

A
COMMUNITY SERVICE PROJECT REPORT
ON
SOLAR RENEWABLE ENERGY RESOURCES
Submitted in partial fulfilment of
The requirements for the award of degree of
BACHELOR OF TECHNOLOGY
IN
ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted by

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(2022-2023)



CERTIFICATE

This is to certify that the **community service project** work entitled “**SOLAR RENEWABLE ENERGY RESOURCES**” done by **M.MADHUSUDHAN (21MG1A04A5), O.VAMSI (21MG1A04A6), P.MAHESH (21MG1A04A7), P. VAISNAV NARAYANA(21MG1A04A8),P.KRISHNA(21MG1A04A9),R.RAVIBABU (21MG1A04B0), S. ANILKUMAR(21MG1A04B1), T.MOHAN DURGA PRASAD (21MG1A04B2), V.RAJESH (21MG1A04B4),** of **Electronics & Communication Engineering** Department, is a record Bonafide work carried out by them. This **community service project** is done as a partial fulfilment of obtaining Bachelor of Technology Degree to be awarded by **JNTUK, Kakinada**.

The matter embodied in this **Community Service Project** report has not been submitted to any other university for the award of any other degree.

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ACKNOWLEDGEMENT

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Finally, we would like to acknowledge our deep sense of gratitude to all well-wishers and friends who helped us directly or indirectly to complete this work.

With all Sincerity,

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DECLARATION

We hereby declare that the work presented in this **Community Service Project** titled **“SOLAR RENEWABLE ENERGY RESOURCES”** is submitted towards completion of **B.Tech Community Service Project in ELECTRONICS & COMMUNICATION ENGINEERING at SREE VAHINI INSTITUTE OF SCIENCE & TECHNOLOGY, Tiruvuru, NTR Dist.,** It is an authentic record of our original work pursued under the guidance of **Mrs. A. Shirisha, Asst. Professor.**

We have not submitted the matter embodied in this **Community Service Project** for the award of any other degree.

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ABSTRACT

The solar fields considered here vary between 4.6 and 13.8 m² for single-family houses (2 to 6 solar collectors) and between 18.4 and 36.8 m² for multifamily houses (8 to 16 solar collectors). Storage tanks range from 50 to 100 l/m² of solar field area installed. The amount of dew prepared through solar thermal energy varies between 35%–75% and 40%–80% for small systems in single-family houses and multifamily houses, respectively. When larger collectors' areas are used, the preceding fractions increase between 50%–90% for large collectors' areas, however, the overall duration of the stagnation conditions is strongly influenced by the inclination



fig 1.1 solar thermal energy utilization

Solar thermal power plants use the sun as a heat source. In order to generate a high enough temperature for a power plant, solar energy must be concentrated. In a solar thermal power plant this is normally achieved with mirrors. Estimates for global solar thermal potential indicate that it could more than provide for total global electricity needs. There are three primary solar thermal technologies based on three ways of concentrating solar energy: solar parabolic trough plants, solar tower power plants, and solar dish power plants. The mirrors used in these plants are normally constructed from glass, although other techniques are solar energy is generated by nuclear fusion reactions within the sun.

Solar energy is inexhaustible, freely available and clean source of energy generation. The solar pv system generates variable output, its operation depends upon the solar irradiance. In this paper, a single-phase transformer less multilevel inverter is used for solar pv application. A constant voltage of 330 v dc is produced by dc-dc boost converter from variable input voltage. By using h-bridge multilevel inverter dc voltage is converted into sinusoidal 230 v ac voltage. The system is modelled using matlab. Two, multilevel inverters are compared to show reduced total harmonic distortion (thd). Solar energy is generated by nuclear fusion reactions within the sun. The energy that radiates from the sun is a mixture of ultraviolet, visible, and infrared radiation. The intensity of this radiation when it reaches the earth is 1361 w/m². When it passes through the atmosphere, some of this radiation is scattered and some absorbed. Even so, the amount of energy that reaches the surface of the earth is so large that the amount falling in one hour could meet all the electricity demands of the planet. Solar thermal power plants can only utilize direct radiation from the sun, but solar cells, like plants, can absorb both direct and scattered, diffuse radiation. The distribution of solar energy across the globe is not even, and some regions have much higher insolation levels than others. These might become major sources of solar-generated electricity in the future.

It is an essential source of renewable energy, and its technologies are broadly characterized as either passive solar or active solar depending on how they capture and distribute solar energy or convert it into solar power. Active solar techniques include the use of photovoltaic systems, concentrated solar power, and solar water heating to harness the energy. Passive solar techniques include orienting a building to the sun, selecting materials with favourable thermal mass or light-dispersing properties, and designing spaces that naturally circulate air.

There are many other applications and benefits of using solar panels to generate your electricity needs - too many to list here. But as you browse our website, you'll gain a good general knowledge of just how versatile and convenient solar power can be.

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CHAPTER – 1

INTRODUCTION

Defining the solar energy:

Solar energy is any type of energy generated by the sun. Solar energy is created by nuclear fusion that takes place in the sun. Fusion occurs when protons of hydrogen atoms violently collide in the sun's core and fuse to create a helium atom.

