
DI-SOLAR
UNSTOPPABLE
POWER
OF SOLAR
TO YOUR OWN SRI LANKA
A solution by
DIMO
THE PERFECT PARTNER

WHY SOLAR?

Just 15min of Sunshine that falls on Sri Lanka has sufficient energy which is equivalent to her entire annual electricity consumption. Yes, you heard it right.

If you need another perspective, solar panels installed in just 70% of the area of the island of Karaitivu, will be sufficient to supply electricity for the entire nation.

Many have already started harnessing this inexhaustible power source from the sky since 2011 and now it is time for your loved ones back in Sri Lanka to do same to enjoy free electricity throughout the year.

With **DIMO**'s impeccable engineering excellence proven over its illustrious history of 83 years, rest assured that your loved ones are kept at bay regardless of what's going on around in your beloved motherland. You can explore how you can participate in resolving your loved one's electricity requirement as well as helping the nation to harness this free electricity during this unprecedented economic downturn. From a simple standalone battery storage solution to a solar PV grid connected system.

HOW DO THEY WORK?

Solar panels are manufactured to generate electricity once they are placed under the sunshine. Electricity generated by solar panels are Direct Current (DC). Appliances at homes run on Alternate Current (AC). Therefore, the DC current generated by solar panels should be converted in to AC current using an Inverter. Electricity generated by the solar panels are fluctuating all the times due to moving clouds at any given time. With such fluctuating currents, home appliances can not be operated. That is why the inverter output is connected to the Mains. By this way, appliances can be run without any issue. When the sunshine generates more energy than what is consumed, such extra power is fed to the grid. When there is an overcast condition, electricity is imported from the grid in to the home. Solar PV systems are connected to the grid under 3 schemes. They are Net Accounting, Net Metering and Net Plus. More details of these scheme are provided later in this document.

A CONVENTIONAL ON-GRID SOLAR PV SYSTEM

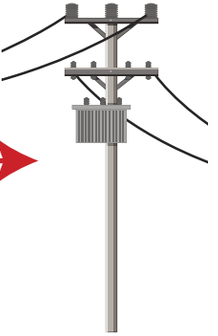
When this roof top grid connected solar PV system is installed in your home, the system will generate sufficient electricity year around. If the system generates more than what is consumed, utility company will pay you as well. Once designed to meet to your average Monthly consumption, this system will generate sufficient power year around. Only disadvantage in these conventional on-grid solar PV systems is that they can not operate during power cuts as a security feature required by the utility company.

Solar PV panels

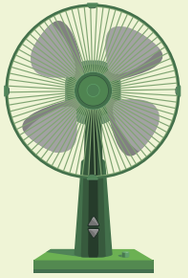
On Grid Inverter

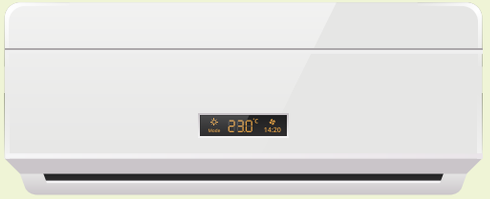
Load

Meter



CEB/LECO approval is required before the installation.





Technically, any appliance can be operated once the system is designed accurately.

