



## Electric Power by Solar Cell

Electric Power Supply by Solar-Cell (EPSC) is using Sunlight, which is available on every where and do not need supply of gas or oil fuel

Solar-Cell do not need special treatment, very long life time (more than 20 years), without pollution, base on those are things that Electric Power with Solar-Cell can be implement independently on every where (i.e. for satellite, villages and also urban without any problem)

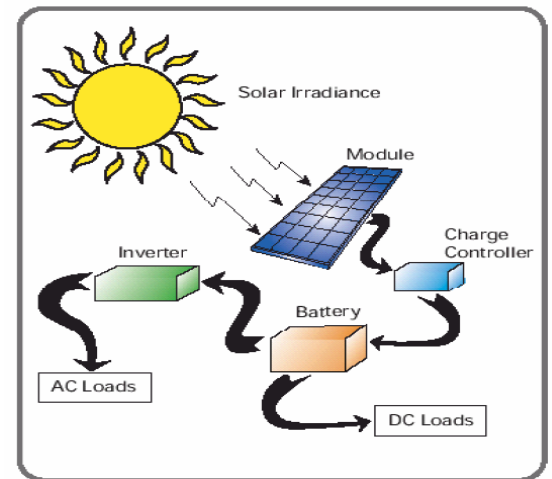
### Advantages with Solar Cell

- Solution to have electrics power supply on any places
- Operational cost is very less
- Maintenance free, there is no difference to use, same like common electric
- No fuel and oil changes
- Easy to maintain
- Long term investment, which is life time of the Solar-Modules up to 25 year and do not need additional equipments
- The Electrics output quality is standard AC (220~240) volt 50-60Hz and DC 48Volt, stable



## Electric Power by Solar Cell (EPSC) Consist of Four main components in General

- Solar Module is to changes sunlight become electric energy
- Controller Charger is to manage traffic of electric and protecting the batteries from over current / electric supply exceeded
- Battery is as electric storage of power supply and to make output stable.
- Load is/are devices required/used the electric power supply (i.e. Computer /Server, Lamps, Air Conditioner, etc)



The EPSC output is DC (direct current) electric, if required can be changes to become AC (alternating current) by using Power Inverter. EPSC is Electric Generator which is the output can be use by any electric equipments, from small to big requirement



## Implementation of EPSC

### **System Full Supply :**

Electric Power Supply from Solar-Cell purely (Photovoltaic, PV)

### **System Hybrid:**

Electric Power Supply with mix configuration, it can be Solar-Cell combine with Diesel-Genset or Solar-Cell with Regular Power Supply (PLN)

### **The above Systems can be use for any purpose, as follows**

- Electric Power Supply for BSS (Base of Station System) wireless mobile communication
- Bank – ATM
- Office / Office building
- Houses

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## Electric Power Supply by Solar Cell for BSS (EPSC BSS)

Currently, competition for the mobile wireless operator is very heavy, which are some new operators built already and some of the key factors to get success, as follows:

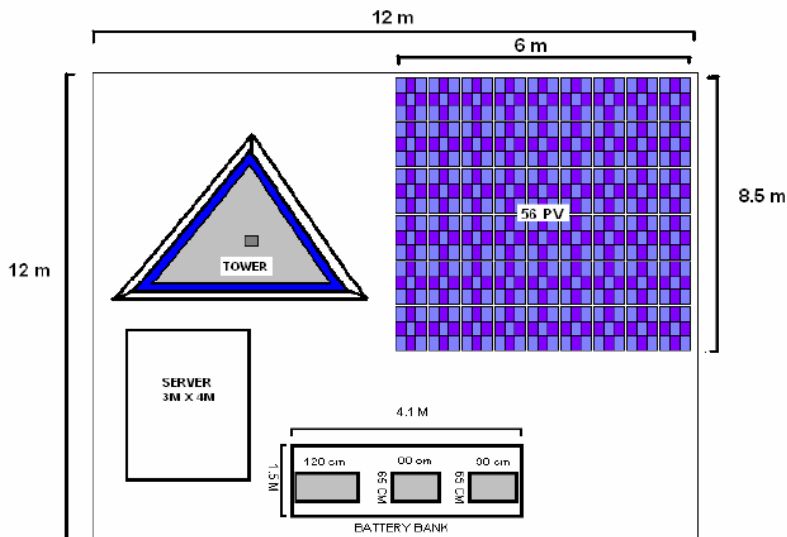
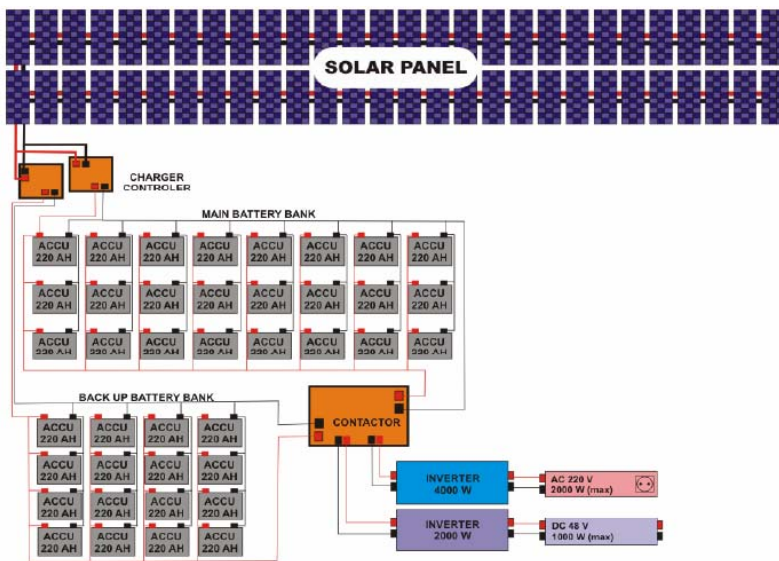
- Network Service Availability, which is service must always available use by subscribers non-stop (7x24 hours) without any disturbances unstable Electric Power Supply, which is often happens in Indonesia
- Expansion of network coverage can be done on the proper position (coordinates) without worry about electric power supply, this is will be match with marketing target to get additional new subscribers on the new location of your BTS
- Long term investment, life time of the Solar-Cell can be up to 25 year and stable
- Easy to maintain

### Offering for EPSC BSS

- As a telecommunications network services especially wireless mobile phone which has vision to be the best company of telecommunications network services.
- We have alternative solution of electric power supply for all requirements, electric power supply for BSS (Base Station System), with high availability and stability, competitive price, quick installation by the experienced technical support



### Architecture of EPSC BSS



Charger Controller (CC) Function as a device to get electric power from solar module and generate ampere to charge batteries, with features increasing 20% ampere. (CC for batteries backup use timer & recognition low battery system)

Contactor consist Timer and recognition Low Battery System, have function to control batteries uses by turns

Inverter function to changes DC (Direct Current) to AC (Alternating Current), stabilizer bundled

Power DC 48V function to change DC for power consumption of radio system devices, stabilizer bundled

- Temperature:
- Solar Cell, 25 – 45
  - Battery calcium, 15 – 40
  - Inverter, 10 – 45
  - Control Charger, 10 – 45
  - Contactor, 10 –45
  - Power DC, 10 –45



### Configuration Solar Cell, Batteries & Batteries Backup

SOLAR CELL 56 PV - Parallel = 56 X 130 WP = 8736 WP (increased by CC 20%) - 3000 Watt Load = 5736 WP  
 BATTERIES POWER 24 Unit = 24 X 12 Volt X 230 AH = 66240 Watt Hour = 22 hours - uses  
 BATTERIES BACKUP 16 Unit = 16 X 12 Volt X 230 AH = 44160 Watt Hour = 15 hours - use  
 5736 WP charges 24 Unit Batteries need 11 hours, when batteries empty  
 5736 WP charges 16 Unit Batteries need 7 hours, when batteries empty

**TABEL CONFIGURATION SYSTEM RUNING SOLAR CELL,BATTERY AND BATTERY BACKUP**

