



MINISTRY OF ENVIRONMENT AND FOREST
UNDP/BGD/96/007
Sustainable Environment Management Programme [SEMP]



**5KW Centralized AC System for Coastal Fishermen
Communities**

Sustainable Rural Energy (Comp 2.6)
Local Government Engineering Department

Schematic Diagram of 5 KWp Centralized Solar Powered AC System at Shariakhali, Chakaria, Cox's Bazar

Salient Features :

- System Capacity : 5000 Wp
- No of PV Panels : 68 (75/each Watts)
- Battery : 72 Nos.
- Power Conditioning Unit : 2 Nos.(3Kw each)
- Lamps : 180 (CFL)
- Beneficiary House Holds : 72
- No of TV points : 20
- Over head Low tension Line
- System autonomy : 3 days
- Operation hours : 5/day

90 nos Lights
90*11W CFL &
5 nos TV Points
5*35W



L O A

Inverter
3KVA



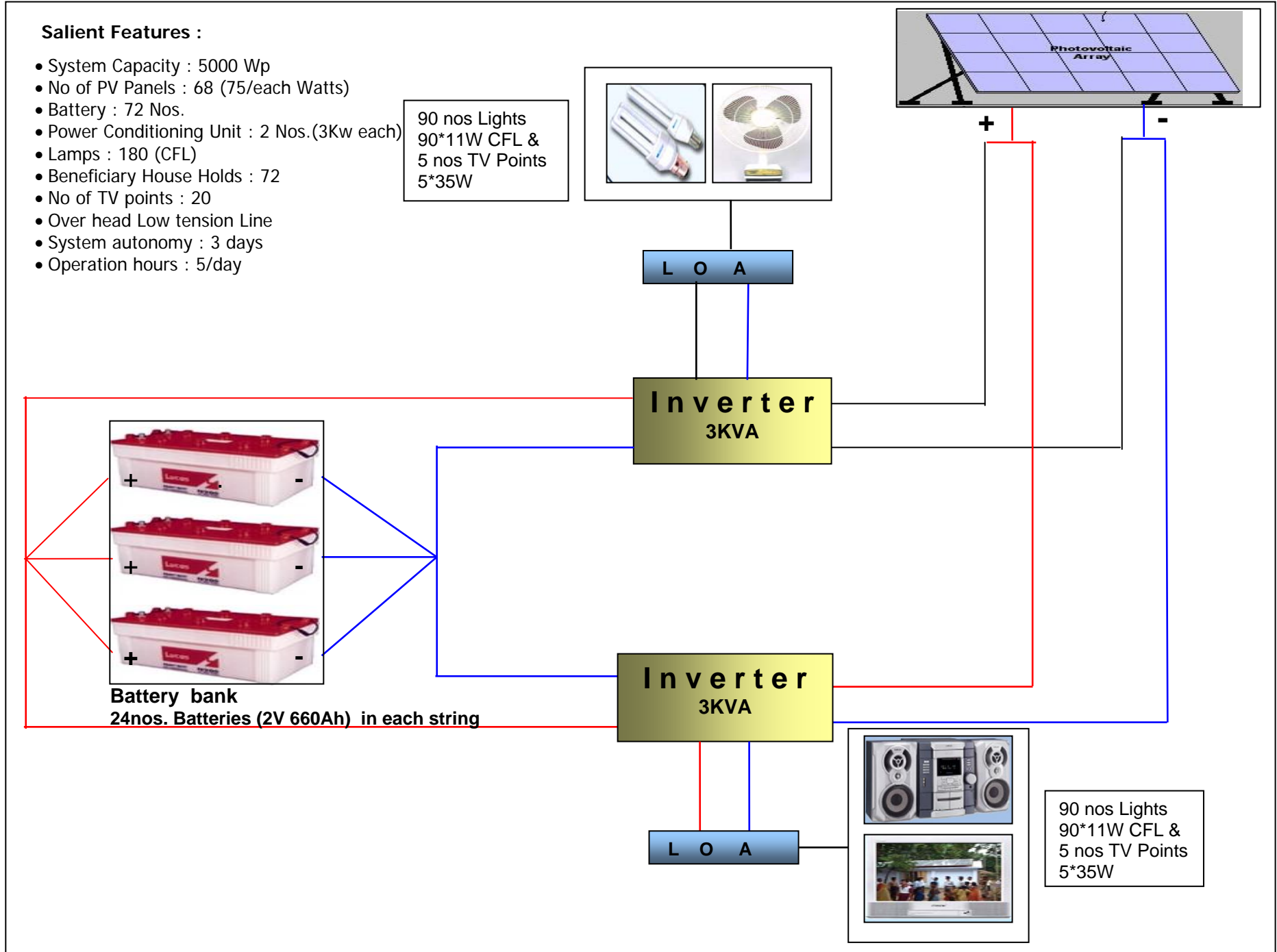
Battery bank
24nos. Batteries (2V 660Ah) in each string

Inverter
3KVA

L O A



90 nos Lights
90*11W CFL &
5 nos TV Points
5*35W



Background : Bangladesh has one of the most densely populated, low-lying, coastal zones in the world, with 20-25 million people living within a one-meter elevation from the high tide level. The coastline in Bangladesh totals about 735 km. This area became most vulnerable to sea storm surges, inundation, salt-water intrusion, flash floods which hinders coastal development activities. Peoples living in coastal areas and remote islands with poor communication and lack of electricity. Moreover a large number of unions and remote markets located in the off-grid areas and it will not be possible to bring some of those within near future.

In these remote areas fishing is the main income generation activity. Almost all the households partially or fully depend on diesel/kerosene, candle lighting. Environment friendly PV systems in such areas can give impetus to local development, employment generation, promote livelihood and tourism.

Project Location: Sariakhali Jaldaspara is a remote sea-shore and off-grid area located in Fariakhali union under Chakaria upazila in Cox's Bazar district.

Description : During the last decade LGED has been engaged in demonstrating PV technology for various rural applications like rural market, rural clinic, rural villages in different parts of the country and has a good record to introduce newer technologies in this country. Like many other successful efforts LGED has installed a largest centralized solar AC power unit at Sariakhali and giving access to electricity for coastal community through SRE project. Centralized Solar AC System having overhead low tension lines connected 80 families.

Expected Benefits: Solar electrification at Sariakhali, Chakaria improves quality of life of the eighty families by extending their working hours and help students for night time study. Moreover, access to TV and radio at this community provides information and better entertainment to the beneficiary specially on health, education, sanitation and family welfare.

Environmental Impact: The main sources of power in coastal households generated from diesel and kerosene which was contributing emission of greenhouse gas, changes in coastal biodiversity and also made climate changes. Energy harvested from Sunlight is clean and exhaust free. It is a proven environmentally friendly technology.

Operation and Maintenance (O& M) : The responsibilities of Operation and Maintenance has (O&M) entrusted on the beneficiary committee. Necessary training has already been given to the beneficiaries. One page pamphlet in Bangla which covered operation and maintenance of the system was supplied to beneficiaries. A technical person has been appointed as caretaker of the system. All maintenance will be carried out by Solar System O & M Committee.