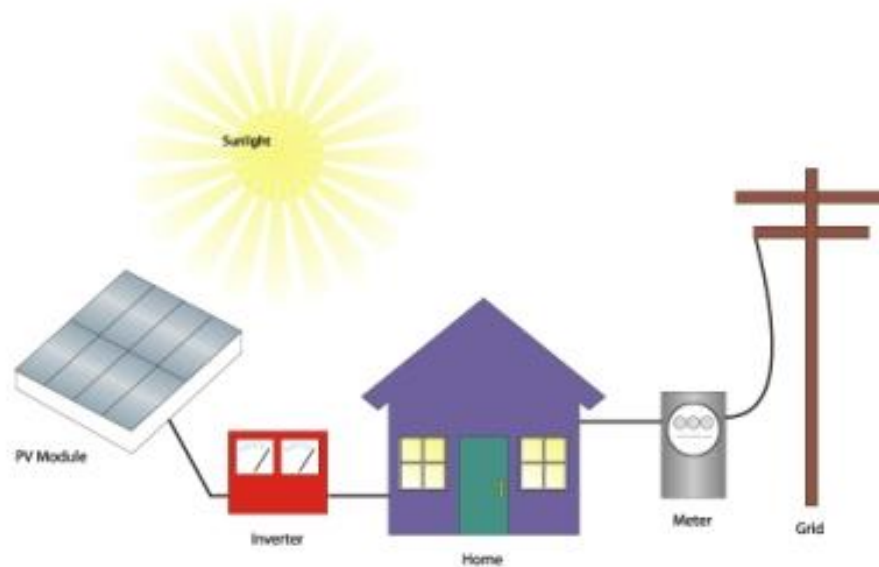


## How a Photovoltaic System Works



A 5 kW system will generate 5000 watts of electricity when fully exposed to bright sunlight. The photovoltaic system (solar system) works when the sun's rays hit a photovoltaic cell. The sun's rays excite electrons within the cell. These electrons begin to move and create an electric current within the cell. Direct current (DC) is generated by the cells and it travels from the cells into an inverter. The appliances in our homes use alternating current (AC). The inverter changes the direct current into alternating current and the alternating current flows into the home to be used. There will be times when the photovoltaic system produces more power than the home is using. The excess power that the home does not use is routed back into the utility through a bi-directional meter. The bi-directional meter measures both the amount of electricity the customer uses off the utility system grid and the amount of electricity that is produced by the photovoltaic system that the home does not use. The utility purchases this power that is delivered onto our grid system. The utility then bills the customer for the difference.

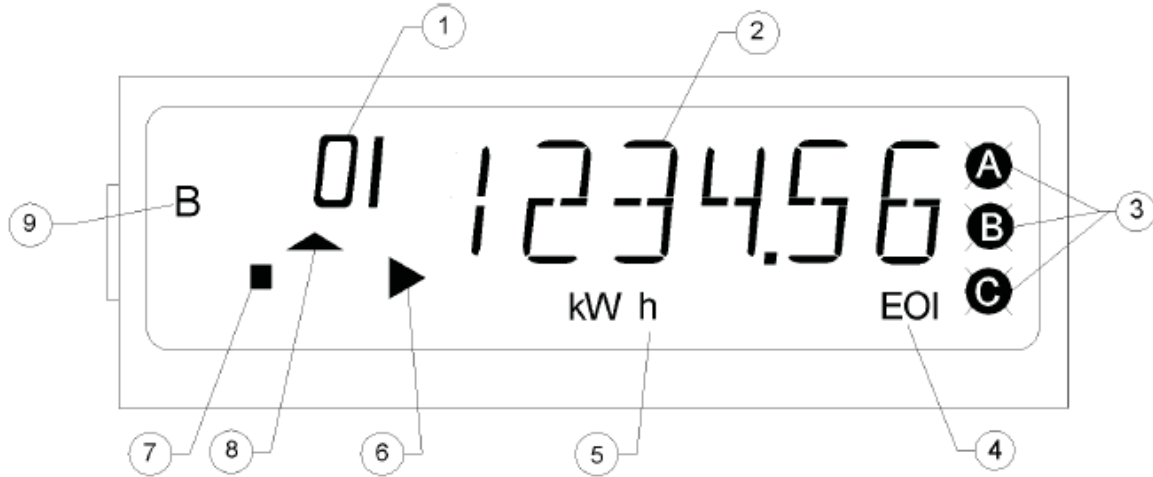
### Bill Calculation:

Power by Utility (reading 1) – power by customer (reading 2) = usage to be billed

Reading 1: The power passing through the bi-directional meter from the utility source, "RESN1" value in NISC billing system.

Reading 2: The power passing through the bi-directional meter from the customer's photovoltaic (solar) system source, "RESN2" value in NISC billing system.

## Bi-Directional Meter Display



1. The Display Label is "01". This is the kWh reading for the power provided by the utility  
A display of "02" would be the kWh reading for the power generated by the customer that is being sold back to the utility.
2. Six-digit display of energy (kWh).
6. Energy is being delivered to the load. If the arrow was pointing to the left, the energy being generated by the customer would be flowing back into the utility grid.

