**DESCRIPTION**

**Aim:** To monitor the heat waves in an area.

**Hardware:** Interfacing Node MCU, INA219 and Solar cell.

High temperatures can not only cause serious health problems, it can also cause major problems in data centres, restaurants, greenhouses, and more. By monitoring heat waves we can overcome such problems.

The Solar cells placed will measure the degree of temperature in that area, the readings obtained are the data values which will be used to predict the heat waves in the area.

It may seem counter-intuitive, but solar panel efficiency is affected negatively by temperature increases. Photovoltaic modules are tested at a temperature of 25 degrees C (STC) – about 77 degrees F., and depending on their installed location, heat can reduce output efficiency by 10-25%. As the temperature of the solar panel increases, its output current increases exponentially, while the voltage output is reduced linearly. In fact, the voltage reduction is so predictable, that it can be used to accurately measure temperature. As a result, heat can severely reduce the solar panel’s production of power.

These predictions will help in knowing the power consumption in advance which would keep the demand on expected lines so that power utilities are prepared to take maximum load without considerable load shedding.

Not only this, but it would give a heads up on the level of water consumption.

All such necessities of the public can be predicted according to the intensity of the heat wave in their area.