Solar PV Installations: Beyond the Basics

At the core of the domain of PV installations is the practical aspect. So, it is not enough to be trained and even certified if you have not gotten your hands dirty. As an engineering technician, I was quite accustomed to engineering principles, electronics and executing electrical engineering projects. I noticed that Solar PV installations are very complex. As you need to know different brands of inverters and batteries. Then also have a good understanding of electrical installations that includes the electrical distribution (DB) box and its layout. Which also has installations rules on top of that. These factors bring about the gap of lacking the skills to be productive in doing Solar PV installations. This gap grows bigger if as an installer you are working alone. Even if you do DIY projects. You still have the need to leverage on other experts´ experiences and learnings. This will enable the improvement of installation skills. On this premise, I developed an online course of that attempts to fast tracks the DIY installer and certified installer skills. The course starts off with key Solar PV terminology.

Solar PV Terminology

Terminology is crucial when interacting with colleagues in the Solar industry as you can follow and understand what they are talking about. Hence, we cover irradiance, power formulas ($P = V \times I$), VOC (open circuit voltage), Vmp (maximum power voltage), and panel strings. As we are grappling with engineering principles, we need to understand the basic principles of electricity.

Basic principles of electricity

How would you deal with electrical circuits if you don´t have an idea what is current? What is resistance and voltage? Now, these basics will help in understanding concepts like AC (alternating current) and DC (direct current) elements of a solar PV system. With this in mind, we then have to eventually design the Solar PV system. But we need to at least know the three key elements of the Solar PV system.

Three key elements of a PV System

Well, there are only three elements being the in solar panels/modules, the inverter and batteries. We delf deep in preparing the solar panels and its other components like panel rails, MC4 connectors and mounting systems to place panels on the roof top. When it comes to inverters and batteries these components help to better understand solar PV design.

Solar PV design

The design of a Solar PV system is all about finding the suitable solar PV system size considering the available material and customer requirements. This involves calculating the number of panels needed, the size of these panels. Then, the inverter size that will deliver the customers requirements. This design will determine if the Solar PV system will save any money on your electricity. The online course explores a number of arrangements and configurations to setup a solar PV System.

The online course

To further preview the course online which is published on the Udemy platform you can access it through this link by clicking here. The preview will give a comprehensive view of the entire course and the topics covered.

The author

Zolile Toli

Solar Installer, Project Management Professional(PMP)

Email: zolile@ztsolutions.co.za

Linkedin: https://www.linkedin.com/in/zolile-toli-pmp-44612147/

Website: www.ztsolutions.co.za