

ENHANCED SUSTAINABILITY ROADMAP

Learnings from the Ecolabelling Process –
for current and future properties



carbon ▶ cost ▶ community ▶ climate

cBalance Solutions Hub

Our Partner



Prepared for:



January 2015

PROJECT STATUS

ECOLABELLING & REPORTING

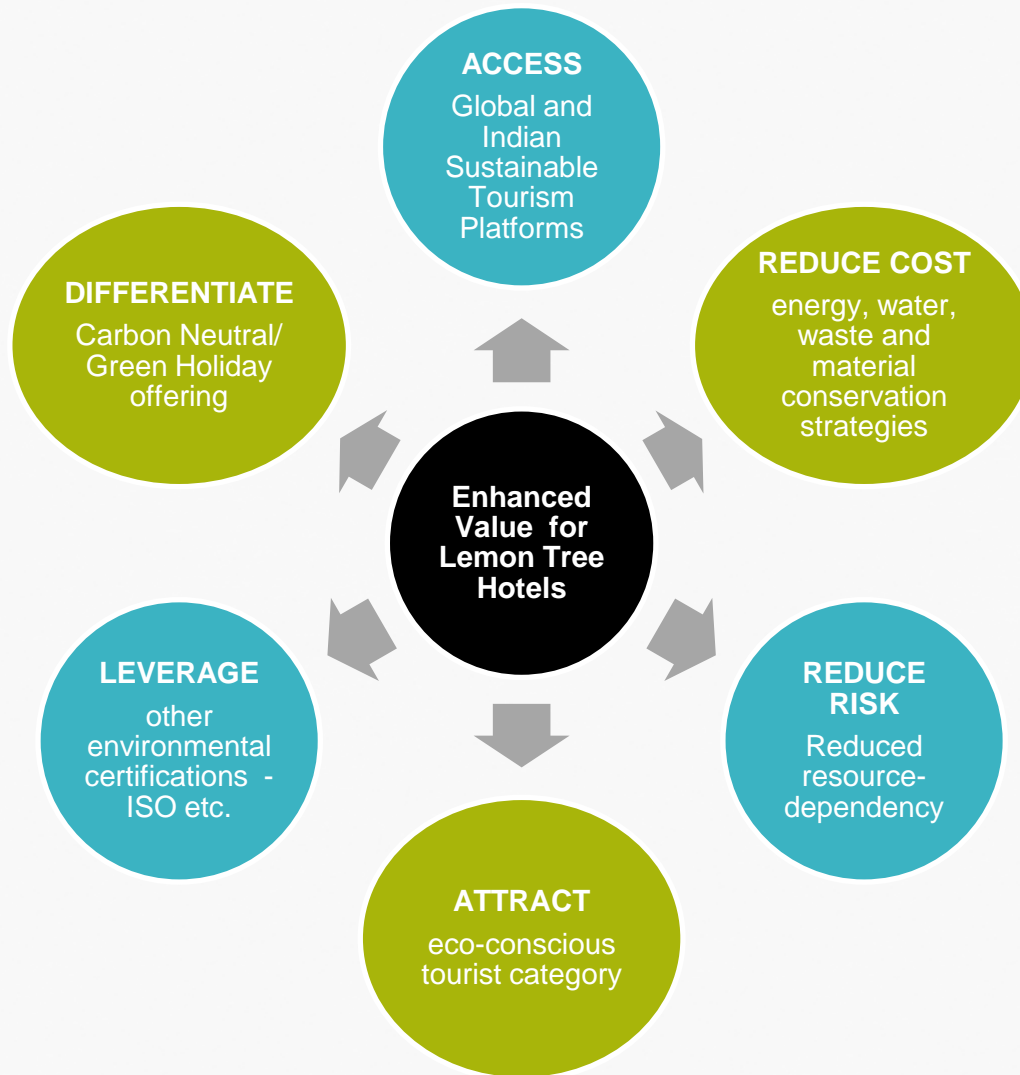
- Lemon Tree Pune Property: Carbon Footprinting & Sustainability Practices KPIs Mapping
- References: Site Audit, Electricity Bills, Purchased Fuels Bills, Ledgers FY 2013-14, Architectural Layout of Hotel, Pictures

Next steps:

- Application for The Green Signal Ecolabelling Certification.
- Customer-facing Ecolabelling Report.
- Organizational Level Sustainability Reporting for Lemon Tree Hotels – according to GRI guidelines.
- Electrical, Thermal Energy & Water Audit.



VALUE ADDITIONS RADAR



VALUE ADDITIONS

ACCESS & ATTRACT

Access: Global Sustainable Tourism initiatives can be classified according to trade promotion apex-bodies and eco-tourism business portals. Your properties can be listed on these platforms based on your accomplishments after achievement of '**The Green Signal Ecolabel**' certification. Currently no 'cluster' or other Tourism-initiatives is able to access these initiatives as no formal efforts towards measuring environmental impact as well as conservation practices of hospitality properties have been undertaken in India.

ECO-TOURISM TRADE PROMOTION BODIES:

