



CLEAN ENERGY CAREERS

An Overview

MVWIB Clean Energy Careers Workshop Series
funded by the Massachusetts Clean Energy Center and
the United States Environmental Protection Agency

Produced by the Merrimack Valley Workforce Investment Board



Traditional Fossil Fuel Energy



CLEAN ENERGY:

- **Is renewable**
 - Like energy from the sun
 - Energy from wind
 - Energy from moving water
- **Is efficient**
 - Like insulating homes & buildings
 - Like using CFL bulbs not incandescent.

Clean Energy Job: Solar Electricity Installers



Home Energy Assessor



Wind Turbine Installer



Clean energy jobs are in all career paths



Management/
Professional

Technical (manufacture, installation, operations, maintenance)



Engineering
& Design



Administration
& sales



Research &
Development

SOLAR ELECTRIC | CAREERS

Wage data is from the Minnesota Department of Employment and Economic Development's

ADMINISTRATIVE, SALES, AND MANAGEMENT

General Manager | \$31.64-\$65.67
Marketing Manager | \$44.96-\$68.92
Solar Sales Manager | \$32.38-\$66.94
Solar Sales Representative | \$30.69-\$55.36
Office Manager | \$11.19-\$16.80
Technical Support Representative | \$11.84-\$18.99



DESIGN AND INSTALLATION

Construction Manager | \$33.48-\$51.52
Civil Engineer | \$30.13-\$47.94
Structural Engineer | \$34.79-\$51.01
Solar Systems Engineer | \$34.79-\$51.01
Solar Electric Drafter | \$21.26-\$31.28
Electrician | \$23.13-\$34.49
Solar Electricity Installation Manager | \$24.97-\$36.88
Solar Electricity Installer | N/A
Surveyor | \$24.69-\$37.53
Solar Site Assessor | N/A



RESEARCH, DEVELOPMENT, AND MANUFACTURING

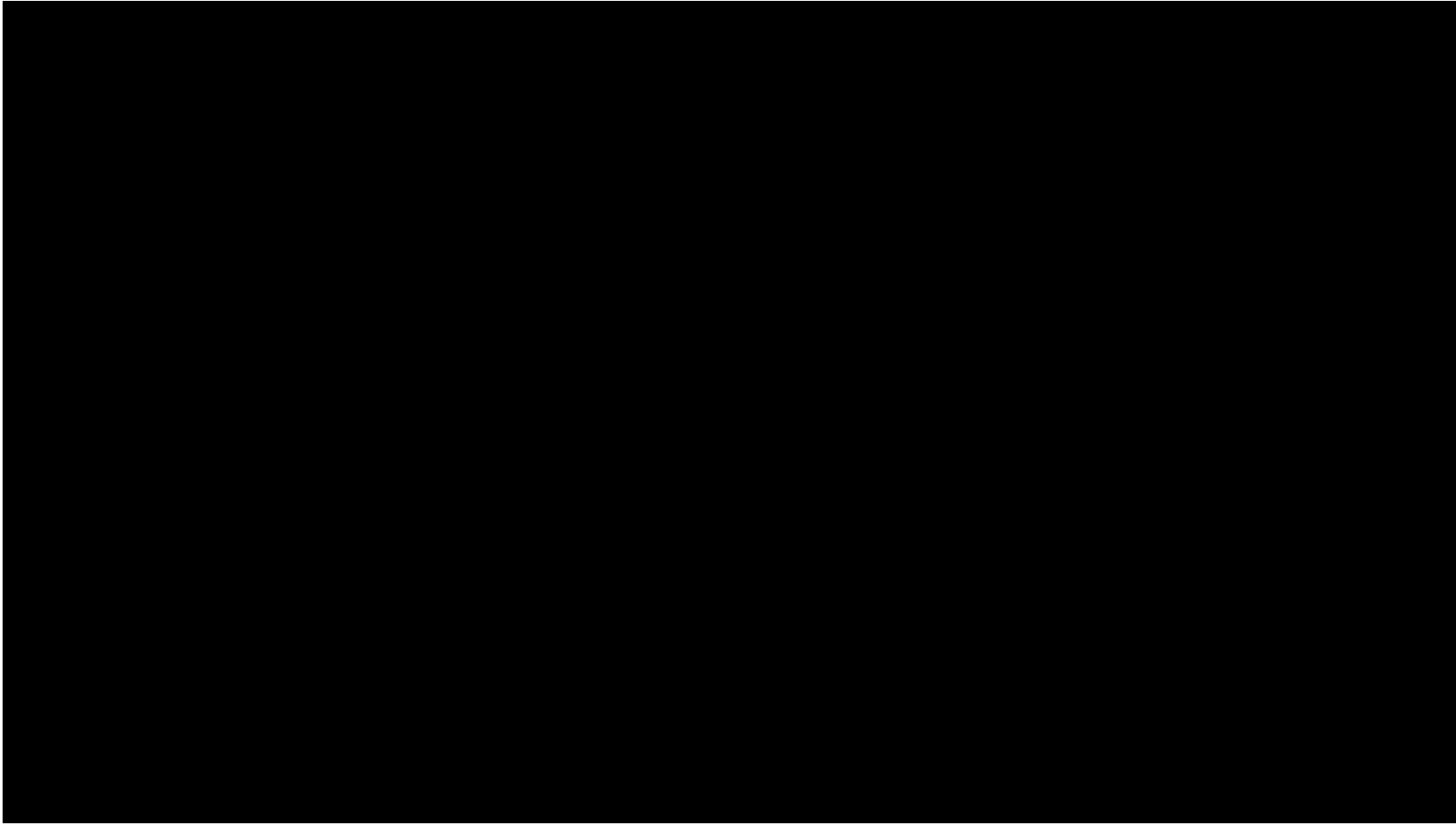
Chemist | \$26.18-\$43.23
Electrical Engineer | \$33.21-\$48.11
Mechanical Engineer | \$29.69-\$44.80
Engineering Technician | \$21.20-\$31.84
Photovoltaic Production Manager | \$34.79-\$56.26
Photovoltaic Production Supervisor | \$20.61-\$31.55
Cutting or Punching Machine Operator | \$12.92-\$18.41
Welder, Solderer, or Brazier | \$15.40-\$21.78
Assembler | \$11.93-\$17.80



THIS SHOWS
THE POSIBILITY
FOR CAREER
ADVANCEMENT

Find your
clean energy
career!

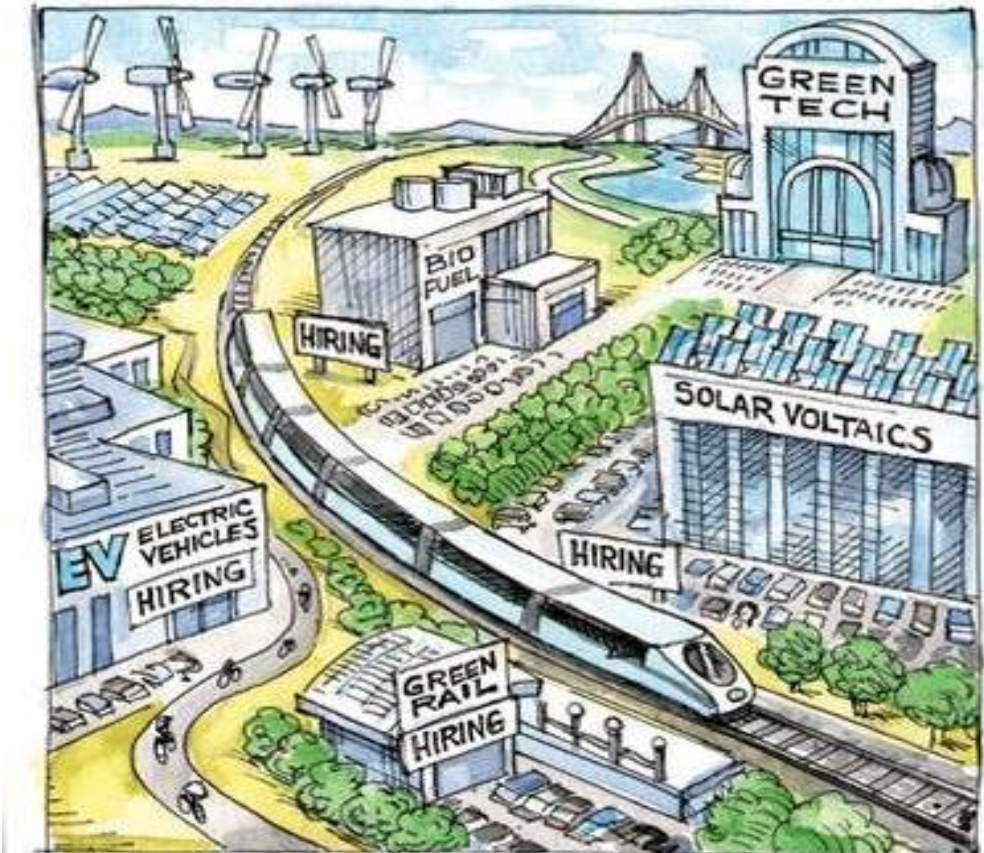
Clean energy sources – 3 minute video!





Clean Energy Careers

Why should I care?



