What is daily global solar radiation?

=The solar radiation that reaches the Earth's surface without being diffused is called direct beam solar radiation. The sum of the diffuse and direct solar radiation is called global solar radiation.
Atmospheric conditions can reduce direct beam radiation by 10% on clear, dry days and by 100% during thick, cloudy days.

What is diffuse solar radiation ?

= Diffuse sky radiation is solar radiation reaching the Earth's surface after having been scattered from the direct solar beam by molecules or particulates in the atmosphere. It is also called sky radiation, the determinative process for changing the colors of the sky.

Solar Water Heater.

= Usage of solar water heater for any application where steam is produced using a boiler or steam generator can save 70-80% of electricity or fuel bills. A residence can save 70-80% on electricity or fuel bills by replacing its conventional water heater with a solar water heating system. Solar water heaters are known to have the fastest repayment of investment in 2 to 4 years depending upon use and fuel replaced.

Working Of a Solar Water Heater

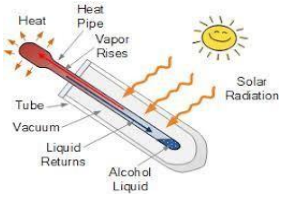
= The Sun's rays fall on the collector panel (a component of solar water heating system). A black absorbing surface (absorber) inside the collectors absorbs solar radiation and transfers the heat energy to water flowing through it. Heated water is collected in a tank which is insulated to prevent heat loss. Circulation of water from the tank through the collectors and back to the tank continues automatically due to thermo siphon system. Based on the collector system, solar water heaters can be of two types: A solar water heater consists of a collector to collect solar energy and an insulated storage tank to store hot water. The stored hot water can be used later any time.

Main Components Of Solar Water Heating System.

= Solar Collector(to collect solar energy) Insulated tank (to store hot water) Supporting stand
Connecting pipes and instrumentation etc.

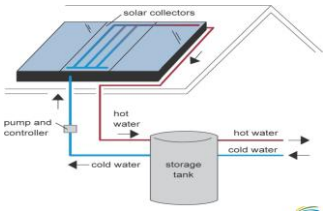
Evacuated tube collectors (ETC)

= Evacuated tube collectors are a way in which heat loss to the environment, inherent in flat-plates, has been reduced. Since heat loss due to convection cannot cross a vacuum, it forms an efficient isolation mechanism to keep heat inside the collector pipes. Since two flat sheets of glass are normally not strong enough to withstand a vacuum, the vacuum is rather created between two concentric tubes. Typically, the water piping in an ETC is therefore surrounded by two concentric tubes of glass with a vacuum in between that admits heat from the sun (to heat the pipe) but which limits heat loss back to the environment. The inner tube is coated with a thermal absorbent.



Flat plate solar collector.

= Flat-plate solar collectors usually have three main components: A flat metal plate that intercepts and absorbs solar energy. A transparent cover that allows solar energy to pass through the cover and reduces heat loss from the absorber. A layer of insulation on the back of the absorber to reduce heat loss.



install solar water heater.

= 1.Mount the solar collectors:

the first step is to put the solar collectors in place on your roof.

2. Install the storage tanks and heat exchanger:

your collectors need a storage tank where they can send their heated antifreeze transfer fluid.

3. Install piping systems for the antifreeze fluid:

In order to connect your collectors to the heat exchanger and storage tanks, your installer will run flexible piping from your roof to your new storage tank or tanks.

4. Install water transport pipes :

As with antifreeze fluid, water needs to be cycled through your new solar hot water setup. Water transport lines, usually in the form of copper piping, need to be run from your storage tank to the rest of your home.

5. Install control systems:

Two temperature sensors have to be connected with wiring and installed along your hot water system.

6 Insulate the system:

Once all of the pieces are in place, the last step in any solar hot water job is to insulate each part. Your installer will plug holes in your roof, insulate piping, and double check that connections between components are sealed. Any energy lost along the piping systems or within the storage tank itself is lost savings, so it is vital to insulate your system properly.