B HYBRID OFF-GRID SOLAR PV SYSTEM

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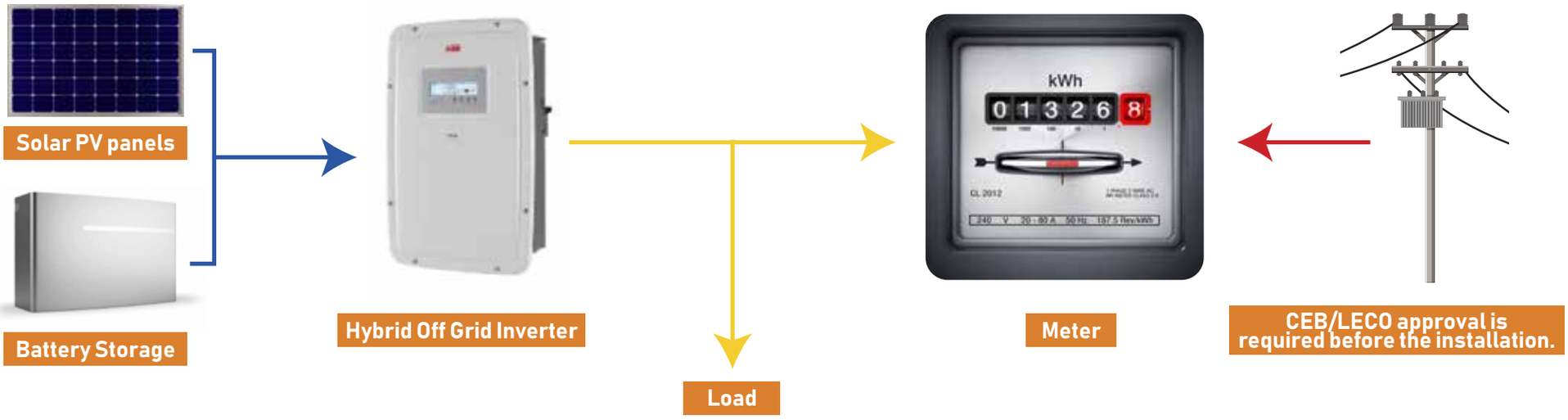

