

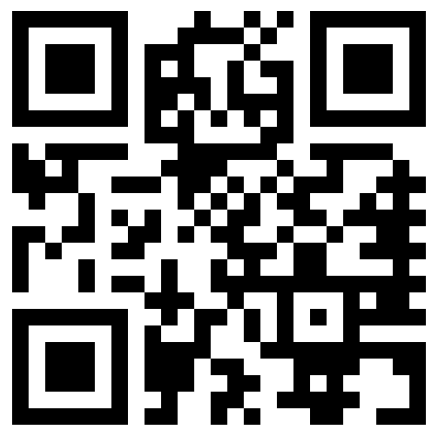


New Page Turners Limited.

"The Light of Wisdom"

**GO
GREEN ENERGY!**

PROFILE.



Green Energy!

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NEW PAGE TURNERS LIMITED is a forward-thinking, energetic, and dynamic electricity installation company that was established in Kenya under the Companies Act (Cap 486) Laws of Kenya to provide a wide range of innovative and cost-effective electrical service, products and maintenance.

The Company provides unrivaled nationwide service to its clients.

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NEW PAGE TURNERS GREEN ENERGY SOLUTIONS



OUR OBJECTIVE

By delivering reliable and sustainable **Green energy solutions** for productive commercial, industrial, agricultural, processing, commercial enterprises, industrial enterprises, and healthcare facilities, New Page Turners Limited aims to address the energy needs and offer reliable green energy solutions on **OFF GRID** and **ON GRID systems**, on **hybrid** and **standalone off grid power plants**. Our priority is to provide power to these facilities in a cost-effective and scalable manner, allowing them to operate smoothly, cost-effectively, and efficiently.



VISION

To be the most preferred electrical power line installation and maintenance partner in Kenya and beyond by providing high-quality, efficient, reliable, safe, and cost-effective services.

MISSION

To satisfy our clients' needs for electricity line construction services and **Green energy Solutions** by implementing efficient and consistent work practices in a safe and healthy environment for all of our employees and the community.



SOLAR LIGHT

Solar lighting absorbs solar radiation during the day and converts it to electrical energy using solar panels. A charge and discharge controller stores it in the battery bank. When the daylight gradually dims to about 10lux at night and the open circuit voltage of the solar panel is about 4.5V, the controller should detect this voltage value and then direct the battery to discharge and power the LED light source to achieve functional lighting.

SOLAR STREET LIGHTS

These bulk solar lights are primarily designed to illuminate large areas with the most intense light, such as Street Lighting, Roadway Lighting, Pathway Lighting, Ramp Lighting, and Sidewalk Lighting

SOLAR GARDEN LIGHTS

These solar lights with high luminous efficiency can be irradiated to a larger area when combined with a unique optical design. They are an excellent way to highlight the lovely landscaping in your garden.





OUR COMMITMENT



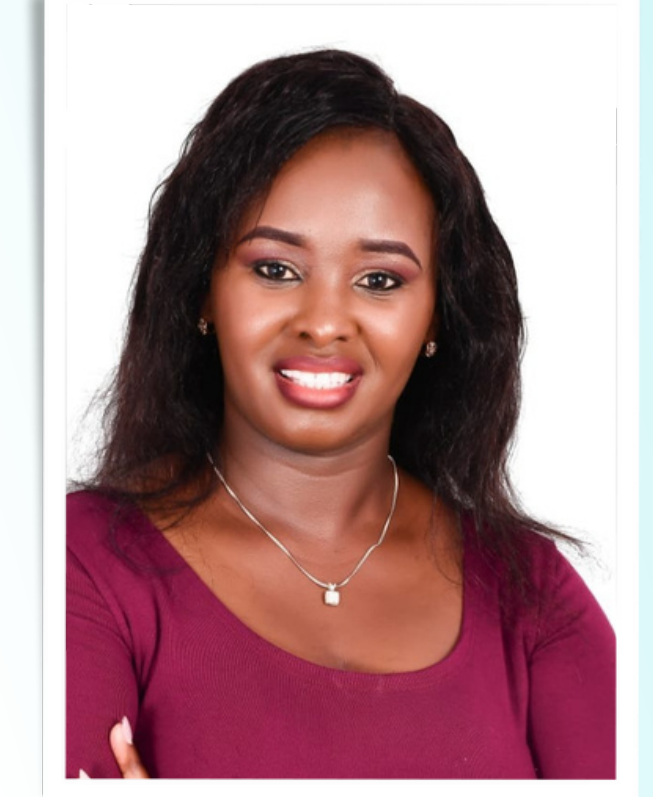
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DIRECTOR



