Clean Energy Partnership Advisory Group

October 5, 2022

Agenda

Introduction & Overview

Clean Energy Workforce Analysis & Recommendations

- BW Research Report

Workforce Development

- Clean energy workforce clearinghouse

Innovation & Business Support

- Clean energy innovation and business support
- Clean Hydrogen Hubs
- Cleantech Open Northeast Regional Finals

Next Steps & Adjourn

Clean Energy Partnership

- **Maine's Clean Energy Partnership (CEP)** was established to advance Maine's clean energy, economic development, and workforce goals.

- Preparing and expanding Maine's clean energy workforce as well as supporting innovation of clean tech products and services.

- Supported by the **Maine Jobs and Recovery Plan** to GEO.

Workforce Development ($3.7m)

- $2.9m to support workforce development
- $800k to develop workforce clearinghouse – centralized location with information related to education, training and employment opportunities and resources

Innovation ($2.5m)

- $2.25m in clean energy innovation and business support
- $250k for clean energy finance study

BW Research Update

[bw] RESEARCH PARTNERSHIP

Maine Clean Energy Workforce Research

OCTOBER 2022

PRODUCED FOR THE STATE OF MAINE, GOVERNOR'S ENERGY OFFICE

GOVERNOR'S Energy Office

Governor's Energy Office

2022 Maine
Clean Energy
Workforce Analysis Report

PRODUCED FOR THE STATE OF MAINE, GOVERNOR'S ENERGY OFFICE

[bw] RESEARCH PARTNERSHIP

Key Research Themes / Focus Areas:

1. Identify employer needs and challenges
2. Understand training & asset landscape
3. Profile current and potential clean energy workers

Methodology Overview

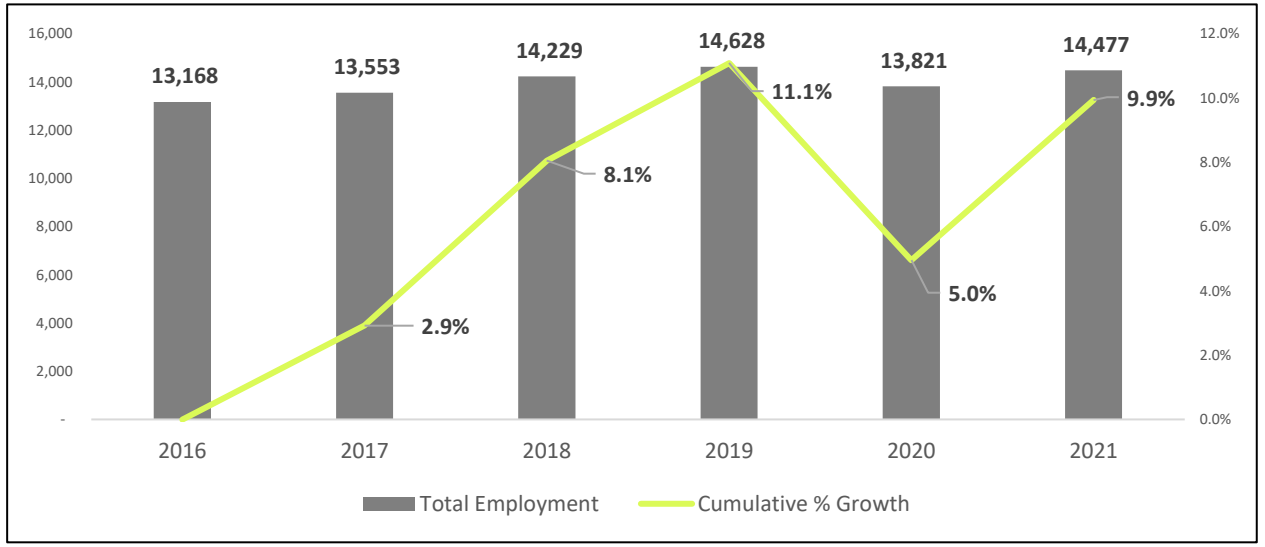
1. **Primary Research**
   a. **Employer survey**
   b. **Potential worker survey**
   c. **Current worker survey**
   d. **Stakeholder outreach**
   e. **Human-Centered Design Session ****