Workshop 1

MVWIB Clean Energy Careers
Workshop Series funded by
the MassCEC & the EPA.

Produced by the Merrimack
Valley Workforce Investment
Board

The energy sector is huge.

We use energy everywhere to heat & cool our buildings, power our vehicles, and make electricity. Mostly with conventional fuels. **For example:**

Oil drilling to refine into gas



To be used in our vehicles



Mountaintop removal
coal mining

To power generators

To make electricity

A sampling of clean energy careers



← Solar cells for electricity



→ Wind turbines for electricity

- Employment to develop, manufacture, install or maintain **renewable energy sources** to power all aspects of our lives.
- OR employment to use fossil fuels more efficiently.



Hydropower for electricity



Electric car



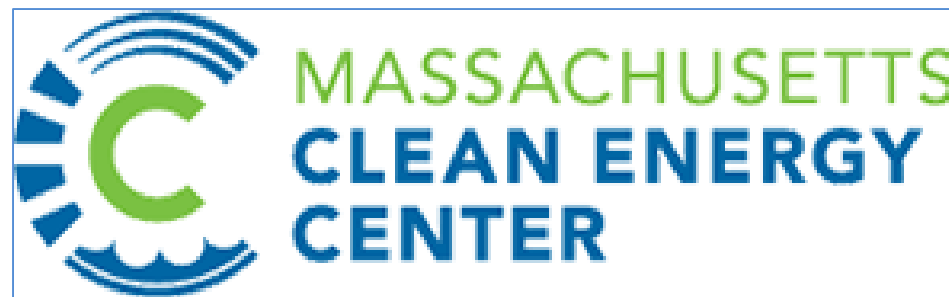
Home assessment for energy conservation



Why should I care?

- Job Growth
- Innovation
- Social inclusion
- Environmental protection
- Sustainable development

2013 MA Clean Energy Industry Report

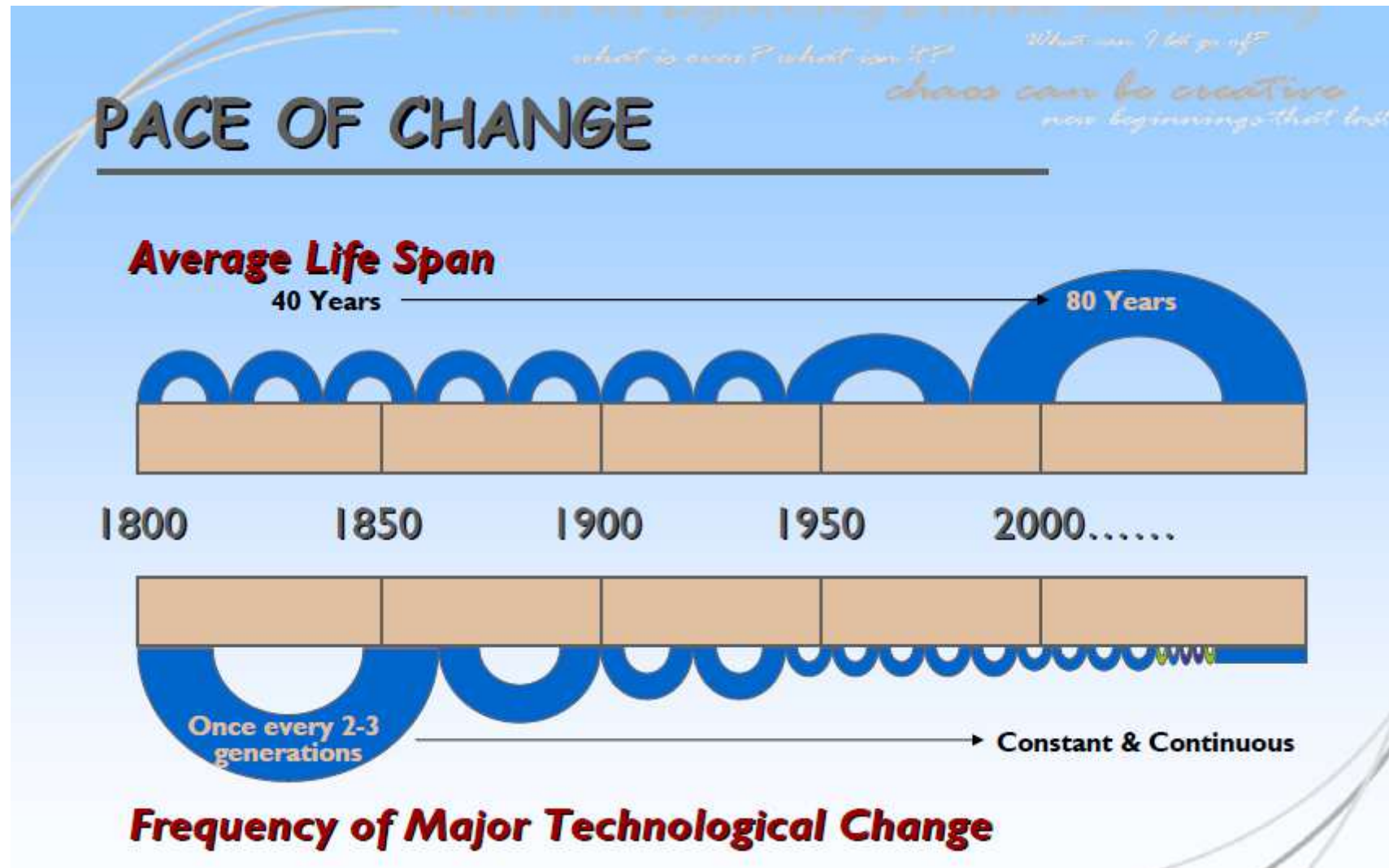


Key Findings

79,994 clean energy workers

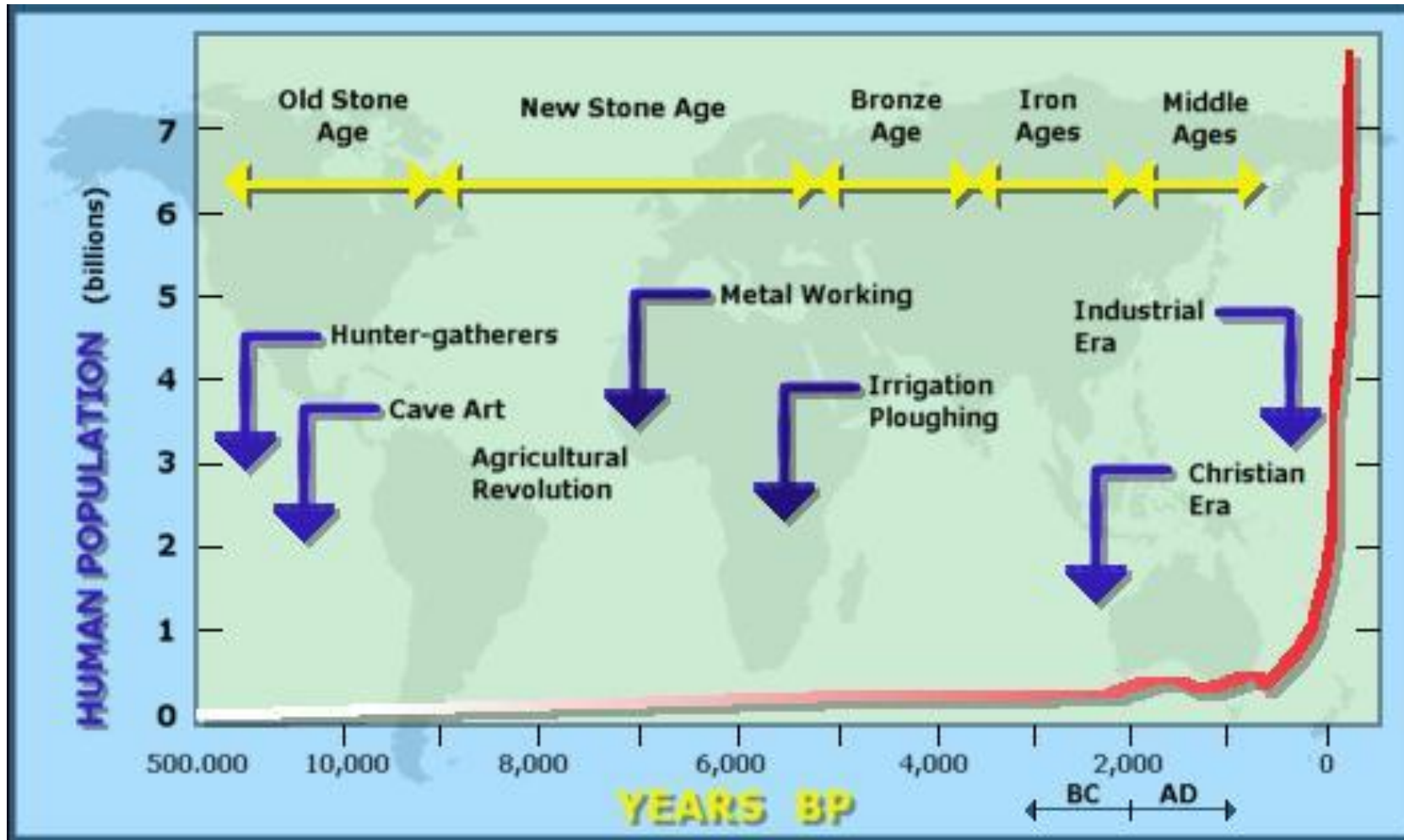
11.8% employment growth rate 2012-2013

24.4% employment growth rate 2011-2013



We need to prepare for a future of innovation, and embrace and master new ideas.

