



## Raw waste data per resident per day

### Aruneo Data

| data_id                       | soc_id_id | date       | user_associated_id | Green Waste (in KG) | Blue Waste (in KG) | Red Waste (in KG) |
|-------------------------------|-----------|------------|--------------------|---------------------|--------------------|-------------------|
| 2022-02-02_Sarjan Tower_dhyan | 1         | 2022-02-02 | 0                  | 0.875               | 1.282              | 2.06              |
| 2022-02-03_Sarjan Tower_dhyan | 1         | 2022-02-03 | 0                  | 2.124               | 2.447              | 0.506             |
| 2022-02-04_Sarjan Tower_dhyan | 1         | 2022-02-04 | 0                  | 1.076               | 2.429              | 0.646             |
| 2022-02-05_Sarjan Tower_dhyan | 1         | 2022-02-05 | 0                  | 2.136               | 1.986              | 0.967             |
| 2022-02-06_Sarjan Tower_dhyan | 1         | 2022-02-06 | 0                  | 1.229               | 0.915              | 2.062             |
| 2022-02-07_Sarjan Tower_dhyan | 1         | 2022-02-07 | 0                  | 1.815               | 1.247              | 0.516             |
| 2022-02-08_Sarjan Tower_dhyan | 1         | 2022-02-08 | 0                  | 1.989               | 1.891              | 2.481             |
| 2022-02-09_Sarjan Tower_dhyan | 1         | 2022-02-09 | 0                  | 1.214               | 2.304              | 1.901             |

## Municipal mock report

| username  | Bio_Energy | Bio_energyshare | Average_Footprint | Credits | Total_Waste | Total_Green_Waste | Total_Blue_Waste | Total_Red_Waste |
|---|------------|-----------------|-------------------|---------|-------------|-------------------|------------------|-----------------|
| dhyan   | 5696.0     | 0.0             | 0.0               | 37      | 0.0         | 60.0              | 76.0             | 67.0            |
| dhyan-test  | 5677.0     | 0.0             | 0.0               | 38      | 0.0         | 62.0              | 78.0             | 62.0            |
| Maharshi  | 5702.0     | 0.0             | 0.0               | 34      | 0.0         | 75.0              | 68.0             | 81.0            |
| Janesh  | 5703.0     | 0.0             | 0.0               | 40      | 0.0         | 60.0              | 68.0             | 65.0            |
| Salonee   | 5697.0     | 0.0             | 0.0               | 32      | 0.0         | 77.0              | 76.0             | 60.0            |
| Dhruv   | 5669.0     | 0.0             | 0.0               | 36      | 0.0         | 68.0              | 76.0             | 73.0            |
| Vatsal  | 5692.0     | 0.0             | 0.0               | 33      | 0.0         | 63.0              | 77.0             | 70.0            |
| test123   | 5695.0     | 0.0             | 0.0               | 34      | 0.0         | 65.0              | 70.0             | 66.0            |
| dummy-123   | 5695.0     | 0.0             | 0.0               | 30      | 0.0         | 62.0              | 64.0             | 60.0            |
| hello-world   | 5715.0     | 0.0             | 0.0               | 32      | 0.0         | 72.0              | 84.0             | 80.0            |
| 0 Tulip-4   | 5724.0     | 0.0             | 0.0               | 33      | 0.0         | 74.0              | 81.0             | 70.0            |
| 04/Apr/2022 16:51:49] "GET /aruneo/soc_dash/ HTTP/1.1" 200 3070               |            |                 |                   |         |             |                   |                  |                 |
| 04/Apr/2022 16:51:49] "GET /static/css/style.css HTTP/1.1" 200 2189           |            |                 |                   |         |             |                   |                  |                 |
| 04/Apr/2022 16:51:49] "GET /static/css/bootstrap.min.css HTTP/1.1" 200 155758 |            |                 |                   |         |             |                   |                  |                 |

- Values of Bio-energy share , Avg footprint and total waste comes after a month of data generation, hence it is 0 for a particular day.

