

# Vox energy solutions case study construction essay

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Vox Energy Solutions was founded in 2007, and has a long history in western Pennsylvania. Vox Energy Solutions has over 35 old ages in building, and they understand western Pennsylvania ' s clime, environment and architecture. Vox has assembled one of western Pennsylvania ' s most experient squads in the alternate energy field. Their experient staff includes a RESNET energy hearer, HERS Rater, a green edifice hearer, entry-level NABCEP certified solar professionals, system interior decorators, installers and a maestro lineman to help with the clients energy demands. There is non excessively much history on Vox Energy Solutions because they are a reasonably new company.

The company was started by Rich and Mary Foltz who beforehand ran a company that did cell phone tower instillment. They have started as the lone full-service supplier in Pennsylvania to put in solar panels, solar thermal for hot H<sub>2</sub>O, and air current turbines in the province. They are a turning company who has doubled their client instillments every twelvemonth since 2007. Rich got into the renewable energy concern by correlating the procedure of put ining cell towers as non really different from the installing of air current turbines. However, holding talked with representatives of the company they found wind turbines are non their strength ; they focus on largely selling and put ining solar panels. The company designs and installs renewable energy systems, so they market the merchandises and services to residential and commercial clients and seek to acquire them to purchase the services. Mission StatementVox Energy Solutions ' mission is to assist our clients save money on their electric public-service corporation measures while assisting to protect the environment.

With the promised additions in electric costs from public-service corporation companies throughout the province starting in January 2011, we are here to assist our community understand and implement alternate energy solutions. We will besides necessitate to concentrate on supplying general information to the populace because there are many misconceptions about solar energy.

**Sustainability of Vox Energy Solutions**When interviewed, the director of Human Resources Michelle McCully told me that when specifying sustainability it is of import to simplify the definition since many people are non clear about its significance. Her definition is a merchandise or something that can be used and it will non harm the Earth ' s resources. It is something that does n't consume resources that you can utilize for a long clip, and it will ne'er travel off and is non finite resource like coal or oil. Sun will ever be at that place. Vox Energy Solutions is non merely practising sustainability or following a sustainable plan, they on the other manus work to sell sustainable and renewable energy to the citizens of Pennsylvania.

Vox Energy Solutions realizes that renewable energy does work in the Pittsburgh country and they are trying to assist Pittsburgh turn to going a leader in energy nest eggs. **Sustainable Merchandises**Vox energy solutions specialize in the merchandising and instillment of three merchandises for renewable energy: solar panels ( photovoltaic ) , Wind Turbines, and solar thermal panels. It is known that western Pennsylvania on norm merely has 59 clear cheery yearss a twelvemonth so a major misconception has formed that solar panels are non advantageous for the country.

However, solar power plants in western Pennsylvania. We receive 82 % ( NASA ) of the same solar radiation that Miami, FL receives. Solar power works utilizing light non sunshine, so western Pennsylvania generates more than plenty light to bring forth renewable energy that will significantly take down energy costs.

Solar panels are made of Si that is placed and laminated under non-reflective glass. As the light hits the Si inside the solar panel the negatrons begin to bring forth a DC electrical current that gets sent to an inverter. The inverter so converts that DC current to an AC current. The place receives the energy in an electric panel that powers the house.

If the solar panels generate more electricity than what is used in the place, the electricity is sent to the electric company and “ banked ” for future usage. Besides if the family is in demand of more electricity those “ banked ” watts are used at no extra cost to the householder. It is of import to understand this construct because it is a sustainable construct where a batch of energy can be potentially saved. Rich Foltz became interested in the renewable energy field from his initial thought to put in air current turbines in the Pennsylvania country. Wind energy uses the kinetic energy of gesture generated to bring forth electricity. The ground Vox Energy Solution focuses on solar over air current is because air current coevals is site-specific and the western Pennsylvania country has many hills and mountains. There are besides a figure of other bounds that must be considered to decently put in a air current turbine.

A chief concern right now is the township and municipality because many countries consider air current turbines an oculus sore and normally do not hold that much infinite to put in them. Weave turbines must hold a autumn infinite of 1 to 1.25 the times the tallness of the turbine. The size of the belongings is of import to see along with the velocity the air current generates in that location. Many elements may impact the velocity of the air current including trees and edifices, or any kind of barrier. The most common countries for air current turbines in Pennsylvania are off the interstate or turnpike where there is a batch of infinite and air current.

