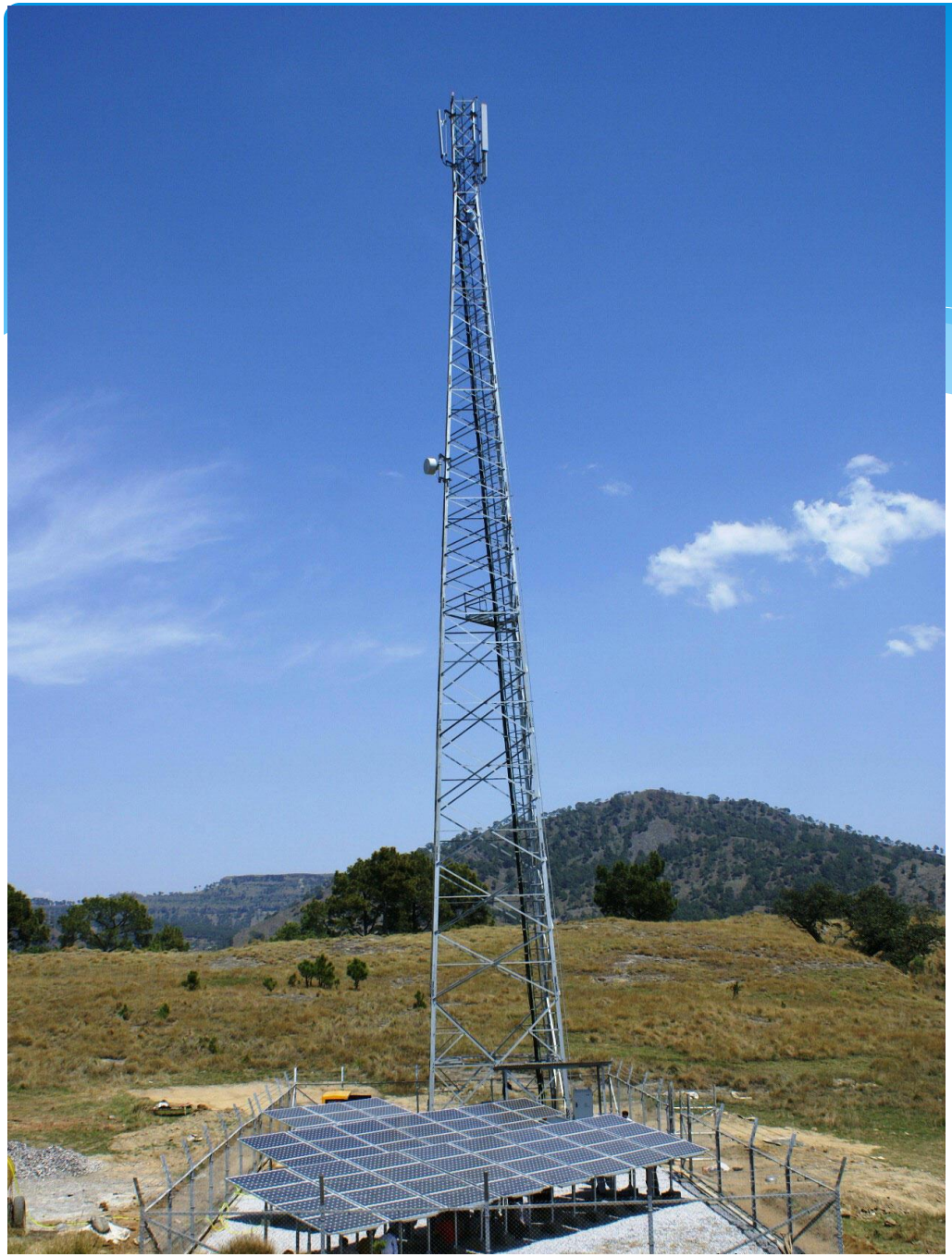
ABSORT ENTERPRISES

Leading Innovative Service Provider…

RENEWABLE ENERGY

SOLUTIONS



COMPANY PROFILE

Company Background:

Absort Enterprises is a fast growing company amongst others in the Nigerian innovative solutions industry. Owned by Mr ADESOTE, Abayomi a specialist in the field of renewable energy solutions, with experience, exposure, vast local knowledge, research and global orientation in problem solving and technology development in Nigeria as a first generation entrepreneur.

As an innovative solutions company, we provide unbeatable standard in wide range of products and integrating technologies spanning through platforms including, Inverter systems, UPS, solar power plant (Grid and Off-Grid Systems), solar BTS, solar extra-low-voltage systems (ElVs), solar water system, solar streetlights, solar air conditioners, solar water heater, etc. Our expertise right from Design, Logistics, Installation, maintenance and effective after sales service are reliable to give support to our esteemed customer.