The amount of sunlight that strikes the earth's surface in an hour and a half is enough to handle the entire world's energy consumption for a full year. Solar technologies convert sunlight into electrical energy either through photovoltaic (pv) panels or through mirrors that concentrate solar radiation. This energy can be used to generate electricity or be stored in batteries or thermal storage. Below, you can find resources and information on the basics of solar radiation, photovoltaic and concentrating solar-thermal power technologies, electrical grid systems integration, and the non-hardware aspects (soft costs) of solar energy. You can also learn more about how to go solar and the solar energy industry. In addition, you can dive deeper into solar energy and learn about how the us department of energy solar energy technologies office is driving innovative research and development in these areas. Solar energy 101 solar radiation is light – also known as electromagnetic radiation – that is emitted by the sun. While every location on earth receives some sunlight over a year, the amount of solar radiation that reaches any one spot on the earth's surface varies. Solar technologies capture this radiation and turn it into useful forms of energy. There are two main types of solar energy technologies—photovoltaics (pv) and concentrating solar-thermal power . Photovoltaics basics you're likely most familiar with pv, which is utilized in solar panels. When the sun shines onto a solar panel, energy from the sunlight is absorbed by the pv cells in the panel. This energy creates electrical charges that move in response to an internal electrical field in the cell, causing electricity to flow.



Fig 1.2 Solar Panel

The solar fields considered here vary between 4.6 and 13.8 m² for single-family houses (2 to 6 solar collectors) and between 18.4 and 36.8 m² for multifamily houses (8 to 16 solar collectors). Storage tanks range from 50 to 100 l/m² of solar field area installed.

1.2 photovoltaic cell

Photovoltaic, pv, is a device that converts light from into electrical energy. The main components of solar energy system are solar panels, inverter, battery pack, and charge controller. For residential use, there are several types of solar systems available in the market to consider. While these are based on different factors like grid connection, material type, battery, and placement, there are three main types of solar power systems: stand- alone systems, grid-connected systems and solar pv hybrid system. Gaza strip has been suffering from a chronic deficit in electricity since 2006. Around two million people are living on less than 4 hours of electricity a day because of the 61% electricity deficit. Several alternatives, including the use of electric generators, solar panels and uninterruptible power supply units were initiated to overcome electricity shortages, particularly in houses, hospitals and schools. That problem started in 2006, when Israeli forces occupation bombed electricity-generating station located in the central gaza strip. The problem is increased due to the tensions between hams and fatah, over custom tax revenue, funding of gaza, and political authority.

Gaza is supplied by three primary sources: Israeli power line (120 mw), Egypt power line (37mw if all lines worked) and the Palestine electric company (pec) power line, and the said quantity depends on the amount of fuel available for the production of electricity [3]. On average, the pec provides approximately 80 mw or more than 50% Of Its Full Capacity Of 120 MW. However, PEC Currently Can Provide Gaza Only By 54MW. In Addition; Israeli Line Is Reduced To 70MW Out Of Its Full Capacity Due To The Above-Mentioned Reasons.

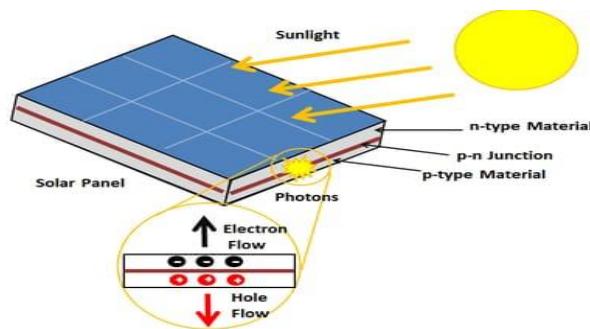


Fig 1.3 Photovoltaic Cell

CHAPTER - 2

TYPES OF SOLAR PANELS

Monocrystalline solar panels:

The highest cost option of all types of solar panels, monocrystalline panels are likely to be the most expensive option. This is largely due to the manufacturing process – because the solar cells are made from a single silicon crystal, manufacturers have to absorb the costs of creating these crystals. This process, known as the czochralski process, is energy-intensive and results in wasted silicon (that can later be used to manufacture polycrystalline solar cells).

Polycrystalline solar panels:

Middle of the road polycrystalline solar panels are typically cheaper than monocrystalline solar panels. This is because the cells are produced from silicon fragments rather than a single, pure silicon crystal. This allows for a much simpler cell manufacturing process, thus costing less for manufacturers and eventually end-users.

Thin-film solar panels:

It depends what you pay for thin-film solar panels will largely depend on the type of thin-film panel; cute is generally the cheapest type of solar panel to manufacture, while cigs solar panels are much more expensive to produce than both cdte or amorphous silicon.



Fig 1.4 Types of Solar Panels

A solar photovoltaic (PV) system changes sunlight into electricity. Sunlight is caught by the solar panels and converted into usable electricity by the inverter. This can then be used to power appliances in your home directly, or **stored in a battery** for use later when the sun is not shining. If not used or stored, the excess electricity is directed back to the grid.