Wind energy is really effectual when its put into operation, the air current causes the blades of the turbine to roll up its kinetic energy. When the air current blows through the blades it creates a lift that makes the blades turn. As the blades turn the connected shaft interior besides turns an electric generator that produces electricity. Solar thermal is besides non yet every bit good known or popular in the Pennsylvania country. Solar thermal is frequently referred to as solar hot H<sub>2</sub>O, and it converts the Sun ' s energy straight to heat. The heat that is generated is so used to a place or edifice, and chiefly heats the hot H<sub>2</sub>O, but can besides be used for infinite warming and pools.

The solar thermic expressions really similar to the solar ( photovoltaic ) panels, and they are besides installed on the roof of them place or concern. The Sun will hit the glycol solution in the solar thermal aggregator which heats it up. The het ethanediol is pumped to a hot H<sub>2</sub>O armored combat vehicle and heats the warming component located at the underside of the

H2O armored combat vehicle, this indirectly heats the drinkable H2O above the warming component up to 140 grades.

This heat that is created is what is so used for heating inside the places and concern of solar thermal proprietors.

- Sustainable ServicesThe sustainable services or concern pattern that Vox Energy Solutions follows is what they feel set them apart from any competition in the western Pennsylvania country. After run intoing with the Gross saless Executive Jesse Loomis, it was clear that Vox has really experient high quality experts in the reclaimable energy field. Jesse explained how they give their clients home energy audit analysis to find where and how their energy is being lost. Besides in these audits they determine any contraption or systems in the place that are runing inefficiently. The end is to pattern sustainability in these places and assist do cost-efficient betterments to be implemented to heighten the energy efficiency of the places.

This manner, non merely are clients acquiring renewable energy installed on their places, but they besides are salvaging a enormous sum of energy that would otherwise be wasted. The place hearer makes a study of the place that includes diagnostic testing, recommendations for energy salvaging fixes, a cost/benefit analysis for the possible betterments, and besides gives expected return on investings. Jesse showed many high engineering instruments used for difficult to observe countries of the place. One piece of

equipment that stood out was his infrared camera that he uses for mensurating the extent of leaks in the edifice. Government Incentives One of the major concerns for put ining solar panels is the initial cost, and it is expensive to buy them. All information tells the funny client that the disbursal depends on the specific client and their budget, ends, and how much they use energy.

To buy a individual mean panel it costs within the scope of 500 to 700 dollars. It is really of import when sing the purchase to see the panels as an investing. The rate of return on norm says that the client will do their money back in 8 old ages, and today ' s panels are said to hold a 25 to 30 twelvemonth life. After the 8 twelvemonth period all the money that the client makes is in additions, so they receive a really high involvement on their initial payment. That is of import to cognize when the client is looking at the large initial disbursal, but there are besides authorities inducements like federal inducements, province inducements, Renewable Energy Credits, funding, and public-service corporation company incentives. Federal inducements are available for all three types of renewable energy systems offered by Vox Energy Solutions. When the client files their revenue enhancement they are eligible for a 30 per centum recognition. This peculiar revenue enhancement interruption merely lasts until the twelvemonth 2016.

Pennsylvania besides has province inducements with the Pennsylvania Sunshine Grant Program which is available for solar ( Photovoltaic ) systems. This offers more aid giving clients a discount for each W of solar energy they install on their places. Unfortunately this plan has really limited sums

available and is likely to run out really shortly. This plan does nevertheless offer a 30 per centum discount for solar thermic systems installed.

A really of import factor that makes put ining solar panels an investing is the Renewable Energy Credits ( REC ' s ) where the client can gain money for bring forthing extra solar electricity. For every 1000 kW hours a system produces, one REC is gained. These can truly add rapidly if the place or edifice produces a batch as REC ' s are valued around 300 dollars. There are besides options for people to derive inducements through funding and public-service corporation companies. There are low involvement loans available through Pennsylvania Keystone Help Program. These loans cover a assortment of place betterment investings, including solar and solar thermic systems. Besides in different countries some public-service corporation companies have renewable energy system inducements and some besides give place energy audits. CompetitionVox Energy Solutions has many rivals in the country, but merely a few are Western PA companies.

It is their belief that companies outside the Pennsylvania country are non major rivals with them because they believe local renewable energy companies offer a far more valuable service to the part and many Pittsburghers are really interested in sponsoring local companies. Vox Energy Solutions is seeking difficult to put their ain criterions and values, and the local rivals are the lone competition that they pay attending to. Vox Energy Solutions believe they stand apart from their rivals because they are full service. Full service means they do everything from place energy audits, to



weave, solar and solar thermal every bit good as sum the renewable energy credits.

