



2018 NEEP Summit
EE By The Sea: Oceans of Opportunity
October 1-3 / Middletown, RI

Session 1B: Building a Green Workforce

Moderator: Scott Johnstone, Packetized Energy

Phil Jordan, BW Research Partnership, and Research Fellow at
Harvard Kennedy School of Government

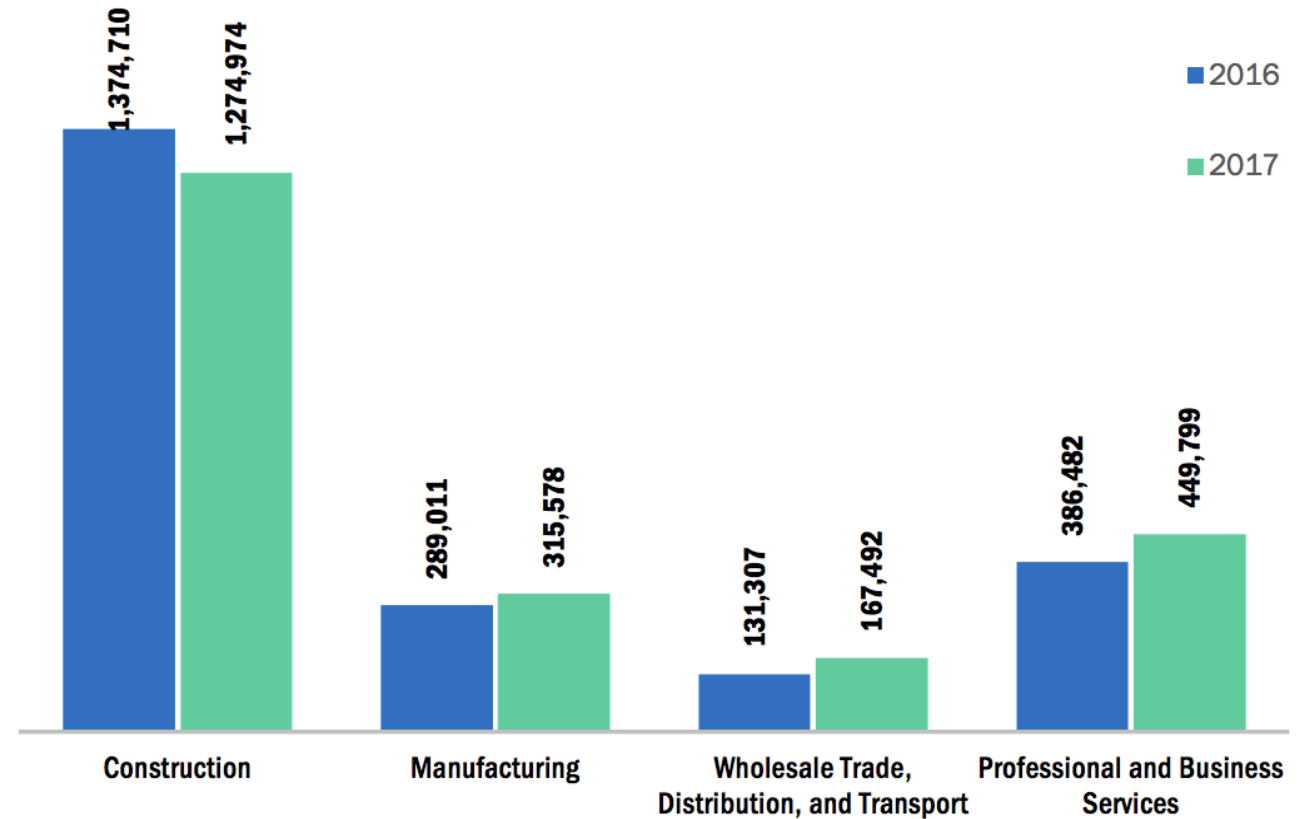
Tamika Jacques, Massachusetts Clean Energy Center

