

Energy Efficient Appliances for Decentralised Healthcare



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A comparative study of popular healthcare appliances in use vs energy efficient alternatives on the basis of energy consumption requirements

One of the first roadblocks in designing an efficient renewable energy powering system for a health centre is the efficiency of various appliances being utilised. These inefficient can shoot up the cost of powering exponentially and thus not only increase monthly expenditures of health centres but also reduce the scope of these appliances to be available at the last mile, where at times, it may be needed the most.

A closer look into each health centre at all levels of healthcare delivery , points to a great need and scope to replace high power consuming equipments or account for the efficiency of the said equipments when planning for or setting up new health centres.

The following document aims to provide a guide to health care providers, energy service providers and policy makers, amongst other stakeholders, to certain categories of healthcare appliances and their efficient alternatives. It also provides for each appliance category an estimate of potential energy and energy infrastructure savings on replacement.

APPLIANCE CATEGORIES WITH EFFICIENT ALTERNATIVES



LUMINARIES,
FANS, COMPUTER
& PRINTER



COLD CHAIN &
REFRIGERATION



MATERNAL &
CHILD CARE

APPLIANCE CATEGORIES WITH A NEED OF GREATER EFFICIENCY



DENTAL CARE



RADIOLOGY



STERILISERS



Connect with us to know more about energy efficient healthcare appliances or to contribute as a technology developer!

SELCO Foundation

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LUMINARIES, FANS, COMPUTER & PRINTER

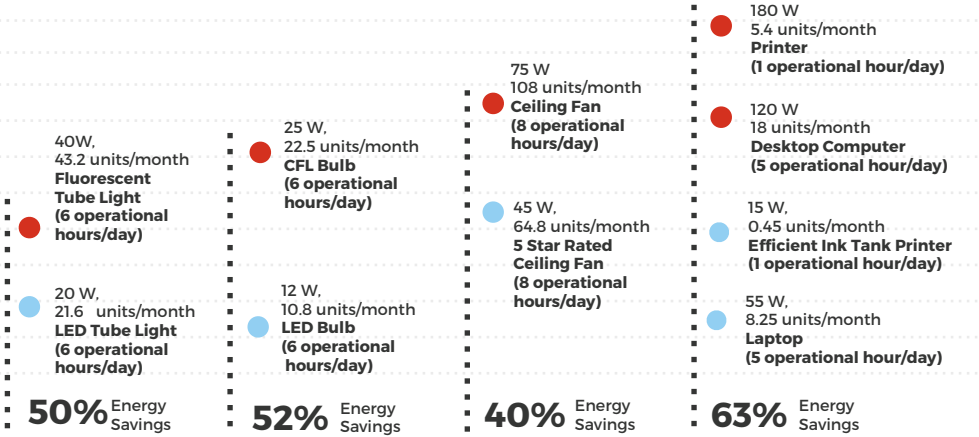
Energy Consumption Comparison

Solar Powering of Luminaries, Fans, a computer and a printer in an inefficient Primary Healthcare Centre vs one with efficient appliances