MARY MUTHONI KABIRU
CUSTOMER SUCCESS &
BUSINESS DEVELOPMENT
DIRECTOR



JANE GICHUKA
FINANCE & ADMINISTRATIVE
DIRECTOR

We have undertaken to continue to satisfy our clients electrical line construction services and **Green Energy Solutions** through efficient and consistent work practices in a safe and healthy environment for all our employees and community, guided by our vision of providing reliable, safe, quality, and competitively priced, renewable energy solutions on OFF GRID , ON GRID systems, and hybrid electrical power installation services, electrical products and maintenance. Green energy is created with zero carbon emissions, providing the highest net environmental benefit.

SOLAR LIGHTS COMPONENTS



BATTERIES

Lead-acid batteries and **lithium batteries** are the two main types of batteries used in solar-powered lights.

Lead-acid batteries have been used in solar lighting for the longest time, and they are more stable and cost-effective. The disadvantage is that lead-acid batteries are large in size and can cause significant environmental pollution during production, and their prices fluctuate significantly due to the effect of lead cost.



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BATTERIES

The benefit of lithium batteries is that, for the same capacity, their volume and weight are smaller than lead-acid batteries, their energy density is higher, and their application is more versatile. The disadvantage is that it is more expensive than a lead-acid battery. However, with technological advancement and increasing market acceptance, the cost of lithium batteries has gradually decreased and it has become the primary battery type used in solar lighting.

SOLAR PANELS

Solar PV modules, also known as solar panels, are the most important component of a solar photovoltaic power generation system and the most valuable component of a solar energy system. Its purpose is to convert sunlight radiation into electric energy and send it to batteries for storage. It can also directly power the loads.



SOLAR PANELS



In the solar lighting system, the controller is primarily responsible for charge/discharge control and management. The solar panel generates electricity during the day and charges the battery via the controller. At night, the controller discharges the solar lights' battery to supply power to the light source for lighting. When the rainy days last too long, the controller will cut off the battery power supply if the battery voltage falls below the controller's preset battery lack-of-power voltage. Furthermore, the controller has an intelligent power mode that can adjust the brightness of the light source based on battery surplus capacity for energy savings and can extend lighting time to the maximum in continuous rainy/cloudy conditions.



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LED LIGHT SOURCE

LEDs are the most recent generation of light sources. Different types of led lights are now widely used in both outdoor lighting such as street lights, floodlights, and garden lights, as well as indoor lighting such as bulbs, tubes, ceiling lights, and so on.



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SOLAR STREET LIGHTS



Solar LED street lights are a solar solution that replaces traditional street lights by combining solar energy and LED light sources. Solar panel street lights can not only meet the basic functions of lighting, but they can also provide brightness that can reach 2-3 times the brightness of the traditional ones.