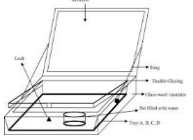
What is a solar cooker

A solar cooker can be defined as a device that can use direct sunlight as a source of energy and
is used for cooking. It works on the principle of the conversion of sunlight into heat energy In simple words, the sunlight heats the pot, it lights energy into heat energy, which is used for cooking food, or for pasteurizing the drink or any other food material **Types of solar cookers**

The basic structure of a solar cooker consists of a pan or pot and a mirror is a must.However basis on the structure of the solar cooker,there are mainly two types of solar cookers,Box type and Parabolic type

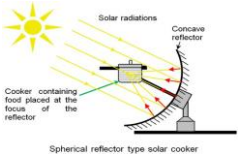
Box Type solar cooker

In this type of solar cooker, the heat gets reflected into a box, then it is trapped by the glass on the top and creates a greenhouse effect and in that process, the heat is produced. With using, this heat the food is cooked The most used type of solar cooker is a box type. It has a basic structure and three main components are used for making the solar cooker. One metal box is painted black from the inside, and very importantly a glass sheet, a plane mirror that will work as a reflector.



Parabolic type solar cooker

In parabolic type solar, where the cooking utensil is housed, the heat converges in that single
point. The solar cooker heats up and it helps in cooking. A solar thermal collector is used for cooking food and pasteurising the water It can heat up in a very short time. This type of solar cooker is used since ancient times. It is believed that the idea of curving a mirror comes from the greek and roman civilisations.



Spherical reflector type solar cooker

construction and working of Stirling engine?

=A Stirling engine is an external combustion engine that creates work by utilizing a temperature gradient within a cylinder to drive a piston. These engines are attractive options for green technologies because the temperature differential can be produced by a variety of heat sources.The concentrated solar energy drives Stirling cycle engine, which operates by letting heat flow from a hot source to a cold sink to do work. The work output of the Stirling cycle then drives a generator to create electric power.

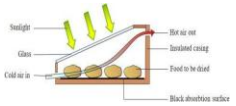
Advantages and disadvantages of solar cooker As the sunlight cannot work directly, it needs heat conversion as the light waves interact with the molecules of the substance that is the solar cooker. Many advantages of a solar cooker makes it popular. **Advantages of solar cooker**: The solar cooker can be made at a bare minimum cost and with fewer components. This is the main reason why it is so popular. As it does not need fuels, on one hand, it saves money and on the other, it can reduce the pollution level for the betterment of our
environment. Solar energy is freely available, anyone can make it of use, and the very low management cost is making it affordable for everyone.

Disadvantages of solar cooker

As the solar cooker works only with solar energy, it becomes less effective on rainy days or even when it is cloudy outside.cooker is a very
time-consuming process compared to an oven and gas. In the time of preparing
thick dishes, it becomes difficult with solar cookers. Even strong wind can hamper the cooking process.

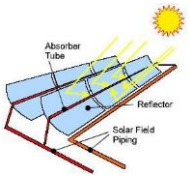
Solar dryer

Solar dryers are used to eliminate the moisture content from crops, vegetables, and fruits. The solar dryer consists of a box made up of easily available and cheap material like cement, galvanized iron, brick, and plywood. The top surface of the dryer is covered by transparent single and double-layered sheets. The inside surface is colored black to absorb the incoming solar radiation. Since the box is insulated, the inside temperature of the box is raised. The air is ventilated through the small holes at the top of the box. As the inside air gets warm, it rises by the natural circulation process and removes the moisture from the fruits, vegetables, and the crops placed in trays inside the box. To fill the vacuum, fresh air comes in by a forced draught process and the process continues.