Combination of Appliances

6 + **5** + **6** + **1** + **1**
Tube Lights Bulbs Fans Printer Computer

● Inefficient ● Efficient

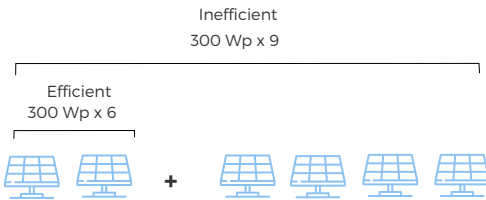


EFFICIENT: Consumes 3.53 Units/Day

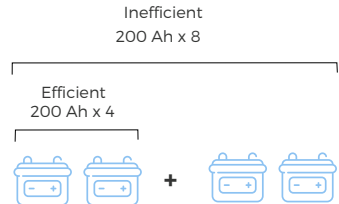
47% Energy Savings

INEFFICIENT: Consumes 6.57 Units/Day

Energy Generation Panel Capacity



Energy Storage Battery Capacity



Energy Conversion Inverter Capacity

Efficient: 2.5 kVA, 48 V

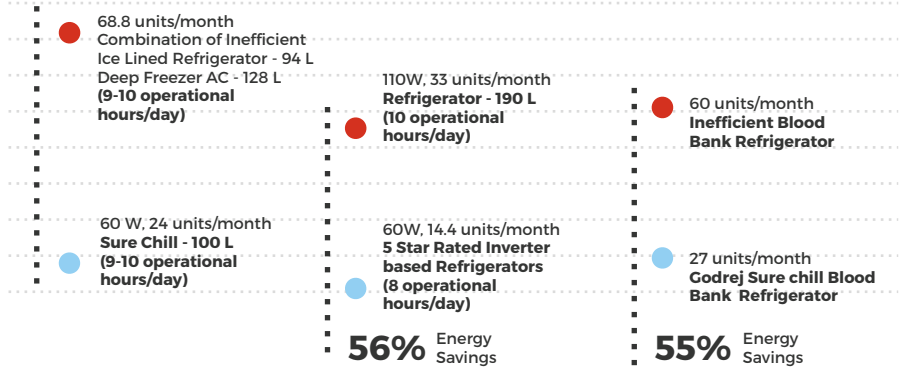
Inefficient: 4 kVA, 48 V



COLD CHAIN & REFRIGERATION

Energy Consumption Comparison

● Inefficient ● Efficient



Solar Powering of an ILR and Deep Freezer vs the Sure Chill

EFFICIENT SOLUTION: 460 Wp - Without Inverter and Battery

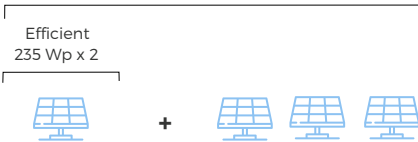
Sure Chill

INEFFICIENT SOLUTION: 1.2 kWp - With Inverter and Battery

ILR + DF

Energy Generation Panel Capacity

Inefficient
300 Wp x 4



Energy Storage Battery Capacity

Efficient
(No Battery Required)

Inefficient
180 Ah x 8



Energy Conversion Inverter Capacity

Efficient: DC System

Inefficient: 5 kVA, 96 V

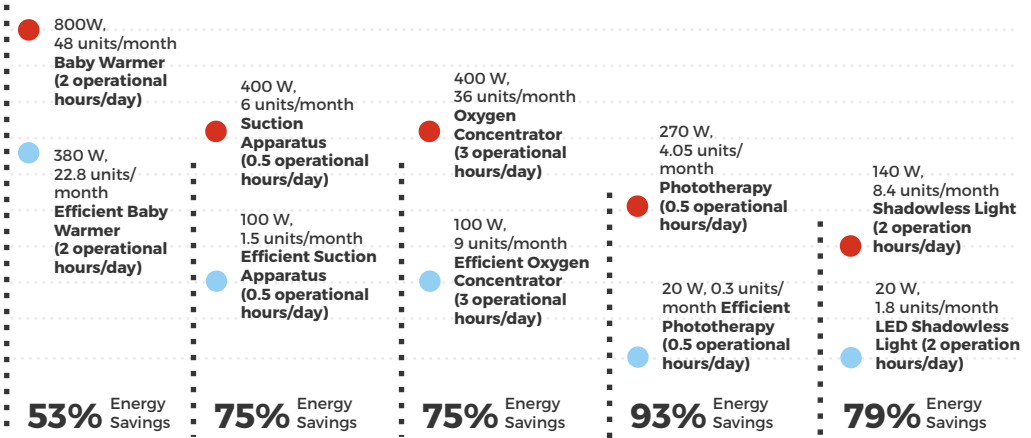


MATERNAL AND CHILD CARE

Energy Consumption Comparison

Solar Powering of an inefficient delivery activities in Labour Room vs an efficient one

● Inefficient ● Efficient

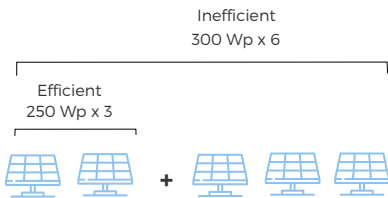


EFFICIENT: Consumes 1.16 Units/Day

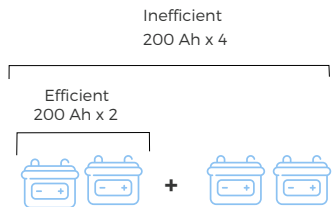
66% Energy Savings

INEFFICIENT: Consumes 3.41 Units/Day

Energy Generation Panel Capacity



Energy Storage Battery Capacity



Energy Conversion Inverter Capacity

Efficient: 1.4 kVA, 24 V

Inefficient: 4 kVA, 48 V