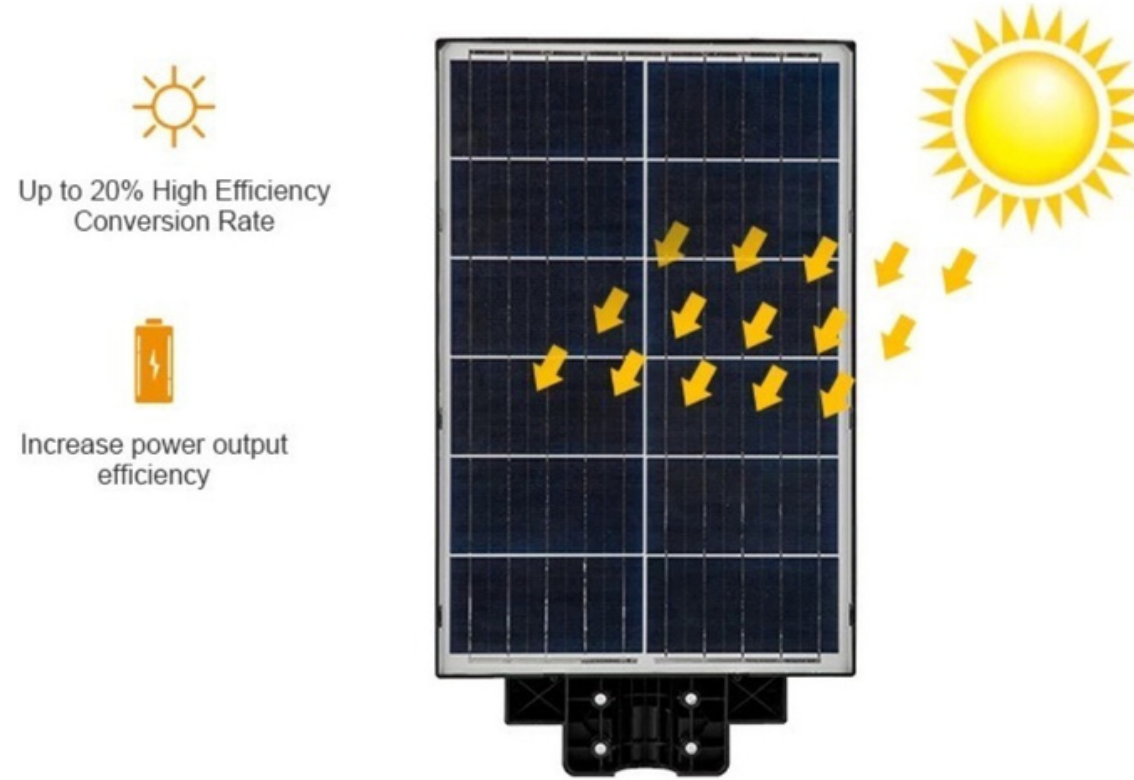
Moreover, the power consumption of solar-powered street lights is also much lower than traditional types. In terms of service life, theoretically the solar street lights' lifespan is 1-2 times of traditional street lights. So solar street lights have become the priority choice for road lighting construction in the world.

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SOLAR PANEL CHARGING

With 18%-20% high efficiency conversion rate 25 Years Working



New Page Turners Limited is a leading installer of solar powered street lights having installed several solar powered flood lights and street lights for governments and non-governmental organizations. Instead of using the traditional halogen lamps which consume about 400 to 1500 watts of power, our solar powered LED lamps consume from 20 to 250w with a similar or better luminous intensity giving rise to bright solar powered streets, walk paths, bays, roads and other places that require all night lighting at good prices. Feel free to contact us now!

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SOLAR POWERED STREET LIGHTS

Solar Street lights can enable county governments significantly reduce their electricity bills as well as reduce cost of wiring of new street lights over long distances. Institutions with bays and ware houses that need all night flood lighting can significantly reduce their electricity costs by installing solar powered flood lights and streetlight hence increasing their profits