Rich Nortz, Mitsubishi Electric

Ted Trabue Jr, DC Sustainable Energy Utility

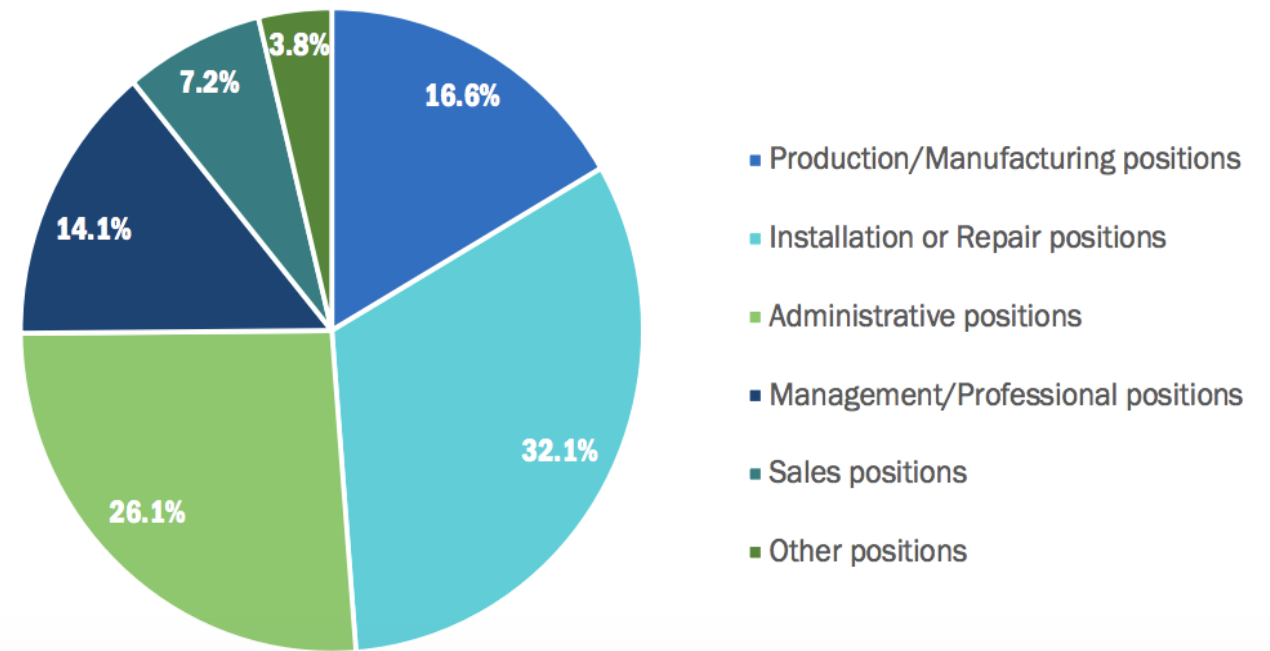
Value Chain

Energy Efficiency Employment by Major Industry Sectors, Q2 2017



Occupations

Figure 54.
Occupational Distribution – Energy Efficiency, Q4 2017





Demographics

Demographics – Energy Efficiency, Q4 2017

Demographic	Employees	Percent of Sector	National Workforce Averages
Male	1,723,732	77%	53%
Female	524,792	23%	47%
Hispanic or Latino	337,402	15%	17%
Not Hispanic or Latino	1,911,122	85%	83%
American Indian or Alaska Native	32,288	1%	1%
Asian	107,276	5%	6%
Black or African American	176,303	8%	12%
Native Hawaiian or other Pacific Islander	25,166	1%	>1%
White	1,748,399	78%	78%
Two or more races	159,092	7%	2%
Veterans	238,162	11%	6%
55 and over	317,194	14%	23%
Union	239,364	11%	11%

MORE ENERGY EFFICIENCY = MORE CONSTRUCTION JOBS



More than 1 out of every 6 US construction workers spend 50% or more of their time on Energy Efficiency (18%)



Nearly 60% of energy efficiency's 2.25 million employees work in construction (1.27 million)

80%

of energy efficiency construction businesses say employees spend a majority of time on energy efficiency—an increase from last year (74%)

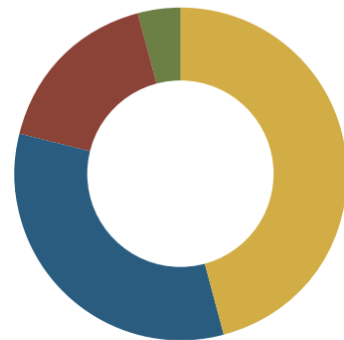
EE JOBS ACROSS THE COUNTRY

- // These jobs are local. **99.7%** of U.S. counties have energy efficiency jobs
- // Energy efficiency now employs workers in more than **3,000** of America's **3,007** counties
- // More than **300,000** Americans living in rural areas work in energy efficiency
- // America's Top 25 metro areas employ **900,000** workers in energy efficiency
- // **35%** of U.S. energy workers are involved in energy efficiency

