

Technologies description for off grid concept on Pemba Island, Tanzania

Technology	Description	Notes
ECOBARGE PILOT		
Desalination unit, RO	60 m3/day	40 ft container
Cooling for fish	10 °C/-18 °C	40 ft container
Floating Solar Station	250 kW	
Energy Storage	500 kWh	20 ft container
THE SOLUTIONS FOR A RESORT		
Solar Station, land based	<p>Capacity: not less 152,46 kW Type: Ground-mounted, two-row, landscape orientation. Azimuth - 0 degrees (north orientation) Tilt of PV panels - 4 degrees Maximum system voltage 1000 V Output voltage - 0.4 kV</p> <p><i>Equipment analogs:</i> PV module - 330 W (PV per string - 22 PCS) Inverter - 20000 W, number - 7 pcs (It is not envisaged to use one central inverter. In case the central inverter is broken, the entire station will be out of service.)</p>	
Solar Collectors, double-circuit	<p>Average load on the hot water supply system - 3.5 kW Hot water system temperature - 55C Average daily consumption of hot water - 200 l / day</p> <p>Collector: Type: installation on the ground (there is no possibility of installation on the roof), the optimal installation angle is 4 degrees. Double-circuit (Ethylene glycol or an analogue is used as a coolant) Accumulator tank - 200 l.</p> <p>The installation of the tank is provided separately from the</p>	20 units

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Solar Collectors, double-circuit	collector (provide a pumping group), because the experience of installing collectors showed that due to the quality of the water, the accumulator tank fails.	20 units
Energy Storage	Type - Lithium NMC prismatic Energy - not less 456 kWh Type: modular Power consumption - 27.24 kW Discharging time 12 h (night) Output voltage - 0.4 kV	
Mist spray water type nozzles	50 units	
Shower heads to reduce water consumption	40 units	
Water saving toilets	27 units	
Grey water treatment system	22 000 l/day	
Water saving garden irrigation hoses	30 units of 15 m long	
Buried clay pots	50 units	
Solutions for swimming pools to eliminate the usage of chlorine and save the coral reef from bleaching	1 main pool 150 m3 5 plunge pools 2 m3	
Solutions for Community, 181 houses		
Rooftop Solar	<p>Option 1: Capacity: 1.65 kW Installation - on the roof Roof material - metal Storage system 100 A*h Inverter 1.5 kW</p> <p>Option 2: Capacity: 3.3 kW Installation - on the roof Roof material - metal Storage system 2x100 A*h Inverter 3 kW</p>	
Toilets		
Solutions for cooking		