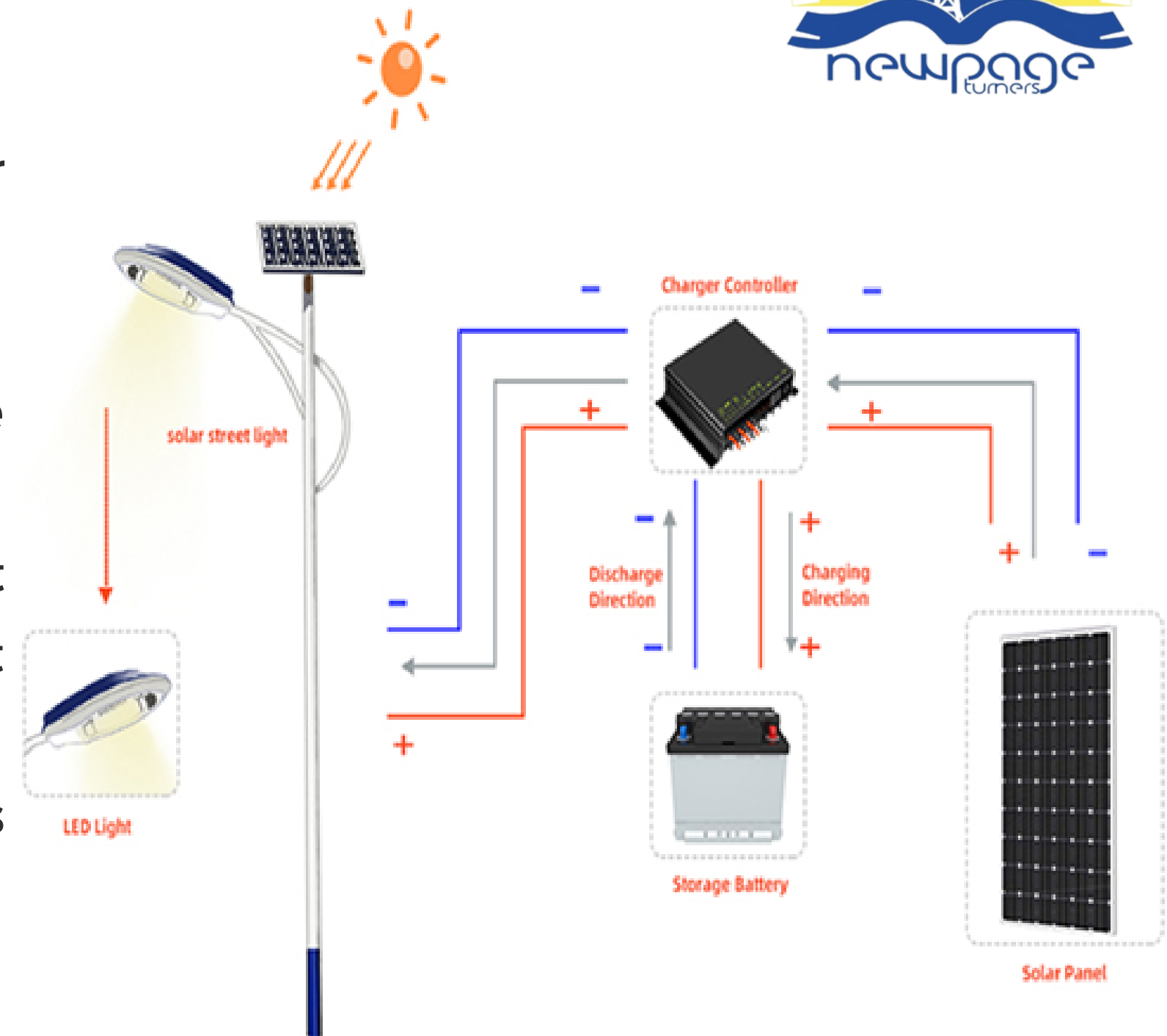


We do a complete energy audit and recommend the best solutions to implement including using energy efficient appliances e.g. 4 feet LED lights and bulbs as well as others with consume a fraction of what conventional appliances use.

ADVANTAGES OF NEW PAGE TURNERS SOLAR STREET LIGHTS



- More than 8 years of practical experience in solar light street lights.
- Participated in large-scale solar lighting projects.
- As a mature solar street light company, New page Turners Limited has 20 product-related patents.
- A complete product line from traditional split solar street lights to smart all-in-one solar street lights.
- Have a professional pre-sales and after-sales team.
- Provide scientific solar lighting solutions.



COMMERCIAL SOLAR SYSTEM



PROSPECTS OF SOLAR POWER SYSTEMS

Kenya lies within the tropics and is endowed with significant solar energy resources. Kenya has high solar potential as its geographic location provide suitable conditions for solar energy throughout the year. It is estimated that the country receives daily insolation of 4-6kWh/m² (Energy and Petroleum regulatory authority (EPRA), 2019).

According to data, the global solar energy market has a compound annual growth rate of 47.4% based on the annual average solar system installed capacity.

Photovoltaic power output measures the practical amount of electricity that can be generated per a unit of installed PV capacity. It is measured in kilowatt hours per installed kilowatt-peak of the PV capacity (Global Solar Atlas, 2022).

It represents practical solar potential that can be exploited using PV. According to Global Solar Atlas, the practical photovoltaic power output potential ranges between 4.04-5.15 kWh / kWp. Therefore, the solar energy is abundant throughout the year and can be tapped to meet the country's energy demand.

