

**Carbon Footprint Calculation
for Santhigiri College, Thodupuzha, 685 583 Kerala, for 2021- '22**

Sl. No:	Source	Rate	Quantity x Days/year	Total Quantity	Annual Eqvt. CO ₂
1.a	Electricity use	0.82 kgCO ₂ /kWh (India 2018)	2,480 kWh/month	29,761 kWh	24.4 T CO ₂
1.b	Fossil fuel use	2.68 kgCO ₂ eq/kg 2.30 kgCO ₂ eq/L	- LPG (66x19+6x14)	- 1,338 kg	3.1 T CO ₂
1.c	Firewood	1.65-1.8kgCO ₂ eq/kg	100 kgx12	1,200 kg	2.2 T CO ₂
2.a	Food waste	1.9 kgCO ₂ eq/kg	18 kgx300d	5,400 kg	10.3 T CO ₂
2.b	Paper waste	1.725kgCO ₂ eq/kg	6 kgx250d	1,500 kg	2.6 T CO ₂
2.c	Water waste	0.298kgCO ₂ eq/kL	15 Lx365L	5,520 L	1.6 T CO ₂
2.d	Plastic/Other	6.0kgCO ₂ eq/kg	1.45x250	362.5 kg	2.2 T CO ₂
3.a	Bus – students	2.68 kgCO ₂ eq/L	(360/4) x 250	22,500 L	60.3 T CO ₂
3.b	Staff, Stu/week	2.68 kgCO ₂ eq/L	100x230x4/50x4	460 L	1.2 T CO ₂
3.c	Cars, Taxis, and College Car	2.30 kgCO ₂ eq/L	80x250/10	2,000 L	4.6 T CO ₂
3.d	Auto rickshaws	2.68 kgCO ₂ eq/L	15x20x250/15L	5,000 L	13.4 T CO ₂
3.e	Two wheelers	2.30 kgCO ₂ eq/L	24x45x250/50 L	5,400 L	12.4 T CO ₂
4	Events, Festivals	LS			24.0 T CO ₂
5	Construction	Lump Sum	--		--
	Total				162.3 T CO₂

*No. of activity days in 2021-22 reckoned as: 250 days

Table 4.1: Calculation of Carbon Footprint Source-wise

**Remediation for Carbon Footprint
of Santhigiri College, Thodupuzha, 685 583 Kerala, for 2021-'22**

!	Source	Rate	Quantity x Days/year	Total Quantity	Annual Eqvt. CO ₂
1	1.a. Solar PV electricity 1.b. Solar Hot Water 1.c. Wind energy 1.d. Biogas 1.e. Micro Hydro Power, other	0.82 kgCO ₂ /kWh -- 1.34/kg --	25 kWx4x365 - - 3.5cum/day	36,500 kWh - - 1277.5 kg	30.0 T CO ₂ -- -- 14.7 T CO ₂ -
2	2.a. Replacing old tube lights 2.b. Replacing bulbs & CFLs 2.c. Replacing Fans, Motors 2.d. UPS Upgradation 2.e. Reduce Phantom load	0.82	300 LED Tubes x 40 W x 6h x 250	18,000 kWh	14.8 T CO ₂
3	3.a. Waste Reduction 3.b. Recycling 3.c. Waste to Energy	0.26 kgCO ₂ /kL	15 kL/day	4,500 kL	1.2 T CO ₂
4	4.a. Sharing of vehicles 4.b. Low footprint options 4.c. Electric/Solar vehicles		8 Bikes	LS	0.5 T CO ₂
5	5.a. Greenery forest retained 5.b. Tree planting, Biodiversity 5.c. Gardens, Lawns etc.	Nil 22kg/yr. 2200 kg	LS		10.0 T CO ₂
6	6. Walking & bicycle use	2.68 kg/L	135x250x2/50x4	637.5 L	1.7 T CO ₂
7	7. Outreach activities	22 kg/yr	LS		8.0 T CO ₂
!	Total				80.9 T CO₂

Table 4.2: Remediation for Carbon Footprints: available/created.

The International Organization for Standardization (ISO) also provides some general standards for

- o! Greenhouse gas emissions at Organization level (ISO 14064 - 1) and
- o! Greenhouse gas emissions at project level (ISO 14064 - 2)
- o! Specifications to validate and verify relevant accountings are documented in (ISO 14064 - 3)

[Full Report of Green Audit of Santhigiri college of computer science, Vazhithala is issued separately]