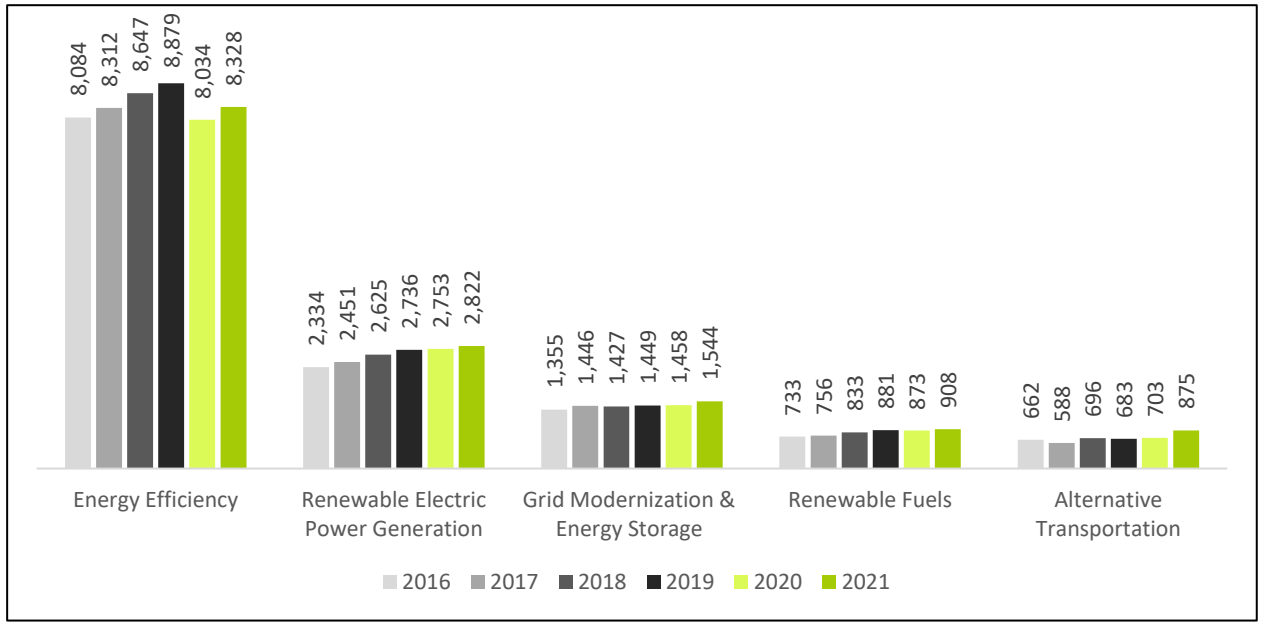
2. **Secondary Research**
   a. **Occupational supply analysis**
   b. **Training & asset inventory**

<u>Stakeholder Outreach:</u>

1. Business owners/employers
2. Clean energy workers
3. General population/potential workers
4. Utilities
5. Union representatives
6. Business associations

Labor Market Context (2022 USEER Update)





14,477

Clean Energy Workers in 2021

5%

+656 jobs

Job Growth from 2020 – 2021

High-Level Key Findings

1. **Job Growth:** Significant post-COVID rebound in jobs, employers project continued growth

2. **Hiring Challenges:** Significant hiring difficulties due to small applicant pool and insufficient industry experience/knowledge

3. **Skill Needs:** Work experience is key to landing a job, certifications and licenses also important