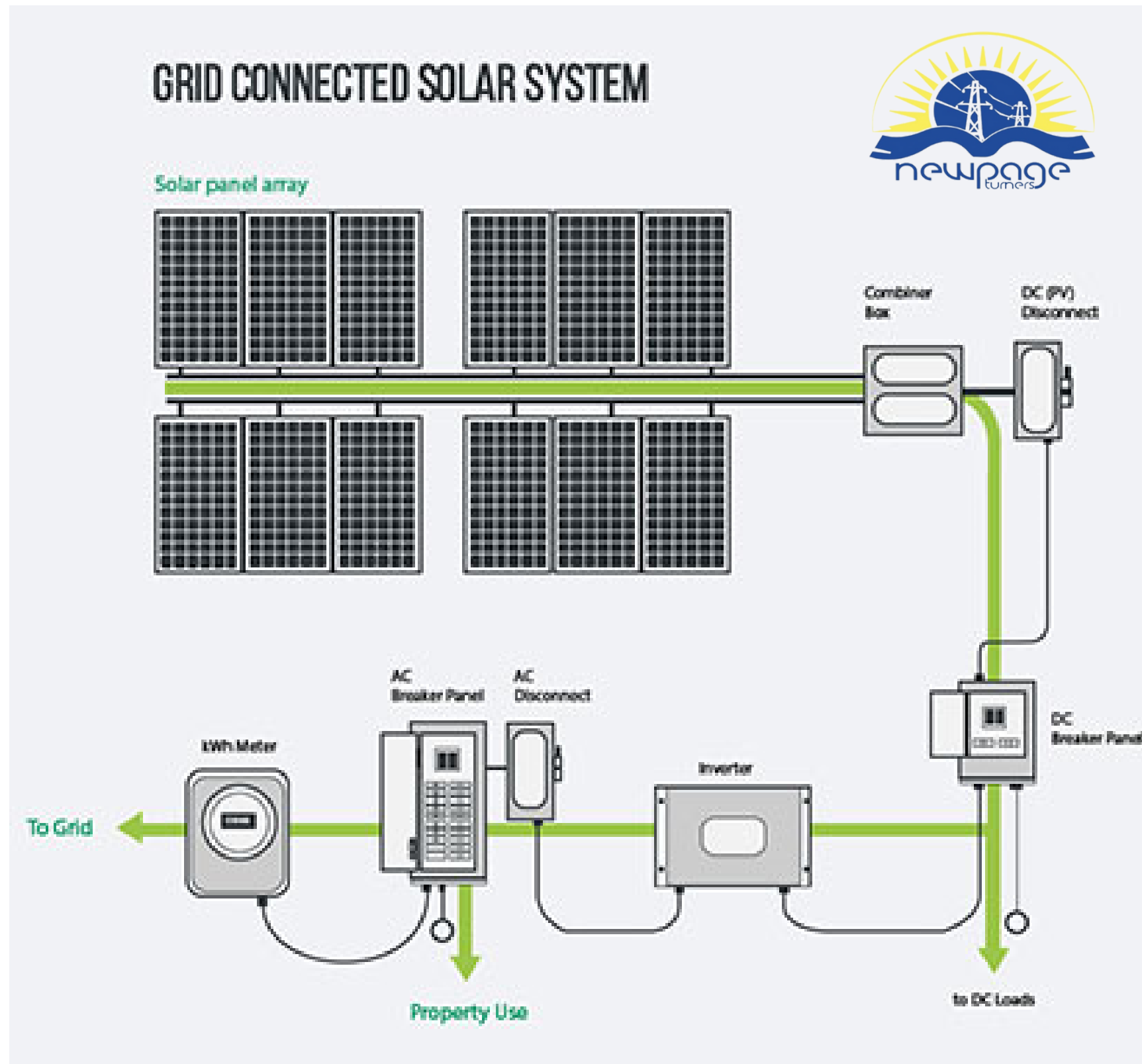
GRID TIED SOLAR POWERED SYSTEM



New Page Turners Limited helps customize systems for a range of **industrial solar power system applications**.

The most common type of solar power system is a grid-connected solar power system. These systems are linked to both your local power grid and your home. In most cases, the systems provide your power needs throughout the day, and if your system produces more electricity than your home requires, it sends the excess back to the electric grid, where it can be used by your neighbors and others.

GRID TIED SOLAR POWERED SYSTEM



OFF GRID RESIDENTIAL SOLAR POWER SYSTEM

Stand-alone solar power systems are extremely useful in areas with limited (or non-existent) utilities. Using an **entirely off-grid solar system** necessitates the purchase of additional equipment such as batteries and/or other energy storage devices, but the end result is complete independence from any outside utility provider.

