Renewable Energy*

(AAS Degree and Certificate)

Science, Technology, Engineering & Mathematics Career Cluster

SAN JUAN COLLEGE

NATURE OF WORK

There is a strong interest in renewable energy due to the awareness of increasing fuel costs, dependence on foreign energy supplies and environmental impact from fossil fuels. Three of the many types of renewable energy resources are photovoltaics, solar thermal, and wind power. **Photovoltaic** is the direct conversion of sunlight into electricity using no moving parts. **Solar thermal** systems harness energy directly from the sun, either passively or actively. A passive system involves designing buildings and installing materials to capture and store the sun's energy. Active systems use the sun's energy to heat up fluids in solar collectors that are then pumped to where heat is needed. The energy in **wind power** is converted to electricity by a wind turbine.

WORKING CONDITIONS

Installers need to be able to work outside either individually or in teams of two or more while on the ground or on rooftops and be able to lift at least 50 pounds. Sales and technical sales people will often be working indoors in an office environment. System designers need to be comfortable going on site visits that involve being outside and often being on rooftops; however, much of the design work will be performed indoors in an office environment.

TRAINING & QUALIFICATIONS

An Associate's of Applied Science degree in Photovoltaic System Design and Installation is required. Working with any of these three renewable energy areas require that decisions be made about the type of equipment to be utilized for the project, locating the best placement of equipment, and the installation of the equipment.

JOB OUTLOOK

Employment opportunities exist in small renewable energy businesses, energy companies, equipment supply companies, oil and gas field service companies, utilities, and in international agencies assisting development of Third World countries. Currently there is a shortage of qualified workers to support the rapidly growing renewable energy industry, especially in photovoltaics. Jobs include salespeople in charge of marketing and selling systems, system designers who specify which equipment is to be used, installers who build and install systems, and technical sales and support personnel who represent equipment distributors or manufacturers.

CAREER OPTIONS

Photovoltaic System Designer and Installer

ESTIMATED SALARY RANGE

New Mexico—$30,000 to $40,000
(depending on skill, experience and responsibility)

RELATED OCCUPATIONS

Architect, Building Inspector, Energy Auditor, Engineer, Heating, Ventilation, and Air Conditioning Technician, Home Performance Contractor, Technical Sales Person

SJC Basic Program Information

The Photovoltaic System Design and Installation degree is a concentration of the College's Renewable Energy program. Students will gain the knowledge and skills necessary to design and safely install electrical energy systems based on current photovoltaic and power conditioning equipment. Utilities and remote power users recognize this fast-growing sector of the electrical power industry as a viable and established energy alternative.

For further information go to:

www.sanjuancollege.edu/pages/158.asp
Click on AAS link under Career Programs
www.sanjuancollege.edu/reng

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*Most of this information is from San Juan College's Renewable Energy Program Coordinator