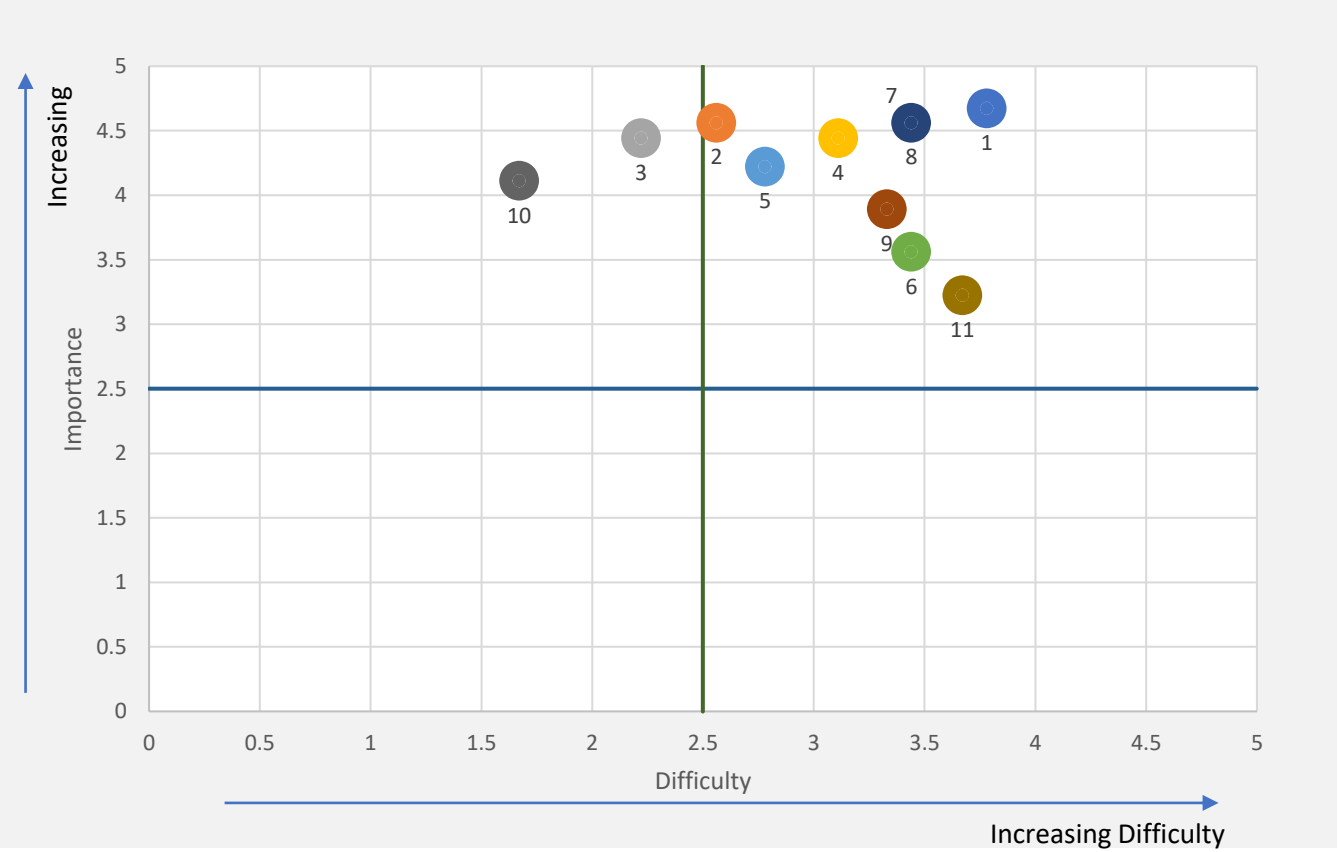
4. **Job Profile/Outlook:** Career satisfaction is high – opportunities for career/wage mobility & benefits

5. **Challenges & Bottlenecks:** Low awareness of clean energy job types, opportunities, positions, listings, training

Recommended Focus Areas

1. **Expanding access to apprenticeships and other earn-and-learn models**
2. **Increasing offerings of hands-on courses and modules geared towards learning "trade skills" in early education settings**
3. **Creating a clearinghouse for clean energy workforce development efforts, resources, and funds in the state**
4. **Offering training stipends and other incentives to support business' onboarding, recruitment, and training costs**
5. **Providing pathways to independence and entrepreneurship, particularly for lower-wage jobs in weatherization**

Specific Action Items



1. Embed more pre-apprenticeship offerings
2. Support pre-apprenticeships and pathways to apprenticeship
3. Educate teachers/counselors/etc. about career pathways in trades and clean energy
4. Increase coordination and create partnerships between industry associations, unions, and schools for programs
5. Provide support/technical assistance to help job seekers and employers navigate new resources
6. Establish a model like Maine Jobs and Recovery Plan
7. Share clear training and career pathways with multiple tracks and benchmarks for prospective clean energy workers
8. Provide flexible funding to support learners
9. Establish career navigation services
10. Share success stories and case studies to provide learning opportunities
11. Incentivize business ownership to current workers through access to preferred capital

Contact Information

Phil Jordan, Vice President

pjordan@bwresearch.com

Sarah Lehmann, Project Manager

slehmann@bwresearch.com

https://bwresearch.com

Clean Energy Workforce Clearinghouse

Workforce Clearinghouse

Recommendation: Create a clearinghouse for clean energy workforce development efforts, resources, and funds in the state.

Action: The Governor's Energy Office will develop an online platform for attracting workers, sharing workforce development opportunities, and highlighting job opportunities in this sector.