*The International
Ecotourism Society*



*Center for Responsible
Tourism*



*Global Sustainable
Tourism Council (GSTC)*



VALUE ADDITIONS **ACCESS & ATTRACT**

ECO-TOURISM BUSINESS PORTALS

Eco Stay



Eco Luxury



Eco Hotels of the World

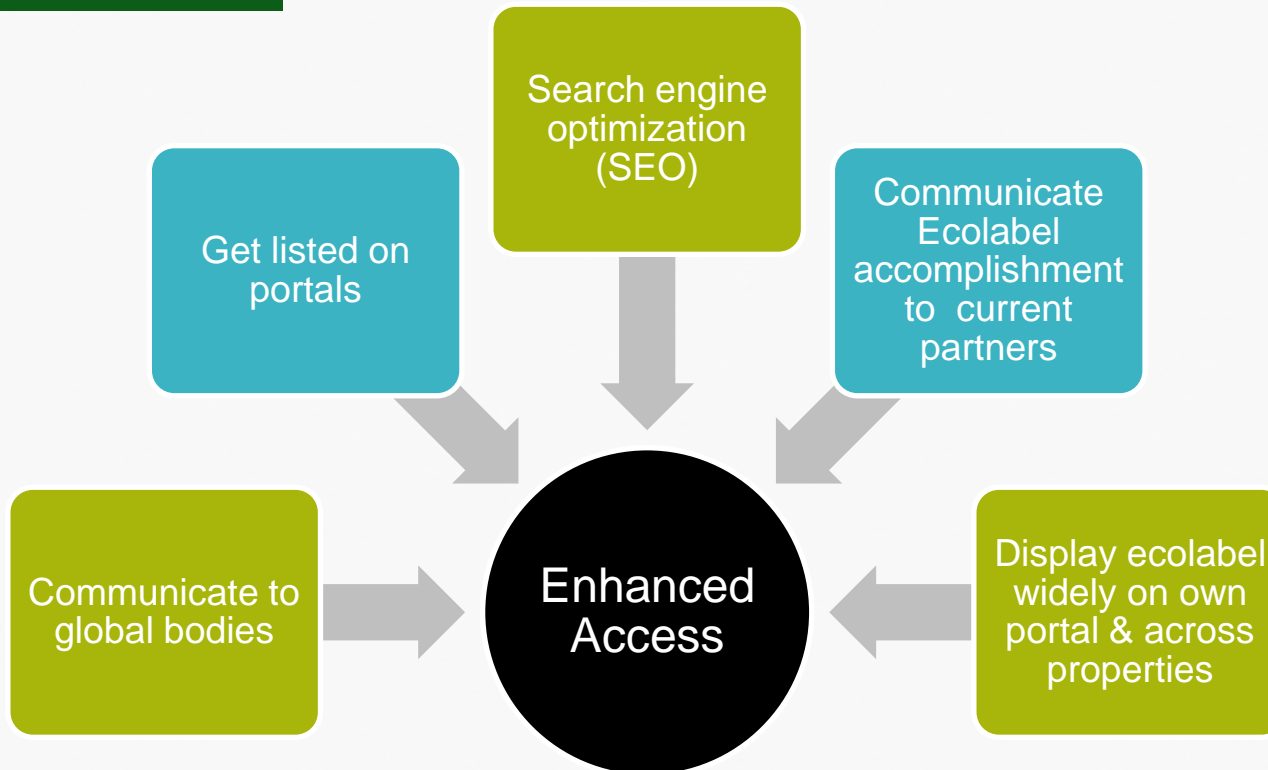


Conde Nast Traveller



VALUE ADDITIONS **ACCESS & ATTRACT**

NEXT STEPS →



VALUE ADDITIONS DIFFERENTIATE

Differentiate: Assessing your per-overnight stay carbon footprint enables your property, through collaborative partnerships with local environmental initiatives / NGO's etc, to offer socially-inclusive, community-based 'carbon offsets' as a voluntary green-fund donation certificate qualifying as a carbon-neutral holiday offering. Currently no Hotel Chain in India is able to offer a carbon-neutral / certified-eco-friendly holiday in India due to non-participation in measurable, reportable, verifiable certification initiatives such as The Green Signal.

HOTEL CARBON MEASUREMENT INITIATIVE



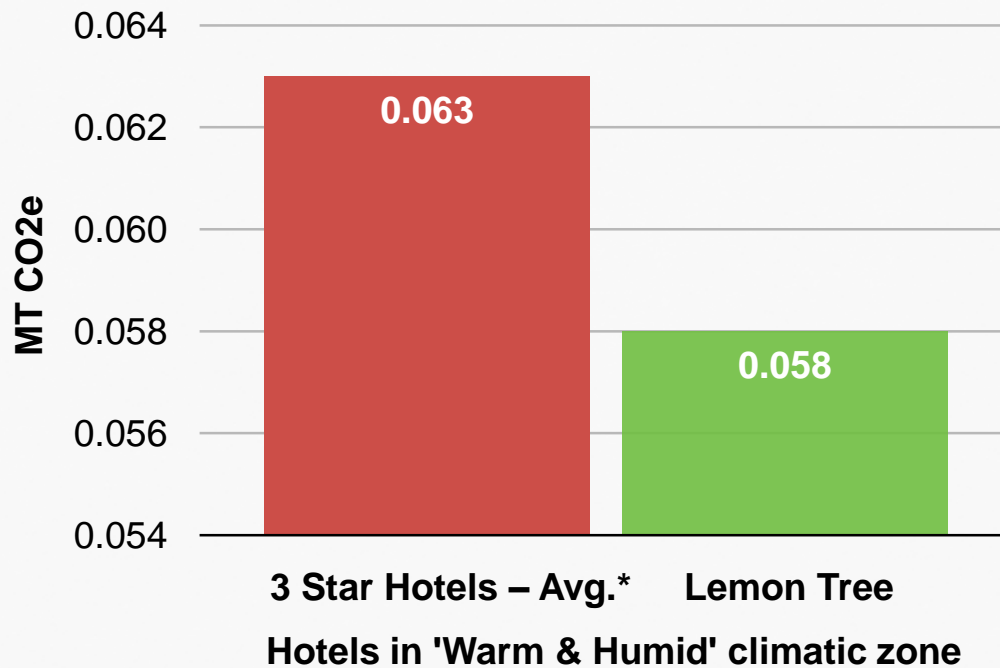
This global metric has been developed by the WTTTC to allow for standardized measurement of Carbon Footprints hotel overnight stay in a manner valid for communicating to hotel guests. This leads to comparability between results of GHG inventorying across properties in similar service class's and geographical locations.