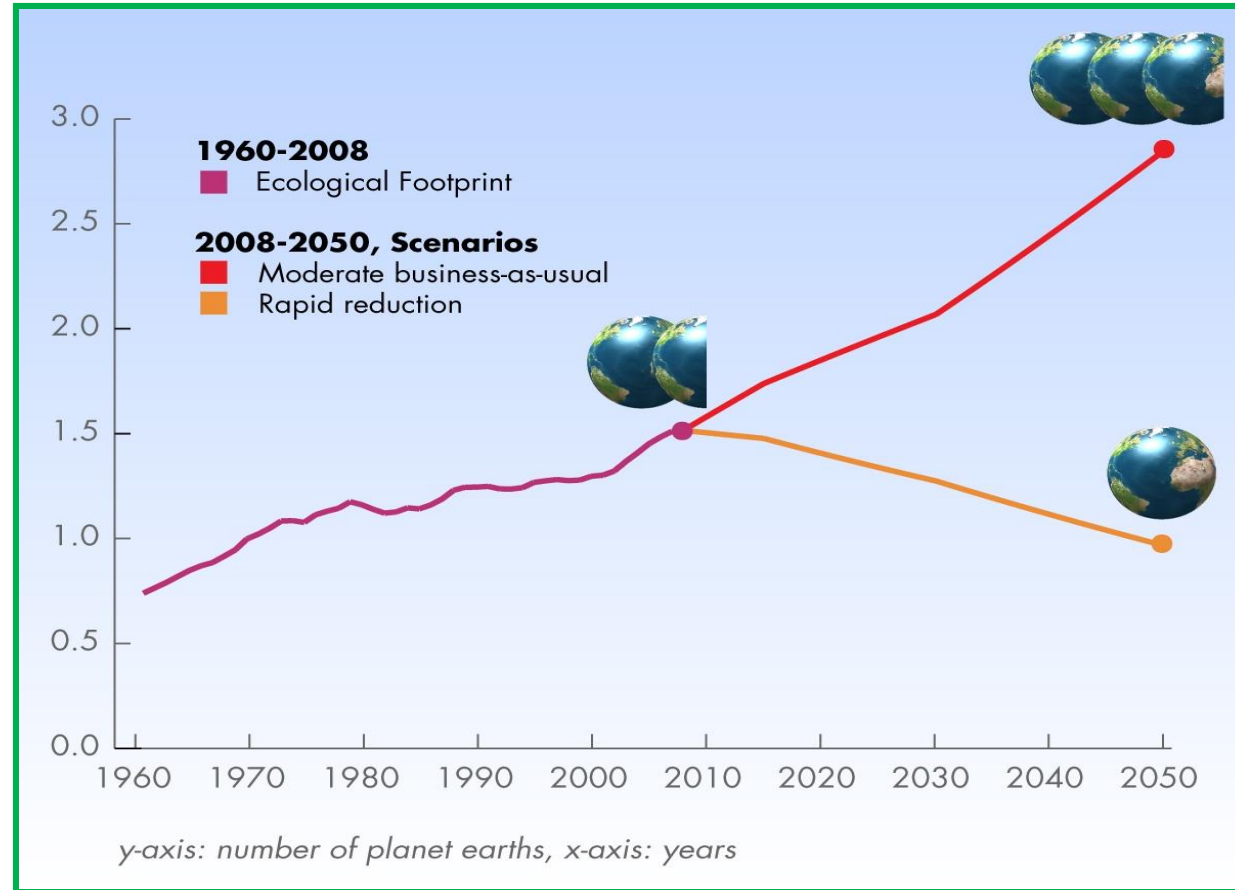
Human Population Growth Over Time



www.globalchange.umich.edu

New industries will employ our growing population, contributing to social inclusion.

The ability of the environment to sustain us



www.footprintnetwork.org

- **Biocapacity** – the ability of nature to produce materials for our use and to absorb our waste. Fossil fuels are a material the Earth produced, and Carbon Dioxide, created when fossil fuels are burned, is a waste product.
- **Ecological footprint** – the amount of biological capacity humans actually use to maintain their lifestyle.
- **OUR ECOLOGICAL FOOTPRINT IS LARGER THAN THE EARTH'S BIOCAPACITY!!!!**

- If the world's population of 7 billion lived like:
- How many planets would we need?