Installing solar power generators has been an expensive affair even till date. However, positive measures have been taken to make sure it is affordable for our prospective customers to install a solar system.


BRIEF INTRODUCTION TO RENEWABLE ENERGY
Free Abundant Energy For All…

DEFINITION:

Renewable energy or naturally generated energy source is any form of energy obtained from the Sun, wind, waves, or another natural renewable source, in contrast to energy generated from fossil fuels.

For the sake of this presentation, based on research solar energy has been chosen to be the best form of renewable energy as an alternative solution to our problematic power situation in Nigeria due to the geographic location, abundant sun radiation, infrastructure and so on.

Solar energy can therefore be defined as the energy radiated from the Sun in the form of heat and light, used by green plants for photosynthesis and harnessed as solar power.

OUR SERVICES INCLUDE:

* **Solar Stand-Alone power system design, supply & installation.**
* **Solar Hybrid power system design, supply & installation.**
* **Inverter system design, supply & installation.**
* **Solar Street lighting.**
* **Solar Air conditioning systems.**
* **Solar water system for urban and rural communities.**
* **Solar BTS station for telecoms.**

Advantages of solar power

- Saves and reduces the cost of fuel consumption.
- Reduces the tariff of the power agency drastically.
- The energy and heat from the sun is free and unlimited.
- Solar power is non-polluting. Solar power usage does not emit any greenhouse gases or harmful waste.
- Solar power is perfect and saving for power generation in remote areas or where the cost of expansion utility grid is high.
- Solar power is versatile. It can be used for low-power purpose as well as larger ones – from solar powered garden lights to stereo set, Television sets, air conditioners, water heaters, cars, buildings and satellites, etc.
- Solar power system requires very little maintenance and last for many years.

BASIC COMPONENTS OF A TYPICAL SOLAR POWER SYSTEM

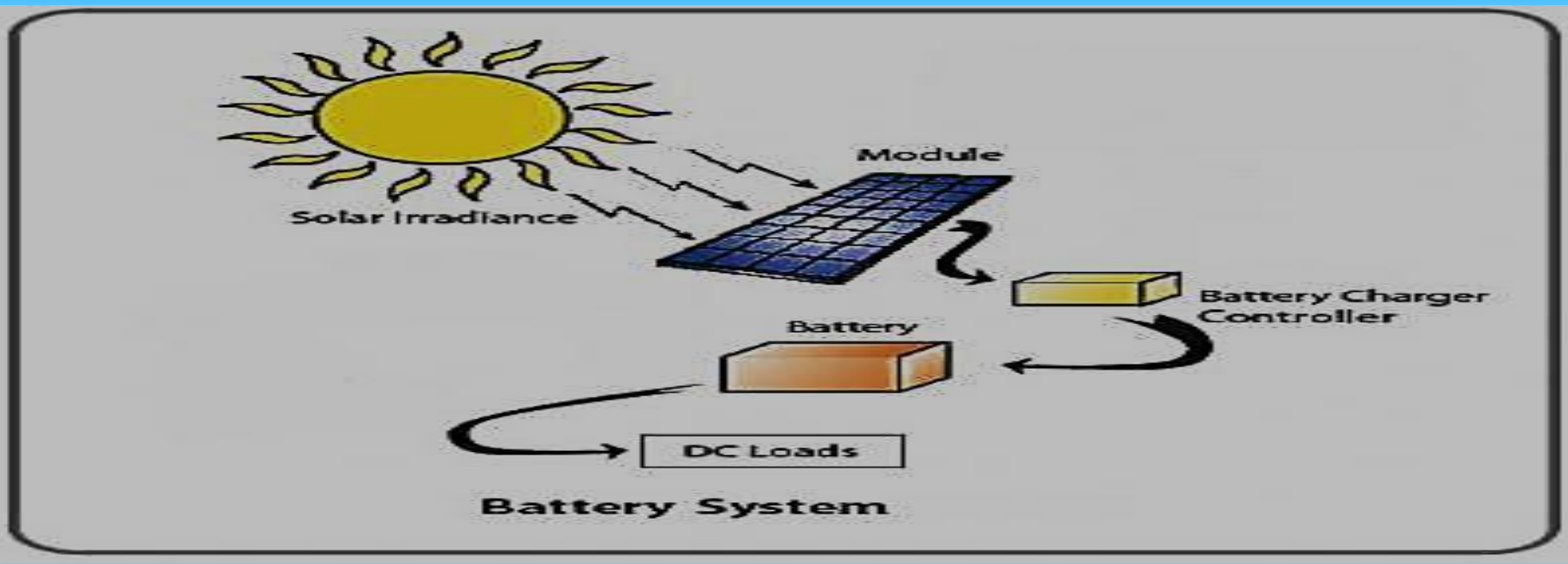
SOLAR PANEL: This device is otherwise known as Photovoltaic(PV) Module, used in converting the radiant light from the sun to direct current (DC).