VALUE ADDITIONS DIFFERENTIATE

Lemon Tree Hotel, Pune

- Carbon Footprint (MT CO₂e) per Overnight Stay -

Total Carbon Footprint = 1,736.57 MT CO₂e/year, Total Overnight Stays = 29,867 nos./year



Approximate overnight stay voluntary carbon tax will range from **Rs. 38/on-stay (Lemon Tree Hotel, Pune)**

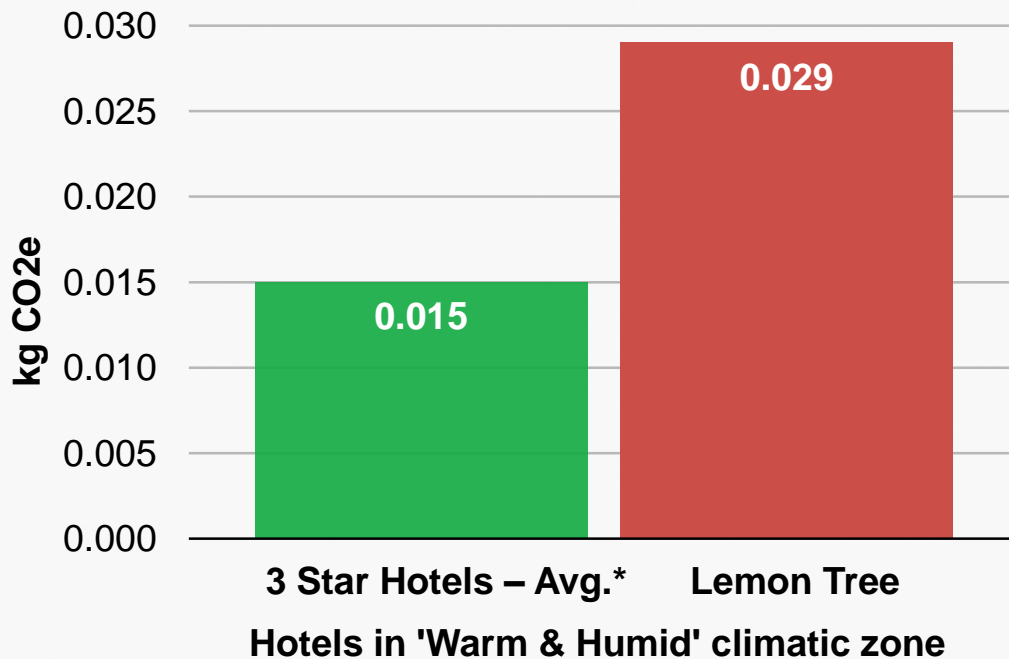
*Based on European Union Allowance Price ~ 7 EUR/MT CO₂e

* Based on results from ECO-III project (collaborated by Bureau of Energy Efficiency (BEE) & USAID) - www.eco3.org/about-us/

VALUE ADDITIONS DIFFERENTIATE

Lemon Tree Hotel, Pune

- Carbon Footprint (kg CO₂e) per Overnight Stay per INR Avg. Room Tariff -
Total Carbon Footprint = 1,736.57 MT CO₂e/year, Total Overnight Stays = 29,867 nos./year,
Avg. Room Tariff = 2,003 INR



* Based on results from ECO-III project (collaborated by Bureau of Energy Efficiency (BEE) & USAID) - www.eco3.org/about-us/



VALUE ADDITIONS DIFFERENTIATE

Food-miling & Food-footprinting: Local and certified organic foods already identified at the hotels. Foodmiles and indicative food-footprint can be displayed for all menu and buffet options

	Foodmiles 	Footprint 
<p>CHAMPAGNE & SPARKLING WINE Veuve Clicquot Ponsardin Brut Yellow Label, Reims ✦ Classical dry Champagne with lightly honeyed flavors of apple blossom and peach ✦</p>	<p>4</p>	<p>1</p>
<p>Charles de Fere, Jean Louis Blanc de Blancs, France ✦ Light, bright and fruity, exuding aromas of apple, apricot and a hint of honey ✦</p>	<p>1</p>	<p>3</p>
<p>Iron Horse Fairy Tale Cuvée Brut, Green Valley ✦ Intense apples and ripe pears, toasty and bright, balanced with cleansing citrus acidity ✦</p>	<p>2</p>	<p>2</p>

← clesnimg cilre aedihl ✦
 ✦ jileneq abpiles auq tibe beaz' iogil auq rihim' rehanceq wihp
 Iron Horse Fairy Tale Cuvée Brut, Green Valley 10



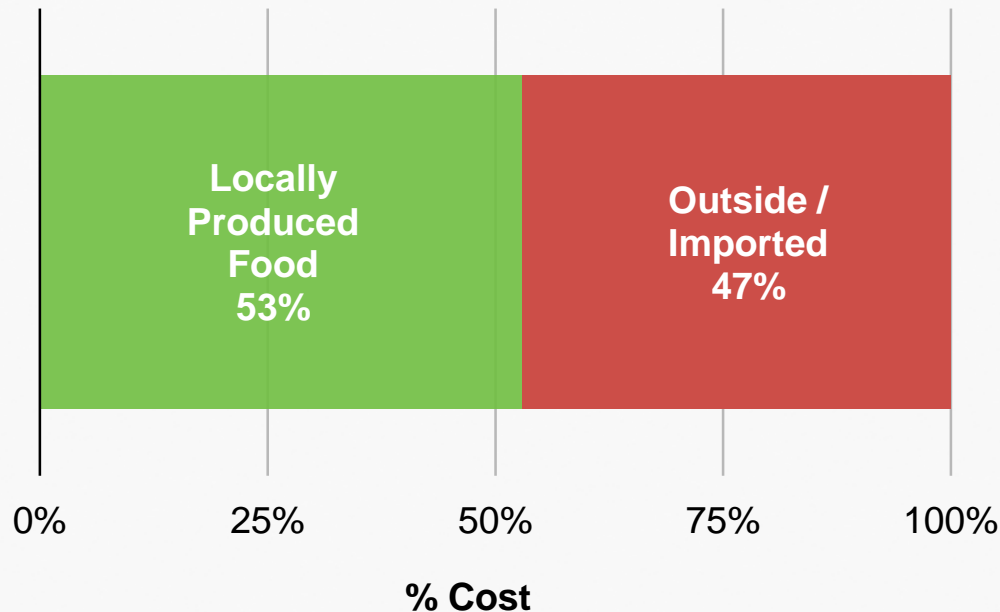
VALUE ADDITIONS DIFFERENTIATE

Target Setting for Local Food: % local food procurement already calculated.
[% of local (within state) food procurement cost relative to total annual food procurement cost]