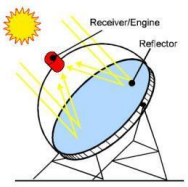
Parabolic Trough Systems:

In a parabolic trough CSP system, the sun's energy is concentrated by parabolically curved,
trough-shaped reflectors onto a receiver pipe – the heat absorber tube – running along about a meter above the curved surface of the mirrors. The temperature of the heat transfer fluid flowing through the pipe, usually thermal oil, is increased from 293ºC to 393ºC, and the heat energy is then used in the thermal power block to generate electricity in a conventional steam generator.

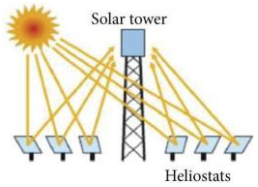


Parabolic Dish Systems:

A Parabolic dish system consists of a
parabolic-shaped point focus concentrator in the form of a dish that reflects solar radiation onto a receiver mounted at the focal point. These concentrators are mounted on a structure with a two-axis tracking system to follow the sun. The collected heat is typically utilized directly by a heat
engine mounted on the receiver moving with the dish structure. Dish can attain extremely high temperatures, and holds promise for use in solar reactors for making solar fuels which require very high temperatures. Stirling and Brayton cycle engines are currently favored for power conversion, although dish has been seldom deployed commercially for power generation.

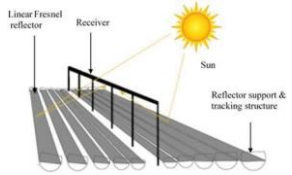


Concentrated center tower systems:
As the sun shines down on a solar tower's field of heliostats, each of those computer-controlled mirrors tracks the sun's position on two axes. The heliostats are set up so that over the course of a day, they efficiently focus that light towards a receiver at the top of the tower.



In their first iteration, solar towers used the sun's focused rays to heat water, and the resulting steam powered a turbine to create electricity. Newer models now use a combination of liquid salts, including 60% sodium nitrate and 40% potassium nitrate. These salts have a higher heat capacity than water, so some of that heat energy can be stored before using it to boil the water, which drives the turbines
.

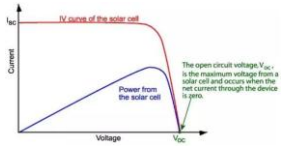
Fresnel reflector power plant
These reflectors use long thin, segments of mirrors to focus sunlight onto a fixed absorber. The absorbers are located at the focal point. The concentrated solar energy from the reflectors supply solar energy 30 times intense than the normal radiation. The energy is then transferred to the working fluid of the system.



CSP technologies use mirrors to reflect and concentrate sunlight onto a receiver. The energy from the concentrated sunlight heats a high temperature fluid in the receiver. This heat - also known as thermal energy - can be used to spin a turbine or power an engine to generate electricity.

The solar tracking system
= The solar tracking system, include a quadrate array of sensor made up of four Light Dependent Resistor, Potentiometer, Servo motors and a Microcontroller. The designed system has a maximum angle of tolerance to be 2 degrees for any noticeable response of the system to the movement of the sun.

MPPT.
= MPPT or Maximum Power Point Tracking is algorithm that included in charge controllers used for extracting maximum available power from PV module under certain conditions. The voltage at which PV module can produce maximum power is called maximum power point (or peak power voltage).



solar tilt angle.
=Solar PV tilt angle is defined as the number of degrees from the horizontal plane, another definition it is slope angle at which solar panels are mounted to face the sun. The fixed angle is location specific because it depends on the daily, monthly and yearly location of the sun.

Off-grid systemsApplications.
=Electricity supply in rural and remote areas: Off-grid solar systems can facilitate independent, long-term and sustainable electricity generation in rural and remote areas.
Power back up in areas with frequent electricity cuts: A number of places in India face frequent power cuts due to power transmission malfunctions, which can hamper operations of companies and public institutions. Off-grid solar systems can provide an economical and viable long-term backup solution to overcome the problems occurring during frequent power cuts.