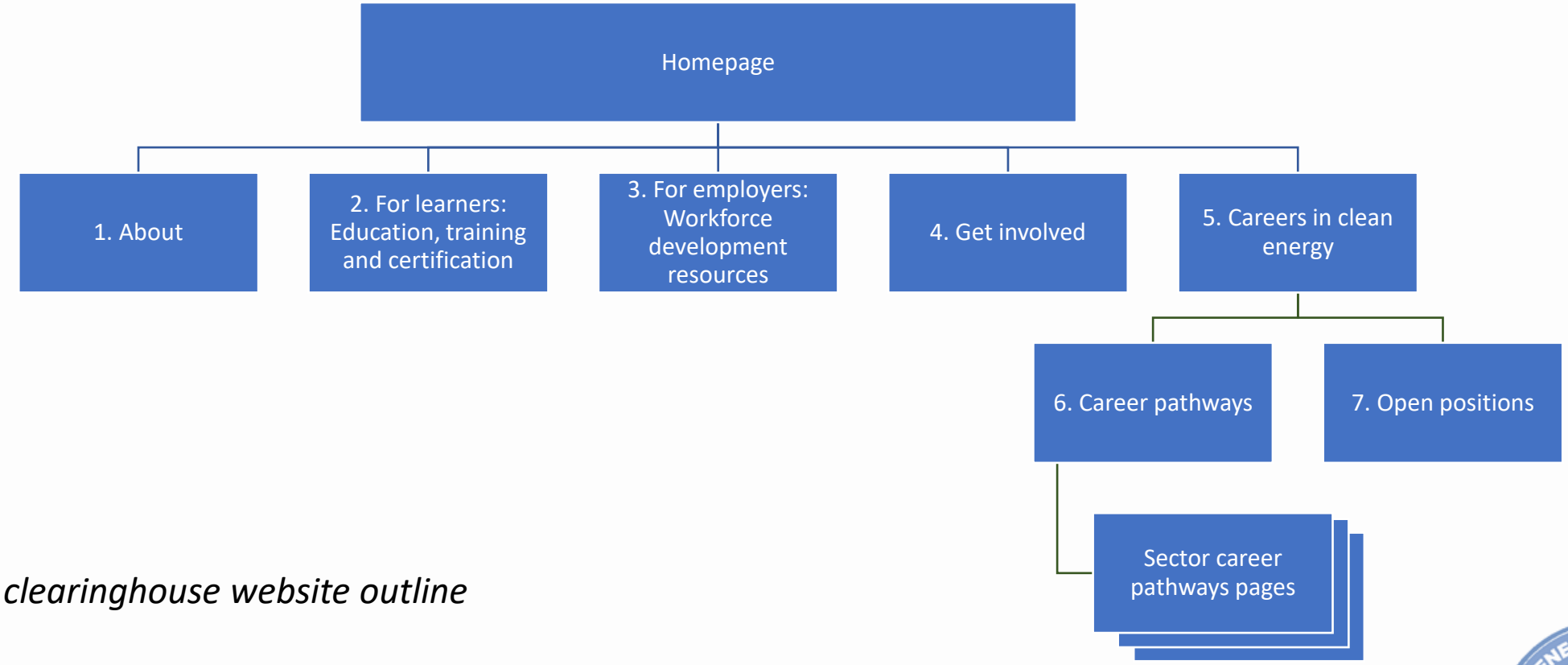
Workforce Clearinghouse

Clearinghouse website will feature:

- Clean energy career information
- Internship and apprenticeship opportunities
- Training and educational programs
- Available career openings
- Outline of clean energy sector career pathways

Plan to leverage the Department of Labor's existing JobLink website, connecting job seekers including those who are unemployed with relevant career information.

Workforce Clearinghouse



Draft clearinghouse website outline

Workforce Clearinghouse

GOVERNOR'S
Energy Office

Training Inventory

The purpose of this tool is to provide employees, employers, educators, and those interest in clean energy careers navigate training opportunities within the State of Maine.

Simply select a *General Technology Sector* you are interested in (if any) and the intended *Purpose* of the training opportunity to view a comprehensive list of programs available.