Lemon Tree Hotel, Pune

- Local Food Procurement Practices -

Total Food Procurement Annual Cost = 1.13 Crores (INR)



Key Learning:

- ▶ Poor location-source documentation in installed software

Next Steps:

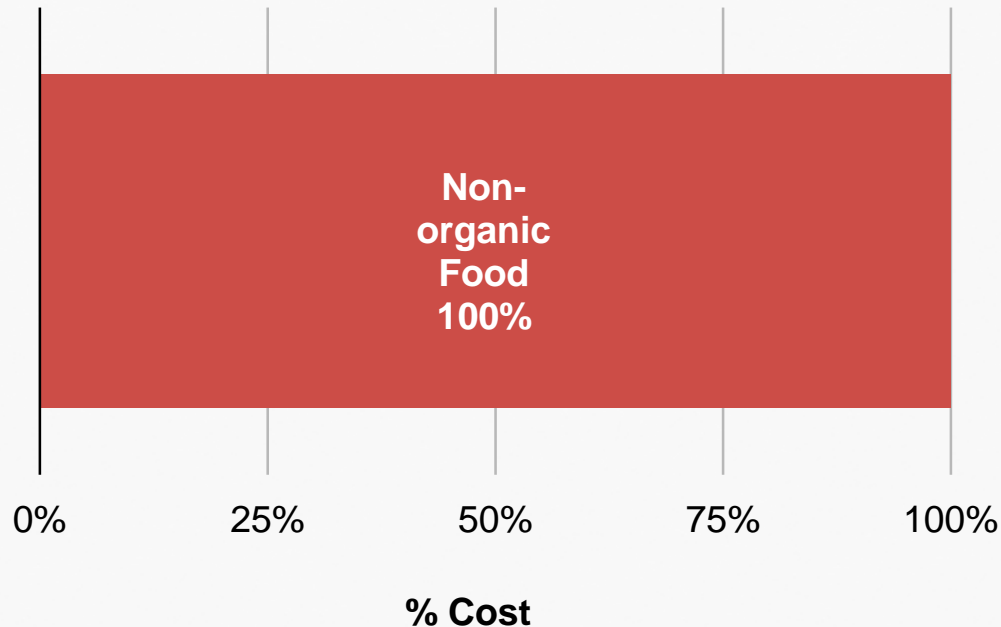
- ▶ Local food source tracing for enhanced verifiability of local food procurement
- ▶ Increase % local food procurement up to 75%

VALUE ADDITIONS DIFFERENTIATE

Target Setting for Organic Food: % organic food procurement already calculated

Lemon Tree Hotel, Pune

- Organic Food Procurement Practices –
Total Food Procurement Annual Cost = 1.13 Crores (INR)



Key Learning:

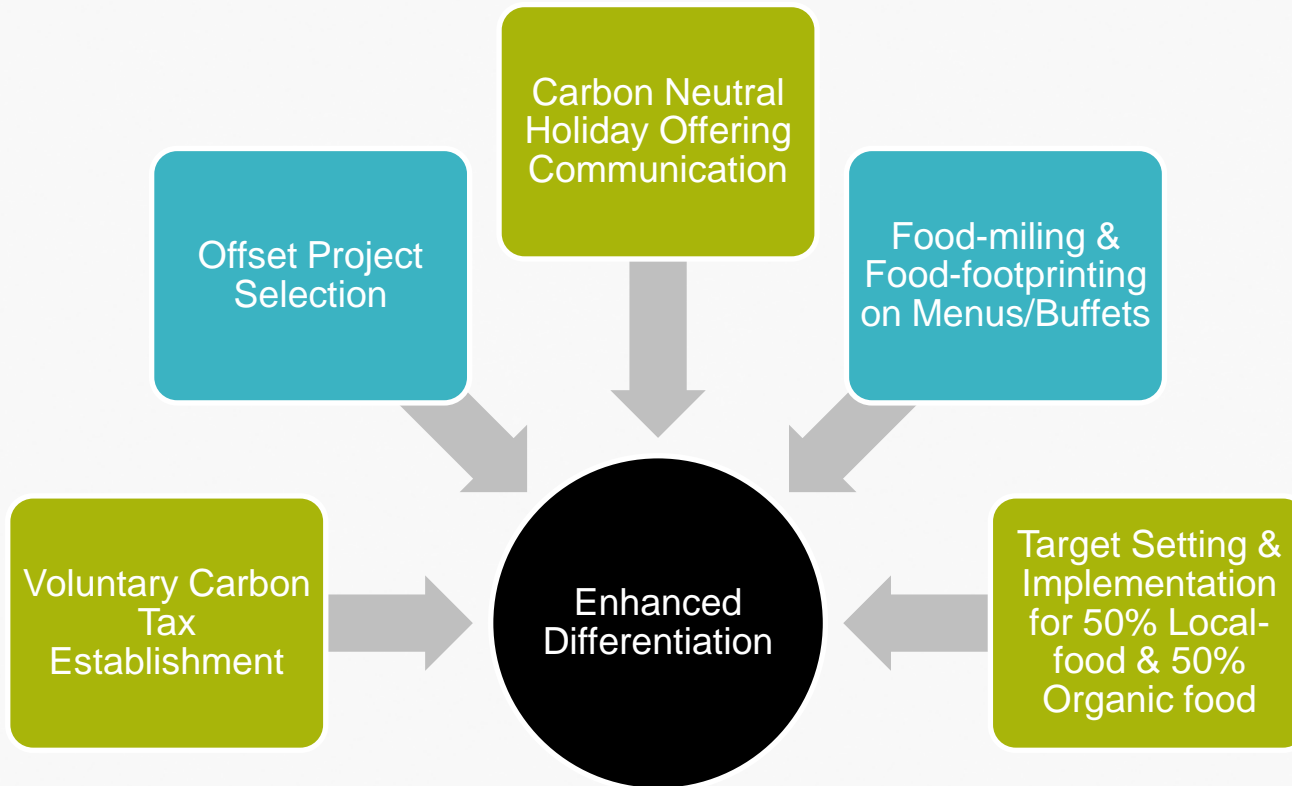
- ▶ Lower than expected % organic food procurement
- ▶ Poor documentation in installed software

