

Career Pathway Spotlight

Discover a Career as a Welder



Discover your career in energy!

Welders fuse the energy industry together — joining the pipelines, bridges, wind towers, and refineries that move energy from where it is made to where we need it.

Pipeline and Energy Infrastructure

From cross-country natural gas pipelines to refineries and offshore platforms, pipeline welders join the miles of pipe that move oil, gas, and water across the energy system, then test and inspect every seam to keep it leak-free.

Structural and Industrial Construction

On bridges, refineries, power plants, and factory floors, structural and industrial welders join the steel beams, vessels, and equipment frames that build heavy industry. Their welds carry massive loads and hold critical infrastructure together for decades of service.

Renewable Energy and Advanced Welding

On wind tower bases, solar racking, and battery storage frames, welders fabricate the steel structures that hold renewable systems in place. In modern shops and shipyards, they also program and supervise robotic welding cells for high-precision production.

CAREER PATH

Start with:

- » A high school diploma or GED

Get Educated:

- » A community college or vocational welding program
- » A welding apprenticeship or union pathway
 - Ironworkers (IW), Boilermakers, UA Pipefitters, or NCCER programs
- » A military pathway with welding experience (e.g., Navy Hull Maintenance Technician (HT) or Army welder (91E))

Specialize With:

Knowledge in:

- » Pipeline welding
- » Structural and industrial welding
- » Renewable energy construction
- » High-pressure or high-temperature systems
- » Robotic and automated welding systems

OCCUPATIONAL SKILLS

- » Strong hand-eye coordination and steady technique
- » Sharp attention to detail and safety focus
- » Physical stamina for active, hands-on work
- » Strong problem-solving when reading prints and adjusting joints
- » Adaptability across job sites, schedules, and weather
- » Clear communication with crews, foremen, and inspectors
- » Comfort with new technology like robotic and automated welding

BENEFITS

These energy industry careers offer:

- » Strong, growing demand across the energy industry
- » Competitive pay with travel premiums for skilled welders
- » Growth into foreperson and inspector roles
- » Specialize in pipelines, renewables, or robotic welding
- » Hands-on work with a clear career ladder

What Might You Do As A Welder?

ENTRY LEVEL

1-4 years

What you will do:

- » Assisting senior welders with material prep, fit-up, and post-weld cleanup
- » Practicing tack welds, simple beads, and basic joint configurations under supervision
- » Grinding, beveling, and preparing edges for senior welders to finish
- » Operating cutting tools, torches, and basic shop equipment safely each day
- » Reading work orders and pulling required materials for the day's assignments
- » Following PPE, hot-work permits, and OSHA construction safety procedures

MID- CAREER

5-8 years

- » Independently welding pipe joints, structural members, and pressure vessels to project spec
- » Reading blueprints, weld procedure specifications, and inspector callouts on the job
- » Setting up MIG, TIG, stick, and flux-core processes for each new job
- » Operating and supervising robotic welding cells and automated production systems
- » Performing visual inspections and supporting weld quality testing programs
- » Training apprentices and mentoring entry-level welders across the full shop

EXPERIENCED

8+ years

- » Leading welding crews on pipelines, renewables, and large construction projects
- » Estimating jobs, scoping welds, and managing budgets and schedules end-to-end
- » Driving safety, quality, and code-compliance programs across multiple active sites
- » Adopting new technology like AI-guided robotic welding and digital inspection tools
- » Coordinating with engineers, inspectors, general contractors, and major clients
- » Mentoring mid-career welders and shaping training and certification programs companywide

What knowledge, skills and abilities will you need to succeed?

- » Listen and follow directions from senior welders and supervisors
- » Comfort lifting, kneeling, and working in tight or outdoor spaces
- » Steady hand-eye coordination and beginner reading of weld symbols
- » Attention to detail and respect for shop safety
- » Eagerness to earn an apprenticeship spot and American Welding Society (AWS) certifications
- » Active AWS Certified Welder (CW) credential
- » Working knowledge of AWS, ASME, and API welding codes
- » Fluency in multiple welding processes and metallurgy basics
- » Comfort with robotic welding controls and automated systems
- » Clear communication with crews, inspectors, and project managers on-site
- » Composure for high-stakes, code-critical welding work
- » Deep expertise across pipeline, structural, and advanced welding processes
- » Leadership and people-management skills for multi-crew projects
- » Strategic communication with executives, inspectors, and clients
- » Strong financial judgment for estimating and project economics
- » Mastery of change management as welding tech and codes evolve
- » Senior credentials such as AWS CWI or Certified Welding Educator

GET PAID!

Entry Level:

- » \$38,640 / year*

As You Gain Seniority:

- » \$51,670 / year*

Later in Your Career:

- » \$76,830 / year*

*Source: United States Energy & Employment Report (2025). These figures use the 10th, 50th, and 90th percentiles of all workers in the role as a proxy for seniority progression and for consistency with BLS OEWS and the United States Energy & Employment Report. Compensation figures should be used as a guide; actual compensation may vary depending on education, geography, experience, and many other factors.



ENERGY INDUSTRY CAREERS OFFER:

- » Excellent salaries
- » Opportunities for advancement
- » Job growth & stability
- » Professional development and training
- » Great benefits

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