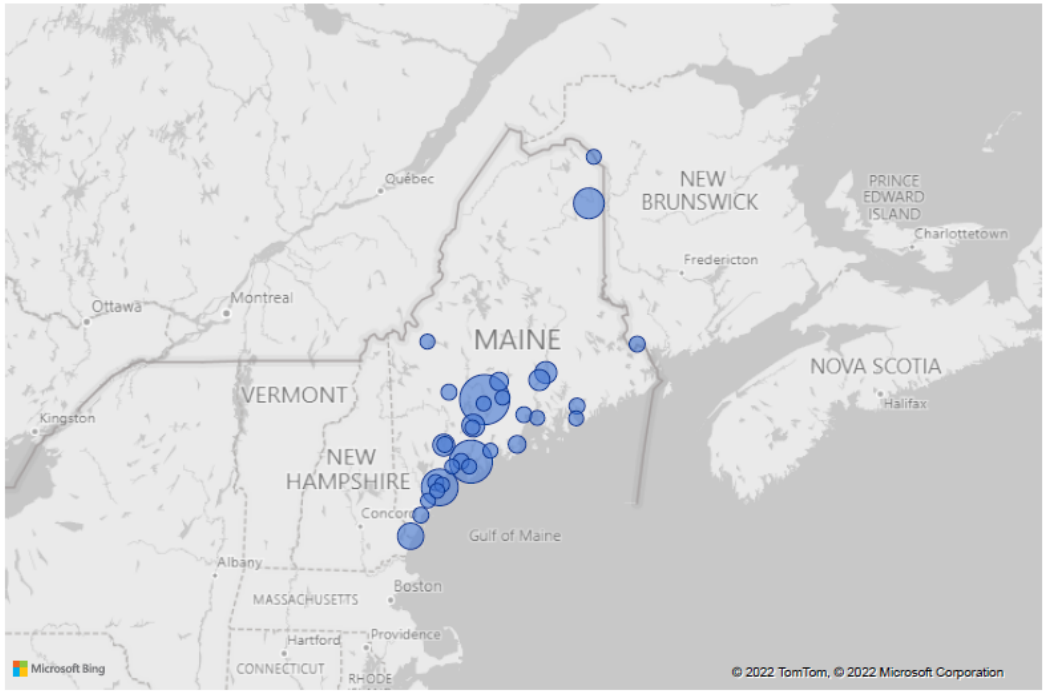
General Technology Sector

- ☐ Alternate Transportation
- ☐ Energy Efficiency
- ☐ Grid Modernization & Storage
- ☐ Renewable Electric Power Generation
- ☐ Renewable Fuels

Purpose

- ☐ Job Seekers
- ☐ Learners
- ☐ Skill-Builders

Programs in Maine



Name of Organization	Name of Program	Degree/Outcome	Program Type
Aero Heating & Ventilating, Inc	Duct Installation Technician Apprenticeship	Increased Employability	Apprenticeship
Anthony Mancini, Inc. DBA Mancini Electric	Electrician Training	Increased Employability	Apprenticeship

Clean energy training dashboard concept

Workforce Clearinghouse

Questions for the Advisory Group:

- Unique aspects/duplicative aspects
- Must-have features
- Existing networks

Clean Energy Innovation & Business Support

Clean Energy Innovation and Business Support

- Funds programs that advance innovation in the clean energy sector
- Provides assistance to clean energy and energy efficiency small businesses and startups for attracting investment, building organizational capacity, growing their businesses, and reaching a broader range of people
- $2.25 million may be provided in the form of loans, grants, technical assistance, counseling, or other services to support business planning
- The GEO will utilize approximately $250,000 to conduct research and analysis aimed at further expanding clean energy development tools and opportunities for the State

Clean Energy Innovation and Business Support

- Anticipate RFP being released in 4th quarter 2022 or 1st quarter 2023
- Funds must be expended by 2026
- Eligible entities include:
  - Clean energy and energy efficiency small businesses and startups
  - Community-based organizations, business support service providers, and business incubator organizations that are directly supporting clean energy and energy efficiency small businesses and startups

Clean Energy Innovation and Business Support

Questions for the Advisory Group:

- Unique aspects/duplicative aspects
- Must-have features
- Existing networks
- Areas of focus and opportunity

Clean Hydrogen Hubs

GOVERNOR'S
Energy Office

Northeast Regional Clean Hydrogen Hub Collaborative

- Maine has joined a multi-state Northeast consortium to explore funding opportunities through the Department of Energy's (DOE) *Regional Clean Hydrogen Hubs* initiative.
- Partners include the States of *New York*, *Rhode Island*, *Connecticut*, *New Jersey*, and *Massachusetts*, as well as a diverse set of public and private hydrogen ecosystem partners from across the region.
    - Utilities
    - Universities
    - Developers
    - And non-profit partners like the Northeast Clean Energy Council (NECEC) and the National Offshore Wind Research & Development Consortium (NOWRDC)