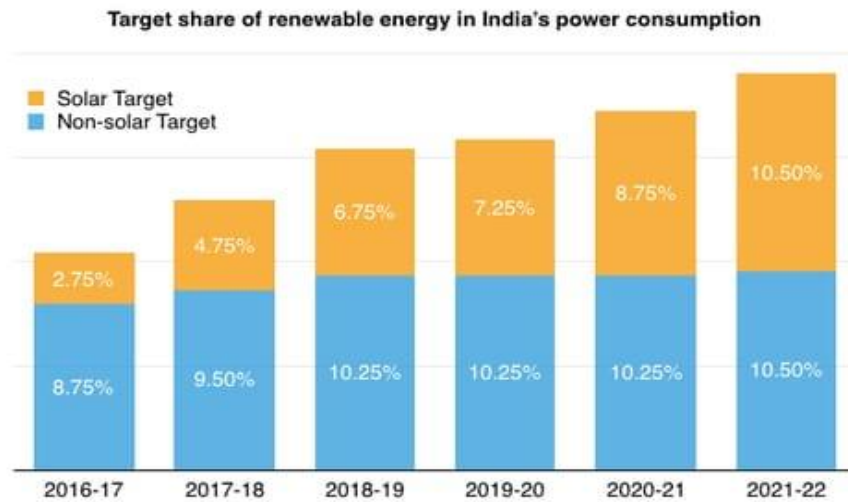


Fig 1.6 Solar Capacity

2.1 Over View In India

The Sun Has Been Worshipped As A Life-Giver To Our Planet Since Ancient Times. The Industrial Ages Gave Us The Understanding Of Sunlight As An Energy Source. India Is Endowed With Vast Solar Energy Potential. About 5,000 Trillion Kwh Per Year Energy Is Incident Over India's Land Area With Most Parts Receiving 4-7 Kwh Per Sq. M Per Day. Solar Photovoltaics Power Can Effectively Be Harnessed Providing Huge Scalability In India.

Solar Also Provides The Ability To Generate Power On A Distributed Basis And Enables Rapid Capacity Addition With Short Lead Times. Off-Grid Decentralized And Low-Temperature Applications Will Be Advantageous From A Rural Electrification Perspective And Meeting Other Energy Needs For Power And Heating And Cooling In Both Rural And Urban Areas. From An Energy Security Perspective, Solar Is The Most Secure Of All Sources, Since It Is Abundantly Available.

Theoretically, A Small Fraction Of The Total Incident Solar Energy (If Captured Effectively) Can Meet The Entire Country's Power Requirements.

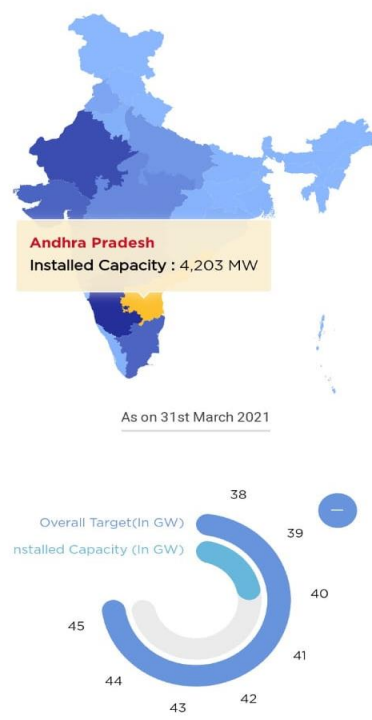


Fig 1.7 Installed Capacity Of Solar Panels

In Order To Achieve The Above Target, Government Of India Have Launched Various Schemes To Encourage Generation Of Solar Power In The Country Like Solar Park Scheme, VGF Schemes, CPSU Scheme, Defence Scheme, Canal Bank & Canal Top Scheme, Bundling Scheme, Grid Connected Solar Rooftop Scheme Etc. Various Policy Measures Undertaken Included Declaration Of Trajectory For Renewable Purchase Obligation (RPO) Including Solar, Waiver Of Inter State Transmission System (ISTS) Charges And Losses For Inter-State Sale Of Solar And Wind Power For Projects To Be Commissioned Up To March 2022, Must Run Status, Guidelines For Procurement Of Solar Power Through Tariff Based Competitive Bidding Process, Standards For Deployment Of Solar Photovoltaic Systems And Devices, Provision Of Roof Top Solar And Guidelines For Development Of Smart Cities, Amendments In Building Bye-Laws For Mandatory Provision Of Roof Top Solar For New Construction Or Higher Floor Area Ratio, Infrastructure Status For Solar Projects, Raising Tax Free Solar Bonds, Providing Long Tenor Loans From Multi-Lateral Agencies, Etc.



Recently, India Achieved 5th Global Position In Solar Power Deployment By Surpassing Italy. Solar Power Capacity Has Increased By More Than 11 Times In The Last Five Years From 2.6 GW In March, 2014 To 30 GW In July, 2019. Presently, Solar Tariff In India Is Very Competitive And Has Achieved Grid Parity.