Next Steps:

- ▶ Organic certification documentation for all organic food
- ▶ Increase % organic food procurement up to 20% by end of FY-2017

VALUE ADDITIONS DIFFERENTIATE

NEXT STEPS



VALUE ADDITIONS

REDUCE COSTS, REDUCE RISKS

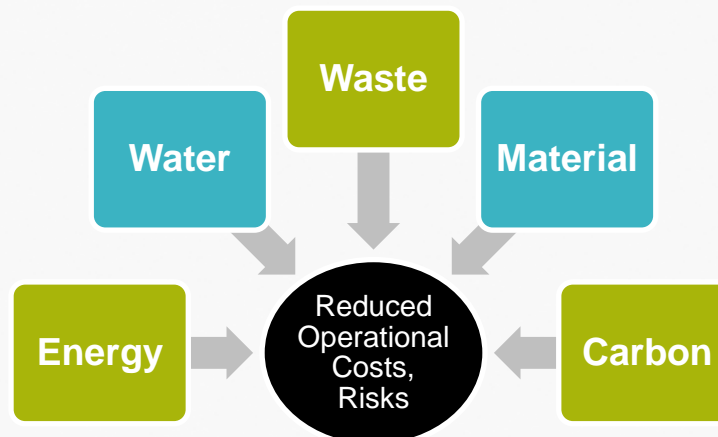
Energy: opportunities for fuel & electrical energy conservation through energy efficiency (technical, operational and behavioural interventions) have been identified

Water: opportunities for water use reduction through water efficiency technology, enhanced water harvesting and recycling as well as interrelated operational practices have been identified

Waste: significant segregated waste management and beneficial reuse opportunities exist in some of the group properties and appropriate solutions are preliminarily explored

Material: opportunities for increased proportion of low-embodied carbon, recycled, biodegradable material for hotel operations / guest amenities have been identified

Carbon: de-carbonizing energy portfolio through captive renewable energy generation and renewable energy purchase to reduce dependence on conventional grid electricity needs to be explored.



VALUE ADDITIONS
REDUCE COSTS, REDUCE RISKS



REDUCE COSTS / RISKS ENERGY (ELECTRICITY)

Lemon Tree Hotel, Pune

- Electricity (kWh) per Overnight Stay -

Total Electricity Consumption = 9,93,410 kWh/year, Total Overnight Stays = 29,867 nos./year



Key Learning:

- ▶ Energy audit of inefficient properties
- ▶ HVAC & insulation efficiency modelling

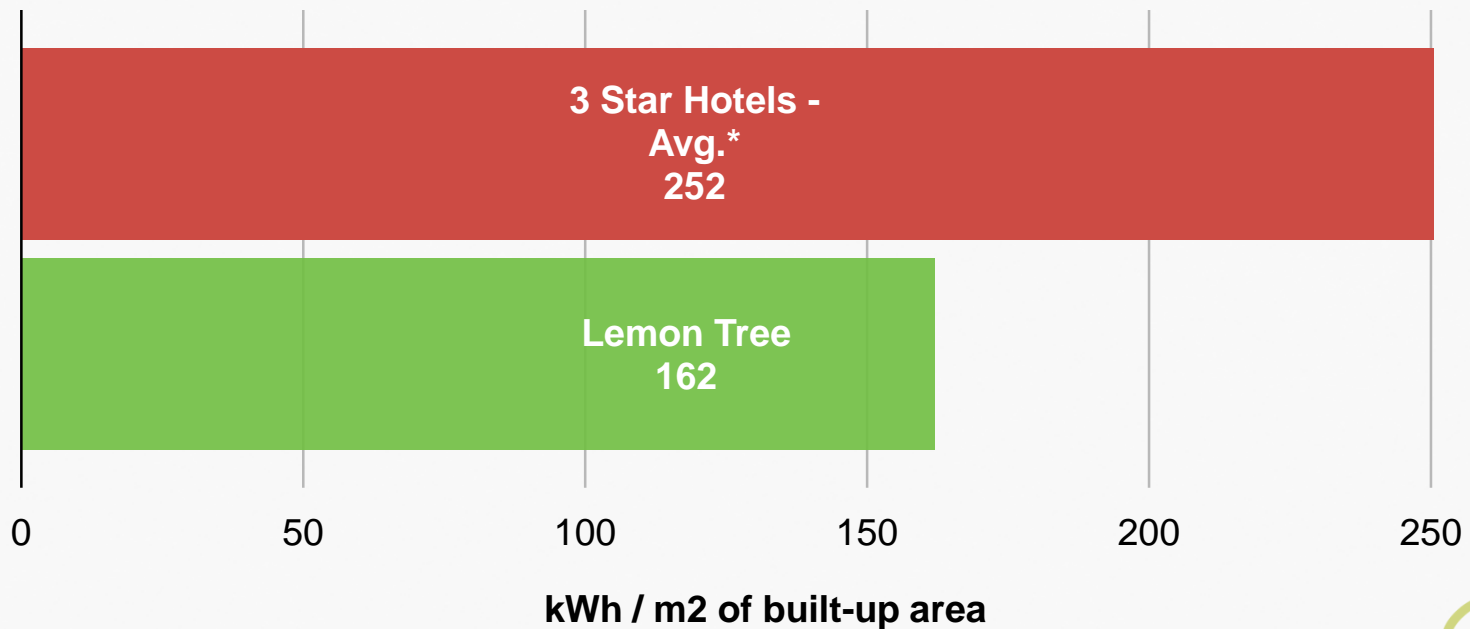
* Based on results from ECO-III project (collaborated by Bureau of Energy Efficiency (BEE) & USAID) - www.eco3.org/about-us/