CHARGE CONTROLLER/SOLAR REGULATOR: Although charge controllers can be purchased with many optional features, their main function is to maintain the batteries at the proper charge level and to protect them from overcharging.

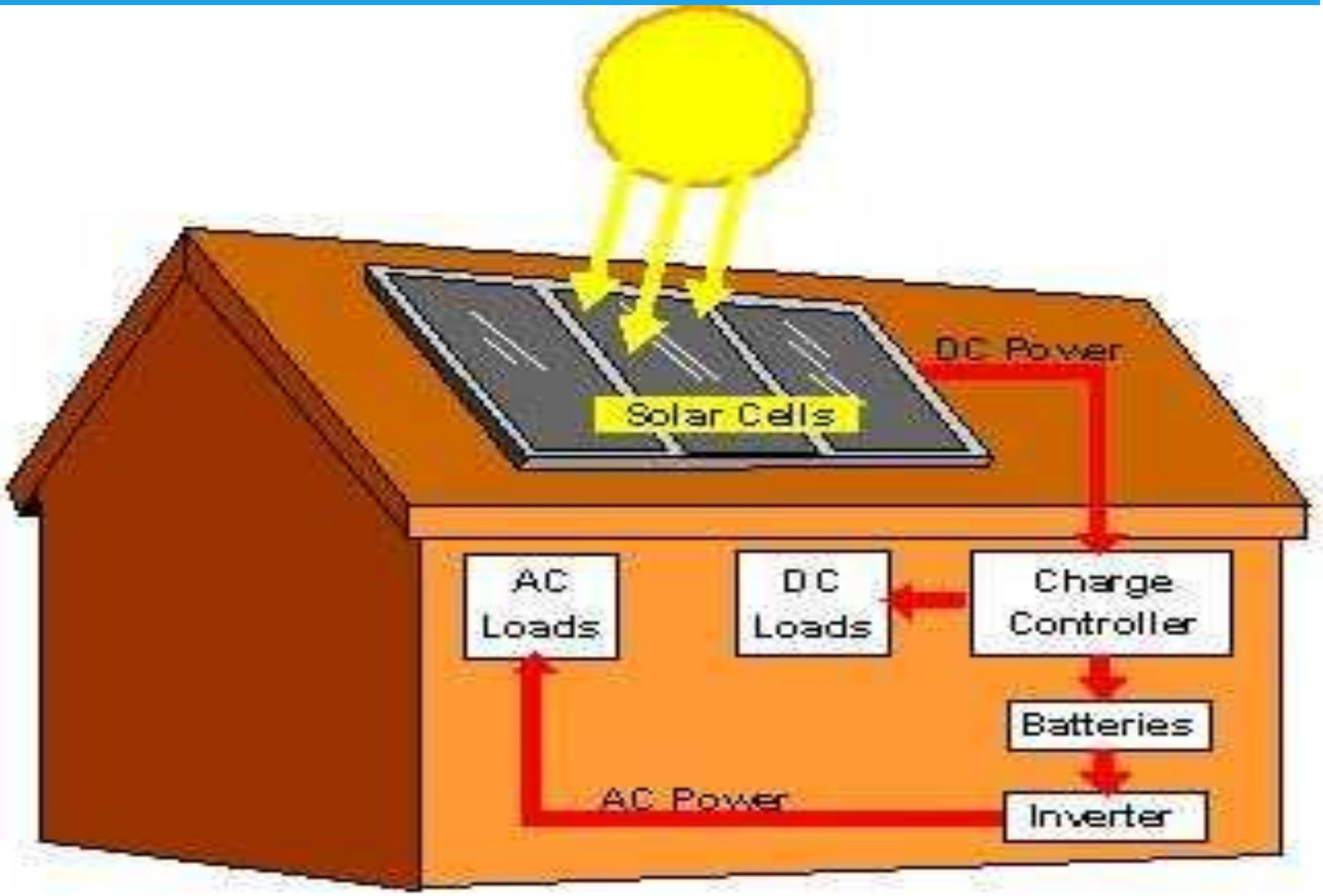
BATTERY: The deepcycle batteries store the power produced by the solar array and discharge it when you need it.

INVERTER: An inverter is required when you want to power AC devices. The inverter converts the DC power, or direct current, from the solar array and batteries into AC power or alternating current.


solar regulator
solar panel
inverter - DC to AC
battery - DC storage
now you are ready to power your AC appliances


Module
Solar Irradiance
Battery Charger Controller
Battery
DC Loads
Battery System

PICTORIAL REPRESENTATION OF A TYPICAL SOLAR POWER SETUP



SOLAR POWER DESIGN FOR SMALL STRUCTURES

Since the end user will likely not be an engineer, we must consider the way they will use electricity.