Worldfootprintnetwork.org

INDIA



UGANDA



CHINA



× 1.1

COSTA RICA



× 1.4

NEPAL



× 1.9

FRANCE



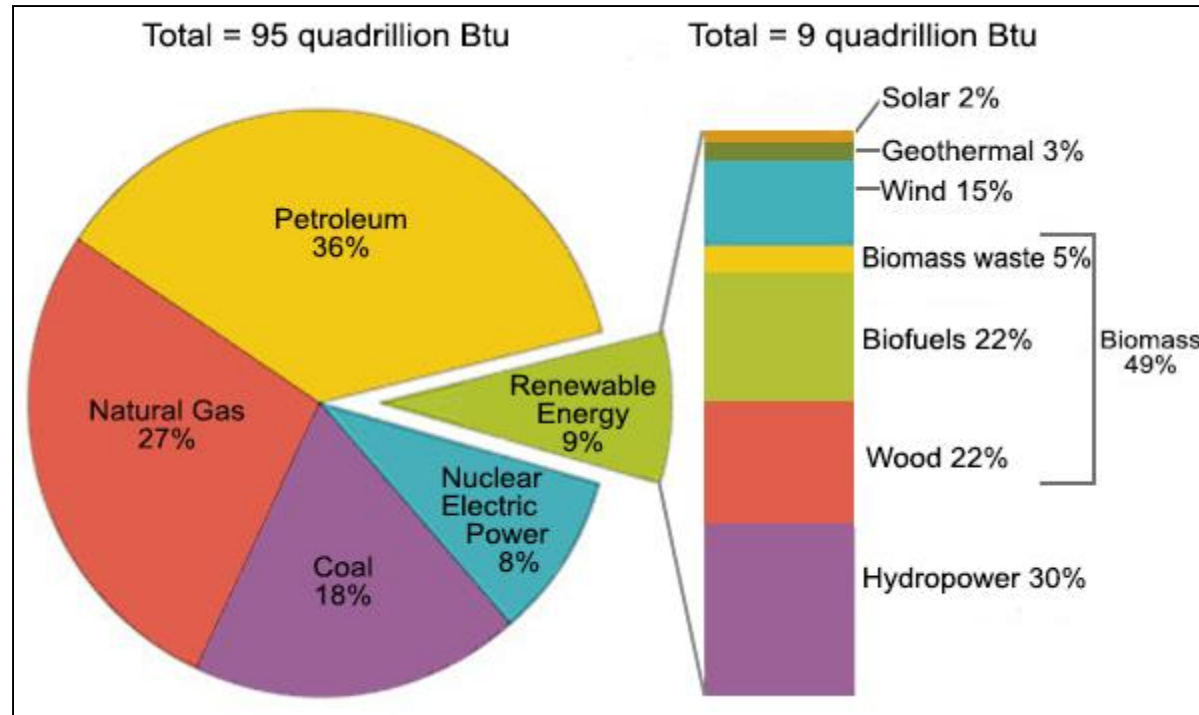
× 2.5

UNITED STATES
of AMERICA



× 4.1

Fossil fuels accounted for 80% of US energy used in 2012

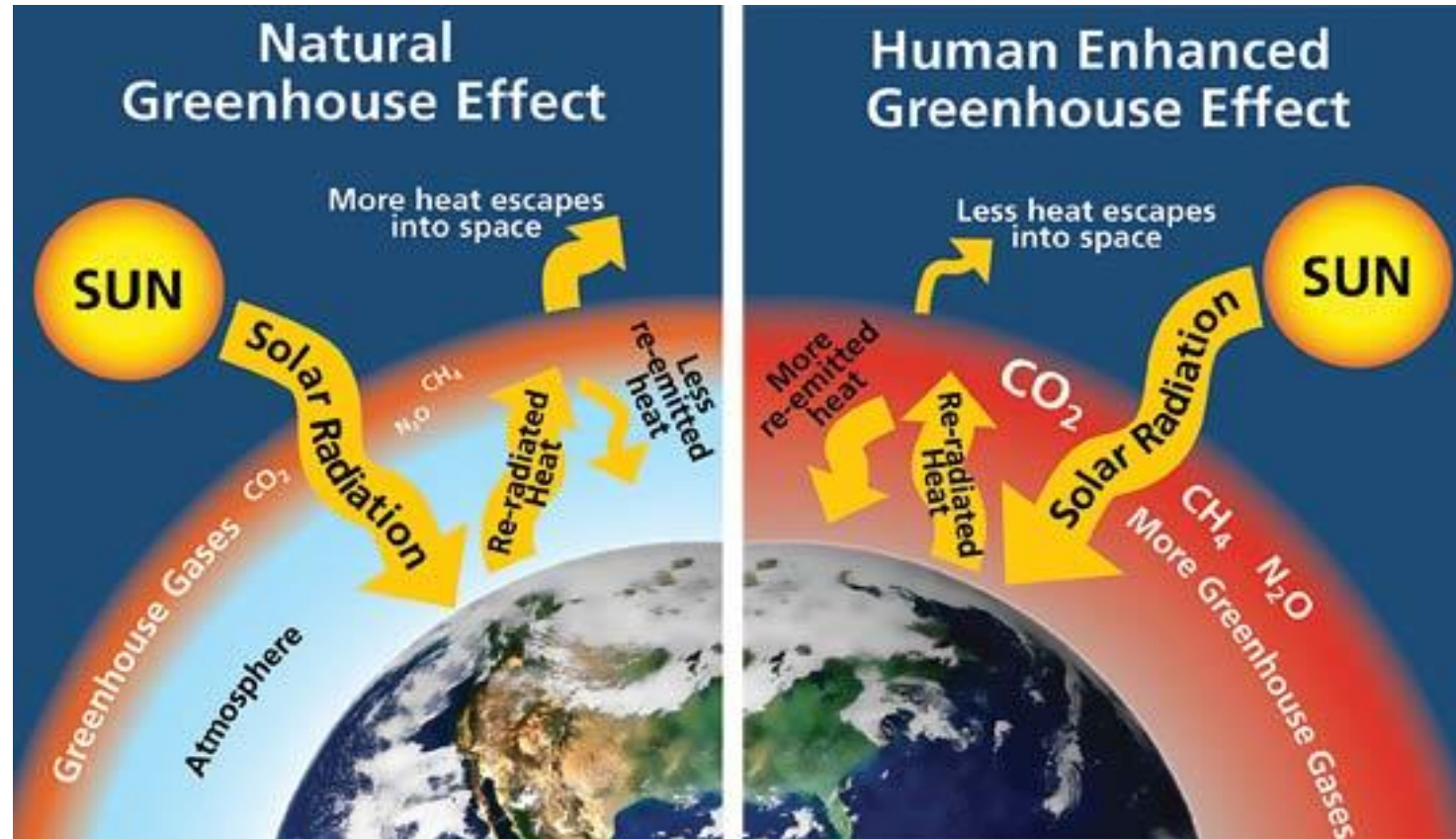


www.altprofits.cm

Energy Uses: cooking, heating and cooling, transportation, electricity, manufacture

BURNING FOSSIL FUELS CREATES CARBON DIOXIDE (CO₂)

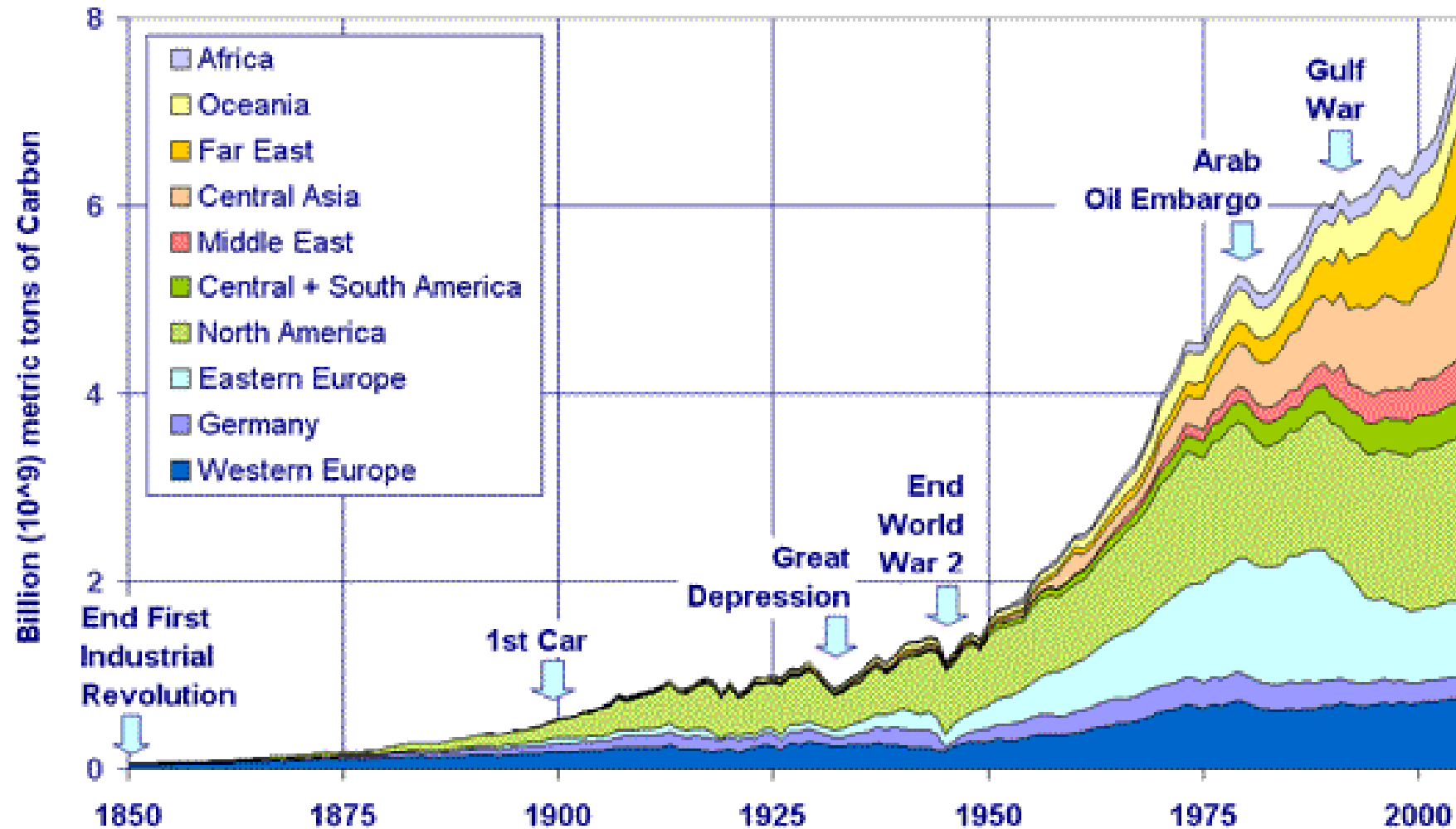
CO₂ is a greenhouse gas contributing to global warming



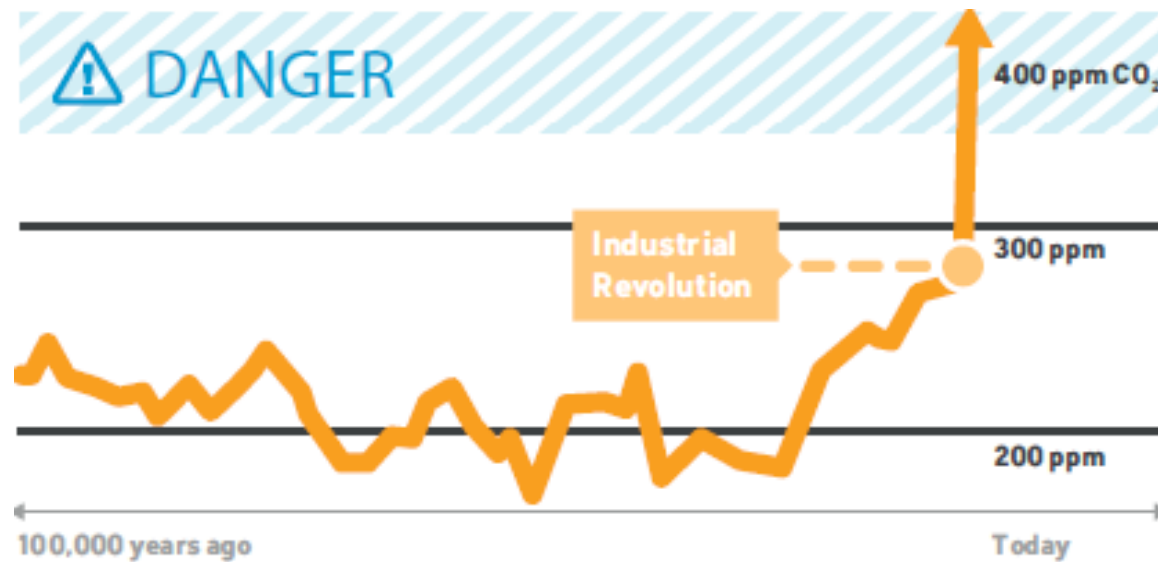
www.nps.gov

- We're emitting CO₂ faster than we can absorb it!

Increase of CO₂ since 1850



www.petrolog.typepad.com



www.350.org

Now we're at 392 ppm of CO₂

For most of Earth's history, our atmosphere has had an average of 275 parts per million of CO₂. Since it is a greenhouse gas, it acts like a blanket that traps heat from the Sun. The more CO₂ in the air, the thicker the blanket.