REDUCE COSTS / RISKS ENERGY (ELECTRICITY)

Lemon Tree Hotel, Pune

- Electricity (kWh) per m2 Built-up Area -

Total Electricity Consumption = 9,93,410 kWh/year, Total Built-up Area = 6,118.97 m2

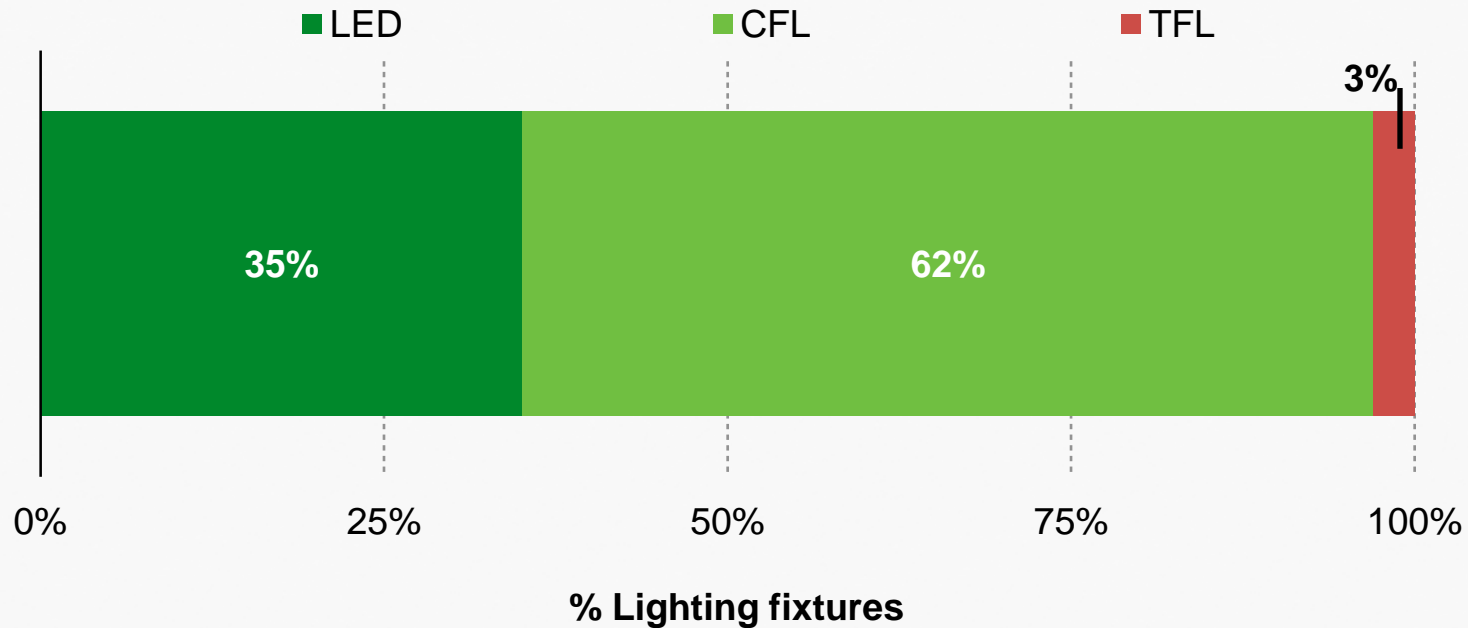


* Based on results from ECO-III project (collaborated by Bureau of Energy Efficiency (BEE) & USAID) - www.eco3.org/about-us/

REDUCE COSTS / RISKS ENERGY (ELECTRICITY) - LIGHTING

Lemon Tree Hotel, Pune

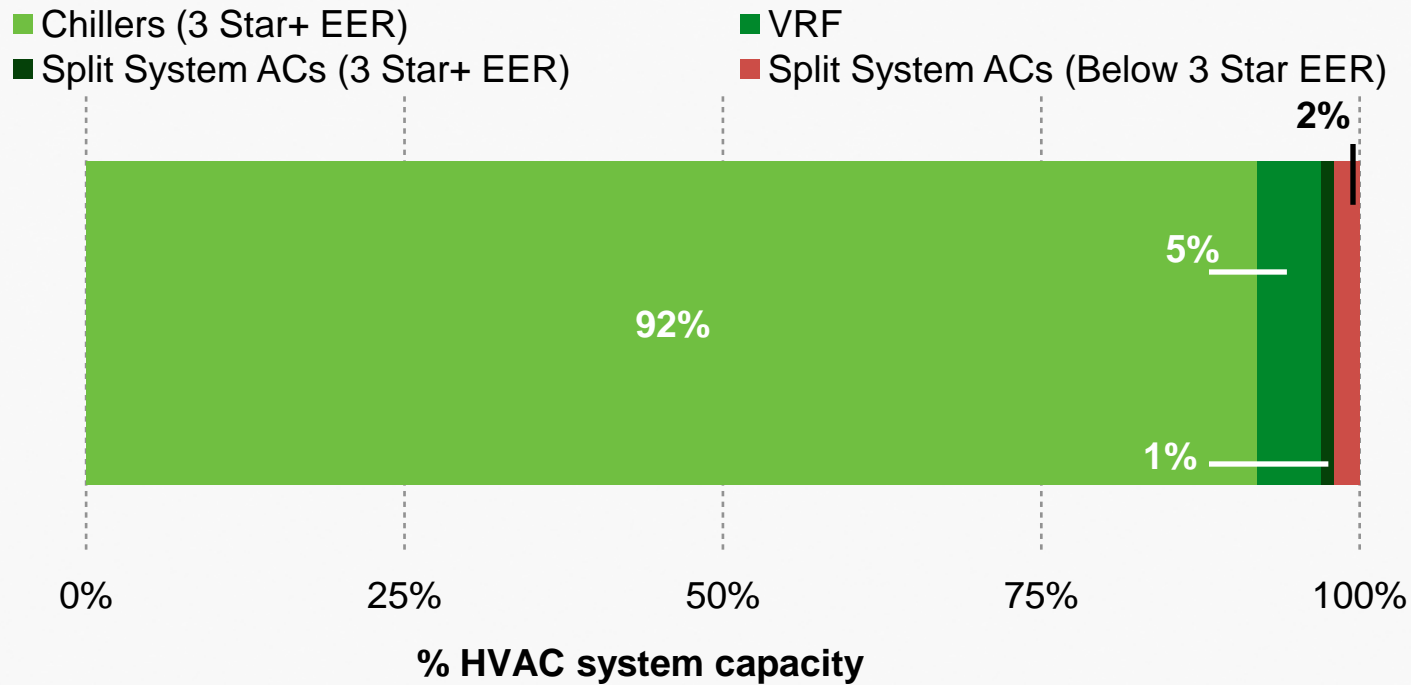
- Lighting Fixture Type Distribution -
Total Lighting Fixtures =1,576 nos.