They or their visitors may not be aware that there is a limited supply of energy for their use or if they are aware, they may not understand the impact to the system when they add a new appliance or leave the air conditioning running all night when they're not even in the building. When we design a solar system, we account for every demand the end user has for power. Every light bulb, radio, fan, air conditioner, computer, toaster, whatever…. Otherwise, the system will be expensively oversized or it will experience brown-outs or black-outs because it's undersized. I've never seen one but you might want to consider posting a sign at the building entrance stating "You are entering a battery powered building. Please conserve our electricity."

Typical solar power design for Mr A

Appliances	Wattage (W)	Duration of use(Hr)/Day	WattHour (WHr) /Day
1 TV SET	205	4 hrs	820
3 FAN	210	12 hrs	2520
LIGHTING PT.	200	4 hrs	800

Total load = 615W **Total WHr = 4120WHr/Day**

Panel size = using 200W panels, average hours of sunshine in Lagos is

5.5hrs. Thus, 200w x5.5hrs = 1100WHr/day. = 880WHr (corrected)

Total nos. of solar panels will be 4120/880 = 6 PVs

Baterry Bank = 4120 WHR/12V = 344 AH We divide by 200AH to get the nos of batteries =344/200= 2(aprox.) considering 50% depth of discharge (DOD) Mr A will need 4 batteries.

Inverter size = 615W/0.8(power factr.) = 769VA . Therefore we can use 800VA inverter or higher.

FINANCIAL IMPLICATION OF THIS PACKAGE

Particulars	Standalone Solar Power Plant
picture	
Capacity	1 KW
Cost	N740,000
Units	1 Unit
Application	Solar power back up for existing electrical Appliances viz. Energy saving bulbs, TV set, Fans,
Scope of Supply	System includes Solar Module, charge controller, Battery, circuit breaker, Inverter.
Solar Panel Wattage	200Wp X 6 Nos
Battery Rating	12 V 200 Ah X 4 Nos
Power Saving Metering per month	167Units
Money saved Per Month (PHCN Bill unit cost @ N12.5)*	N2,087.50
Money saved/month (Gen Bill)	N17,800
Not in Scope	Civil Work, Conduit material and Wiring
Lifespan	4 years for the Inverters & Battery setup and 25 Years for Solar Panel

Particulars	INVERTER SYSTEM
picture	
Capacity	1 KW
Cost	N260,000
Units	1 Unit
Application	Inverter back up for existing electrical Appliances viz. Energy saving bulbs, TV set, Fans,
Scope of Supply	System includes Battery, circuit breaker, Inverter.
Battery Rating	12 V 200 Ah X 4 Nos
Power Saving Metering per month	124Units
Money saved Per Month (Electric Bill unit cost @ N12.50)*	N1,550
Not in Scope	Civil Work, Conduit material and Wiring
Lifespan	4 Years for the system

COST COMPARISM

Below is a cost comparism between Stand Alone Solar, Generator and Inverter for a 3.5kVA system;

	Inverter	Generator	Stand Alone Solar
Setup Cost	533,000	85,000	2,382,000
Fuel (Monthly)	N/A	43,650	N/A
Maintenance	N/A	2,200	N/A
Average Lifespan(yrs)	5 yrs	3 yrs	25 yrs
Cost over lifespan*	533,000	1,650,600	3,822,000
Average Cost/Lifespan	106,000	578,533	152,880

COST COMPARISM

The Assumptions used in the analysis above are;

1) **There is PHCN for 12 hours daily**
2) **Runtime for each system daily is 12 hours, except for the standalone solar**
3) **Prices are constant over time**
4) **The average cost/year is done over the lifespan of each system**
5) **The gen consumes 15L of fuel in 12 hours**

WAY FORWARD

1. A confirmation of interest to have this alternative energy system.
2. Based on this confirmation, we will carry out a detailed study of the site and come up with a suitable design.
3. Both parties agree on payment terms i.e. 80 percent upfront.
4. The system will be installed within 3 weeks from this date.

CLIENT REFERENCES

- Q8 Nigeria Ltd, Ikosi, Ikeja City Mall & Lekki
- Softcom Imagio Ltd, Maryland
- Fatwheels Ltd, Alausa
- Engineer S. Oshinyemi, Osaro
- AIICO Insurance, Abuja
- Prof. Toyin Ashiru, MKO Gardens Alausa
- Chief Superintendent of Police Ladi Abayomi
- Dr Mrs Kolade, Vgc.
- Esporta Suites, Ikeja.
- Mr Sesan, Ogudu GRA.

CONTACTS

ABSORT ENTERPRISES

Lagos, Nigeria.

Phone: (+234)816-6409-090, 08086158477,

08064731031, 08185191582

Email: absortenterprises@yahoo.com

THANK YOU