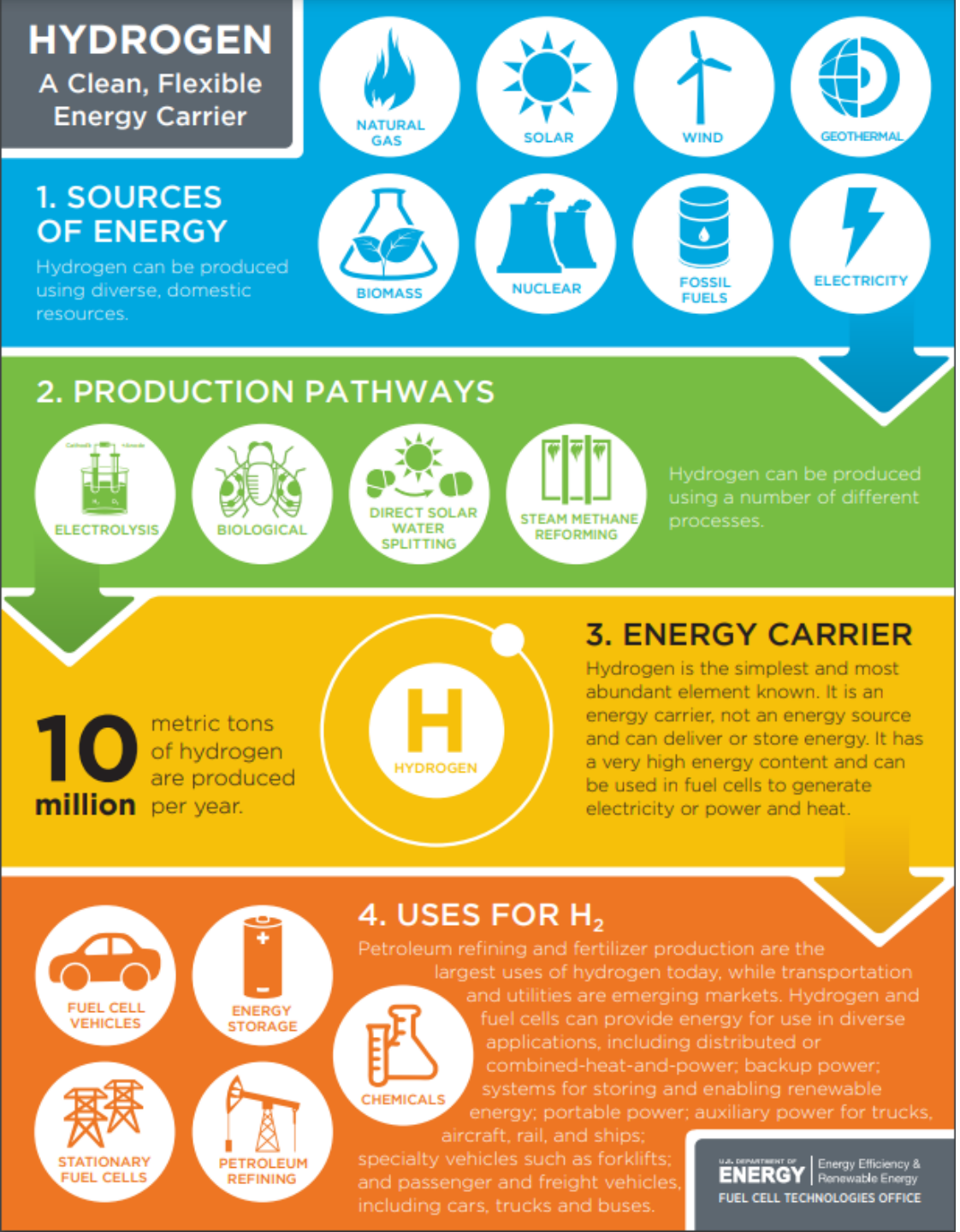
What will the hub do?

- The Northeast coalition will focus on the **integration of renewables** - such as onshore and offshore wind, hydropower, and solar PV - into clean hydrogen production, and the evaluation of clean hydrogen for use in **transportation**, including for medium and heavy-duty vehicles, **heavy industry**, and **power generation** applications or other appropriate uses consistent with decarbonization efforts *in tandem with electrification*.

What is hydrogen?

From NREL:

- Hydrogen does not exist freely in nature and is only produced from other sources of energy. Thus it is known as an ”energy carrier.” When combined with oxygen in a fuel cell, hydrogen produces heat and electricity with only water vapor as a by-product.
- Hydrogen can be made directly from fossil fuels or biomass, or it can be produced by passing electricity through water, breaking the water into its constituent components of hydrogen and oxygen. Some envision a future "hydrogen economy," where hydrogen is produced from a variety of energy sources, stored for later use, piped to where it is needed, and then converted cleanly into heat and electricity.



From [Greentech Media]:

How do you make green hydrogen?

With electrolysis, all you need to produce large amounts of hydrogen is water, a big electrolyzer and plentiful supplies of electricity.

If the electricity comes from renewable sources such as wind, solar or hydro, then the hydrogen is effectively green; the only carbon emissions are from those embodied in the generation infrastructure.

