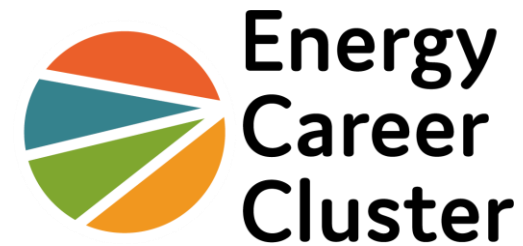
Careers in Energy Week

“Get Into Energy” Innovation Challenge

17th Energy Career Cluster

Secondary Energy Education

Post-Secondary Energy Education



Partnerships & Impact

Blueprint Virginia 2025 –
Virginia Chamber of Commerce



“Partnerships – Education,
Industry, Community”

“Virginia’s Energy Plans,
Progress and Future”



Virginia Labor Market
Information Shop

Executive Order 43

Virginia Department of
Veterans Services



VEWC Strategic Plans

Career
Awareness

Education



Workforce
Planning

Structure
& Support



Energy Career Cluster

Virginia's 17th Career Cluster

Background

- **2011 – 2012:** VEWC conducted workforce demand analysis and Energy education / training program analysis
- **2011 – Present:** Built upon relationships with VA Dept of Education, VA Community College System, VA Chamber of Commerce, Office of the Governor of VA, and other education and state level organizations
- **2014 - 2015:** VDOE approved and added **Energy & Power (8448)** course
- **2018 – 2019:** **HB2008** and **SB1348** passed Q1 2019 requiring VDOE to add Energy cluster, pathways, courses
- **2019 – 2020:** VDOE, VEWC members, and others working together to develop the 17th Energy Career Cluster
- **2020 – 2021:** Pathways developed by 7/1/2020 and ready for school year 2020-2021



Pathways & Courses

Fuels Production

- Energy Source Life Cycle
- Application of Engineered Energy Systems

Power Generation

- Fundamentals of Power Generation
- Power Generation Design and Function
- Energy and Power

Energy Transmission, Distribution, and Storage

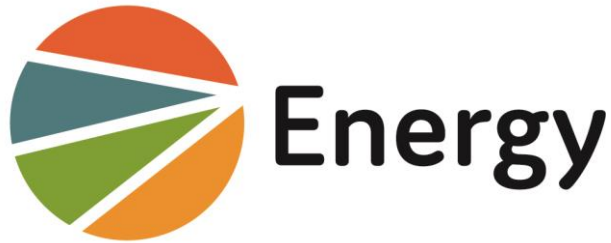
- Energy Transmission and Distribution
- Energy Transmission and Distribution, Advanced

Energy Sustainability and Efficiency

- Energy Supply Sustainability and Efficiency
- Energy Demand Sustainability and Efficiency
- Renewable Energy



Resources & Marketing



- Pathways developed by 7/1/2020 and ready for school year 2020-2021
- [VDOE Energy Career Cluster page](#)



- Promotional videos
 - [Energy Sustainability and Efficiency](#)
 - [Energy Transmission, Distribution and Storage](#)



- Podcasts
 - 2/11/2020: [Energy Sustainability and Efficiency](#)
 - 3/10/2020: [Energy Transmission, Distribution and Storage](#)
 - 5/5/2020: [Fuels Production](#)
 - 5/19/2020: [Power Generation](#)

Post-Secondary Energy Education

Connecting the Pathways

Registered Apprenticeship Programs

Career Certificate Programs

Associate Degrees

Bachelor Degrees

Opportunities

Analyze existing Energy programs

Understand future workforce and skill set demand

Identify education and training gaps

Recommend Energy programs

Post-Secondary Energy Education

Community Colleges

Power Line Worker – 2

Solar Technician – 3

Career Studies Certificates – 9

Associate Degrees – 4

Total Energy Technology (ENE) Courses - 27

4-Year Colleges / Universities

James Madison University

Old Dominion University

University of Virginia

Virginia Commonwealth University

Virginia Tech

Military & Veteran Communities

Dominion Energy Military Program



Virginia Department of Veterans Services

Virginia Values Veterans V3 Program



Energy Industry Demand in Virginia

Job Classification	2018 Jobs	2028 Jobs	Change	2019-2023 Projected Retirements / Attrition	2024-2028 Projected Retirements / Attrition
Lineworker	1443	1519	76	468	187
Plant / Field Operators	696	677	-19	293	68
Technicians	1434	1462	28	514	164
Engineers	996	1003	7	676	113
Customer Service	799	840	41	116	96
TOTALS	5368	5501	133	2067	628

Source: 2019 CEWD Energy Workforce Demand Report

- Data Sources: Quarterly Census of Employment and Wages (QCEW); Regional Economic Information System (REIS); State data compiled from various State agencies.
- Projected attrition / retirements rates taken from CEWD's energy industry survey results.
- Contains data on utility industries that are publicly owned or operated.
- Does NOT include contractor or industry supplier demand data

Matt Kellam

VEWC - Chairperson

Dominion Energy - Military & Recruitment
Program Coordinator

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Real Estate Development

*Development
Construction Management*



Energy Solutions

*Research and Training
Weatherization
Utility Programs*



Housing Services

*Property Management
Asset Management
Resident Services
Homeownership*

Founded in 1975, Community Housing Partners serves low-income individuals and families across the Southeast and Mid-Atlantic through its mission to create homes and communities that are healthy, sustainable, and affordable.

