## CAREER PATHWAYS FOR ADULT EDUCATION

# **ABOUT CAREER PATHWAYS**

Career Pathways combine education, work readiness and job training to attain necessary skills and credentials for specific in-demand occupations or industries. Career Pathway maps illustrate how students can move along a career path in a specific occupational area from adult education through post-secondary or advanced job-training programs and into employment. To advance along a career pathway more quickly, explore opportunities to participate in education and training concurrently. It is suggested that this map be used in conjunction with information on specific education and training programs in Wyoming or in your local area.

Energy Manufacturing & Technology

Industrial & Engineering Technology Career Cluster

**Sector Description:**

The energy manufacturing sector is central to sustainable development, and responds to the global challenges

of environmental protection, economic development and social inclusion. Jobs in this sector have a direct,

positive impact on the environment and typically involve renewable energy, electric transport, energy efficiency

or nature conservation. Specifically, this evolving sector works to protect ecosystems, reduce energy and water

consumption through high efficiency strategies, de-carbonize the economy, and minimize all forms of

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

waste and pollution.

**Sample Entry or Certificate Options**

Solar Energy Technician

**Sample Advanced or Degree Options**

Energy Sustainability Specialist

Environmental Planner

Wind Turbine Service Technician

**Sequential -or- Concurrent**

#### Adult Education

-Core Skills: Reading, Writing, Math, Science

-English Language Skills

-Career Exploration & Planning

-High School Equivalency Preparation

-Employability Skills & Digital Literacy

-Integrated Education and Training

-Work Experience Trainings

Energy Systems Engineer

Nuclear Power Reactor Operator

Nuclear Technician

Wind Energy Development Manager

Carbon Analyst

Biomass Plant Technician

##### Additional Occupational Options Customized Pathway-Jobs/Courses

* Biofuels Processing Technician
* Robotics Engineer
* Solar Power Plant Technician
* Geothermal Technician
* Water Resource Specialist

## CAREER PATHWAYS FOR ADULT EDUCATION- Energy Manufacturing & Technology

**ADULT EDUCATION-High School Equivalency (HSE)**

**Median Wages: $10.49 Hourly / $21,818 Annual**

Many jobs require a high school diploma/equivalent. The official HSE tests (GED or HiSET)

require that students demonstrate proficiency in English, reading, writing, math, science

and social studies.

**SKILLS**

* read for comprehension
* understand math and its practical applications to the career
* using scientific rules & methods to solve problems
* effective oral and written communication skills
* strong critical thinking abilities: use of logic and reasoning to identify strengths and

weaknesses of alternative solutions, conclusions or approaches to problems.

* Digitally literate: proficient in Word, Excel and Powerpoint

SOLAR ENERGY TECHNICIAN

Median Wages: $28.89 Hourly / $60,090 Annual

**Description**: Install or repair solar energy stems designed to collect, store, and circulate solar-heated water for residential, commercial or industrial use.

**Job Duties**

* Assemble & install solar systems in accordance with codes and standards
* Apply weather sealing to array, building or support mechanisms
* Determine appropriate sizes, ratings, and locations for all system overcurrent devices, disconnect devices, grounding equipment, and surge suppression equipment
* Install module array interconnect writing, implementing measures to disable arrays if necessary

**WIND TURBINE SERVICE TECHICIAN**

**Median Wages: $26.76 Hourly / $ 59,830 Annual**

**Description:**  Inspect, diagnose, or repair wind turbines. Perform maintenance on wind turbine equipment including resolving electrical, mechanical, and hydraulic malfunctions.

**Job Duties**

* Diagnose & repair problems involving wind turbine generators or control systems
* Test electrical components of wind systems with devices, such as voltage testers, multimeters, oscilloscopes, infrared testers, or fiber optic equipment
* Collect turbine date for testing or research & analysis
* Assist in the assembly of individual wind generators or construction of wind farms
* Operate manufacturing equipment to fabricate wind turbines

**OTHER OCCUPATION**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Median Wages:**

**Description**:

**Job Duties**

**NUCLEAR TECHNICIAN**

**Median Wages: $23.24 Hourly / $48,350 Annual**

**Description:** Operate or tend machinery at surface mining sites, equipped with scoops, shovels, or buckets to excavate and load loose materials.

**Job Duties**

* Operate machinery for backfilling excavations, vibrating or breaking rock/concrete
* Move materials over short distances / handle slides, mud or pit cleanings or maintenance
* Direct workers engaged in placing blocks/outriggers to prevent capsizing of machines when lifting heavy loads
* Set up, maintain, and inspect equipment

**NUCLEAR POWER REACTOR OPERATOR**

**Median Wages: $33.58 Hourly / $69,845 Annual**

**Description:** Operate or control nuclear reactors, move control rods, start and stop equipment, monitor and adjust controls, and record data in logs, implement emergency procedures when needed, may respond to abnormalities, determine cause and recommend corrective action.

**Job Duties**

* Monitor all systems for normal running conditions, performing activities, such as checking gauges to assess output or the effects of generator loading on other equipment
* Operate nuclear power reactors in accordance with policies & procedures to protect workers from radiation & to ensure environmental safety
* Adjust controls to position rod & regulate flux level, reactor period, coolant temperature, or rate of power flow, following standard procedures
* Develop or implement actions such as lockouts, tagouts, or clearances

**WIND ENERGY DEVELOPMENT MANAGER**

**Median Wages: $61.84 Hourly / $128,620 Annual**

**Description:** Lead or manage the development and evaluation of potential wind energy business opportunities, including environmental studies, permitting, and proposals.

**Job Duties**

* Manage wind project costs to stay within budget limits
* Create wind energy project plans, including project scope, goals, tasks, resources, schedules, costs, contingencies, or other project information
* Supervise the work of subcontractors or consultants to ensure quality & conformance to specifications or budgets
* Review civil design, engineering, or construction technical documentation to ensure compliance with applicable government or industrial codes, standards, requirements, or regulations