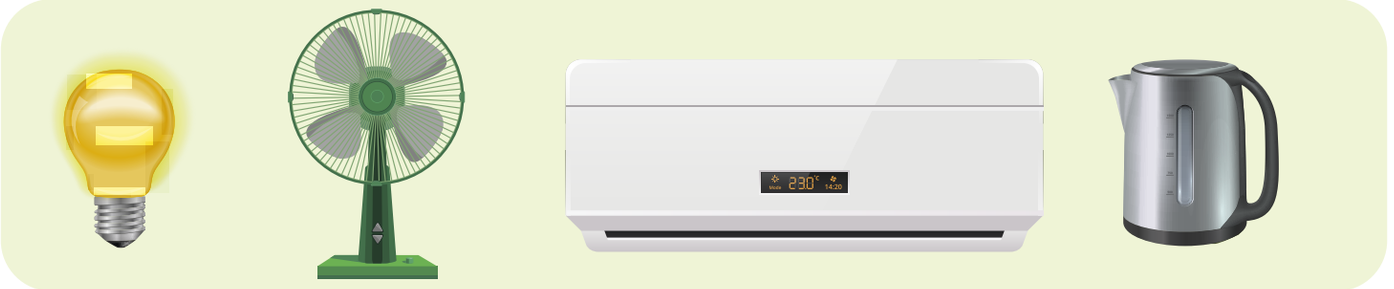

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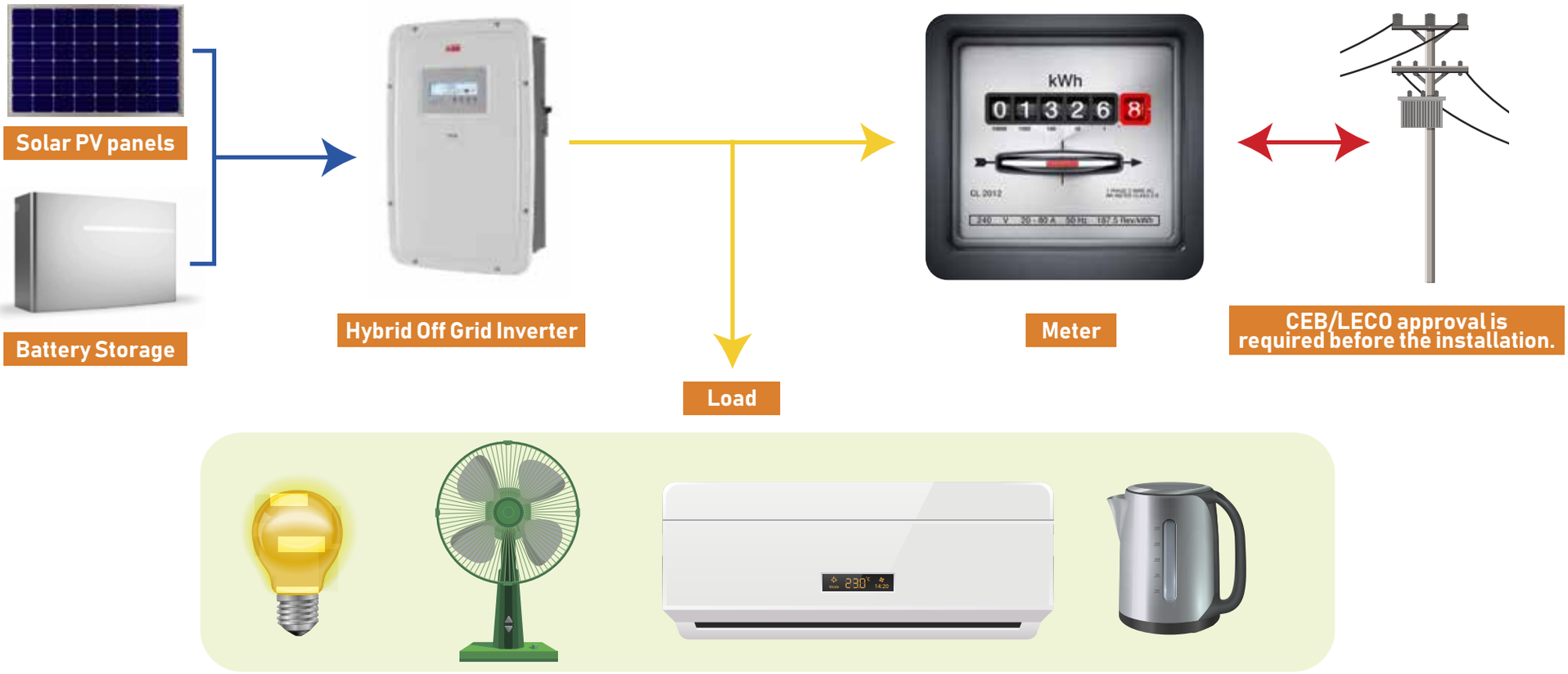
C HYBRID ON-GRID SOLAR PV SYSTEM

These systems are the most effective solution. They are connected to the grid as well as can be used during power cuts. The solution is comprised of solar panels as well as a battery storage. Inverter is a hybrid on-grid type which has the capability to operate from both sources of power (i.e. solar PV and Battery)