CHP began in 1975 by providing weatherization services in rural Appalachia, and today's Energy Solutions division promotes healthier, safer, more energy efficient built environments by providing energy audits, inspections, home performance upgrades, and building science education.

Who We Are



CHP Energy Solutions Research and Training Center



Housing Development Challenge

- ✓ Over 80% of energy efficiency businesses report hiring difficulties.
- ✓ Over 40% of the current construction workforce will retire in the next 12 years.
- ✓ Hiring challenges are compounded by the lack the capital to invest in recruitment, hiring, and training programs.

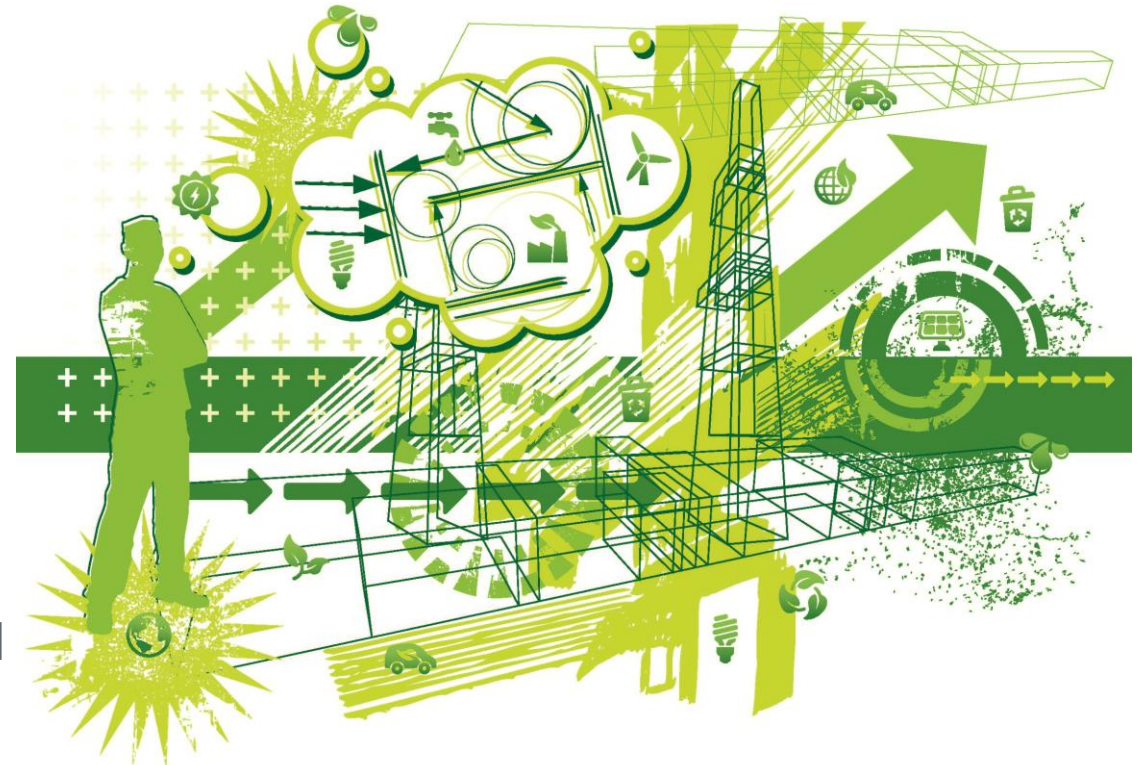


Construction, Retrofitting, and Energy-Efficiency Assessment Training and Employment Systems

A regional partnership funded by a \$3.8 million U.S. Department of Labor Energy Training Partnership grant via the American Recovery and Reinvestment Act.

7 Collaborative Partners:

- Community Housing Partners
- Virginia Tech
- New River Community College
- Wytheville Community College
- Virginia Western Community College
- New River/Mount Rogers Workforce Investment Board
- Western Virginia Workforce Development Board



For Employers:

- ✓ Skills training, degree and certification programs for incumbent workers
- ✓ Opportunities to hire
- ✓ CREATES program graduates
- ✓ CREATES job board
- ✓ Educational workshops and job fairs
- ✓ Research and outreach for curriculum development



For Job Seekers:

- ✓ Skills training, degree and certification programs for unemployed and dislocated workers
- ✓ CREATES job board and job fairs
- ✓ Job search and placement
- ✓ Career counseling

