

# WIND ENERGY



## Wind Maintenance and Repair.

There are more wind Turbines than there are people to work on them.

Thus, creating a need for:  
Wind Turbine Technicians.

With starting salaries of sixty thousand per year the future is blowing in the wind.

Wind farms are all over the country and Texas is the largest for wind energy. Off shore wind farms are creating opportunities for off shore oil platform technicians. This is an easy transition for unemployed oil field workers. Wind is the new oil.



## Power Generation and

**Alternative Energy** is how to produce electricity with any fuel other than oil.

This includes nuclear. In this program we look at how to produce steam with conventional fuels, but the main focus is on Sun Light, Wind, Hydrogen, Nuclear, and Landfill Gas. Steam can also be condensed and produce potable water. A nice bonus especially with water shortages

We also study the main alternative power sources being utilized today:

## SOLAR and WIND

These two industries are growing at a rate of 60% a year. Career opportunities are endless.

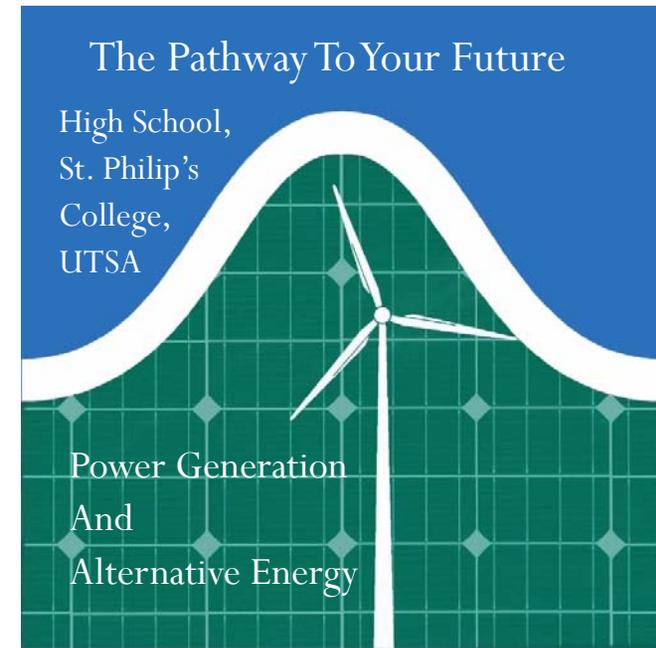
Federal, State, and Local incentives are creating a booming market for installation and maintenance.

**The Age of Smart Grid** is also upon us and the need for energy storage.

Time of use and the ability for the individual to produce and maintain their own energy for their home and auto is our future.

We must look for ways to produce a sustainable lifestyle that is full circle.

Encompassing our consumption and production of energy and our day to day living habits and needs.



## Applied Electrical & Mechanical

## Technology Department

Power Generation

Solar Energy

Wind Energy

Landfill Gas

Hydrogen



ALAMO COLLEGES DISTRICT  
St. Philip's College

# LAND FILL GAS

## Methane

Why not make energy from your household waste. The trash we throw away today is our electricity tomorrow.

The landfill is full of biodegradable materials that produce methane as they decay. The landfill is capped and the trapped methane is pumped to a near by power plant to produce electricity.

Landfill gas technicians are in big demand as Federal Regulations require methane management and capture of our local landfills.



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# PHOTOVOLTAICS

## Solar Energy



Learn solar basics ( HANDS ON)  
skills for the ins and outs of the Solar  
(Photovoltaic) Industry.

Solar System Design

Solar System Installation

Solar System Maintenance

Solar System Sales

Practicum (Intern) with local Installation

Contractors and Manufacturers

Obtain a Marketable Skills or a  
Certificate for:

Power Generation, Wind, Solar

Train to test for the:

NABCEP ASSOCIATES CERTIFICATE

NABCEP PROFESSIONAL INSTALLER  
CERTIFICATE

# HYDROGEN

## Fuel Cells

Hydrogen is the most abundant element in the universe.

Water is H<sub>2</sub>O. Two hydrogen molecules to one oxygen. By using solar and an electrolyzer you get hydrogen and oxygen gas. Hydrogen to power your fuel cell and oxygen to purify water.

Then recombine back into water and start the process all over again.

You can use non-potable water and the end product is potable water and electricity.

California is ahead of the country with Hydrogen Power Plants, Desalinization and hydrogen cars.



**Texas Sustainable Energy**  
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