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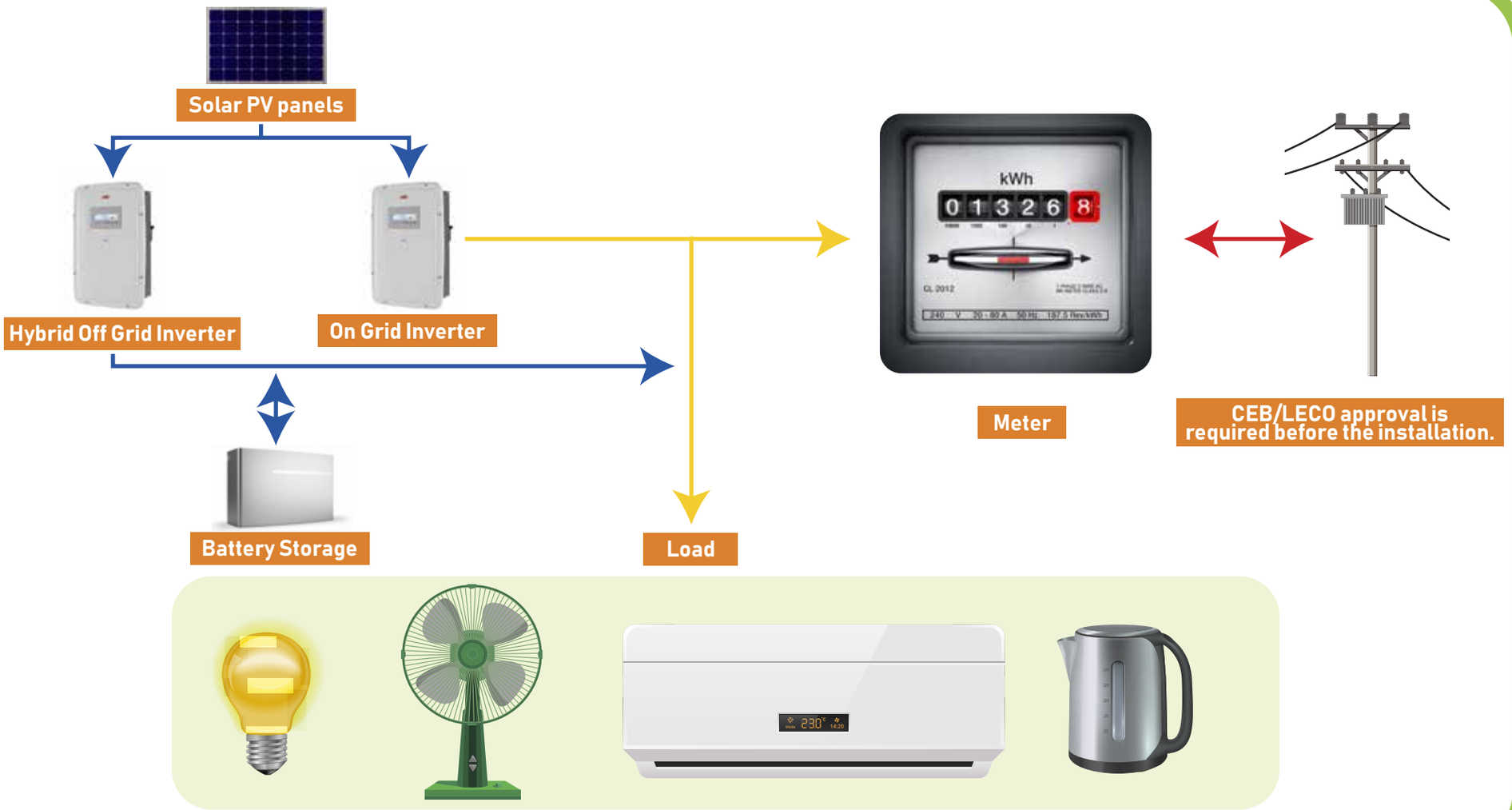
D EXISTING ON-GRID SOLAR PV SYSTEM + HYBRID OFF GRID INVERTER

If you have a conventional roof top grid connected solar PV system already installed in your home, this solution will make your existing system to operate even during power cuts uninterrupted while you enjoy all the benefits of grid connected solar PV systems.



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E BATTERY INVERTER SYSTEM

This is the simplest solution available to be used during power cuts. Solar panels are not required. Battery bank is charged when grid electricity is available. During the power cuts, the stored energy is converted in to AC current and fed in to the appliances.

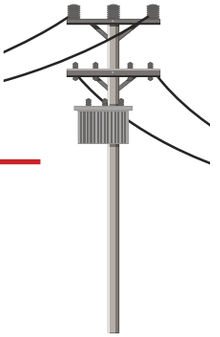
Not suitable for prolonged power cuts. During long power cuts, mains electricity is not sufficient to charge your battery storage. In such situations, other options are to be considered.