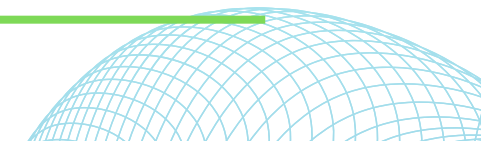
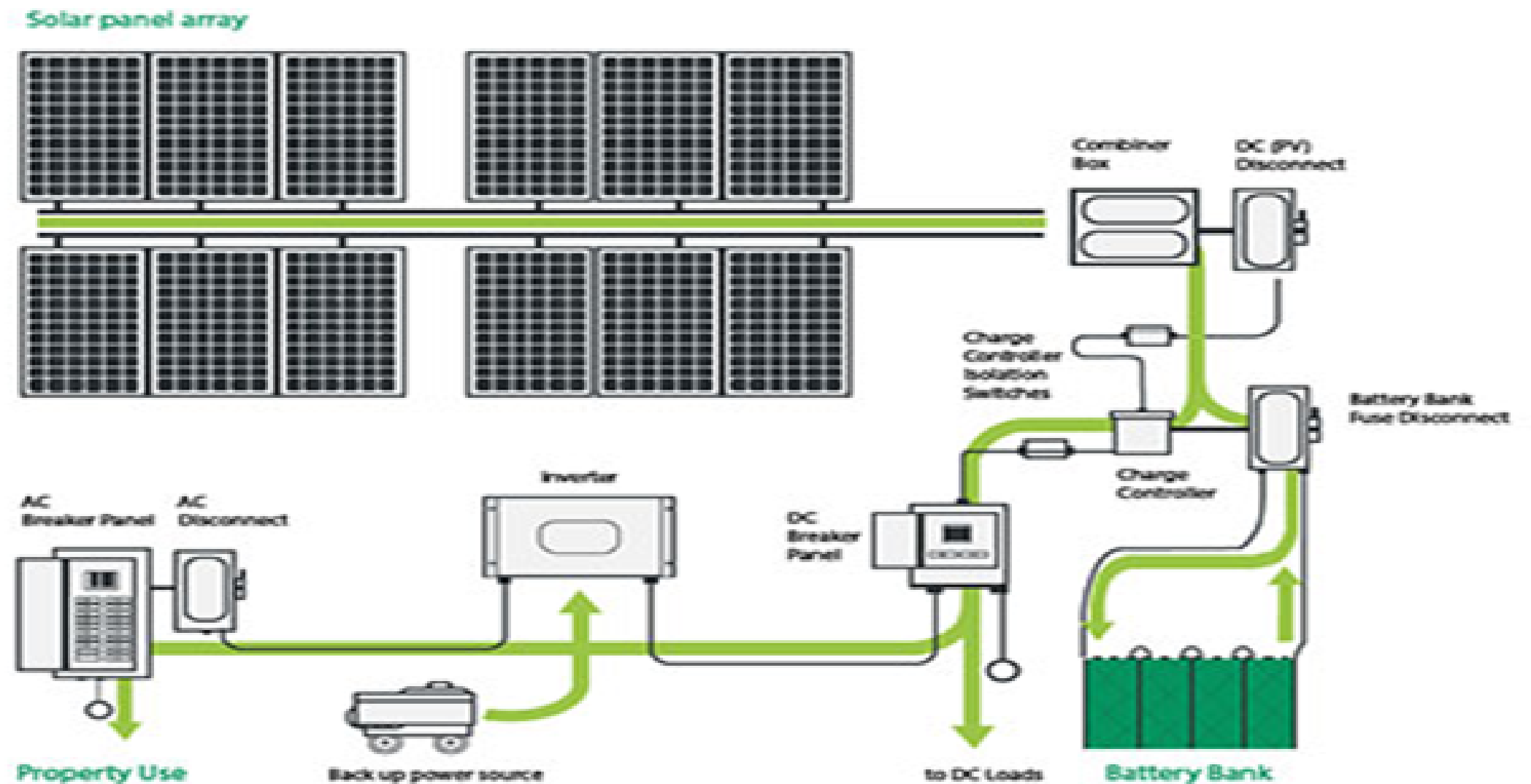
Because battery storage is limited, one of the drawbacks of an **off-grid solar system** is that unused energy is frequently wasted. There are also regulations in some areas that require residences and businesses to be connected to a grid.