## Result / End Parameters calculation method

|                          | Conventional/Present method   | Project method   | Results  |
|--------------------------|---|--|--|
| Carbon Foot print Impact | <b>Conventional Electricity Per capita per month</b><br>250 kWh units/home<br>150 kWh units share of fossile fuel (60% share) (      )<br>136.50kg CO2 emission (0.91 kg/kWh emission factor in fossil fuel)<br>1.632 ton/year CO2 footprint  | <b>Bio-electricity per capita per month</b><br>8.64 kg /home (35% share of organic matter in 24kg waste/month/home generated)<br>1.29 to 6.91 m3 bio-mass (0.15m3/kg to 0.8m3/kg conversion factor)<br>5.2 to 27.6 kWh electricity (Bio-Electricity factor:4.1)<br>1.33 to 1.58 ton/year (2.5% to 11% share in monthly electricity requirement)                                | 8 to 19% footprint reduction   |
|                          | <b>By Waste generation</b><br>31.2% share in waste incineration (24 kg waste produced/person/month)<br>7.48 kg per capita waste incinerated<br>8.98-11.98 kg CO2 emission (1.2 to 1.6 kg / kg waste emission factor)<br>0.11-0.14 on/year CO2 footprint BY WASTE<br><b>1.772 to 1.742 ton/year CO2 footprint -TOTAL</b> | <b>By plastic waste recycle &amp; Eco-brick</b><br>8% share of plastic waste in total waste 31.2%<br>23.2% (5.5kg) share in incineration after plastic recycle percentage (31.2%-8%)<br>0.079 to 0.105 ton/year Footprint after Eco-brick treatement and plastic recycle.<br><br><b>1.63 to 1.43 ton/year CO2 footprint - TOTAL</b>  |  |
| Electricity Impact       | <b>Conventional Electricity consumption</b><br><br>Taking 5667 kWh unit equivalent to Bio-electricity consumption   | <b>Bio-Electricity consumption</b><br>Biomass conversion: 0.15m3/kg to 0.8m3/kg<br>Bio-electricity factor: 4.1<br>8.64kg organic matter in total waste-35% of 24kg waste generated per capita/month<br>1728kg organic waste per month for 200 houses avg in a society<br>5667 kWh equivalent Bio-electricity consumption (1728kg x 0.8m3/kg (Biomass) x4.1 (Bio-elect factor)) | Bio-electricity is cheaper by 14167Rs./ 242.2 CAD (36%) for society/month<br><br>Bio-electricity is cheaper by 70.83Rs./ 1.21 CAD per capita per month |
|                          | <b>Conventional Electricity Cost</b><br><br>Generation average cost= 7Rs/ kWh<br><br><b>39669 Rs. Total Cost of Fossil-fuel based electricity</b>   | <b>Bio-Electricity Cost</b><br>Generation cost per kWh= Biomass-3Rs + Handling/sizing-0.50Rs + Maintenance & Overheads-1Rs.+ Transportation-2Rs = 5.50Rs<br>Final cost = 4.50Rs. (5.50Rs.-1Rs. selling of organic matter by society)<br><br><b>25502 Rs - Total Cost (5667 kWh x 4.50Rs)</b>   |  |
| Cooking Gas Impact       | <b>LPG &amp; PNG cost per capita</b><br>12-15kg/month - Per capita Gas consumption<br>LPG cost: 63.35Rs/kg ie 760-950Rs / month<br>PNG cost:830Rs/1MMBTU ie 303-378Rs / month   | <b>Compressed Bio-Gas-CBG cost per capita</b><br>12-15kg/month - Per capita Gas consumption<br>CBG cost:25Rs/kg ie 300-375Rs / month. From 1728kg waste generated we get about between 7.2-11.4% of CBG share / Total Gas consumption  | CBG is 60% cheaper than LPG<br><br>CBG is 2-3% cheaper than PNG  |
|                          |   |  |  |
| LANDFILL SHARE           | 72 % of the waste collected disposed in landfills in unheigenic manner<br>17.3Kg per capita waste disposed to landfills ( 72% of 24kg)  | 21% of organic and almost 20% of plastic waste diverted from landfill<br>So, only 31% of the waste collected is disposed into landfills  | 41% or 9.84 Kg waste diverted from landfill  |

- All data taken from reliable sources
- Some unavoidable assumptions in landfill share taken