Battery Storage

Battery Inverter

Load

Meter



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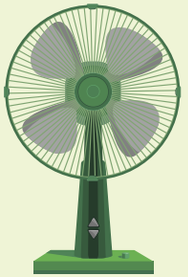

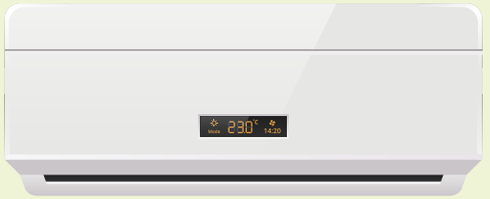

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COMPARISON OF EACH SYSTEM

	A Conventional On-Grid Solar PV System	B Hybrid Off- Grid Solar PV System	C Hybrid On- Grid Solar PV System	D Existing Conventional On-Grid System + a new Hybrid Off Grid Inverter	E Battery Inverter System
Uninterrupted Power during Power Cuts	N	Y	Y	Y	Y
Saving Electricity Bill	Y	Y	Y	Y	N
Scheme I : under Net Metering	Y	N	Y	Y	N
Scheme II: under Net Accounting	Y	N	Y	Y	N
Scheme III: under Net Plus	Y	N	Y	Y	N

WHAT ARE THE ABOVE SCHEMES?

CEB/LECO allow electricity consumers to connect their solar PV system under 3 Schemes. They are Net Metering, Net Accounting and Net Plus.

NET METERING

Solar PV system generates electricity during the day time and feeds both home appliances and the grid. When there is less energy being produced, you will consume electricity from the grid. If there is more energy being produced, it will be exported to the grid. During night time, you can import the exported electricity back. You will have to pay for the net difference. This is measured by the special two-way meter the utility will be installing. If you have an excess electricity in your account, Utility does not pay you. Instead, it will be carried forward to your next month.

NET ACCOUNTING

The system works in the same manner with different electrical configuration. Solar Power is consumed inside home as well as it is fed to the grid. However, when there is excess electricity in your account, Utility will pay you at Rs. 22 per Unit (kWh) in the first 7 years. From 8th year, you will be paid Rs. 15.5 per unit. Since electricity consumers have to pay Rs. 45 for each unit consumed from the grid (if their consumption is more than 180 units per month), this scheme is most suitable for residential consumers.

NET PLUS

Under this scheme, Solar Power is not consumed by the consumer. All the electricity generated will be exported to the grid and will be paid at the same rates like in Net Accounting. This scheme is best suitable for Industrial consumers as they only pay Rs. 12 for each unit consumed from the grid.

DIMO AS YOUR RENEWABLE ENERGY SOLUTION PROVIDER

DIMO has always been in the cutting-edge technological frontiers that enabled power utilities to generate, transmit and distribute Electrical Power reliably and economically at the highest level of efficiency. **DIMO** provides innovative, safe and user-friendly advanced solutions that boost productivity and improve efficiency in mini-hydro, bio mass, solar and wind power plants.

We have been in the forefront of many renewable energy projects such as Sri Lanka's first 100MW wind project in Mannar Island as well as Sri Lanka's first Micro-Grid project at University of Moratuwa together with Lanka Electricity Company (LECO).

Several corporate level solar PV projects both ground mounted and rooftop were carried out successfully. Our B2B electrical engineering excellence is now available for residential customers.

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ABOUT DIMO GROUP

Diesel & Motor Engineering PLC (**DIMO**) is a 83 year young multifaceted diversified conglomerate based in Sri Lanka, actively involved in power transmission and distribution, building technologies such as fire detection & protection and ELV solutions, railway, marine, lifts & escalators, material handling and warehouse management, refrigeration, fluid Management, industrial engineering, power tools & equipment, healthcare and automobile representing world renown principals such as Mercedes-Benz, Jeep, Siemens, DHYBRID, TATA, Chrysler, MTU, KSB, Komatsu, Michelin, ThyssenKrupp to name a few.

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