Three hundred years ago humans started burning coal and oil, and the amount of CO₂ in the atmosphere started going up. Now we're at 400 ppm and rising by about 2 ppm each year.

350 ppm is the safety limit for life on Earth. At 392 ppm and rising we're far beyond anything human civilization has ever seen before.

IN SUMMARY

- The main source of energy for all our needs is fossil fuels.



- This creates Carbon Dioxide (CO₂) emissions, that contributes to climate change.
- We need to grow renewable energy sources to fuel all our needs so we can slow change to our climate.

Clean Energy Careers Are part of the answer!

- ✓ Are growing
- ✓ Are innovative
- ✓ Are inclusive



- ✓ Are environmentally sustainable

What are you waiting for?

Small Group Exercise!

Visit:

- http://www.iseek.org/iseek/media/quiz/energy/energy_quiz.html
- Each group take the “How Much Do You Know About Energy” Quiz
-
- Find your score, and go back and try to answer those you got wrong.
- Be ready to report to the large group:
 - What is one thing the group learned about clean energy today? (You can't say what the last group said – so prepare 2-3 things you learned!)
 - What were the 3 most interesting things the group learned?

Small Group Exercise!

Visit:

- <http://www.footprintnetwork.org/en/index.php/GFN/page/calculators/>
- Each student calculate his/her Ecological Footprint.
- Be ready to report to the large group:
 - What can you do to lower your footprint?
 - Through the exercise where did you find there might be a job to help people lower their footprint?

Green Jobs,



Clean Energy Jobs,



and where do you find them?

MVWIB MassCEC/EPA Clean Energy Careers Workshop 2

What is a green job?

Environmental /
Natural Resource
Conservation

Recycling and
Pollution
Reduction

Green
Manufacturing

Renewable
Energy

Energy Efficiency

- Green jobs are those that have an impact on a product, service, or process that results in **environmental benefit**.

Real life examples.....

- A **solar photovoltaic (electric) panel** is a green product.
- A **home energy audit** is a green service.
- A **supply chain analysis** is a green process.



Green industries.....

are grouped according to how they benefit the environment.

And green jobs are in all career paths



Management/
Professional



Engineering
& Design



Technical (manufacture, installation,
operations, maintenance)



Administration
& sales



Research &
Development

Environmental Conservation

□ For people who want to protect or improve the environment

■ Job Examples:

- Conservation Scientist
- Environmental Engineering Technician
- Forester Ranger
- Naturalist

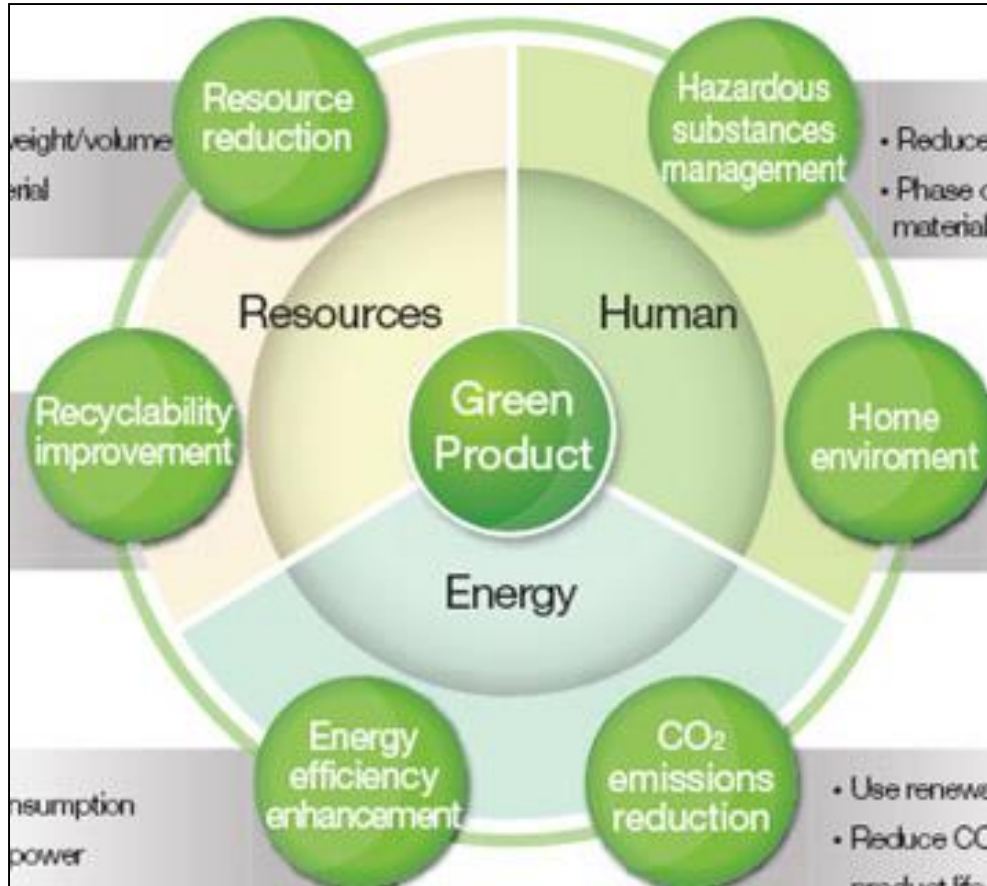


Recycling and Pollution Reduction

- Reuses or recycles materials; prevents or lessens the effects of pollution
- Jobs:
 - Lead/Asbestos Workers
 - Urban Planners
 - Water/Wastewater Treatment Operators
 - Recycling Coordinator
 - Solid Waste / Recyclable Materials Collectors



Green Manufacturing



Job Titles:

- ✓ Green Marketing Managers
- ✓ Industrial Engineering Technician
- ✓ Production Supervisors
- Supply Chain Managers

And here come the Clean Energy jobs...

These are 2 additional categories of Green Jobs.

- They encompass goods, services and processes related to **renewable energy** and **energy efficiency**.

Renewable Energy

- Jobs to develop, manufacture, install or maintain renewable energy sources to power all aspects of our lives.
- Renewable energy is used primarily to make electricity.



Solar Electricity (Photovoltaics)

Job Titles: Solar Site Assessor; Solar Installer; Electrician; Solar Systems Engineer; Solar Sales Rep; Electrical Engineer



Wind Energy

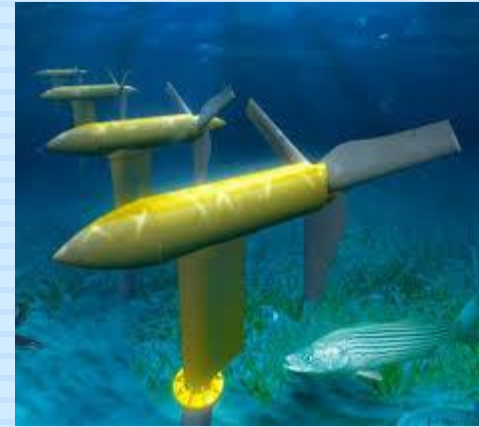
Jobs: Researchers; System engineers; Designers; Draftsmen; installers; mechanics; manufacturers; maintenance; electricians



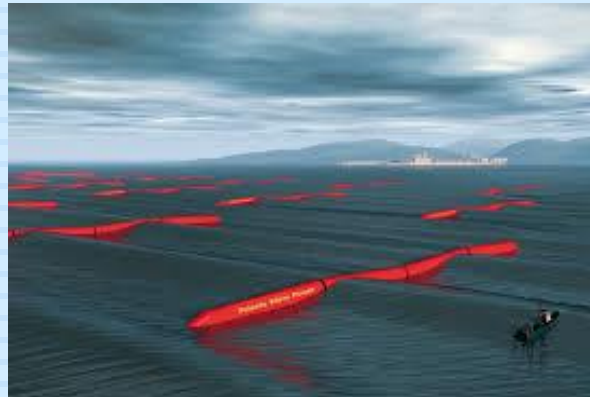


Merrimack River Lawrence dam

Free flow
underwater
turbines



Wave energy



Micro hydro
power



Hydropower

Jobs: Research scientists and engineers; plant operator;
dam maintenance and repair; system design and
installation



Biomass

Jobs: Plant operator; plant worker; financial management; CDL drivers



Solar Thermal & Passive Solar (not for electricity)

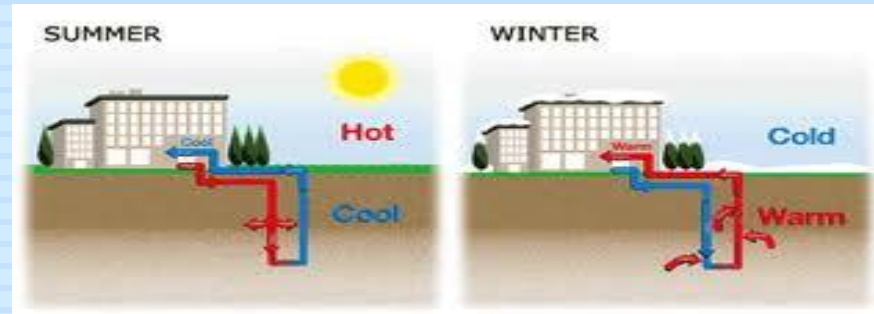
Job titles: Plumbers; manufacturers; builders; insulation; window installers; system and home designers



