Evaluating Climate-Critical Careers

Teacher Manual: Lesson 10

Essential Question (AKA "The Big Question")

How do I evaluate which climate-critical roles would best fit me?

Learning Objectives. Students will be able to:

1. Identify career categories and specific occupations in clean energy and climate technology
2. Describe how your interests, skills, desired training, career goals, and work environment preferences affect determining the right career fit
3. Recognize the growing demand and opportunity of climate-critical careers.

Lesson Summary

This lesson transitions from focusing on different types of clean energy solutions to thinking about the careers that make those solutions possible. Specifically, it focuses on the growth and demand of clean energy and climate-tech career sectors and how to evaluate which of the many different clean energy or climate-tech jobs could be the best fit for students. The lesson explores how skills, interests, and values align with potential careers in this rapidly growing field.

Technology referenced in this lesson:

- Offshore wind power
- High-performance buildings

Careers referenced in this lesson:

Broad mention of diverse career options throughout the climate-tech landscape with specific mention of

- project manager
- wind turbine technician
- energy auditor.

Agenda	Timing	PPT Slide	
Opening Activity	5 minutes	2	**Pre-lesson**
Present agenda and learning objectives	5 minutes	5–7	
Direct Instruction Video Technology introduced Careers introduced	20 minutes	8–15	
Primary Learning Activity Partner or small group work Reinforce what was learned	20 minutes	16	
Closing Review learning objectives Closing activity Reflection	5 minutes	17–19	
Extension			
Handouts			
TOTAL TIME	**55 mins**		

Preparation

- Read the Student Presentation Deck (PPT).
- Watch video(s) included in the Student Presentation Deck (Most are available on the MassCEC YouTube channel).
- Print worksheets and handouts before class.
- Verify that the computer hosting the presentation deck is connected to the internet for video and hyperlink viewing.
- Please check any links in the slide deck to ensure they work as intended, and then review the content below.

Where to learn more about the lesson's content

If extra preparation time is available, these resources will provide additional background on the topics covered in this lesson.

- MassCEC/Workforce
  An introduction to the range of workforce support and career development programs that MassCEC offers to aspiring climate workers

- Degrees: Real Talk About Planet-Saving Careers
  Podcast featuring candid conversations with everyday changemakers about careers, motivation, how they're fighting climate change—and how you can too

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Overview and Opening Activity (10 mins)

Materials and Resources

- Slide deck
- Index cards with tape or Post-It notes with clean energy careers written on them
- Worksheets (optional)

Opening Activity. Get students thinking and talking right away.

Activity Objective: Encourage students to start thinking about what they can already identify about different careers in climate tech and clean energy based on what they've learned about different clean energy solutions in the first half of this course.

Set-up: Before class, write different clean energy careers on Post-it notes so they are ready to hand out to students as they come into class.

Instructions

- Give each student a Post-it note with a clean energy career. S**tudents should NOT look at their Post-it note, but instead stick it on their forehead so others can see it, but they can not. Ideas include**
    - wind turbine technician
    - solar salesperson
    - EV automotive technician
    - architect
    - utility worker
    - engineer
    - insulation worker.
- Students have three minutes to move around the classroom, asking one another **"yes" or "no"** questions to identify the career on their forehead.
- Example questions:
    - Do I work outside?
    - Do I work at heights?
    - Do I work with lots of different tools?
    - Do I work on a team?
    - Do I usually wear protective equipment?
    - Do I work at a computer most of the day?

- After three minutes, let all students make a final guess at the career on their forehead before looking at their careers.
- Ask some students to share reactions to the exercise; what was challenging? What kinds of questions were most helpful? Did they know more careers than they thought? Fewer?

Present the Agenda. Students should be gaining familiarity with the format:

- After the opening activity, students will learn new information. The main activity asks students to answer questions that expose their skills, interests, and values, helping them to pinpoint potential climate-critical career paths. The closing activity encourages students to tie the lesson objectives to an actionable step to continue exploring how their interests, values, and skills align with possible clean energy careers.

Present the Big Question and Lesson Objectives (See top of page 1)

- Students will focus on understanding how to find a career that suits them within clean energy and climate technology.

Key points to emphasize:

- Explore the clean energy job market.
- Discuss values, interests, and skills.
- Understand how to evaluate career fit.

Possible discussion questions:

- Are you more attracted to jobs that you're good at or excite you?
- Do you prefer to work alone, in small groups, or with large teams? Why?

Direct Instruction (20 mins)

Provide information to help the students achieve the learning objectives and prepare them to actively engage with the activity.