2.2 India's Solar Capacity : Milestones And Challenges

The story so far : india added a record 10 gigawatt (gw) of solar energy to its cumulative installed capacity in 2021. This has been the highest 12-month capacity addition, recording nearly a 200% year-on-year growth. India has now surpassed 50 gw of cumulative installed solar capacity, as on 28 february 2022. This is a milestone in india's journey towards generating 500 gw from renewable energy by 2030, of which 300 gw is expected to come from solar power. India's capacity additions rank the country fifth in solar power deployment, contributing nearly 6.5% to the global cumulative capacity of 709.68 gw.



Fig 1.8 Solar Capacity Milestones And Challenges

Why Is India Falling Short In Roof-Top Solar Installations?

The Steep Rise In Large, Ground-Mounted Solar Energy Is Indicative Of The Strong Push Towards Increasing The Share Of Utility-Scale Solar Projects Across The Country. RTS Deployment Stands At 6.48 GW In 2021, Far Short On The Union Government's Target Of 40 GW Of RTS By End 2022. The Large-Scale Solar PV Focus Fails To Exploit The Many Benefits Of Decentralised Renewable Energy (DRE) Options, Including Reduction In Transmission And Distribution (T&D) Losses. One Of The Primary Benefits Of Solar PV Technology Is That It Can Be Installed At The Point Of Consumption, Significantly Reducing The Need For Large Capital-Intensive Transmission Infrastructure. This Is Not An Either/Or Situation; India Needs To Deploy Both Large And Smaller-Scale Solar PV, And Particularly Needs To Expand RTS Efforts.

The List Of Top Solar Companies [Manufacturers] In India:

1 . Waaree Energies Ltd

Waaree Energies Ltd., Founded In 1989, Is A Mumbai Based Company Having A Significant Presence Of Over 360+ Locations In India And 68 Foreign Countries

Tata Power Solar Systems

This Solar Power Company Remains An Eminent Leader In Manufacturing One Of The Best Solar Panels In India The Company Boasts A Stronghold On Residential Rooftop Solar Units And Has Shipped About 1.4 GW Of Solar Modules Worldwide Over The Past 20 Years.

Vikram Solar

Serving Over Six Continents, Vikram Solar Is One The Largest Solar Energy Companies Providing Mono And Bifacial Solar Panel Modules. They Have Installed & Commissioned Over 1355 MW Of Solar Projects Across India. They Have Over 1 GW Solar Panel Manufacturing Capacity And A 10 Kw Floating Solar Plant In Kolkata.

Adani Solar

A Subsidiary Of Adani Enterprises Ltd., Adani Solar Belongs To The 15 Largest Utility Solar Power Developers Worldwide. They Manufacture Solar Cells And Modules With 1.5 GW+ Of Cell And Module Capacity At Mundra, Gujarat. Adani Solar Is One Of The Largest Solar Panels Installers In India



Fig 1.9 Solar Panels Brands

Chapter - 3

Solar Panels Advantages And Disadvantages :

When considering a solar panels installation, it is essential for you to take a look at the pros and cons of solar energy.

Before going into more detail on each pro and con, let's first look at a list of some of the notable pros and cons of using solar energy :

3.1 Pros Of Solar Energy:

Solar Panel Installation Comes With A Number Of Benefits. Some Advantages Of Solar Energy Include:

- 1.Reduced Electric Bill
- 2.Insurance Against Rising Energy Costs
- 3.Cheaper Power Source
- 4.Return On Investment
- 5.Environmentally Friendly
- 6.Energy Independence

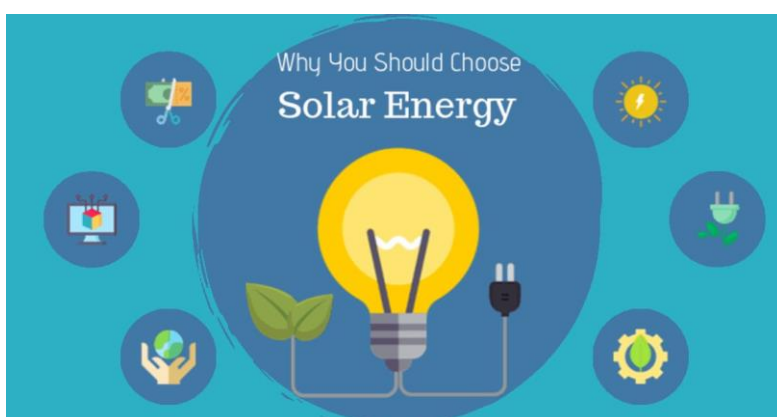


Fig 2.0 Advantages Of Solar Panels

3.2 Cons Of Solar Energy:

Ok, so we've looked at the solar energy advantages, it's time for you to get familiar with the solar power disadvantages.