REDUCE COSTS / RISKS ENERGY (ELECTRICITY) - HVAC

Lemon Tree Hotel, Pune

- HVAC System Type Distribution -
Total Tonnage = 260.73 TR

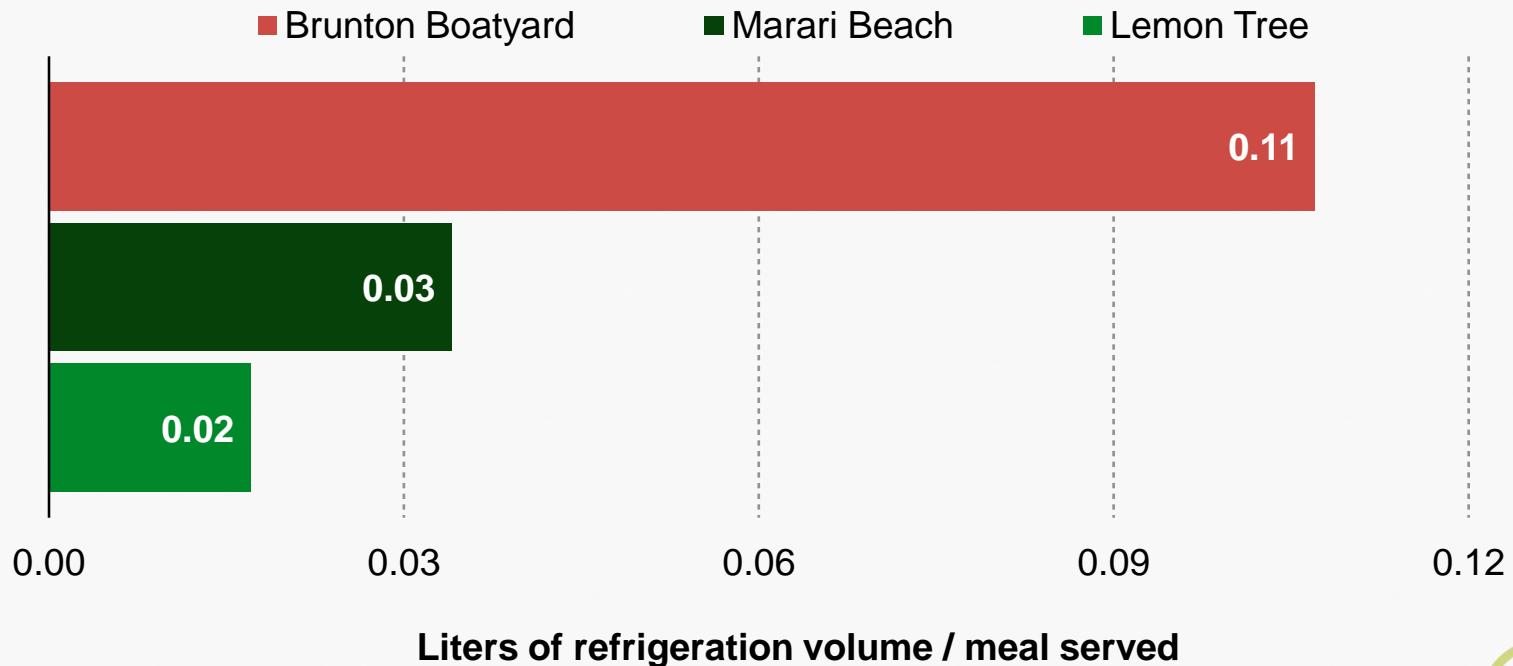


REDUCE COSTS / RISKS ENERGY (ELECTRICITY) – F&B SERVICE REFRIGERATION

Lemon Tree Hotel, Pune

- F&B Refrigeration Volume (liters) per Meal Served -

Total Meal Served = 8,41,602 nos./year, Total Refrigeration Volume = 14,452.12 Liters