What is the opportunity?

- DOE released its Funding Opportunity Announcement (FOA) for H2Hubs on 9/22/22. Concept papers are due 11/7/22. Full applications in March 2023.
- "This $8 billion effort will catalyze investment in the development of H2Hubs that demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen, in support of the Biden Administration's goal to achieve a carbon-free electric grid by 2035 and a net zero emissions economy by 2050."
- Regional hubs will form a national clean hydrogen network.
- DOE envisions 6-10 H2Hubs for a total of $6-7 billion.

Non-technology requirements

- Substantial engagement with local/regional stakeholders
- Must ensure projects generate local/regional/national benefits
- Meaningful community and labor engagement
- Investment in U.S. workforce with good-paying jobs
- Must contribute to Justice40 Initiative

How is Maine engaged?

- We have joined the Northeast Regional Hub Team and are participating in working group meetings where we are:
  - Building relationships with other State Energy Offices and entities across the value chain of hydrogen;
  - Continuing to work with partners like NOWRDC who can inform how the state might incorporate opportunities into offshore wind planning;
  - Learning about the opportunities and challenges of developing a clean hydrogen industry and its supporting infrastructure, particularly in the context of difficult to decarbonize sectors; and
  - Representing Maine-specific interests in a regional proposal for federal funding.

www.maine.gov/energy/initiatives/infrastructure/cleanhydrogenhubs

- If you have an interest in developing clean hydrogen projects (involving hydrogen generation, consumption and/or related services) in Maine, please complete our Maine Clean Hydrogen Market Survey.

- For more information, please get in touch with me caroline.colan@maine.gov.

Cleantech Open Northeast

Cleantech Open Northeast

Accelerating Cleantech Innovation

October 2022

Beth Zonis, Senior Director, Cleantech Open Northeast, NECEC

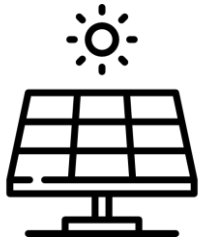
necec
Accelerating the Clean Energy Economy

CLEAN TECH OPEN

necec
Accelerating the Clean Energy Economy

CLEAN TECH OPEN

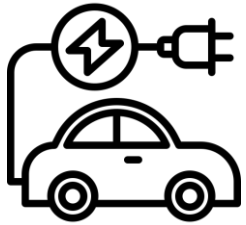
Accelerating startups that help the environment



Energy Generation

Energy Efficiency

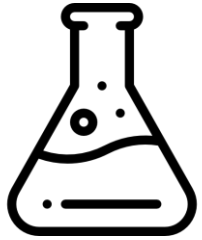
Green Building



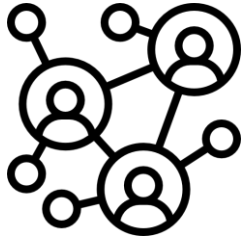
Transportation

Energy Distribution & Storage

Agriculture, Water & Waste



Chemicals & Advanced Materials



Information & Communication Technology

Cleantech Open is like a mini MBA

TRAINING
- National Academies, National Webinars, and Regional Training
- Practice Judging and Business Clinics

MENTORSHIP
- Local and international mentors (general & specialists)
- Business Clinics

ACCESS TO CAPITAL
- Relationship with Strategic investors, Angel Groups, & VC Firms
- Pitch Panels, Networking, Investor Connect

SHOWCASING & PRIZES
- Regional Events and Showcases
- National Conference and Global Forum
- Press exposure
- Competition for cash and other prizes

16 Maine Alumni since 2012

NOTABLE ALUMNI

BLUETRACE

cerahelix

Pika ENERGY

RECENT ALUMNI TO WATCH

Alonetics LLC

baselineES

FINSULATE

ANTIFOULING FOR CLEAN AND HEALTHY WATERWAYS

FOOT HILL

ECO-FRIENDLY CAMP FUELS

PRIME LIGHT WORKS

Maine Mentors

All very engaged and helpful!

