



## GLOBENGY SOLAR POWER TELECOM TOWER SYSTEM



### Environment

Millions of people depend upon the equipment you operate. Functioning in remote and extreme locations, the power to your equipment must be rugged and reliable. Servicing your equipment requires more than just a quick trip to a location, so from maintenance to repair to daily operations, the dependability of your key power source to the profitability of your business, and so is the requirement of any Telecommunications set up.



Telephonic communication are a part of life, rather an essential life these days and especially when more and more countries and companies, are not putting in funds in land to land phone systems, cellular telecommunication is a essential a part of life, whether it is a developing country, under-develop country or a developed country.

## Challenge

Remote and extreme locations present a daily operational challenge for you. With distance and severe weather conditions limiting the ability to perform maintenance and repairs, reliability is a requirement for you. The power solutions you choose for your critical telecommunications applications simply must perform whether they are less than ten feet of snow or enduring the heat of desert conditions.

## Solution

Providing a cost-effective, competitive alternative to fuel-based solutions for remote telecommunications applications, GLOBENGY SOLAR POWER TELECOM TOWER SYSTEMS eliminate concerns such as high fuel costs, greenhouse gas emissions, recurring servicing cycles, frequent and costly component replacement, and problematic maintenance procedures. GLOBENGY SOLAR POWER TELECOM POWER SYSTEMS delivers extremely reliable power solution that can be containerized and rapidly deployed in the most extreme, remote environments.

GLOBENGY SOLAR POWER TELECOM TOWER SYSTEMS solutions can also be sized and configured for hybrid power systems. Combining solar with additional sources of power generation such as diesel, fuel cell or wind



generators, hybrid power systems offer a reliable and economical solution for large telecom power requirements.

GLOBENGY SOLAR POWER TELECOM TOWER SYSTEMS sales consultants and engineering personnel have extensive experience quoting and sizing solar power systems for a variety of telecommunications applications and geographical locations. Thousands of installations still reliably operating in the field after a decade or more are a testament to this expertise and precision.

## **Applications**

- Mobile networks: GSM, CDMA and 3G
- Mesh networks: security, oil & gas, agriculture, Wi Fi, Wi MAX.
- Satellite terrestrial networks and VSAT's
- Remote microwave and repeater sites
- Telemetry and SCADA networks
- Relay or call stations repeater sites
- Telemetry and SCADA networks

## **Telecom Tower Scenario**

There are various type of towers in Telecom Tower scenarios like Rural or remote areas, we presume the towers in interiors may be one of these types, subject to confirmation we presume one of these would be the Telecom Tower



## Temporary Monopoles



## Elevating Towers



## Lattice Towers



## Monopoles



## Our presumptions

The power requirements per tower may be 2/ 4 /6 / 8 / 10 KW and in accordance to that, we propose the following configurations:

We propose Solar Photovoltaic System to provide 12 V DC supply to remotest Telecom Towers in Tanzania, East Africa. Presuming, we suggest reliable 96 V D.C.





power supplies for communication equipment to minimize the down time of the very vital communication link, which links various cellular telecom customers.

We suggest 12 V DC Charger with battery bank. Since the grid power or the generator power supply is not reliable with power interruption due to various reasons and non timely supply of fuels also creates lot of disruption, apart from the corruption in the pricing of Diesel supply raises the costs of maintenance, apart from the fact that these stations have to manned on regular basis for diesel supply to generators, raises the maintenance cost, the most logical solutions to the practical solution would be to:

- a) Use of Solar P V Panel based Battery back system with ample reserve to switch over to other battery in case of constant rainy or such days.

**INTERESTING ADDITIONAL ADVANTAGE THAT CAN BE TAKEN UP:**

- b) Make positive use of the thousands of generator sets for the general benefit of nearby villages, where the cost of maintenance of such generators can be highly beneficial and further if these generator sets are coupled with Biomass Gasifier System, it can replace the need of diesel UPTO 80% and lots of villages can be electrified. This is additional benefit etc
- c) For maintenance of such transmission system customer will have increase the back up time of existing DC power supply. Therefore the system should be designed considering the following points.
  1. Photo Voltaic system operating in parallel with existing 12 V DC chargers with battery bank to ensure a reliable power supply up to maximum of 120Amps approx. to the communication system including Aviation Lamp.... And providing 2 such systems to provide full proof power supply to each tower where in case of power shortage in one system the automatic tripping to the other system takes care immediately.
  2. The proposed PV system shall provide at least more than 16 – 18 hours power back up/day.
  3. The system will operate primarily on solar power and will take back up from grid in case of continuous bad weather.
  4. For mounting of PV panel we suggest robust iron frame configurations to be tied up, with the Telecom Tower itself, facing the direction of sun.
  5. Solar panel are made up of mono crystalline etc etc, UL, CL certification etc etc
  6. Guarantee & Life of solar panel is 20 Years



7. Is is economical in longer terms when compared to & DG sets based electricity producing system.
8. System can be custom designed on receipt of more information as per actual requirement, PRECISE TECHNICAL SPECIFICATONS OF WHICH HAS TO BE PROVIDED BY THE CONCERNED ELECTRICAL INCHARGE OF THE PROJECT OR SITES.
9. We offer Tower Power Back up system from Design to Supply, installation and commissioning.

## **Bill of Quantity**

1. Solar PV panels in multiplication of watts required.
2. Batteries(s) 12V, 120 Ah.
3. Control Panel(s)
4. Structure & Civil work.
5. Cable, fittings & accessories.
6. Design, Drawing & Installation cost.

**Digital Image of How the Solar Battery power system will ultimately look in remote areas**





## System Configuration & Diagram of stand-alone PV system with battery storage powering DC loads, for Telecom Towers