As with everything, there are disadvantages of solar which include:

- 1.High initial cost
- 2.Intermittent energy source
- 3.Uses a lot of space
- 4.Small amount of pollution during manufacture, transport and installation
- 5.Not ideal if you plan on moving house
- 6.Location of solar cells

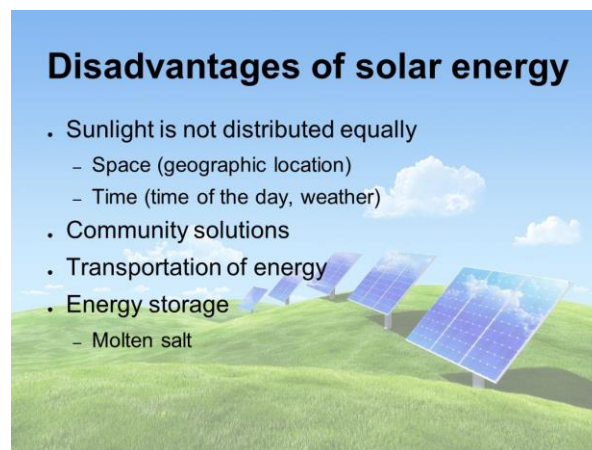


Fig 2.1 Disadvantages Of Solar

3.3 Solar Panel Working Process :

Solar power is harnessed using solar photovoltaic (pv) technology that converts sunlight (solar radiation) into electricity by using semiconductors. When the sun hits the semiconductor within the pv cell, electrons are freed and bus bars collect the running electrons which results in electric current. When we place solar panels connected in a calculated manner in the sunlight, they start producing current and voltage .

In the form of direct current (dc) but in most of the countries in the world appliances and equipment runs on alternative current (ac) so we need to connect to all solar panels to an inverter which then converts dc into ac for home use.

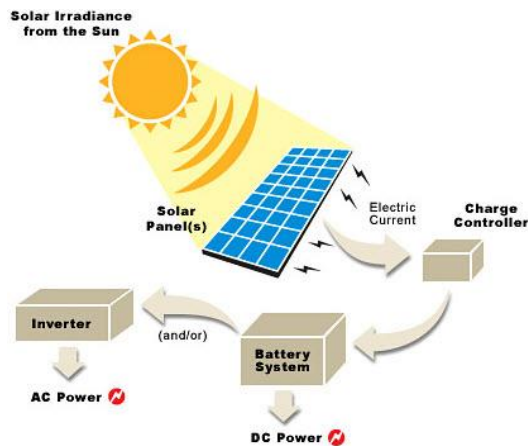


Fig 2.2 process of solar energy

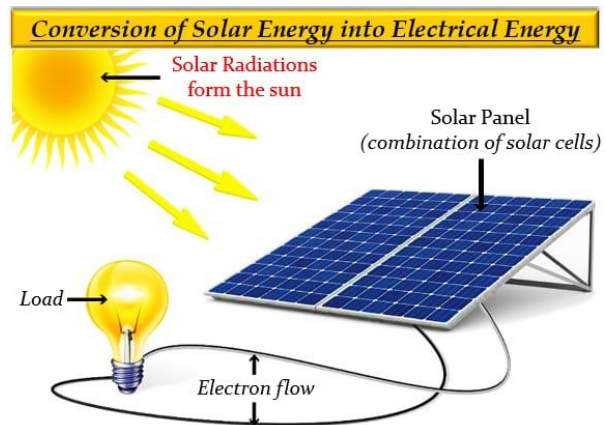


fig 2.3 solar energy into electrical energy

Farmer's guide to going solar :

A growing number of farms and agricultural businesses are looking to solar to power their daily operations. Thanks in part to the solar energy technologies office's investments, the cost of going solar has declined, enabling more installations across the country. Consider these questions to help you determine what's best for you and your farm.

Q .my farmland floods in the spring. Can i still install solar pv?

Solar can be installed in flood plains, but all electrical equipment will have to be installed above the projected level of flooding. Raising equipment could increase the cost of installation and may negatively impact the project economics. Also, the cost of insurance will be higher for pv systems in a flooding area. An area that will not be flooded may be better suited for pv installation



Fig 2.4 farmland floods

3.4 solar panels lifespan

Q.how long do solar panels last ? Solar panel lifespan explained ?

The industry standard for a solar panel's productive lifetime is 25-30 years. However, a solar panel won't die after 25-30 years, rather, their output will decrease a significant amount below what the manufacturer projected. It's hard to understand the upfront cost of going solar without knowing how long you can expect your rooftop panels to produce ample energy.

Your solar panels will be able to offset your electricity use for decades, but it is also important to understand industry projections and degradation rates.

Q.what is the life expectancy of a solar panel?

As a general rule, the average lifespan for solar panels is about 25-30 years. However, this doesn't mean that they stop producing electricity after 25 years – it just means that energy production has declined by what manufacturers consider to be a significant amount.

Their life expectancy, however, will be much longer. Solar panels will continue to work for many decades, given they aren't physically damaged by wind, debris, or any other external factors. This is primarily because solar panels don't have any moving parts – they rarely break from within and are usually only damaged by outside forces like a poor racking setup or inclement weather.

Q.how often do you replace solar panels?

The industry standard for most solar panels' lifespans is 25 to 30 years. Most reputable manufacturers offer production warranties for 25 years or more. The average break even point for solar panel energy savings occurs six to 10 years after installation.

