

POWER YOUR FUTURE **IN ENERGY**

Your roadmap to **construction trades, utilities, and engineering careers** across the Redwood Region. Whether you want to build with your hands, keep critical systems running, or design the infrastructure of tomorrow — there's a path for you. Many start right now, with no degree required.

75%

Of jobs start with just a high school diploma

\$143K

Top pay without a college degree

Earn While You Learn

Get paid \$20–\$45/hr during training

PATH A

Construction & Trades

See Page 2

Build, wire, plumb, and power up. You can launch these hands-on careers with an apprenticeship that lets you earn while you learn. Most require no degree.

PATH B

Utilities & Maintenance

See Page 3

Keep the power on, water clean, biomass running, and systems maintained. These jobs handling essential energy infrastructure have year-round demand and top earning potential.

PATH C

Engineering & Technical

See Page 4

Design systems, draft plans, and solve complex problems. You can start with an associate's degree and grow into engineering roles to earn up to six-figures.

\$97M

Invested locally since **2019** in renewable energy and restoration projects. Offshore wind, solar microgrids, and biomass are creating new careers across the Redwood Region.

**Labor Market Information from [CA Employment Development Department](#) in cooperation with the Bureau of Labor Statistics.*



Path A: Construction & Trades

NO EXPERIENCE REQUIRED TO START!

Build, wire, plumb, and power the Redwood Region

Most of these careers start with just a high school diploma.

Apprenticeships let you earn **\$25–\$45/hr** while you train — no student debt required.

Solar installation is one of the fastest-growing trades in the region.



Career Flow

START HERE Laborer / Helper

No degree needed
OSHA (Occupational Safety & Health) 10 recommended

\$21–27/hr

YEAR 1–3 Apprentice

Registered apprenticeship
2–5 yrs, PAID training

\$25–35/hr

YEAR 3–5 Journeyman

Certified tradesperson
Carpenter, Electrician,
Plumber, Solar Installer

\$31–40/hr

LONG TERM Foreman / Manager

Crew lead or
Construction Manager

\$43–53/hr

Roles & Pay

Electrician Apprenticeship

\$38/hr

Carpenter Apprenticeship

\$36/hr

Solar Installer / Photovoltaic Technician NABCEP (North American Board of Certified Energy Practitioners) Certification

\$27–35/hr

Plumber / Pipefitter Apprenticeship

\$31/hr

Operating Engineer Heavy Equipment Training

\$31/hr

Construction Laborer OSHA-10

\$27/hr

Drywall / Cement Mason / Roofer On-the-job training • No credential needed

\$30–40/hr

First-Line Supervisor 5+ years experience

\$43/hr

Local Employers & Support

What Helps You Get Hired

- High school diploma or GED
- OSHA-10 certification
- CA driver's license
- CPR / First Aid certification
- Physical fitness & reliability

Local Employers

[Greenwired](#) [Humboldt Redwood Company](#)

[NRG \(New Resource Group\)](#) [Clean Power](#)

[North Fork Lumber](#) [Mercer-Fraser](#)

[Granite Construction](#) [County Public Works](#)

[RCEA \(Redwood Coast Energy Authority\)](#) [PG&E](#)

[Humboldt Sawmill Company](#) [Caltrans District 1](#)

Education, Training & Apprenticeships

- **IBEW (International Brotherhood of Electrical Workers) Local 551** — Earn-while-you-learn electrical apprenticeship programs including Wireman (Residential and Commercial) and Sound and Communications
- **UA (United Association) Local 290** — Earn-while-you-learn apprenticeship programs including plumbing and HVAC/R
- **Operating Engineers Local 3** — No-cost, on-site heavy equipment apprenticeships
- **Mendocino College** — Sustainable Construction & Energy Technology: Renewable Energy Certificate, Construction Certificate, Building Efficiency & Performance Certificate
- **College of the Redwoods** — Construction Technology (Electrician Trainee, Residential Construction, Solar Photovoltaic Technician and more), Welding Technology
- **WECA (Western Electrical Contractors Association)** — Alternative to union track. Statewide electrical apprenticeships

Pro Tip: Many training programs are *no-cost* or *earn-while-you-learn*. Otherwise, many employers will pay for your training. Find an employer first — then ask about tuition reimbursement.



Path B: Utilities & Maintenance

**YEAR-ROUND CAREERS
EARN WHILE YOU LEARN**

Keep the power on, water clean, and energy systems running

Energy infrastructure careers that keep the Redwood Region powered. From water treatment to biomass plant operations to heating, ventilation & air conditioning (HVAC), these roles offer stable, year-round employment with strong advancement opportunities. Most start with a high school diploma and on-the-job training.



Career Flow

START HERE Helper / Entry Operator

High school diploma +
on-the-job training or
pre-apprenticeship

\$38–\$43K/yr

Apprentice / Operator-in-Training

Licensing, certification,
or apprenticeship
6 months – 5 years

\$47–\$60K/yr

JOURNEY LEVEL Licensed / Certified

Water Operator, Boiler
Operator, HVAC Tech,
Mechanic

\$60–\$86K/yr

LONG TERM Supervisor/Manager

5+ yrs experience
No degree required

\$79–\$87K/yr

Roles & Pay

Electrical Repairers, Powerhouse & Substation

Biomass & substation work

\$86K/yr

Heavy Equipment Mechanics

Long-term on-the-job training

\$68K/yr

HVAC (Heating, Ventilation & Air Conditioning) Mechanics & Installers

Post-secondary certificate

\$63K/yr

Maintenance & Repair Workers, General

Broad entry point

\$49K/yr

Water / Wastewater Plant Operators

State licensing program

\$68K/yr

Industrial Machinery Mechanics

Biomass, mills & plants

\$68K/yr

Stationary Engineers & Boiler Operators

Biomass & power plants

\$47K/yr

First-Line Supervisor / Facilities Manager

5+ years experience

\$79–\$87K/yr

Lineworker Apprenticeship — A Standout Pathway

Electrical Power-Line Installers follow a unique apprenticeship track through **IBEW (International Brotherhood of Electrical Workers) Local 551** or utility companies. Key Certifications: Commercial Driver's License, OSHA 10/30, First Aid/CPR Certification