Residential system



Iceland geothermal:
26% electricity
87% heat & hot water



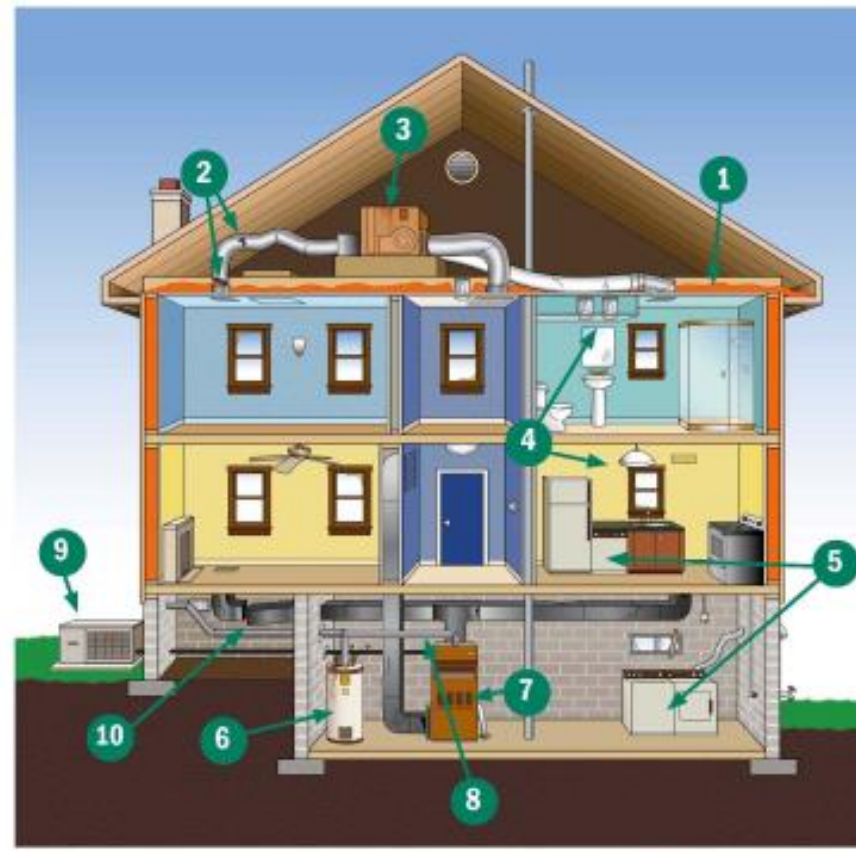
How geothermal heating
& cooling works

Geothermal Energy (Used directly or for elec.)

Jobs: Environmental engineer; environmental engineering technician; plumbers; plumbers helpers; manufacturers; sales reps; etc.

Building related energy efficiency

- Careers that help create a built environment that uses and wastes less energy



Improvement Opportunities

- 1 Low Insulation Levels
- 2 Duct Leakage
- 3 Inefficient Heat Pump
- 4 Incandescent Bulbs
- 5 Inefficient Appliances
- 6 Gas Tank Water Heater
- 7 Inefficient Furnace
- 8 Combustion Safety
- 9 Inefficient A/C
- 10 Duct Disconnect

Residential energy efficiency

Jobs: Insulation Installers; Air Sealers; Energy Assessors; HERS Raters; Window Installers; Lighting Designers; Sales Reps; equipment manufacture, etc.



Commercial energy efficiency

Same jobs as residential energy efficiency, but on a commercial scale.



Building new structures to be energy efficient

Jobs: LEED Construction Managers, plumbers; electricians; sustainable design architects; draftsmen; landscape designers; etc.

What most interests you?

Environmental / Natural
Resource Conservation

Recycling and Pollution
Reduction

Green Manufacturing

Renewable Energy

Energy Efficiency

□ Research a Green Job!

- Pick a job
- Find its responsibilities, pay and education needed.
- Let us know if it interests you!



Critical thinking
skills



Integrity

Professionalism

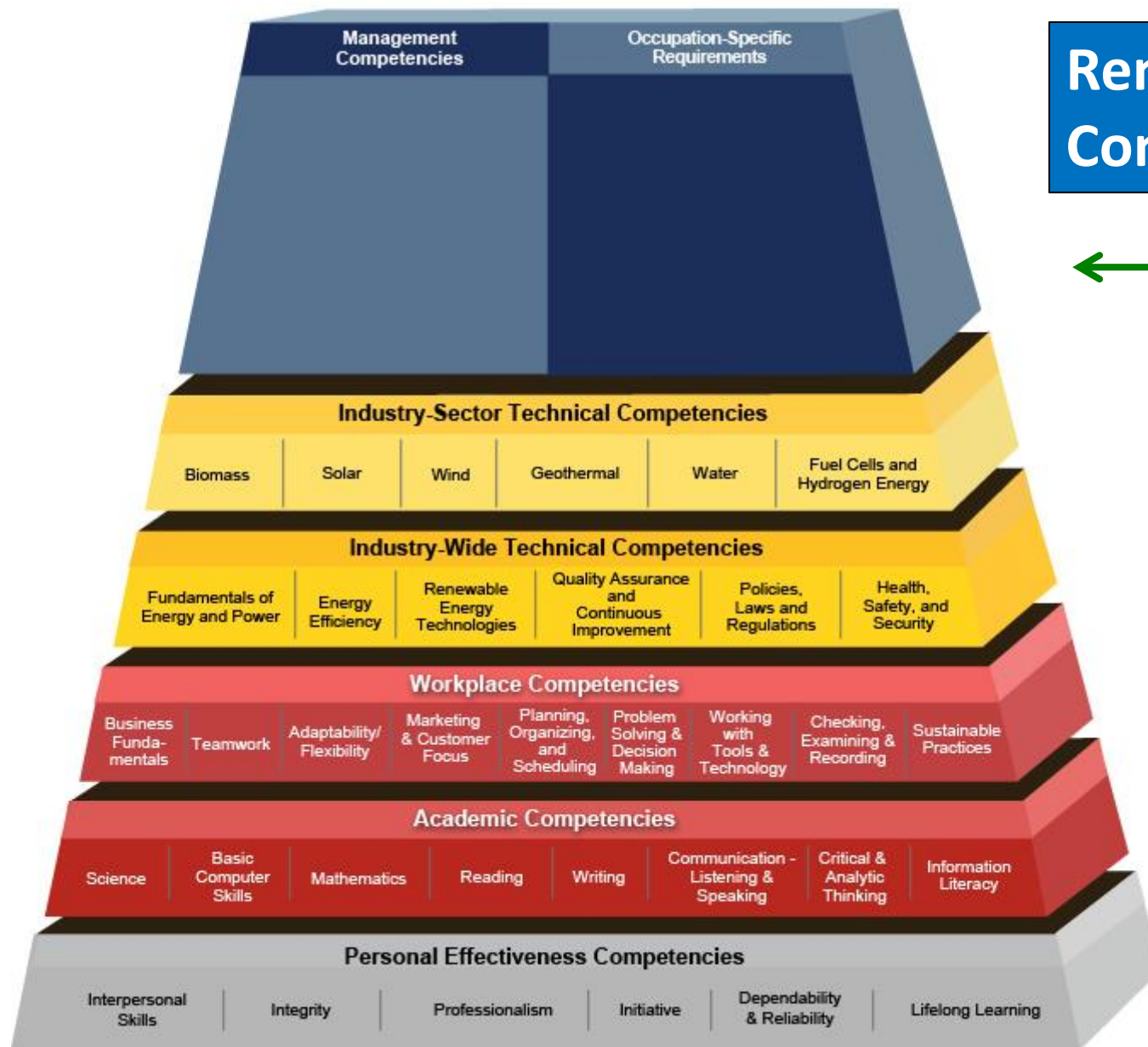
Certifications

Even Clean Energy Careers require an education!

Workshop 3

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Produced by the Merrimack Valley Workforce Investment Board



Renewable Energy Competency Model

← Occupational skills

← Industry skills

← Foundational skills

<https://www.careeronestop.org/competencymodel/competency-models/renewable-energy.aspx>

MVWIB MassCEC/EPA Clean Energy Careers Workshop 3



Deep Dive on Foundational Skills:

ARE YOU A PROFESSIONAL?

Find out!

- **Read** “Are you a professional”.
- **Choose** two role-plays from the list on p. 2.
- **Pick** two students to do each roll-play.
- **Perform** the role plays for the group.
- **Analyze** – did each pair act professionally?



SOLAR

FUEL CELLS & HYDROGEN

WIND

Technical competency is **also** required.

What industry is your job in?

Research the education you will need to achieve technical competency in the job you selected.

WATER

BIOMASS

GEO THERMAL

Where to find it?