What is PV system solar?
=Photovoltaic materials and devices convert sunlight into electrical energy. PV materials and devices convert sunlight into electrical energy. A single PV device is known as a cell.
What are the types of solar PV systems?
=There are three main types of solar PV systems. On-Grid Solar System,Hybrid Solar System and Off-Grid Solar System.
Difference between PV and solar panels?
=Photovoltaic panels are installed for the conversion of thermal energy into electricity, while solar panels convert solar radiation into heat. This is why these solutions do not compete with each other. Instead, they may complement each other.

Construction of Solar Cell
=A solar cell is basically a junction diode, although its construction it is little bit different from conventional p-n junction diodes. A very thin layer of p-type semiconductor is grown on a relatively thicker n-type semiconductor. We then apply a few finer electrodes on the top of the p-type semiconductor layer.These electrodes do not obstruct light to reach the thin p-type layer. Just below the p-type layer there is a p-n junction. We also provide a current collecting electrode at the bottom of the n-type layer.

Working Principle of Solar Cell.
=Solar cells convert the energy in sunlight to electrical energy. Solar cells contain a material such as silicon that absorbs light energy. The energy knocks electrons loose so they can flow freely and produce a difference in electric potential energy, or voltage.The flow of electrons or negative charge creates electric current. Solar cells have positive and negative contacts, like the terminals in a Battery. If the contacts are connected with a conductive wire, current flows from the negative to positive contact.

Series connection of PV panels
=Just like a battery, the wire from the positive terminal of one solar panel is connected to the negative terminal of the next panel.solar panels have two terminals,one positive and one negative. When you connect the positive terminal of one panel to the negative terminal of another panel, you create a series connection. When you connect two or more solar panels like this, it becomes a PV source circuit
.
Parallel connection of solar cells.
=The current is additive, when connecting solar panels in parallel, but the voltage stays the same.When connecting solar panels together in parallel, the total voltage output remains the same as it would for a single panel, but the output current becomes the sum of the amperage of each panel. Thus the effect of parallel wiring is that the voltage stays the same while the amperage adds up.

I-V characteristics of solar cell.
=Isc is the short circuit current and it is measured by short circuiting the terminals. Voc is the open circuit voltage and it is measured when no load is connected. Pm is maximum power, Im is maximum current, Vm is maximum voltage and it occurs at the bend of the characteristic curve.
PV characteristics of solar cell
=PV cell is a semiconductor specialized diode, which transforms visible light into direct current (DC). Any PV cells can also transform radiation from infrared to ultraviolet (UV) to control DC. Photovoltaic cells are a feature of solar power systems.

OFF Grid System Advantages:
=1.These self-sustainable systems can work independently and do not rely on the grid.
2. They generate enough power that can be stored and used at night or when the power grid is down.
3. These are ideal for remote areas where there is no power access from the grid.
4. Grid failures and shutdowns will not affect your power supply.
Advantages of ON Grid System:
= •On-grid solar systems are very cost-effective and easy to install.
•Businesses can recoup the cost of their investment by offsetting electricity bills in just 3-8 years. If a private, commercial or industrial building sets up a solar PV rooftop system it will be eligible to avail an 'Accelerated Depreciation Benefit' which is currently 80% in a year. At this rate, a business can completely depreciate the whole value of the project in approximately 4 years.
•Residential users and business owners can earn a passive income for the surplus energy generated by the system.

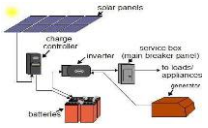
Advantages of Solar Cell. No pollution associated with it. It must last for a long time.
No maintenance cost. **Disadvantages of Solar Cell.** It has high cost of installation. It has low efficiency.
During cloudy day, the energy cannot be produced and also at night we will not get solar energy.

Solar street lighting system
=Solar street lighting system uses the photovoltaic technology to convert the sunlight into DC electricity through solar cells. The generated electricity can either be used directly during the day or may be stored in the batteries for use during night hours.
Parts of a solar street lighting system
=Solar photovoltaic module,Battery box,Lamp with charge controller and Lamp post.