OFF GRID RESIDENTIAL SOLAR POWER SYSTEM



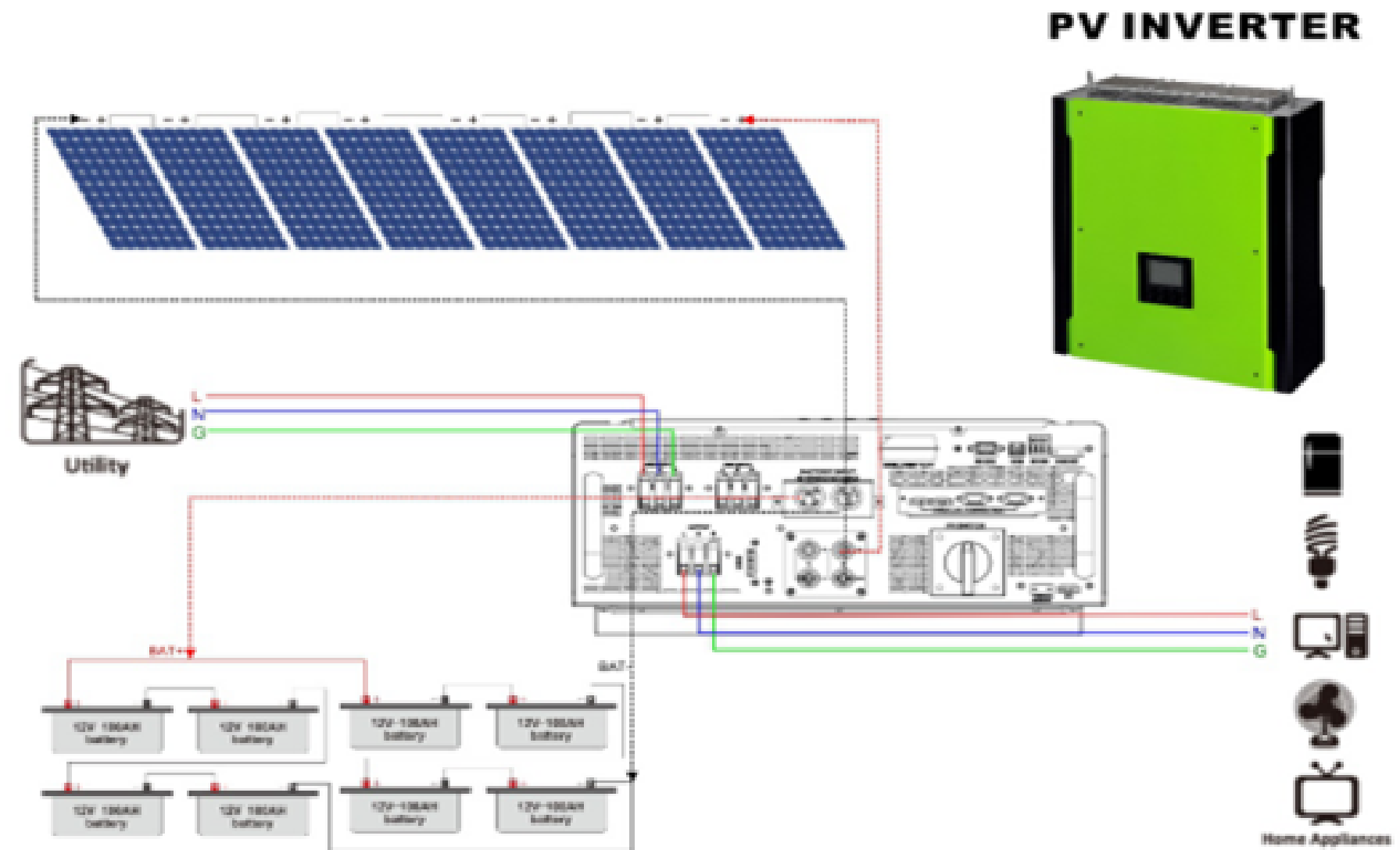
Going off-grid means complete utility freedom, but if this is the route you take, it's best to invest in some heavy-duty solar storage devices and to double-check all local laws and regulations to make sure off-grid is an option for your area.

OFF GRID SOLAR SYSTEM



HYBRID INVERTER SOLAR SYSTEM

Though additional investment in the form of batteries is required, it is very possible to get the best of both worlds by constructing a solar system that only uses traditional utility power as a backup. In this case, instead of feeding excess solar energy back into the grid, you store it yourself. If you plan carefully and build enough storage, you can use the power grid only in extreme cases of energy use or very limited sunlight availability. With the advent of new storage technology, such as the **Tesla Battery**, the hybrid option is becoming more viable.