- Use inquiry-based learning strategies to engage learners where possible.
- Highlight careers related to the technologies.
- Help the learners to relate the learning to themselves and their communities.

Your Place in Clean Energy

Discussion Guidance

- Six factors should be considered by students (or anyone) when identifying their place in clean energy. These can be explored through categories and questions.
    - **Skills**: What am I good at? What are my strengths? These could be skills you already possess or believe you could acquire through training and further education. But if you've always struggled with math, you might reconsider

whether a career that relies heavily on mathematics fits your strengths.
    - **Interests**: What excites you? What do you enjoy? We spend significant time and energy working, so you want to factor in what keeps your attention. Do you love research? Or do you love puzzles and problem-solving? These could be relevant when thinking about a career in clean energy.
    - **Work environment**: In what kind of setting do you want to spend your time? You will spend plenty of time working, so do you want to do that indoors? Outdoors? Up high? On a team? Traveling? What is important to you in a work environment? Remember that this includes workplace dynamics, social environment, and physical environment.
    - **Values**: What motivates you? This doesn't necessarily mean your moral values, although those are important. This is what you care about regarding work, so do you care about relationships? Do you care about independence? Being recognized for doing good work? What matters to you?
    - **Growth potential**: What do you want to accomplish in your career? Do you want to be able to learn on the job and move up quickly? Do you want to become an expert at what you do and teach others? Do you want to be a leader in your field?
    - **Finally, salary**: How much do you need to earn? Pay rates may go up and down depending on different factors. Typically, the more specialized a role is or the more specialized knowledge it requires, the higher the pay rate is. As demand increases for clean energy jobs, pay rates may rise, too, to attract and retain more workers.

Key points to emphasize:

- Several factors go into choosing a career, and everyone might weigh them differently.
- Throughout your career, what's important to you might change.
- There is high demand for skilled workers in clean energy fields.
- Climate-critical jobs are expanding, and many offer stability, making this a promising sector for future careers.
- These are dependable jobs with high-growth opportunities.

Possible discussion questions:

- In your career, would you rather significantly impact the lives of a few people or a small impact on the lives of many people?
- If you plan to raise a family, would you prefer a career that keeps you closer to home and does not require long hours or overnight travel?

Projected High-Demand Jobs in Massachusetts

Discussion guidance:

Highlight some jobs poised to expand significantly in Massachusetts over the coming years.

- Project manager—project managers oversee all types of clean energy projects, including

solar panel installations, wind farms, and energy efficiency retrofits. They are responsible for planning, coordinating teams, managing budgets, and ensuring that all project goals are met on time. This is just a quick snapshot of some of the skills one would need to be a project manager
    - Organization—project managers must manage multiple tasks, deadlines, and resources simultaneously.
    - Problem-solving—they are the go-to person to address issues on a project, so they must be able to address concerns and find solutions.
    - Communication—project managers must communicate updates and instructions between team members and any other stakeholders or community members involved in a project.
    - Leadership—multiple teams or professionals are often involved in clean energy projects, and project managers must be able to guide and motivate them, which requires leadership.
- Wind turbine technician—another area with increasing job demand is offshore wind. Massachusetts is a leader in offshore wind development, so the demand for skilled technicians will continue to grow significantly as more offshore wind projects are constructed.
    - Offshore wind technicians maintain and repair wind turbines, ensuring that they operate efficiently.
    - Skills include mechanical and electrical skills.
    - It would be best to be comfortable working at heights and on the water, as offshore wind means you'll often be working from an offshore platform.
    - Wind turbine technicians need to be good at troubleshooting—they don't always know what the problem is, but it's their job to solve it.
    - They work in all kinds of weather conditions, and those conditions can be more intense out on the water.
    - This is a role that requires lots of safety training
    - The pay rate is anywhere from $55-80K depending on the specific role; there's the potential for higher earnings with additional certifications or more experience.
    - Offshore wind is vital to Massachusetts's climate goals, with the potential to power thousands of homes with renewable energy.
    - Offshore wind projects are supported by federal and state incentives, which will continue driving demand for skilled workers.
- Energy auditor—a third career poised to grow significantly, and one not necessarily requiring comfort with heights, is an energy auditor.
    - Energy auditors evaluate homes and other buildings to identify energy inefficiencies. They recommend upgrades and other changes that help reduce energy consumption and costs.
    - Necessary skills include analytical skills, an understanding of different building systems and components, and strong communication skills. You'd be working with all kinds of people and going into their homes and buildings, often with news they don't want to hear.