Start as a helper, **earn \$60–\$90K during training**,
and **reach journey level at \$143,000/yr!**

Key Certifications

- **Water/Wastewater Operator Grades 1–5** — Through State Water Resources Control Board
- **EPA (Environmental Protection Agency) Section 608** — Required for HVAC refrigerant work
- **Boiler Operator License** — For biomass & stationary plant roles
- **ASE (Automotive Service Excellence)** — Mechanic standard
- **OSHA 10/30** — Safety baseline for all trades
- **CDL (Commercial Driver's License)** — Required for many equipment & utility roles

Local Employers

[RCEA \(Redwood Coast Energy Authority\)](#) [Caltrans District 1](#) [PG&E](#)

[Humboldt Bay Municipal Water District](#) [Trinity Public Utility District](#) [Mercer-Fraser](#) [City of Arcata](#) [Humboldt County Public Works](#)

[Humboldt Redwood Company](#) [City of Eureka](#) [Greenwired](#) [Granite Construction](#) [Humboldt Sawmill Company \(Scotia biomass\)](#)

Key Training & Education

- **College of the Redwoods** — HVAC/R, Automotive Technology, Welding
- **State Water Board / Sacramento State Office of Water Programs** — Operator training & online courses (drinking water and wastewater facilities), Wastewater Operator Certification
- **Operating Engineers Local 3** — Heavy equipment apprenticeship
- **IBEW (International Brotherhood of Electrical Workers) Local 551** — Electrical & Lineworker apprenticeship

Local Employers & Support



Prepared by





Path C: Engineering & Technical

Design systems, draft plans, and solve problems behind the scenes

These careers design and optimize our energy infrastructure.

ASSOCIATE'S DEGREE →
BACHELOR'S → \$100K+



Career Flow

ASSOCIATE'S (2 YRS) Technician / Drafter

College of the Redwoods
or Mendocino College

\$20–\$39/hr

BACHELOR'S (4 YRS) Engineer

Cal Poly Humboldt
Transfer from College
of the Redwoods

\$48–\$72/hr

5–10+ YEARS Senior Engineer

PE (Professional Engineer).
License + experience

\$52–\$85/hr

EXECUTIVE Architectural & Engineering Manager

B.S. (Bachelor of Science) + PE + 10 yrs
or M.S. (Master of Science) degree

\$177K+/yr

Roles & Pay

Associate's Degree Roles

Electrical/Electronics Engineering Tech

Certificate in Electrical/Solar Technology

\$39/hr

Construction & Building Inspector

A.S. Construction Tech + State Certification

\$38/hr

Architectural & Civil Drafters

A.S. Construction/Engineering Tech +
CAD (Computer-Aided Design)

\$32/hr

Civil Engineering Technologists

A.S. Engineering Technology

\$29/hr

Bachelor's Degree & Advanced Roles

Electrical Engineers

B.S. (Bachelor of Science) Energy Systems Engineering

\$72/hr

Civil Engineers

B.S. Environmental Resources Engineering

\$52/hr

Surveyors

B.S. Geospatial Science & Technology

\$52/hr

Mechanical Engineers

B.S. Mechanical Engineering

\$48/hr

Industrial Engineers

B.S. Mechanical Engineering

\$50/hr

Architectural & Engineering Managers

5+ years experience

\$85/hr

Local Employers & Support

Remote Work Opportunities: Engineering roles are among the most remote-friendly careers available. Living in the Redwood Region doesn't mean limiting your job search to local employers — many firms across California hire engineers who work fully remote or hybrid. Build a career with a statewide consulting or engineering firm.

Internships & Hands-On Experience

- **Schatz Energy Research Center** — Paid student research assistantships in microgrids, offshore wind, solar testing, clean transportation (Cal Poly Humboldt students)
- **Schatz / CPUC (California Public Utilities Commission) Energy Division Internship** — Paid internship in regulatory policy, microgrids, offshore wind (undergrad & grad)
- **Schatz Graduate Fellowships** — 4 fellowships for incoming grad students in renewable energy research
- **Redwoods Rising Apprenticeship** — Paid summer positions working with National Park Service in forestry, watershed restoration, monitoring
- **Pacific Offshore Wind Consortium** — Internships in offshore wind energy research & workforce development (Cal Poly Humboldt, Oregon State, Cal Poly San Luis Obispo)

Key Training & Education

- **College of the Redwoods** — Construction Technology (Electrician, Solar Photovoltaic Technician), Skilled Trades and Industry
- **Mendocino College** — Natural Sciences Associate of Science, (Environmental focus), Technology, Science, and Mathematics Pathway
- **Cal Poly Humboldt:**
 - Energy Systems Engineering, Bachelor of Science (B.S.)
 - Environmental Resources Engineering, B.S.
 - Mechanical Engineering, B.S.
 - Energy Systems Engineering, B.S.
 - Environmental Systems, Master of Science (M.S.)