A rooftop solar power system
=A rooftop solar power system, or rooftop PV system, is a photovoltaic (PV) system that has its electricity-generating solar panels mounted on the rooftop of a residential or commercial building or structure.The various components of such a system include photovoltaic modules, mounting systems, cables, solar inverters and other electrical accessories.Rooftop mounted systems are small compared to utility-scale solar ground-mounted photovoltaic power stations with capacities in the megawatt range, hence being a form of distributed generation. Most rooftop PV stations are Grid-connected photovoltaic power systems.

Solar panel array
=A solar array starts with solar cells – or photovoltaic cells – which are then grouped together to make solar panels. This group of solar panels is called an array.Usually not more than 20 solar panels are connected in one string, even though the latest solar inverter models allow more solar panels to be connected per string.
Solar panel junction box.
=Junction boxes protect the electrical connections from the weather, as well as protecting people from accidental electric shocks.
solar battery.
=solar battery is a device that you can add to your solar power system to store the excess electricity generated by your solar panels. You can then use that stored energy to power your home at times when your solar panels don't generate enough electricity, including nights, cloudy days, and during power outages.
solar charge controller.
= solar charge controller is used to keep the battery from overcharging by regulating the voltage and current coming from the solar panel to the battery. **Inverter for solar system**
=inverter is one of the most important pieces of equipment in a solar energy system. It's a device that converts direct current (DC) electricity, which is what a solar panel generates, to alternating current (AC) electricity, which the electrical grid uses.

Off grid solar system layout.
=



Off-grid systems.
=Off-grid systems work independently of the grid but have batteries which can store the solar power generated by the system. The system usually consists of solar panels, battery, charge controller, grid box, inverter, mounting structure and balance of systems. The panels store enough sunlight during the day and use the excess power generated in the night.
These systems are self-sustaining and can provide power for critical loads in areas where a power grid is not available. However, these systems require specialized equipment to function and can be costly to install. These are ideal for businesses which can sustain for a short period of time with no electricity.

Applications of ON grid system:
=Businesses can rely on on-grid solar systems to meet their daily requirements, as well as earn income from the excess power generated. On bright sunny days, buildings can generate enough solar energy to power appliances, lights, water heating systems, etc.

On-grid solar systems.
=On-grid solar power systems generate power using a solar power system and are directly connected to the utility power grid.These systems send excess power generated by the solar power system to the utility grid and consumers get compensated for the extra power fed back.These systems work in collaboration with the power grid. In the case when there is not enough sunlight to meet your business' needs, the system runs on the power supplied by the grid.These systems are best suitable when your power consumption is high and you wish to reduce your electricity bills.On-grid systems can be installed with or without net metering. Being connected to the main grid, these systems do not work during power outages.

Disadvantages of off-grid systems
= 1.Off-grid systems require you to purchase a backup battery which can be bulky and expensive.
2. Solar battery systems require regular maintenance
3. Off-grid options don't feature the feed-in-tariff as the system is not connected to the grid in any way

Advantages of photovoltaic systems
1. High reliability: Photovoltaic systems are still highly reliable even under harsh conditions. Photovoltaic arrays ensure continuous,
3. Low maintenance costs: Photovoltaic systems require only regular inspections and occasional repairs, which are extremely low cost compared to conventional fuel systems.
4. Zero fuel consumption: Photovoltaic systems do not require fuel and can eliminate associated procurement, storage and transportation costs.
5. Noise pollution is small: The photovoltaic system can operate quietly with minimal mechanical movement.
6. There is photovoltaic supervision: In order to improve energy efficiency, photovoltaic systems may need to add some modules.
7. Strong security: Photovoltaic systems do not require fuel and can be safely operated after proper design and installation..