    - The work environment is mainly indoors, although sometimes you may need to be outside to evaluate the outside of a building or an outdoor area.
    - The salary in Massachusetts is $50-$75K, with higher pay for specialized assessments or consulting jobs.
    - Massachusetts prioritizes energy efficiency, and the demand for energy auditors is expected to grow as policies encourage energy-efficient buildings.
    - Energy auditors can help people upgrade existing buildings or ensure that new buildings are as energy-efficient as possible.
    - Energy efficiency is one of the most cost-effective ways to reduce emissions and energy costs, so it's an excellent way for businesses to lower their carbon footprint.

Key points to emphasize:

- The following few lessons will take a closer look at many career paths in clean energy.
- Watch for the six most common strengths across several career paths:
    - Problem-solving: clean energy roles often require innovative thinking to address environmental challenges and develop sustainable solutions.
    - Technical aptitude: many positions need some degree of comfort with technology, from software for energy analysis to hands-on work with solar panels or wind turbines.
    - Communication skills: communication is key in clean energy, whether explaining technical concepts or collaborating with a team.
    - Adaptability: clean energy technologies constantly evolve, and successful professionals can adapt to new tools, systems, and methods.
    - Teamwork: most roles involve collaboration, whether within a company, across community projects, or with other organizations.
    - Analytical thinking: professionals need the ability to assess data, interpret results, and make decisions that benefit the environment and the bottom line.
- These skills may appear in different forms depending on the role, but they are central to many clean energy careers.

Possible discussion questions:

- If it's important to you to live in a particular geographic place, what job opportunities will likely be available there?
- Climate-related jobs often involve newer concepts and technologies. Within that, are you drawn to working with brand-new, rapidly evolving tech?…or something somewhat more proven and stable?

Show the MassCEC career process video *[Title TBD]* (three to five minutes) and follow it with a brief check-in to hear what students took away.

Video Debrief

- What skills does Eric use on the job?
- What are some ways that Eric learned new technical skills?
- What stands out to you about Eric's career discovery journey so far?

Primary Learning Activity (20 mins)

Materials

- Worksheets

Activity Objective: Students answer six reflective questions to explore their skills, interests, and values, helping them pinpoint potential climate-critical career paths. This provides a structured reflection on their strengths and preferences, enabling them to link their personality to potential clean energy jobs.

Instructions

- Divide students into groups of three or four and direct them to their worksheets.
- Today, students will begin to develop their career profiles based on four of the six factors introduced earlier in class.
    - **Skills**: What am I good at? Consider school subjects, hobbies, and areas where you often receive positive feedback.
    - **Interests**: What excites me? Think about topics or activities that capture your attention and keep you engaged.
    - **Work environment**: In what setting do I work best? Consider physical and social factors that contribute to settings, such as indoor or outdoor, teamwork, or working alone.
    - **Values**: What motivates me? Do you want to make a difference, earn recognition, support a team, and make significant discoveries? What will motivate you to continue doing your best work throughout your career?
- Each student will complete the worksheet individually and share their insights with their small group. Small group discussions should cover:
    - Were there any interests they hadn't considered before?
    - Do they have an interest they might want to develop into a skill?
- Answers from these activities are not final; they are a starting point—think broadly! Don't be limited to school or what you usually consider job-related skills and interests!

Activity Debrief

- After about 15 minutes, bring the attention back to the whole class.
- Invite groups to share insights from their conversations; did anyone learn anything that surprised them?
- Ask students to share careers they are interested in learning more about and why.
- Emphasize that clean energy careers are diverse and require a wide range of skills and interests—there's a match for just about any combination!
- Over the remaining lessons of the class, they will examine some of the careers that are critical to Massachusetts meeting its clean energy goals, but this is by no means a comprehensive list.
- The exercise they completed today is applicable whether they are considering careers in clean energy or any other field.

Summarize Key Takeaways:

1. Understand that your career fit matters.
2. Clean energy careers are diverse and interconnected.
3. Personal reflection is an essential part of career exploration.
4. The clean energy transition needs many different skill sets.

Differentiations and Adaptations—Learning Activity (If available)

For students who need additional support: provide example career profiles

Adaptation: Offer a few sample career profiles as examples, showing how someone might align their skills, interests, and values with specific clean energy careers (e.g., wind turbine technician, energy auditor, or sustainability consultant). Include descriptions of why these careers might fit based on the person's traits.

Goal: help students who may struggle to connect abstract prompts to real-world careers by giving them concrete models to reference and build upon.

