



# SRI RAMACHANDRA

INSTITUTE OF HIGHER EDUCATION AND RESEARCH

(Deemed to be University)

## SDG-13-13.2.2.2

### From Biomass Briquettes:

Per day Usage = 170 Kg
Burning of 1 m <sup>3</sup> Biomass Briquettes releases = 3371200 K Cal
Annual consumption of Biomass Briquettes = 62.05 m <sup>3</sup>
Energy used from Biomass Briquettes = 209182960 K Cal / Year
<b>Low Carbon Energy used from Biomass Briquettes = 875.2215 GJ / Year</b>

Calorific value = 4214 K Cal / Kg

Density = 800 Kg / m<sup>3</sup>

### From Bio Gas Plant:

Capacity of the Plant Installed = 50 Kg Kitchen Food waste / Day
No. of Plants Installed = 1 No
10 Kg of food waste can generate 1 m <sup>3</sup> of Bio gas 1m <sup>3</sup> of Bio gas can produce 2.8 KWh
1 day 5m <sup>3</sup> of Bio gas produced
Annual generation = 1825 m <sup>3</sup>
<b>Low Carbon Energy used from Bio Gas Plant = 18.4 GJ / Year</b>

Calorific value = 28 MJ / m<sup>3</sup>

Density = 1.15 Kg / m<sup>3</sup>

### From Solar Water Heater:

Capacity of the Solar Water Heaters installed = 1000 Litters/Day
No. of Units Installed = 6 Nos
Capacity of an individual Existing Electric Water Heater = 100 Litters

No of electric water heater Usage reduced due to Solar water heater = 15 Nos
Power consumption of an individual electric water Heater = 3 KW
Energy saved for a day(12Hours) by using solar water heater = 540 KWh
Energy used from solar water heater = 194400 KWh/Year
<b>Low Carbon Energy used from Solar Water Plant = 699.84 GJ / Year</b>

**From Electric Vehicle:**

Total Vehicles = 4 Nos
Total No of Batteries = 24 Nos (8 Vol – 165 Ahs)
Per day per vehicle running distance = 35 KMs;
Energy from 1 Battery = 1.32 KWh;
Four Electric Vehicles utilizes 44.352 KWh of energy for every 100 KM drive
Energy used from Electric Vehicles = 18255.28 KWh / Year
<b>Low Carbon Energy used from Electrical Vehicles = 65.719 GJ / Year</b>

**Final Results:**

Sources	Energy used (GJ/Year)
Biomass Briquettes	875.2215
Bio Gas Plant	18.4
Solar Water Heater	699.84
Electric Vehicles	65.719
<b>Total Energy Used from Low-Carbon sources in the Year - 2022</b>	<b>1659.1765 GJ / Year</b>

  
 Dr. P.V. VIJAYARAGHAVAN  
 Vice-Chancellor  
 Sri Ramachandra  
 Institute of Higher Education & Research  
 (Deemed to be University)  
 Porur, Chennai-600 116