Solar panel degradation over 25 years: 6 kW in MA

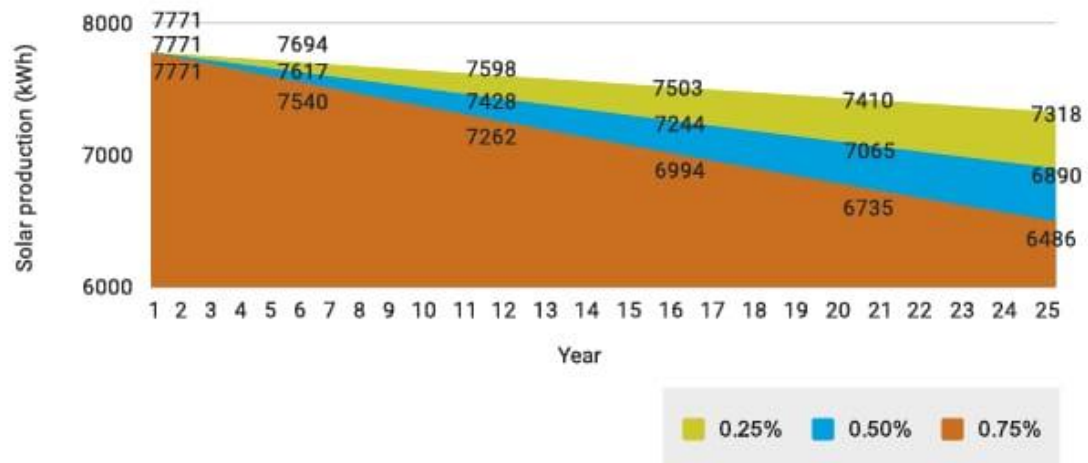


Fig 2.5 Solar Panel Degradation

CHAPTER - 4

PROJECT IMPLEMENTATION

4.1 RESEARCH SURVEY WORK

When we started with our survey what they were assigned to our team . We selected some areas which are near to our college locality . We went to their homes and asked about “ solar panels “.and we collected that data what they answered . And what we questioned them , they cooperated with us and they give their honest answers. And we also tried to taught them how to install “**solar panes**”

And we also discussed the advantages of the “ solar panels “

SOME OF THE INFORMATION WHAT WE GATHERED IN SURVEY FROM FAMILIES

(1) Name : A.Hanumanth Rao
Village : Venkateshwara Nagar
Model No : Aswp 5000
Model Name : Atil 3hp
Rated O/P Volt : 350v-440v Ac
O/P Current : 7amp
Subsidy : 50,000/-

A.Hanumanth Rao A Farmer ,They Having Solar Panels At Their Fields . They Installed Solar Panels Because Of To Reduce Electricity , And For Water Purpose.

QUESTIONS ,WHAT WE ASKED

- 1) How This Photovoltaic Cell's Working ? And Did You Get Any Problems ?
- 2) Was This Solar Panels Helping For You ?

WHAT THEY SAID

- 1) Working Good , Without Any Problem.

2) YES. This Panels Are Helpful At The Water Purpose At The Fields.



(2) Name : CH.Radha KRISHNA

Village : Venkateswar NAGAR

Motor Pump : 5hp (3hp A.C)

Pump Controller : 5hp (Mppt)

Years : 4 Years (Subsidy)

Panel Cost : 60,000/-

CH.Radha Krishna A Farmer , They Are Installed Solar Panels At Their Fields .

For Water Purpose. And To Reduce The Electricity.

QUESTIONS , WHAT WE ASKED

1) How This Panels Working ? Good Or Bad ?

2) Did You Get Any Problems , After Installation Of Solar Panels ?

3) Was This Solar Panels Helping To You ?

WHAT THEY SAID

- 1) They Working Good
- 2) NO , We Don't Get Any Problems
- 3) YES , This Panels Are Very Helpful At The Water Purpose



- (3) Name : K. Srinivasulu
- Home No. : 2-72
- Street : Shanti Nagar
- Current Bill : 1,000/- Per Month

They Don't Have Solar Panels At Their House , And They Don't Have Agriculture Lands .

WHAT WE ASKED

- 1) Why Don't You Install Solar Panels ?

WHAT THEY SAID

- 1) Because Of Money Problem.

SUGGESTIONS GAVE BY WE :

- 1.Gives You Control Over The Electricity.

2.Saving Money3.And Low Maintenance



(4) Name : Rama Rao

House No : 20-206

Street : Shanti Nagar

Current Bill : 700/- Per Month

They Don't Have Solar Panels At Their House.

1) Reason Behind Why Didn't They Put Solar Panels ?

A) Because Of Money Problem.

And They Don't Have Agriculture Lands And Also Having Inverter .



2) Are You Planning To Install A Solar Panels At Your House ?

A) They Said , As Of Now No Idea.

SUGGESTIONS GAVE BY WE

1) Reduce The Electricity Bill.

2) Saving Money.

3) Low Maintenance.

(5) Name : CH.Anjaneyulu

House No : 20-206,2

Current Bill : 1,000/- Per Month.

They Also Having Ac , Refrigerator .