For students who prefer interactive or verbal expression: use partner interviews instead of worksheets

Adaptation: Pair students up for interviews where they take turns asking each other the worksheet prompts and recording answers. Partners can help to brainstorm ideas and clarify thoughts during the discussion.

Goal: support students who thrive in conversational settings and may find verbal expression easier than completing a worksheet or reflecting on these topics independently.

For students who do better with visuals than with writing, create a career profile map adaptation: Allow students to create a visual "career profile map" instead of writing responses. Provide templates with sections for skills, interests, values, and work environment preferences. Students can use drawings, symbols, or diagrams to illustrate their answers.
Goal: engage students who find visual organization more intuitive and stimulating than written formats.

Takeaways and Closing Activity (5 mins)

Key Lesson Points

- Emphasize that understanding personal skills and interests can help students feel more confident in their future career choices.
- Connect careers to the bigger picture; all clean energy careers play a role in achieving climate goals, making their contributions valuable.
- Encourage students to keep exploring and learning more about clean energy careers as they gain new skills and insights.

Closing Activity objective: this activity encourages students to tie the lesson objectives to an actionable step and continue exploring how their interests, values, and skills align with possible clean energy careers.

Ask students to respond to these two prompts:

1. How do your skills, interests, values, and work environment preferences influence how you think about possible career paths?
2. What are two categories of climate-critical careers you want to learn more about?

Instructional Steps

1. Review the learning objectives so that learners can summarize what they have learned.
2. Present the closing activity.
3. Allow time for reflection in the career journal.

Extensions—if learners are loving this topic and want more…

Create a Career Action Plan

Prompt: Choose one climate-critical career that interests you and seems aligned with what you captured in your profile. Research the steps needed to pursue that career, such as education, certifications, internships, or entry-level jobs. Create an action plan outlining what you would need to do to enter this career field.

Goal: encourage students to connect their learning to actionable steps, fostering a deeper understanding of career pathways in clean energy.

Interview a Professional in a Climate-Critical Career

Prompt: Reach out to someone working in a climate-critical career that interests you. Conduct an interview to learn about their daily responsibilities, required skills, and career journey. Prepare a short summary to share your findings with the class.

Goal: give students real-world insights into climate-critical careers while developing communication and research skills.

Design a Job Posting for a Future Clean Energy Role

Prompt: Imagine a clean energy job that might exist in 20 years, such as a "micro fuel engineer" or "smart grid systems analyst." Write a job posting for the role, including responsibilities, required skills, and qualifications. Be creative while grounding your ideas in what you know about today's emerging technologies and challenges.

Goal: push students to think futuristically about clean energy careers, connecting their current knowledge to innovative and imaginative possibilities.

Handouts—Group Activity (below)

Find Your Place in Clean Energy

Instructions

There are six primary factors to consider when evaluating the fitness of a career:

- **Skills** (What am I good at?)
- **Interests** (What excites me?)
- **Work environment** (What kind of setting do I work best in?)
- **Values** (What motivates me?)
- **Growth potential** (What do I want to accomplish?)
- **Salary** (How much do I need to earn?)

Use the information below, your experience, and your reflections to complete this worksheet and create a profile for potential careers of interest.

These are six of the most in-demand skills for clean energy jobs:

- **Problem-solving**: identifying challenges, thinking critically, and developing effective solutions.
- **Technical aptitude**: comfortable using tools, technology, or software to complete tasks and analyze data.
- **Communication skills**: clearly explaining ideas, listening well to others, and collaborating effectively.
- **Adaptability**: adjusting to new situations, technological changes, or unexpected challenges with flexibility.
- **Teamwork**: working well with others to achieve a common goal, valuing others' input, and supporting group efforts.
- **Analytical thinking**: evaluating information, interpreting data, and making informed decisions based on evidence.

Examples of **interests:** hands-on work, investigating, creating, building relationships, leading others, organization, being helpful, or physical work.

Examples of **values:** feeling accomplished, working independently, being recognized, having strong relationships, being supported, or having a flexible work environment.

Notes:

Profile Prompts

Answer the questions below to begin developing a profile for possible careers in clean energy. Revisit this profile throughout the remaining lessons to evaluate which careers might be a good fit for you. Remember, it's okay that your answers will change over time!

Skills and strengths: what am I good at?

Interests: What excites me? What makes me curious?

Work environment: what kind of setting do I work best in?

Values: what motivates me?

Are there any environments or situations I want to avoid?

What areas of clean energy or climate technology interest me the most?

What are three climate-critical careers I want to learn more about? What do I want to know?