MA Clean Energy Careers Training and Education Directory

<http://ma.cleanenergyeducation.org>

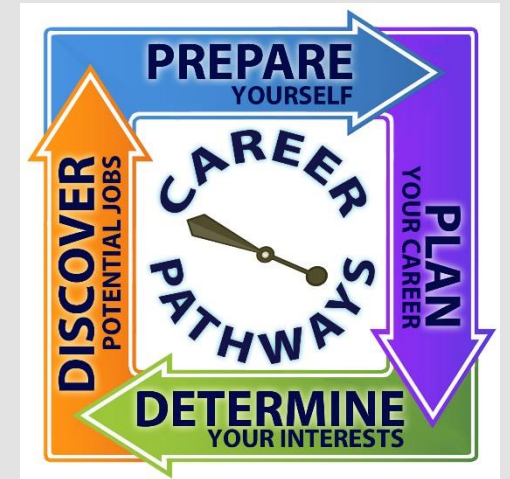


CLEAN ENERGY CAREER PATHWAYS

WORKSHOP 4

MVWIB Clean Energy Careers Workshop Series funded by the MassCEC & the EPA.

Produced by the Merrimack Valley Workforce Investment Board



MA WIND Employers

- * EDP Renewables
- * Eolian Renewable Energy
- * Ogin Energy
- * Patriot Renewables
- * V Squared Wind, Inc.



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Clean Energy Careers Workshop 4

Education	Manufacturing	Installation	General Operations & Maintenance	Research & Development/Other
Bachelor Degree	Production Mgr \$32-\$37/hr.	Electrical Engineer \$29-\$42/hr.		Controller \$42-\$52/hr.
4+ Years Post High School Education & Experience	Plant Operations Mgr \$29-\$37/hr.	Mechanical Engineer \$27-\$35/hr.	Electrical Engineer \$29-\$42/hr.	Director Wind Dev \$36-\$50/hr.
	Mechanical Engineer \$27-\$35/hr.	Environmental Engineer \$23-\$34/hr.	Project Engineer \$25-\$29/hr.	Legal Assistance \$32-\$50/hr.
Associate Degree	1st Line Supervisor \$19-\$24/hr.	Project Manager \$20-\$32/hr.		Transmission Design Eng \$31-\$40/hr.
2+ Years Post High School Education & Experience	Mech Engineering Tech \$18-\$21/hr.			Aeronautical Engineer \$30-\$35/hr.
	Elec Engineering Tech \$18-\$21/hr.	Wind Turbine Technician \$18-\$24/hr.	Renewable Energy Tech \$18-\$25/hr.	Electrical Engineer \$29-\$42/hr.
Technical Diploma	Wind Turbine Machinist \$13-\$20/hr.		Battery Install & Maint \$12-\$16/hr.	Meteorologist \$26-\$49/hr.
Long-Term On-the-Job Training	Millwright \$19-\$26/hr.	Field Operations Mgr \$23-\$27/hr.	Electrician \$15-\$25/hr.	Environmental Officer \$23-\$37/hr.
	Iron/Steel Worker \$17-\$27/hr.	Iron/Steel Worker \$17-\$27/hr.	Wind Field Service Tech \$15-\$24/hr.	
Some Post High School Education & Experience	Welder \$13-\$22/hr.	Electrician \$15-\$25/hr.		
	Turbine Machinist \$13-\$20/hr.	Welder \$13-\$22/hr.		
Apprenticeship Program				
Moderate-Term On-the-Job Training	Sheet Metal Worker \$17-\$26/hr.			
	CNC Machine Operator \$15-\$27/hr.	Equipment Operator \$15-\$24/hr.	Gen Maint & Repair \$14-\$18/hr.	
	Gen Maint & Repair \$14-\$18/hr.	Construction Laborer \$14-\$19/hr.	Customer Service Rep \$13-\$16/hr.	
	Machine Tool Setter \$13-\$16/hr.	Customer Service Rep \$13-\$16/hr.		
	Team Assembler \$11-\$14/hr.	Team Assembler \$11-\$14/hr.		
Short-Term On-the-Job Training	Production Planner \$17-\$21/hr.			
Most Positions Require High School Diploma or GED	Industrial Truck Driver \$12-\$15/hr.	Industrial Truck Driver \$12-\$15/hr.	Truck Transportation \$14-\$19/hr.	Truck Transportation \$14-\$19/hr.
	Production Composite \$11-\$19/hr.	Generator Installer \$11-\$17/hr.		
	Material Mover \$11-\$13/hr.			
	Elec Equip Assembler \$10-\$14/hr.			



Wind Industry Careers

SOLAR PHOTOVOLTAIC Employers

- * Solectrica
- * Nexamp
- * PanelClaw, Inc.
- * Solar City
- * Borrego
- * SunBug Solar



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SOLAR ELECTRIC | CAREERS

Wage data is from the Minnesota Department of Employment and Economic Development

ADMINISTRATIVE, SALES, AND MANAGEMENT

General Manager | \$31.64-\$65.67
Marketing Manager | \$44.96-\$68.92
Solar Sales Manager | \$32.38-\$66.94
🔧 Solar Sales Representative | \$30.69-\$55.36
Office Manager | \$11.19-\$16.80
Technical Support Representative | \$11.84-\$18.99



DESIGN AND INSTALLATION

Construction Manager | \$33.48-\$51.52
Civil Engineer | \$30.13-\$47.94
Structural Engineer | \$34.79-\$51.01
Solar Systems Engineer | \$34.79-\$51.01
🔧 Solar Electric Drafter | \$21.26-\$31.28
Electrician | \$23.13-\$34.49
Solar Electricity Installation Manager | \$24.97-\$36.88
🔧 Solar Electricity Installer | N/A
Surveyor | \$24.69-\$37.53
Solar Site Assessor | N/A



RESEARCH, DEVELOPMENT, AND MANUFACTURING

Chemist | \$26.18-\$43.23
Electrical Engineer | \$33.21-\$48.11
Mechanical Engineer | \$29.69-\$44.80
🔧 Engineering Technician | \$21.20-\$31.84
Photovoltaic Production Manager | \$34.79-\$56.26
🔧 Photovoltaic Production Supervisor | \$20.61-\$31.55
🔧 Cutting or Punching Machine Operator | \$12.92-\$18.41
Welder, Solderer, or Brazier | \$15.40-\$21.78
🔧 Assembler | \$11.93-\$17.80



🔧
THIS SHOWS
THE POSSIBILITY
FOR CAREER

<http://www.iseek.org/industry/green/careers/careers-in-solar-electric.html>

SOLAR HEATING & COOLING Employers

- * GoGreen Industries
- * MassRenewables, Inc.
- * Sunlight Solar Energy, Inc.
- * New England Solar Hot Water



SOLAR | HEATING & COOLING

Wage data is from the Minnesota Department of Employment and Economic Development's

ADMINISTRATIVE, SALES, AND MANAGEMENT

General Manager | \$31.64-\$65.67
Marketing Manager | \$44.96-\$68.92
Sales Manager | \$32.38-\$66.94
Solar Sales Representative | \$30.69-\$55.36
Office Manager | \$11.19-\$16.80
Technical Support Representative | \$11.94 | \$18.99



DESIGN AND INSTALLATION

Architect | \$25.69-\$43.44
Construction Manager | \$33.48-\$51.52
Solar Systems Engineer | \$34.79-\$51.01
Structural Engineer | \$34.79-\$51.01
Electrician | \$23.13-\$34.49
HVAC Technician | \$20.18-\$28.36
Plumber | \$20.85-\$37.11
Solar Installation Manager | \$24.97-\$36.88
Solar Heating and Cooling System Installer | N/A
Solar Site Assessor | N/A



RESEARCH, DEVELOPMENT, AND MANUFACTURING

Mechanical Engineer | \$29.69-\$44.80
Chemist | \$26.18-\$43.23
Solar Production Manager | \$34.79-\$56.26
Solar Production Supervisor | \$20.61-\$31.55
Welder, Solderer, or Brazier | \$15.40-\$21.78
Cutting or Punching Machine Operator | \$12.92-\$18.41
Assembler | \$11.93-\$17.80



RESIDENTIAL ENERGY EFFICIENCY Employers:

- * Next Step Living
- * Conservation Services Group
- * GLCAC, Inc.
- * Merrimack Valley Insulation
- * Siemens, Inc.



RESIDENTIAL | ENERGY EFFICIENCY CAREERS

Wage data is from the Minnesota Department of Employment and Economic Development's 2nd Quarter 2009 Occupational Employment Statistics Survey

HVAC MAINTENANCE AND INSTALLATION

- HVAC Field Supervisor | \$22.99-\$34.83/hr.
- 🔧 HVAC Technician | \$20.90-\$29.25/hr.
- 🔧 Sheet Metal Worker | \$18.96-\$35.08/hr.
- 🔧 HVAC Assistant | \$9.31-\$14.80/hr.
- Pipefitter/Steamfitter | \$20.40-\$37.60/hr.
- 🔧 Pipefitter/Steamfitter Assistant | \$10.76-\$18.13/hr.
- Hazardous Materials Removal Worker | \$19.70-\$31.73/hr.
- Home Appliance Installation & Repair Worker | \$15.72-\$23.61/hr.



MANAGEMENT & PROFESSIONAL SERVICES

- General Operations Manager | \$32.02-\$68.25/hr.
- 🔧 Program Manager | \$32.02-\$68.25/hr.
- 🔧 Project Manager | \$33.63-\$51.28/hr.
- Architect | \$25.66-\$45.05/hr.
- 🔧 Architect Drafting & Design Technician | \$18.37-\$28.92/hr.
- Loan Officer | \$21.49-\$38.81/hr.
- Marketing/Outreach Specialist | \$21.74-\$34.50/hr.
- Cost Estimator | \$21.27-\$34.67/hr.