GROWTH ACROSS AMERICA

There are **353,269** energy efficiency businesses in America

SMALL EE BUSINESS BY EMPLOYEE COUNT

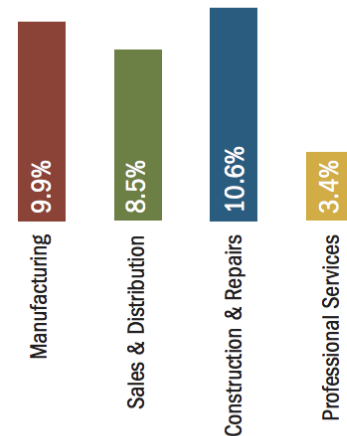


100 + (4%) 6-19 (33%)
20-99 (17%) 1-5 (46%)

GROWTH FOR THE FUTURE

Energy efficiency businesses are projecting **9% growth in jobs** for 2018

...and the job growth is expected across all major industries





Massachusetts Clean Energy Center

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Director of

Workforce Development

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Our Mission

Grow the state's clean energy industry while helping to meet the Commonwealth's clean energy and climate goals.

ADOPT

Increase renewable energy adoption by residents, businesses and communities.

CONNECT

Connect employers, job seekers, students, communities and investors to the clean energy industry.

INNOVATE

Help to spur innovation through infrastructure, funding and technology development support.

FUNDING SOURCE



Massachusetts
Utility Customers



5 Municipal
Lighting Plant
Customers

\$23M annually

*Collected via a surcharge
equal to \$.32/month for an
average residential customer*