Disadvantages of photovoltaic systems
1. High startup cost: Each PV installation should be economically evaluated and compared to existing alternatives. At present, the construction cost of photovoltaic systems is relatively high, but with the reduction of photovoltaic system construction costs and the rise of traditional energy prices, photovoltaic systems will have strong economic competitiveness.
2. Available solar radiation instability: For any solar system, weather changes will greatly affect the amount of electrical energy output. Therefore, the system design needs to be adjusted according to changes in climate and location.
3. Have energy storage requirements: Some photovoltaic systems use batteries as energy storage devices. This increases the footprint, cost and complexity of the system.
4. Efficiency needs to be improved: In order for PV systems to reflect cost-effectiveness, we need to use an efficient method to distribute the energy generated during use. However, they are now often used to power alternative inefficient appliances.

Signal conditioning system
= Signal conditioning is an electronic circuit that manipulates a signal in a way that prepares it for the next stage of processing. Many data acquisition applications involve environmental or mechanical measurement from sensors, such as temperature and vibration.

difference between parabolic trough and parabolic dish
=Parabolic trough is a line focus system which concentrate the heat of the sun on a series of long tube called heat collecting element whereas. parabolic dish is a point focus system that uses a prabolic shaped reflector to focus on single point.

Smart Grid System=A smart grid has been defined as (a network of) self-sufficient systems enabling the integration of power generation sources of any type and/or scale to the electrical grid that reduces the workforce and aims to offer safe, reliable, high-quality and sustainable electricity to consumers and organizations alike.
Electrical Grid System=Electrical grid or power grid is defined as the network which interconnects the generation, transmission and distribution unit. It supplies the electrical power from generating unit to the distribution unit. A large amount of power is transmitted from the generating station to load centre.

Disadvantages of on-grid systems
= 1.On-grid solar systems are battery-less and therefore not able to function or generate electricity during a blackout, due to safety reasons. As blackouts usually occur when the electricity grid is damaged – if the solar inverter was still feeding electricity into a damaged grid it would risk the safety of the people repairing the fault/s in the network.
2. They can't produce solar energy and reduce your power bill at night-time or when there's no sunlight.
3. They provide you with less incentive to conserve energy.

Types of solar inverter
There are three main types of solar inverter – string inverters, microinverters and power optimisers:
1. String inverters: String inverters are the oldest form of inverter, using a proven technology that has been in use for decades. Solar panels are arranged into groups or rows, with each panel installed on a 'string'. Multiple strings can be connected to a single inverter, which transforms the DC electricity produced by the panels into appliance-friendly AC electricity.
2. Micro inverters: Micro inverters are becoming a popular choice in residential solar systems. These are fitted to each individual solar panel and convert DC to AC on the roof, removing the necessity of a separate inverter.Because the conversion is performed this way, if one or more panels are affected by shade then it doesn't have an impact on the panels that are still in sunlight. It's also possible to monitor performance levels of every single solar panel.
3. Power optimisers: Offering many of the benefits of microinverters, but slightly less expensive, power optimisers are also located on each individual panel. But instead of converting DC to AC at roof level, they move the DC to a string inverter. With power optimisers, you should be able to monitor the performance of each panel via an online portal.

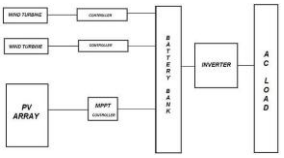
What is a solar inverter?
= A solar inverter is an electrical converter which changes the direct current (DC) electricity captured by solar panels, into alternating current (AC), which is the standard flow of electricity required for electrical circuits and domestic appliances.
How does Solar Inverter work?
Solar inverters work by doing the following:
1) DC electricity is channeled through a transformer.
2) The transformer lowers the voltage and changes to AC.
3) The DC runs through two or more transistors.
4) These are rapidly turned on an off to feed the two different sides of the transformer.

What are the benefits of solar battery storage?
Having solar battery storage helps you to have a reserve of energy. If power cuts are a regular occurrence in your area, with solar power, you will still be able to power your building.With solar battery storage, you will be more resilient to the effects of unforeseeable events,such as a power cut.