And They Don't Have Also Agriculture Lands , They Have (General Store)



1) What Is The Reason For Not Installing Solar Panels ?

A) Because Of Money Problem.

SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity
- 2) And It Can Produces Around 3KWH Per Day
- 3) And Also Solar Heating , Solar Charging

(6) Name : V.Benzman Raju

Street Name : Shanti Nagar

House No : 272

Current Bill : 600/- Per Month

And They Having Inverter Also. And They Don't Have Agriculture Lands.

WHAT WE ASKED

- 1) What Is The Reason For Not Installing Solar Panels At Your House ?
- 2) Are You Planning To Install Solar Panels At Your House ?

WHAT THEY SAID

- 1) Because Of Money Problem.
- 2) They Said , As Of Now No Idea.



SUGGESTIONS GAVE BY WE

- 1) To Reduce The Electricity Bill
- 2) Saving Money
- 3) Low Maintenance

(7) Name : V.Srinivasulu

House No : 691-100

Street Name : Shanti Nagar

Current Bill : 800/- Per Month

And They Having 2 Refrigerators And They Don't Have Agriculture Lands.

They Have Medical Store. They Don't Have Solar Panels.

WHAT WE ASKED

- 1) What Is The Reason For Not Installing Solar Panels At Your House ?
- 2) Are You Planning To Install Solar Panels At Your House ?

WHAT THEY SAID

- 1) Because Of Money Problem.
- 2) They Said , As Of Now No Idea



SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity
- 2) And It Can Produces Around 3KWH Per Day
- 3) And Also Solar Heating , Solar Charging
- 4) Low Maintenance

(8) Name : SK.Karimulla
House No : 1-66
Street Name : Chinthala Colony Road
Current Bill : 150/- Per Month

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands

1) Reason Behind Why Didn't They Put Solar Panels ?

A) Because Of Money Problem.

2) Are You Planning To Install Solar Panels At Your House ?

A) They Said , As Of No Idea.



SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity
- 2) And Also Solar Heating , Solar Charging
- 3) Low Maintenance

(9) Name : CH. Durga Rao

House No : 6-242

Current Bill : 0 (Sc Cast)

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands .
They Having Fridges , Tv , Fans , Lights .

WHAT WE ASKED

- 1) What Is The Reason For Not Installing Solar Panels At Your House ?
- 2) Are You Planning To Install Solar Panels At Your House ?

WHAT THEY SAID

- 1) Because Of Money Problem.
- 2) They Said , As Of Now No Idea



SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity
- 2) And It Can Produces Around 3KWH Per Day
- 3) And Also Solar Heating , Solar Charging
- 4) Low Maintanence

(10) Name : Rajesh

House No : 2-113

Current Bill : (2- Meters) 600 , 300 /- Per Month

They Have Agriculture Lands , But They Don't Install Solar Panels At Their Fields .

And They Having Refrigerators , Tv , Lights.

1) Reason Behind Why Didn't They Put Solar Panels ?

A) Because Of Money Problem.

2) Are You Planning To Install Solar Panels At Your House And Your Field



SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity Bill.
- 2) Saving Money.
- 3) Low Maintenance

(11) Name : S.Pawan

House No : 231-220

Street Name : Ashok Nagar

Current Bill : 1500-2000/- Per Month

And They Having Ac , Fridges , Inverter , And Also Borewells.

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands .

WHAT WE ASKED

- 1) What Is The Reason For Not Installing Solar Panels At Your House ?
- 2) Are You Planning To Install Solar Panels At Your House ?

WHAT THEY SAID

- 1) Because Of Money Problem.
- 2) They Said , As Of Now No Idea



SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity
- 2) And It Can Produces Around 3KWH Per Day
- 3) And Also Solar Heating , Solar Charging
- 4) Low Maintanence

(12) Name : M.Jaya Sri

House No : 16-35

Current Bill : 1600/- Per Month

They Having Refrigerators , Fans , Bulbs .

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands .
And Having Bore Wells.

1) Are You Planning To Install Solar Panels At Your House ?

A) They Said , As Of No Idea.



SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity Bill.
- 2) Saving Money.
- 3) Low Maintenance

(13) Name : K.Lakshmi

House No : 18-45

Electricity Bill : 300/- Per Month

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands .

1) Are You Planning To Install Solar Panels At Your House ?

A) They Said , As Of No Idea

SUGGESTIONS GAVE BY WE

- 1) Gives You Control Over The Electricity Bill.
- 2) Saving Money.
- 3) Low Maintenance



(14) Name : SK.Inthiaz
House No : 1-16
Electricity Bill : 450/- Per Month

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands

QUESTIONS WHAT WE ASKED AND WHAT THE SAID

1) Reason Behind Why Didn't They Put Solar Panels ?

A) Because Of Money Problem.

2) Are You Planning To Install Solar Panels At Your House ?

A) They Said , As Of No Idea.

And They Having Bulbs , Refrigerators , Fans .