LANDSCAPE DESIGN

- Horticulturist | \$22.51-\$48.55/hr.
- Landscape Architect | \$20.01-\$33.84/hr.
- 🔧 Landscaping & Groundskeeping Supervisor | \$17.73-\$26.12/hr.
- 🔧 Landscaping & Groundskeeping Worker | \$10.10-\$16.08/hr.



RETROFITTING & CONSTRUCTION

- General Contractor | \$33.63-\$51.28/hr.
- 🔧 Retrofitting and Construction Field Supervisor | \$24.75-\$37.14/hr.
- Carpenter | \$16.23-\$27.43/hr.
- 🔧 Carpenter Assistant | \$11.20-\$14.98/hr.
- Electrician | \$22.27-\$33.74/hr.
- 🔧 Electrician Assistant | \$12.50-\$20.28/hr.
- Roofer | \$17.32-\$32.43/hr.
- 🔧 Roofer Assistant | \$13.59-\$18.87/hr.
- Window Installer | \$16.23-\$27.43/hr.
- Cement Mason | \$15.78-\$27.15/hr.
- Construction Equipment Operator | \$19.06-\$29.96/hr.
- Siding Installation Worker | \$16.23-\$27.43/hr.
- Insulation Worker | \$13.88-\$22.38/hr.
- Construction Laborer | \$15.18-\$27.28/hr.



WEATHERIZATION

- Weatherization Program Manager | \$23.94-\$39.71/hr.
- 🔧 Weatherization Monitor | \$18.32-\$31.83/hr.
- 🔧 Home Energy Auditor | \$18.32-\$31.83/hr.
- Weatherization Field Supervisor | \$22.99-\$34.83/hr.
- 🔧 Weatherization Technician | \$16.23-\$27.43/hr.
- 🔧 Weatherization Outreach Specialist | \$11.26-\$16.26/hr.



COMMERCIAL ENERGY EFFICIENCY Employers

* Ameresco
* Noresco
* Honeywell, Inc.



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Clean Energy Careers Workshop 4

COMMERCIAL | ENERGY EFFICIENCY CAREERS

Wage data is from the Minnesota Department of Employment and Economic Development's 2nd Quarter 2009 Occupational Employment Statistics Survey

MANAGEMENT / PROFESSIONAL SERVICES

Chief Financial Officer | \$57.69 or higher/hr.
General Operations Manager | \$32.02-\$68.25/hr.
Program Manager | \$32.02-\$68.25/hr.
Project Manager | \$33.63-\$51.28/hr.
Energy Efficiency Software Engineer | \$38.47-\$55.54/hr.
Energy Services Sales Representative | \$30.83-\$56.20/hr.
Horticulturist | \$22.51-\$48.55/hr.
Energy Efficiency Planner | \$18.32-\$31.83/hr.



HVAC MAINTENANCE AND INSTALLATION

HVAC Field Supervisor | \$22.99-\$34.83/hr.
HVAC Technician | \$20.90-\$29.25/hr.
Sheet Metal Worker | \$18.96-\$35.08/hr.
HVAC Assistant | \$9.31-\$14.80/hr.
Pipefitter/Steamfitter | \$20.40-\$37.60/hr.
Pipefitter/Steamfitter Assistant | \$10.76-\$18.13/hr.



ENGINEERING AND DESIGN

Engineering Manager | \$46.72-\$66.90/hr.
Mechanical Engineer | \$28.47-\$43.33/hr.
Mechanical Engineering Technician | \$20.73-\$30.95/hr.
Energy Engineer | \$33.70-\$49.88/hr.
Energy Analyst | \$18.32-\$31.83/hr.
Technical Analyst | \$20.73-\$30.95/hr.
Architect | \$25.66-\$45.05/hr.
Architectural Design and Drafting Technician | \$18.37-\$28.92/hr.
Building Commissioning Engineer | \$28.47-\$43.33/hr.
Building Commissioning Technician | \$20.73-\$30.95/hr.



GENERAL LABOR / MISC.

Foreman | \$24.75-\$37.14/hr.
Roofer | \$17.32-\$32.43/hr.
Roofer Assistant | \$13.59-\$18.87/hr.
Window Installer | \$17.58-\$34.49/hr.
Hazardous Materials Removal Worker | \$19.70-\$31.73/hr.



BUILDING OPERATION MAINTENANCE & CONTROL

Building Controls Engineer | \$34.45-\$50.64/hr.
HVAC/Building Controls Technician | \$21.42-\$30.23/hr.
Chief Engineer | \$22.99-\$34.83/hr.
Building Engineer | \$22.84-\$29.89/hr.
Building Operator | \$15.39-\$22.83/hr.
Control and Valve Installer & Repairer | \$20.30-\$33.46/hr.



LIGHTING

Lighting Design Engineer | \$32.41-\$48.49/hr.
Lighting Design Technician | \$21.77-\$31.15/hr.
Lighting Design Leader | \$18.32-\$31.83/hr.
Electrician | \$22.27-\$33.74/hr.
Electrician Assistant | \$12.50-\$20.28/hr.



LEARN MORE ABOUT COMMERCIAL ENERGY EFFICIENCY CAREERS

<http://www.iseek.org/industry/energy/careers/careers-in-commercial.html>

ELECTRIC POWER Employers

- *National Grid
- * Bridge Energy Group
- *Lowell Central Electric Co.
- *Liberty Energy



ELECTRIC POWER | TRANSMISSION AND DISTRIBUTION

Wage data is from the Minnesota Department of Employment and Economic Development's 2nd Quarter 2009 Occupational Employment Statistics Survey

ENGINEERS AND TECHNICIANS

Principal Engineer | \$46.72-\$66.90/hr.
Reliability and Standards Engineer | \$46.72-\$66.90/hr.
Transmission Planning Engineer | \$32.41-\$48.49/hr.
Transmission Planning Technician | \$21.77-\$31.15/hr.
Transmission or Distribution Line Design Engineer | \$32.41-\$48.49/hr.
CAD Designer | \$20.13-\$31.49/hr.
Substation Engineer | \$32.41-\$48.49/hr.
System Protection Engineer | \$32.41-\$48.49/hr.
Relay Protection Technician | \$28.46-\$36.53/hr.
Field Technician | \$21.77-\$31.15/hr.



OPERATION AND CONTROL

System Operations Manager | \$32.02-\$68.25/hr.
Reliability Coordinator | \$33.70-\$49.88/hr.
Network Reliability Lead | \$33.70-\$49.88/hr.
Balancing Authority Operator | \$23.76-\$42.04/hr.
System Control Operator | \$26.40-\$38.08/hr.
Outage Coordination Dispatcher | \$26.40-\$38.08/hr.
Control Center Support Technician | \$18.09-\$27.27/hr.



SAFETY AND TRAINING

Training Coordinator | \$39.52-\$58.59/hr.
Training and Development Specialist | \$21.77-\$33.63/hr.
Safety and Occupational Health Coordinator | \$25.92-\$37.31/hr.



FACILITIES CONSTRUCTION AND MAINTENANCE

Substation Mechanic | \$28.46-\$36.53/hr.
Substation Mechanic Assistant | \$12.50-\$20.28/hr.
Millwright | \$19.01-\$31.15/hr.
Numerical Control Technician | \$15.91-\$22.72/hr.
Electric Equipment Tester | \$13.24-\$20.00/hr.
Machinist | \$16.45-\$24.38/hr.
Welder | \$15.34-\$21.61/hr.
Vegetation Specialist | \$22.35-\$32.95/hr.
Laborer | \$15.18-\$27.28/hr.
Truck Driver | \$15.48-\$23.03/hr.
Transmission Line Maintenance Supervisor | \$22.99-\$34.83/hr.
Line Worker | \$26.16-\$35.30/hr.
Line Worker Apprentice | \$26.16-\$35.30/hr.
Utility Worker | \$19.06-\$29.96/hr.



BUSINESS ADMINISTRATIVE AND RELATED

Department Director | \$32.02-\$68.25/hr.
Transmission Business Relations Manager | \$32.02-\$68.25/hr.
Transmission Account Representative | \$30.83-\$56.20/hr.
Regulatory Compliance Analyst | \$36.95-\$60.07/hr.
Utility Forecaster | \$26.75-\$44.20/hr.
Energy Transmission Accountant | \$23.47-\$34.80/hr.
Economic Expansion Analyst | \$22.74-\$34.77/hr.
Estimator | \$21.27-\$34.67/hr.
Siting, Land Rights, and Permitting Agent | \$13.57-\$24.02/hr.
Administrative Assistant | \$17.61-\$24.53/hr.
Software Engineer | \$38.47-\$55.54/hr.
Control Systems Programmer | \$29.21-\$43.57/hr.



LEARN MORE ABOUT ELECTRIC POWER TRANSMISSION AND DISTRIBUTION



Tesla Electric Car

- As you consider clean energy jobs be sure to connect them to a career pathway.
- As you gain education and experience explore jobs higher up on the pathway that you can apply for!