Vox Energy solutions does see SOLAR-TEC a rival. The difference between these two companies is that Vox Energy Solutions is based out of western Pennsylvania in Allison Park, and SOLAR-TEC is a branch company of its headquarter company W. R. Casteel. The parent company W. R. Casteel is a forte building industry that was started in 1969 and they are chiefly involved in the building of air current turbine installations but they have other renewable energy beginnings they work with in the Eastern United States. They besides have many renewable focal points outside our country in geo-thermal, hydro, and bio mass.

The ground they are focused outside our country is because some of these work better in the western and mid U. S. countries. SOLAR-TEC came in and expressed many of the same exhilaration and issues that go along with solar energy. SOLAR-TEC is new to the country and has non been in operation in western Pennsylvania every bit long as Vox Energy Solutions. Although SOLAR-TEC is newer to the country Vox Energy Solutions said they were really familiar with the company. Michelle told me that they have met Tim Quigley several times and he is a good individual and dedicated to the field. Vox Energy Solutions told me they meet their rivals, particularly the local 1s, really frequently, as there are organisations such as Penn Future, the Green Building Alliance, and CCI that are environmental organisations assisting to progress the field of renewable energy.

Similar to Vox Energy Solutions, most of their rivals are actively involved in these organisations. The renewable energy field is so new to this country, and they mentioned that there is a batch of political work to make to assist stabilise and so turn the industry here. Buildings and PlansVox Energy Solutions does do certain to put the illustration for their employees and clients, as they have solar panels installed on the roof of their company edifice. Even though they do utilize the panels they are non a LEED certified or ENERGY STAR edifice. Vox Energy Solutions moved into a bing older edifice and said that it is really difficult and expensive to change over a older edifice into LEED certified. When asked nevertheless, they told me that would be a end to travel towards down the route as concern improves.

Vox Energy Solutions besides told me they do pattern sustainability in the edifice with an energy nest eggs mindset. They have eliminated paper towels in the public toilets and kitchen, utilizing washable towels. They recycle everything that is reclaimable and recycle scrap paper. They avoid paper merchandises for company maps, and collect and decently dispose of all of their personal batteries and CFL ' s as a squad. They do n't utilize overhead visible radiations unless necessary and employees are really cognizant that they are asked to non publish paperss or electronic mails unless perfectly necessary. Vox has installed programmable thermoregulators on both floors, and merely utilize energy efficient visible radiation bulbs.

Besides, they try to utilize environmentally friendly cleansing merchandises, and for installings they try to do certain that all assorted merchandises used

are environmentally friendly. Vox Energy Solutions said the chief manner they try to distribute the word of their company is by making undertakings with pupils and schools to construct consciousness for their plan. One peculiar plan Vox Energy Solutions was involved in was the 2010 Tech 50 Green Technology Award held in Pittsburgh, PA October 15, 2010. Vox Energy Solutions was selected as the victor of the Green Technology class for the Pittsburgh Technology Council ' s esteemed one-year Tech 50 awards.

Every twelvemonth the Tech 50 awards Pennsylvania ' s most successful and advanced engineering companies. The awards represent transformative engineering centres of excellence with companies at all phases of growing, every bit good as the industry ' s top executives. The Green Technology class included companies that use engineering to make merchandises that improve operations, addition efficiency and promote sustainability while cut down energy ingestion, waste, pollution and operations costs.

The Pittsburgh Technology Council is the first and largest regional engineering trade association in the United States with more than 1, 400 member companies in western Pennsylvania. The Council ' s mission is to lend to the success of the part ' s engineering concerns by concentrating on developing the economic strength of several sustainable industries. This was really of import to the growing and development of Vox Energy solutions to be acknowledge for their parts and ends toward sustainability.

Supply ChainVox Energy Solutions prides themselves for merely covering with local makers of the merchandises they sell. They are a really honorable company that wants to put the illustration in everything they do, so they realize that long distance cargos of merchandises merely construct up truck emanations and this is of import to cut down. Besides they find that if it is of import to their Pittsburgh clients to merely seek local concerns that they would be hypocritical if they did non make the same. Vox Energy Solutions said that there are many distributors in the western Pennsylvania country and that they deal with assorted makers. They besides said that the assorted makers are really competitory presently in driving down the cost of panels and bring forthing the lowest coasting stuffs that make up the merchandise.

## **Beginnings**

Voxenergysolutions. comwww. solartecpa.

comJesse Loomis. Gross saless Executive at Vox Energy Solutions. Michelle McCully. Manager, Human Resources at Vox Energy Solutions. Tim Quigley.

Director of SOLAR-TEC.