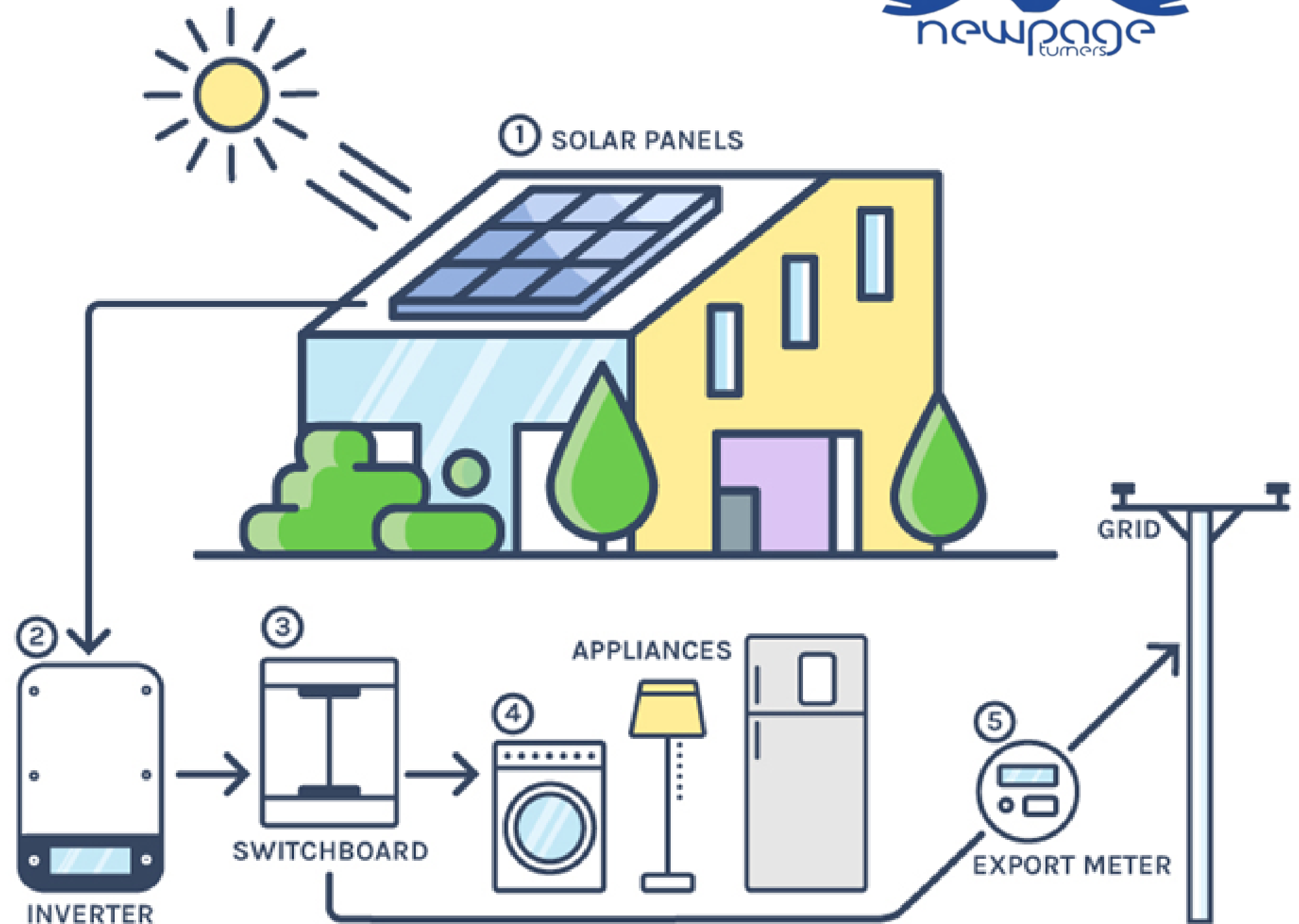


HOW DOES THE ON GRID SOLAR SYSTEM WORK

On-grid solar power systems are typically made up of a photovoltaic array made up of solar cell modules, a solar charge and discharge controller, a grid-connected inverter, a DC load, and an AC load. When there is light, the photovoltaic array converts solar energy into electric energy and supplies power to the load via the solar charge and discharge controller.



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THE DIFFERENCE BETWEEN ON GRID AND OFF GRID



HOW IT WORKS

An off-grid solar system, also known as an independent solar power generation system, is a system that does not rely on the power grid and operates independently. The electricity generated by the solar panel flows directly into the battery and is stored. When it is needed to use, the direct current in the battery flows through the inverter and is converted to alternating current.

On-grid solar systems, namely solar power generation, household power grid, and public power grid, are linked together. Solar power generation is directly inverted into the parallel voltage required by the national grid and is preferentially used by families. And when solar power can't generate enough power for home appliances, it's automatically replenished from the grid.



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