SUGGESTIONS GAVE BY WE

1) Gives You Control Over The Electricity

2) And It Can Produces Around 3KWH Per Day

3) And Also Solar Heating , Solar Charging

4) Low Maintenance



(15) Name : J.Shiva

House No : 2-32

Current Bill : 800/-

They Don't Have Solar Panels At Their House. And They Don't Have Agriculture Lands .

1) Are You Planning To Install Solar Panels At Your House ?

A) They Said , As Of No Idea

WHAT WE ASKED

1) What Is The Reason For Not Installing Solar Panels At Your House ?

2) Are You Planning To Install Solar Panels At Your House ?

WHAT THEY SAID

1) Because Of Money Problem.

2) They Said , As Of Now No Idea.

SUGGESTIONS GAVE BY WE

1) Gives You Control Over The Electricity Bill.

2) Saving Money.

3) Low Maintenance



CHAPTER - 5

CONCLUSION :-

This Photovoltaic Effect Is Capable Of Large-Scale Electricity Generation. However, The Present Low Efficiency Of Solar PV Cells Demands Very Large Areas To Supply Electricity Demands.

Renewable Technologies Are Considered As Clean Sources Of Energy And Optimal Use Of These Resources Decreases Environmental Impacts, Produces Minimum Secondary Waste And Are Sustainable Based On Solar Energy Is A Clean, Pollution Free And Renewable Source Of Energy. Development Of This Source Of Energy Requires An Accurate Detailed Long-Term Knowledge Of The Potential Taking Into Account Seasonal Variations.

The Region Of The Earth Between The Latitudes Of 40°N And 40°S Is Generally Known As The Solar Belt And This Region Is Supposed To Be With An Abundant Amount Of Solar Radiation. Karnataka Being Located Between Latitudes 11°40'N And 18°27'N Has A Geographic Position That Favours The Harvesting And Development Of Solar Energy. Karnataka Receives Global Solar Radiation In The Range Of 3.8–6.4kwh/M². Global Solar Radiation During Monsoon Is Less Compared To Summer And Winter Because Of The Dense Cloud Cover. The Study Identifies That Coastal Parts Of Karnataka With The Higher Global Solar Radiation Are Ideally Suited For Harvesting Solar Energy.

The Energy Of Light Shifts Electrons In Some Semiconducting The Current And Future Economic And Social Needs.

“USE SOLAR FOR BRIGHT FUTURE”

The Bright Future Of Solar Power

Solar Power Is Now Cheaper Than Coal In Some Parts Of The World, And Generating Power From The Sun Is Likely To Be The Lowest-Cost Energy Option Globally In Less Than Ten Years, According To Bloomberg. In Many Places Around The World, Solar Is Already The Lowest-Cost Option.

Solar Power For Every Home

Sunflare, A Los Angeles-Based Startup, Is Looking To Become The Next Solar Heavyweight With Its Lightweight Panels. Compared To Conventional Solar Panels, Sunflare’s Panel Products Have The Same Metallic Blue Look, But Not Much Else In Common.

Suggestions given by us:-

- Save money on your electric bill
- Increase your home’s value
- Offset rising electricity costs
- Advance clean energy technology
- Support the local economy
- Boost clean energy in the grid
- Long life span with low maintenance

RESULT :-

We Have Successfully Completed Our “**COMMUNITY SERVICE PROJECT**” .Which Was Given To Us By Our Respective H.O.D Sir And Respective Project Incharge .Without Any Kind Of Parallel Errors.

TOP 10 SOLAR PANELS INASTALLED STATES

- | | | | | |
|-------------|-------------------|----------------|------------------|--------------|
| 1.Karnataka | 2.Telangana | 3.Rajasthan | 4.Andhra Pradesh | 5.Tamil Nadu |
| 6.Gujarat | 7. Madhya Pradesh | 8. Maharashtra | 9. Uttar Pradesh | 10.Punjab |

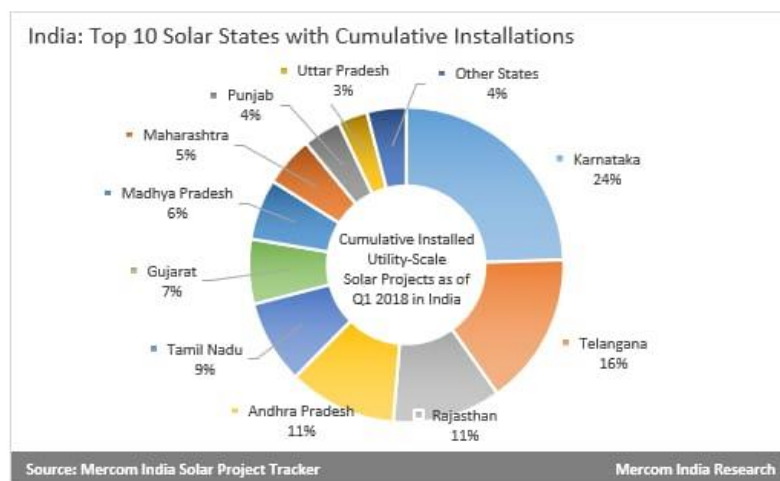


Fig 2.6 Top 10 Solar States With Cumulative Installation

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