Community College Four-tiered System

Tier 1	Tier 2	Tier 3	Tier 4
6 to 16 weeks Entry level	1-2 semesters	3-4 semesters	2+ years
Certificate of Completion	Career Studies Certificate	Career Studies Certificate+	Associate's Degree
Construction and retrofitting occupations	Electrical power Wind and solar Building codes Wiring Basic carpentry HVAC Mechanical codes	Electronics Programmable Controllers Microprocessor applications Power monitoring Control process integration Construction methodology Computer drafting & design	Engineering Robotics Electrical & control systems Construction methodology Construction management Computer drafting & design

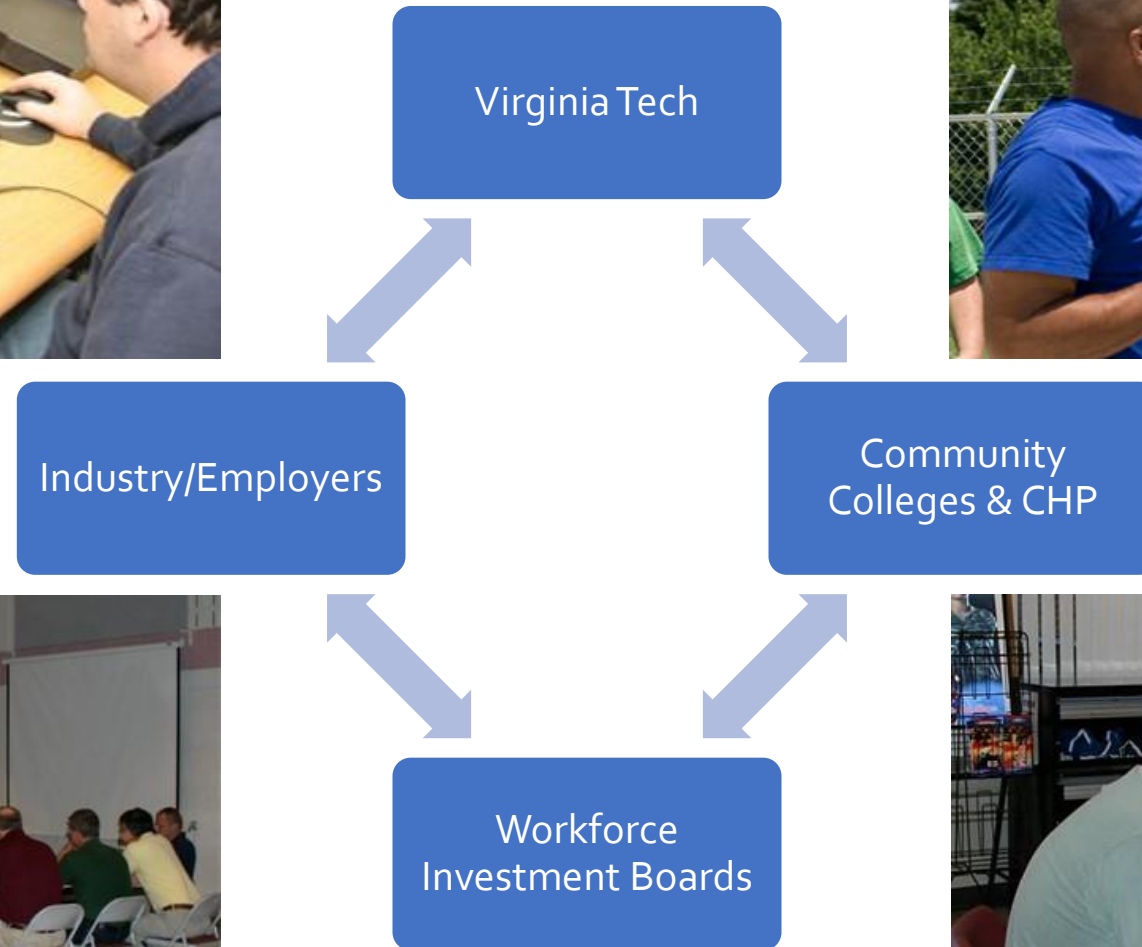
CHP Energy Solutions Training

Energy efficiency auditing
Residential weatherization
Green Property Management
Certified Lead Renovator
HERS Rater

BPI Certifications
Building Analyst
Building Envelope
Heating
Manufactured Housing



CREATES Collaborative Systems Building



CREATES Participation and Outcomes

Training Outcomes

Total Served:

Proposed	380
Actual	568

Started Training:

Proposed	350
Actual	523

Completed Training:

Proposed	320
Actual	443

Received Degree/Credential:

Proposed	300
Actual	382



Employment Outcomes

Total Job Placements:

Proposed	250
Actual	439

Non-incumbent workers entering new jobs	287
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Incumbent workers receiving new positions	31
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Incumbent workers receiving title change, increased responsibilities, and/or increased wages	121
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**Just Passed:
Infrastructure Investment and Jobs Act**



**Next up:
Build Back Better Act**

To capitalize on funding opportunities:

- Be agile
- Collaborate
- Identify partners
- Consider competitive advantages:
 - Underserved populations
 - Leveraged funding streams
 - Scalability
 - Replicability



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See You Tomorrow
VAEEC 2021 Energy Efficiency Forum

1:30-4:00 pm