How to Install Solar Street Light.
=1. Installation of the Foundation.: To install the foundation of your solar street light, choose a level and flat ground, with no inclination
2. **Installation of the Battery and Battery Box:** Place the battery beside the Basis Cage,underground, at about 600 mm. Follow the electrical circuit diagram on how the battery will be connected.
3. **Setup the Street Lamp: A**..Lift the lamp pole off the ground for 1 meter, with the use of a supporting bench. **B.**Install and secure the Solar Bracket at the top of the lamp pole. **C**. Install the Light Fixture on the lamp pole.If electronic ballast is needed, place it inside the light fixture. **D.** Check installation and connections to confirm that everything is in the right place. **E.** Use a crane to erect the lamp pole.
F.Place the controller inside the lamp pole**.**

Working of Solar-wind Hybrid Systems: Solar-wind hybrid systems are basically an integration of solar panels and wind turbine, the output of this combination is used to charge batteries, this stored energy can then be transmitted to local power stations. In this system wind turbine can be used to produce electricity when wind is available and solar energy panels are used when solar radiations are available. Power can be generated by both the sections at the same time also. The usage of batteries is to provide uninterrupted power supply.

Solar-Wind Hybrid System
= Example of a hybrid energy system is a photovoltaic array coupled with a wind turbine.[7] This would create more output from the wind turbine during the winter, whereas during the summer, the solar panels would produce their peak output. Hybrid energy systems often yield greater economic and environmental returns than wind, solar, geothermal or trigeneration stand-alone systems by themselves.
A combine use of wind-solar systems results, in many places, to a smoother power output since the resources are anti-correlated. Therefore, the combined use of wind and solar systems is crucial for a large-scale grid integration.
Other solar hybrids include solar-wind systems.
The combination of wind and solar has the advantage that the two sources complement each other because the peak operating times for each system occur at different times of the day and year. The power generation of such a hybrid system is more constant and fluctuates less than each of the two component subsystems.



What is Net Metering?
Net Metering is a system that gives solar energy owners credits for the power that they add to the grid. When solar panels produce excess power, that power is sent to the grid. And this power can be 'taken back' when the solar plants are not functioning – example, during the night. When a unit of solar energy that has been 'net metered', the
bi-directional electricity meter will run backwards.
Customers are billed only for the 'net' energy use.

Net metering main features and working
= The process of net metering provides system owners with the opportunity to gain extra revenue by selling their excess power to the grid while also making up for shortfalls via the grid. If the amount of energy generated is more than the amount of energy consumed, then the owner gets compensated for the excess amount.

Advantages of Net Metering
= 1.Reduced electricity bills.
2. Benefit for the environment.
3. No need to install expensive battery storage system.
4. Take some pressure off electric grids.
5.Encourages customers to move towards renewable energy.
6.Preserves natural energy resources.

Disadvantage of net metering.
= The problem with net metering is that we are required to credit them with the retail rate of the power they generate, so the part they would have contributed for use of the grid goes away.

What is solar battery storage system?
A device that reserves energy for later consumption that is charged by a connected solar system. The stored electricity is consumed after sundown, during energy demand peaks, or during a power outage.
Most common on residential or commercial buildings.

Solar water heater mount in residential Building:
= 1. Mount solar collectors on your roof.
2. Install storage tanks & heat exchanger.
3. Install piping systems for transfer fluid:- Antifreeze fluid leaves from one pipe on the side of your collectors and runs down to the heat exchanger
4. Install water transport pipes.
5. Install control systems.
6. Insulate the system.

How Do Grid-Tied Inverters Work?
Grid-tied inverters are reliable, and table solar panels have photovoltaic modules. When sun rays fall on this panel, a direct current is generated through the photovoltaic process.This direct current or DC flows to a grid-tied inverter, converting it into alternating current or AC.This AC power or standard electrical current is transferred to the home's electrical service panel to power appliances.
Additionally.This whole concept of the grid-tied system is functional only in the presence of an electric grid.