



Green Environment with Renewable and Nano Energy Sensors in the Vertical Farming Method - A Model

A.Snehaja¹, Sd.Vasim Fathima¹ and Dr.SK.Fakruddin Babavali²

¹4/4 B.Tech,EIE Department,V.R.Siddhartha Engineering College,Vijayawada(A.P).

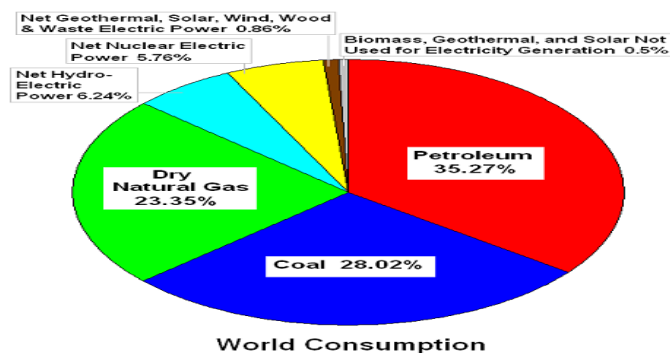
²Department of Physics, V.R.Siddhartha Engineering College, Vijayawada(A.P).

ABSTRACT :

Energy strength is vital in anyone's a part of lifestyles in numerous bureaucracy. It is the gift of the nature to mankind. The day-with the aid of- day usage of energy increases at a fast fee. every 12 months the call for of it's miles going up by way of 10%. If the fee will increase by way of this ratio then we are going to face an power crisis inthe very closeto destiny. Becauseof the greater utilization of strength we aren't in a position to provide it at the requiring degree with the general conventional resources which are non-renewable. For that we must use non-traditional electricity assets which can be renewable. The energies from sun radiation, wind, flowing water, rotating turbines, biomass.. etc. are all called non-conventional energies. As these are all renewable energies we can use them in addition greater range instances which helps toproduce the strength on the requiring level. at the equal time it's also necessary to save energy by using exclusive strategies. For that we will use nano electricity sensors for the implementation of the inexperienced environment Vertical Farming with nanosensors method that's a superb farming approach over all of the different strategies.This technique involves how to develop high quantity of hygienic meals products in muchless amount of area inside environmentally controlled multi-storied building even during un-seasonal durations/times.

INTRODUCTION:

One of the most wide spread factors of the modern-day energy consumption pattern in lots of developing nations is that non-industrial sources including firewood, animal dung and agricultural waste constitute a great eight% the whole electricity used inside the world. through the year of 2050 nearly 80percentof earth populace will reside in city facilities. making use of the most conservative estimates to contemporary demographic trends.The human populace will increase about by using three billion humans at some point of the meantime. An estimated 10[^]nine hectares of latest land will be needed to develop sufficient food to feed them. If the traditional farming exercise maintains as like of this in just any other 50years the subsequent three billion people will really cross hungry. And the arena becomes a miles extra ugly area to live.For this we need to pick a new farming method with the freely available and applicable electricity resources as exchange energy resources.within the Vertical Farming technique we're presented a small version of it wherein we're defined a way to produce the high amount of fine food products by means of the Non-traditional strength souces like solar electricity,wind power,thermal electricity.Non-traditional power assets also referred to as Renewable power sources which can be constantly replenished by means of herbal approaches.



THEORY: OUR MODEL (PROTOTYPE MODEL):

The construction of the prototype is quite simple made of wood. It resembles a small version of the imaginary vertical farming tower with three-storied platform closed from four sides. Flowers are grown/cultivated on those platforms. The top layer of it is set up with a pair of solar panels with nano sensors and a prototype of wind-mill that's in aid of these nano sensors to fulfill the energy wishes of the tower and to draw the underneath floor water for watering the plants, additionally the main crucial matters set up for this version of farming.

- ✓ LED'S also are being set up to provide higher scope for photo-synthesis even all through dull day light and nights. A model of bio-fuel plant is also set up to recycle the organic wastage this is produced all through harvesting, cleaning the weeds e.t.c.,
- ✓ Hydroponics (a way of growing flowers without soil) is also used in this due to the fact taking soil to cover any such large quantity of place in the upper flooring of this structure for developing crops might come to be little bit tough.
- ✓ Drip irrigation method (to offer sufficient water drop via drop to the plant) is also used to reduce the un-important utilization of water.



RESULTS -OBSERVATIONS:

We performed an easy experiment with these solar panel adjusted nano sensors to examine the response of flowers for extraordinary shades of LED'S. On this test we amassed some kidney beans that are made to develop under LED'S rather than sunlight. They exhibited distinctive varieties of homes for distinct shades of LED'S.

The observations are

1. Blue: reasons terrible boom which shapes peak & fine.
2. Red(660 nm): make grow tall and thin (if red is expanded whilst IR diminished plants may be quick however thick)
3. U.V: gives shade, flavor and aroma

THE CHEMICALS THAT ARE REQUIRED FOR THE PREPARATION OF HYDROPONIC SOLUTION ARE:

- 1.yara brand calcium nitrate.
- 2.magnesium sulphate heptahydrate.
- 3.potassium nitrate.
- 4.copper sulphate penta hydrate.
- 5.potassium mono basic phosphate .

ADVANTAGES OF THIS METHOD OF FARMING:

- 1) One year spherical crop manufacturing and one indoor acre is equal to 4-6 outdoor acres or greater depending upon the vegetation (example: strawberries @ 1 indoor acre =30 outdoor acres)
- 2) No climate related crop failure due to droughts, floods & pests.
- 3) All meals merchandise are grown organically just little need of insecticides , germicides and fertilizers.
- 4) Creates sustainable surroundings to the urban centers.
- 5) Affords new employment opportunities.

References:

-
- (1).Overview of power sector in india: www.indiacore.com
 - (2).Bureau of energy efficiency: www.em-ea.org.
 - (3)Natal Green corporation in India: www.ngc.gov.in
 - (4)verticalfarm.com
 - (5)greeningfoil.com