2.2. Solar Power Generation Systems

2.2.1. General

2.2.1.1. The major concerns of Solar System Fire safety arises from the solar cells itself. Poor installation and connections to inverter might cause a fire.

2.2.1.2. Where fires are triggered in the vicinity of solar product installation, concern in the industry is the reaction of solar products to fire and its impact on flame spread and toxic smoke emission.

2.2.1.3. When solar products are under fire, the toxic product of combustion is a concern to fire fighters, combating the fire.

2.2.1.4. Hence, solar cells or product approval to international standards is of prime requirement, which along with the weather and energy performance, also assess flame spread characters and toxicity of product of combustion of the product.

2.2.1.5. All solar products shall be Civil Defence listed and approved. See **Section 2.2.4.** for material approval.

2.2.1.6. Solar or PV façade systems installation, thermal barrier requirements, fire breaks etc. shall be in accordance with **Chapter 1, Section 4.** and appropriate additional large scale façade tests and engineering analysis may also be required.

2.2.2. Hazards to Fire Fighters

2.2.2.1. Solar energy systems on fire consist of following hazards for the fire fighters.
a. Trip and Slipping, if installed on roofs/sloped roofs
b. Structural collapse due to Extra weight
c. Flame Spread on panels, spreading to interior and façade.
d. Inhalation of toxic products of combustion
e. Electrical Shock
f. Battery emissions, explosions and in addition,
g. Hot Fluids if the system is thermal.

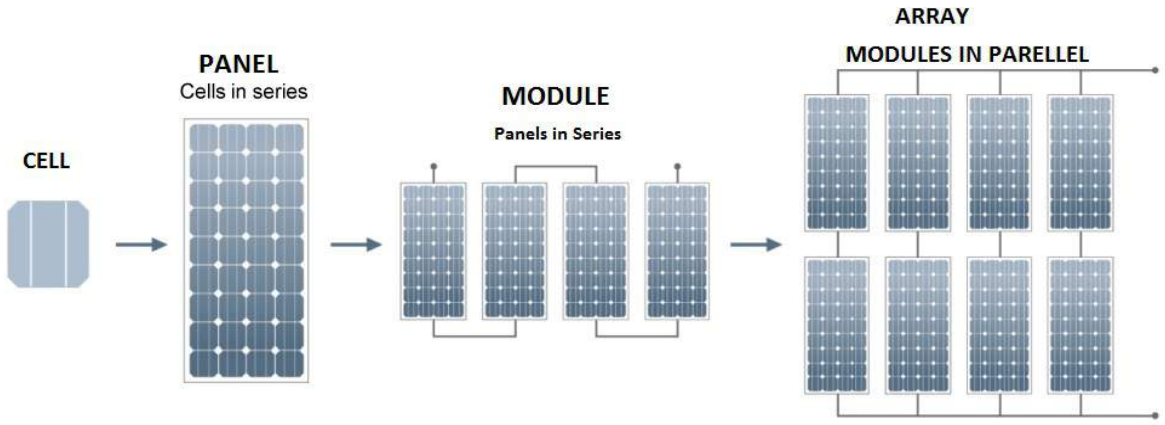

Figure 14.2.: Solar Energy System Components