CORE FUNCTIONS



Renewable
Energy
Generation



Investments



Innovation &
Industry Support



Wind Technology
Testing Center



Marine
Commerce
Terminal

Our Emerging Initiatives



OFFSHORE WIND



ENERGY STORAGE



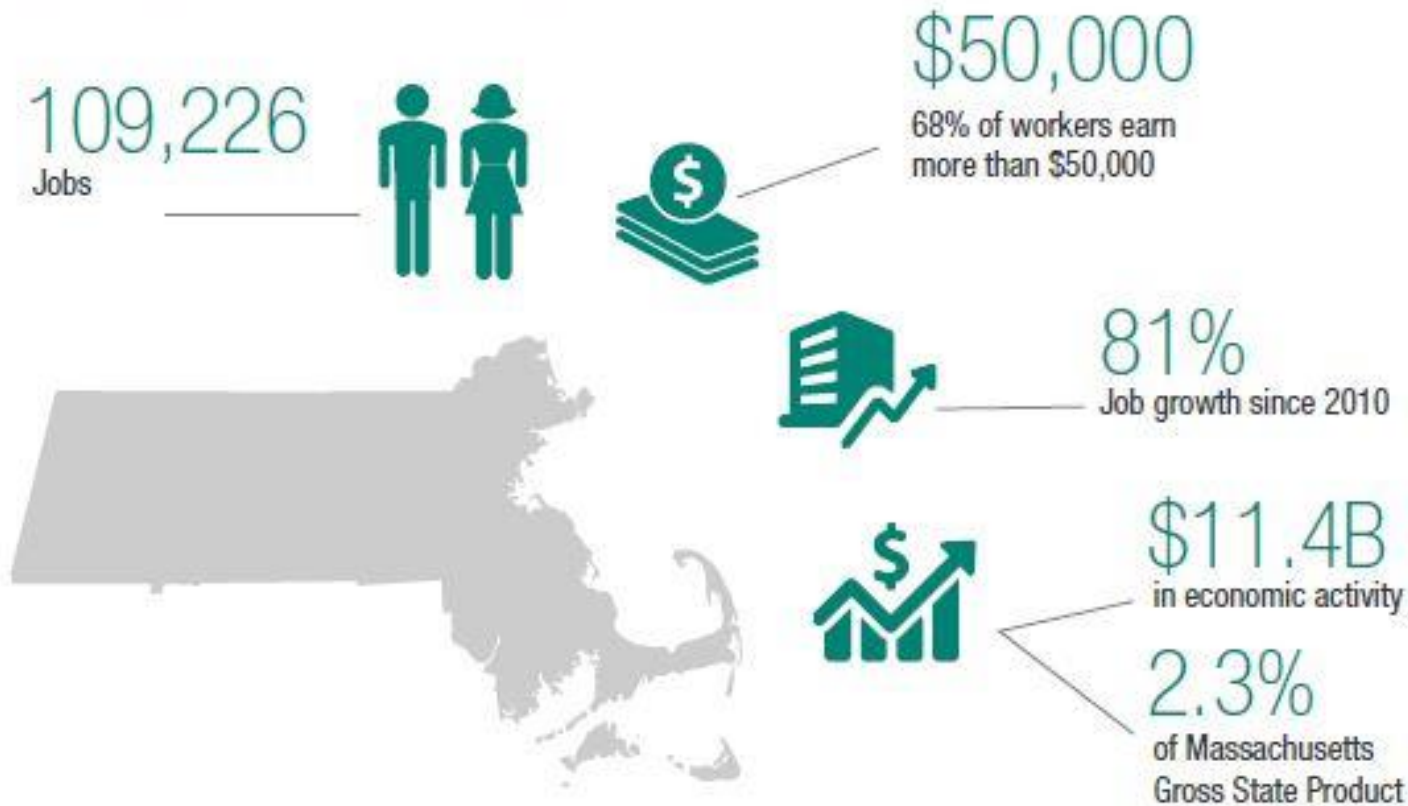
MICROGRIDS



WATER INNOVATION

Massachusetts By Numbers

MASSACHUSETTS CLEAN ENERGY BY THE NUMBERS





Clean Energy Internship Program

Paid internship opportunities for college students at Massachusetts-based clean energy companies

Successes to Date

- Nationally recognized **award-winning** program (IREC/CESA)
- Placed over **3,000 interns** at **385** companies since 2011
- Over **500 students** have gained full or part-time employment at their host companies
- **271 companies, 1,351 students** applied for the summer 2018 session
- Overwhelming **participant satisfaction** with the program to-date
- International students are eligible to participate.

Program Logistics

- Students and Employers apply via www.masscec.com/intern
- 3 sessions offered per year. Summer 2018 session runs from
- Companies may host up to **3 interns per session**
- Employers reimbursed for **12 weeks** of an intern's work at the host company
- Employers find and reach out to students in our database directly
- Employers seek reimbursement from MassCEC at the conclusion of the session. Cap is **\$3,840/intern** (spring/fall) **\$7,680/intern** (summer)



Workforce Development



Workforce Capacity

Learn & Earn

Vocational
Internship
Program

Clean Energy
Activity Day

Pathways Out of Poverty

Successful Women
in Clean Energy



Disconnected Youth

Wastewater
Treatment

Incumbent Workers

2019

Workforce Development

Presented by: **Rick Nortz**



Authorized Training Centers



+ Distributor Training Centers

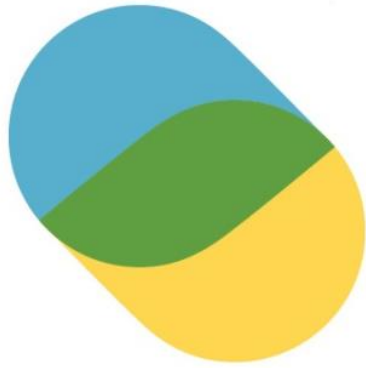


Demonstration/Training Truck



Mobile Trainers





DC
SUSTAINABLE ENERGY
UTILITY



DCSEU Workforce Development

**Train to
Work** + **Teaching
Technical
Skills**



Partnerships



**Training:
Soft Skills**



**Curriculum:
Technical Skills**

DCSEU Model: 4-Month Paid Externships



Building Operator Certification



ENROLL TODAY

SAVE ENERGY & MONEY TOMORROW



Washington. DC
BEGINS May 7th!

Building Operator Certification® (BOC) is the leading training and certification program for facilities personnel. Our graduates make their buildings more efficient, comfortable, and sustainable.

Created and validated by industry experts and practitioners, **BOC is the only credential program that is third-party verified to save energy**, and the only program to require the completion of hands-on projects for certification.

Students demonstrate knowledge of their own building by completing projects involving documentation of building equipment, systems and controls; benchmarking the building's performance using ENERGY STAR® Portfolio Manager™; updating occupancy profiles; reviewing HVAC systems and operation; and mapping the facility's electrical distributions system.

Who should enroll? Those with two or more years of experience in building operation and maintenance who wish to broaden their knowledge of the total building system.

BOC graduates save an average of \$10,500 each year in energy expenses.



DCSEU.COM

2018-2019 Cohort



Thank You.



DC
SUSTAINABLE ENERGY
UTILITY

The DC Sustainable Energy Utility is a project of the Sustainable Energy Partnership under contract to the Department of Energy and Environment (DOEE).