- **Karla Doremus-Tranfield** - Volunteered for extra mentoring of Canadian startups
- **Peter Hollander** - Lead Mentor for several years
- **Geoff Lamdin** - Lead Mentor for several years, great connector in Maine
- **Roland Scott** - 2020 Lead Mentor of the Year
- **Arthur Woolverton** - 2022 Specialty Mentor of the Year

necec
Accelerating the Clean Energy Economy

CLEAN TECH OPEN

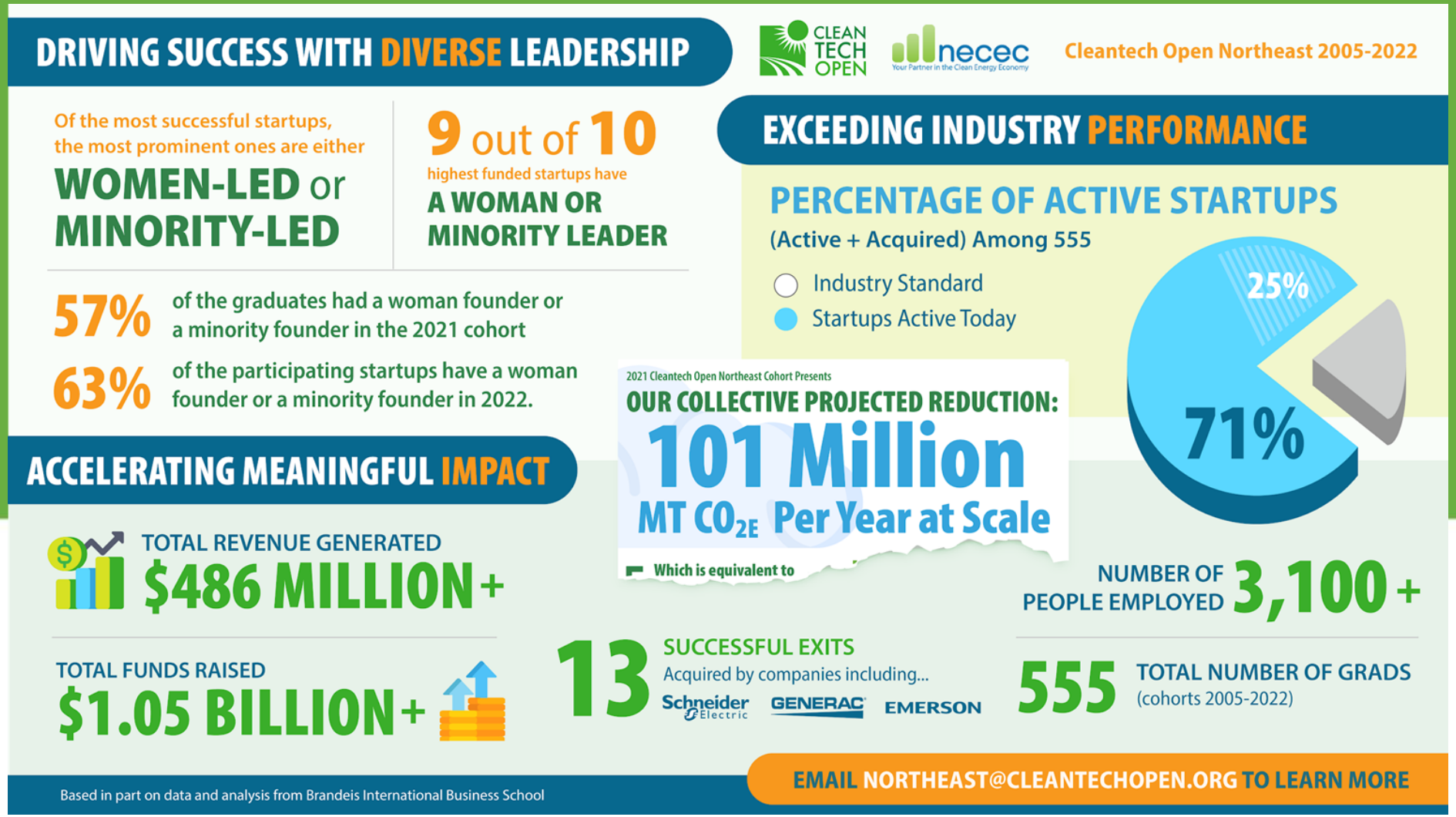
Maine in-kind Sponsors

Helping recruit new startups!

necec
Accelerating the Clean Energy Economy

CLEAN TECH OPEN

Cleantech Open Northeast alumni exceed industry performance with diverse leadership & meaningful impact.



necec
Accelerating the Clean Energy Economy

CLEAN TECH OPEN

For more information click here

Cleantech Open Northeast Accelerator Awards Prizes to Top Startups Across Multiple Cleantech Sectors in First In-Person Finals Event since 2019

necec
Accelerating the Clean Energy Economy

CLEAN TECH OPEN

Read more here

Thank you!

Beth E. Zonis

Senior Director

Cleantech Open Northeast

bzonis@cleantechopen.org

Next Steps

Feedback

Next Meeting

www.maine.gov/energy/initiatives/cep