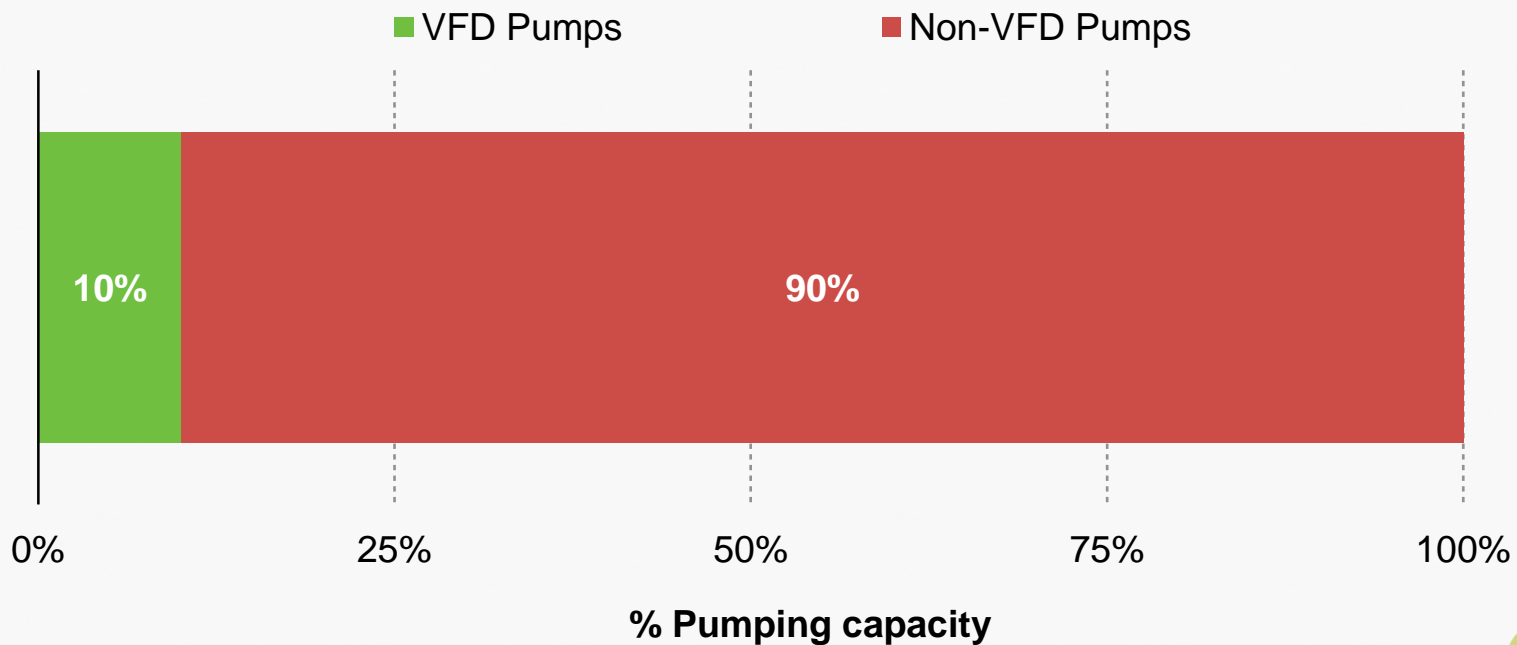


REDUCE COSTS / RISKS ENERGY (ELECTRICITY) – EQUIPMENT EFFICIENCY

Lemon Tree Hotel, Pune

- Equipment – Pumping -

Total Pumping Capacity = 383.5 hp

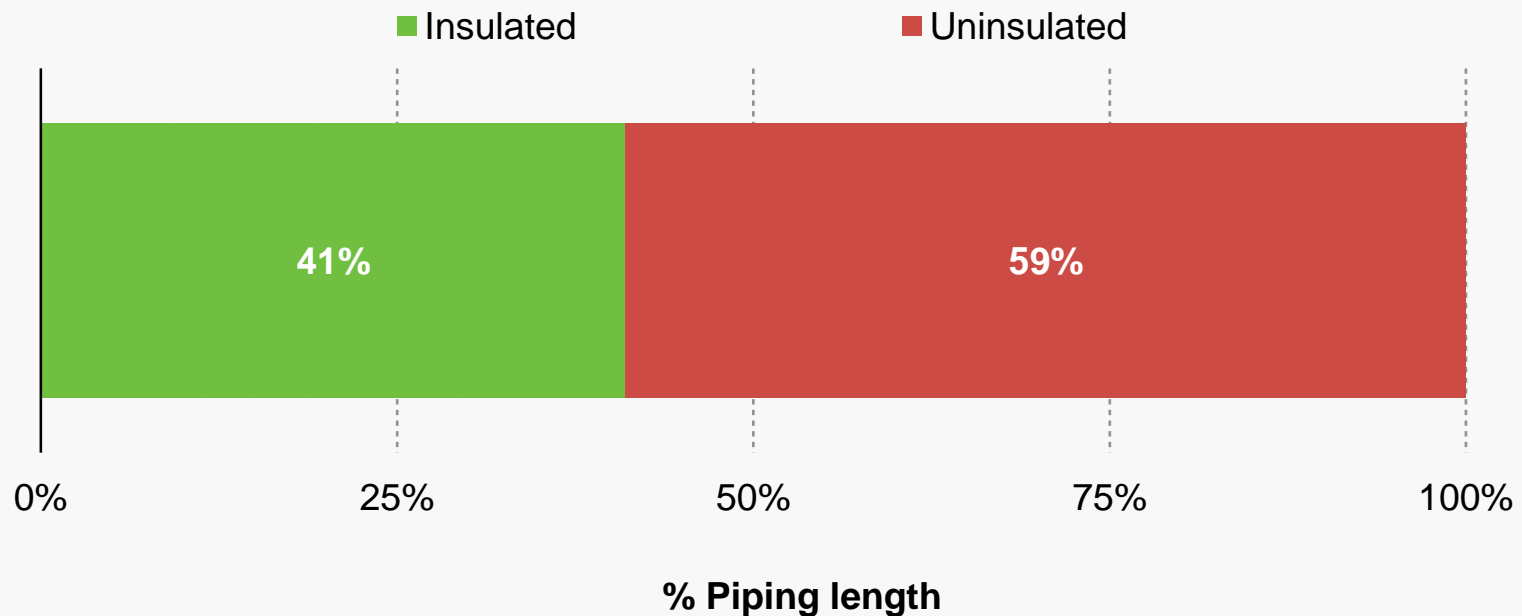


REDUCE COSTS / RISKS ENERGY (ELECTRICITY) – EQUIPMENT EFFICIENCY

Lemon Tree Hotel, Pune

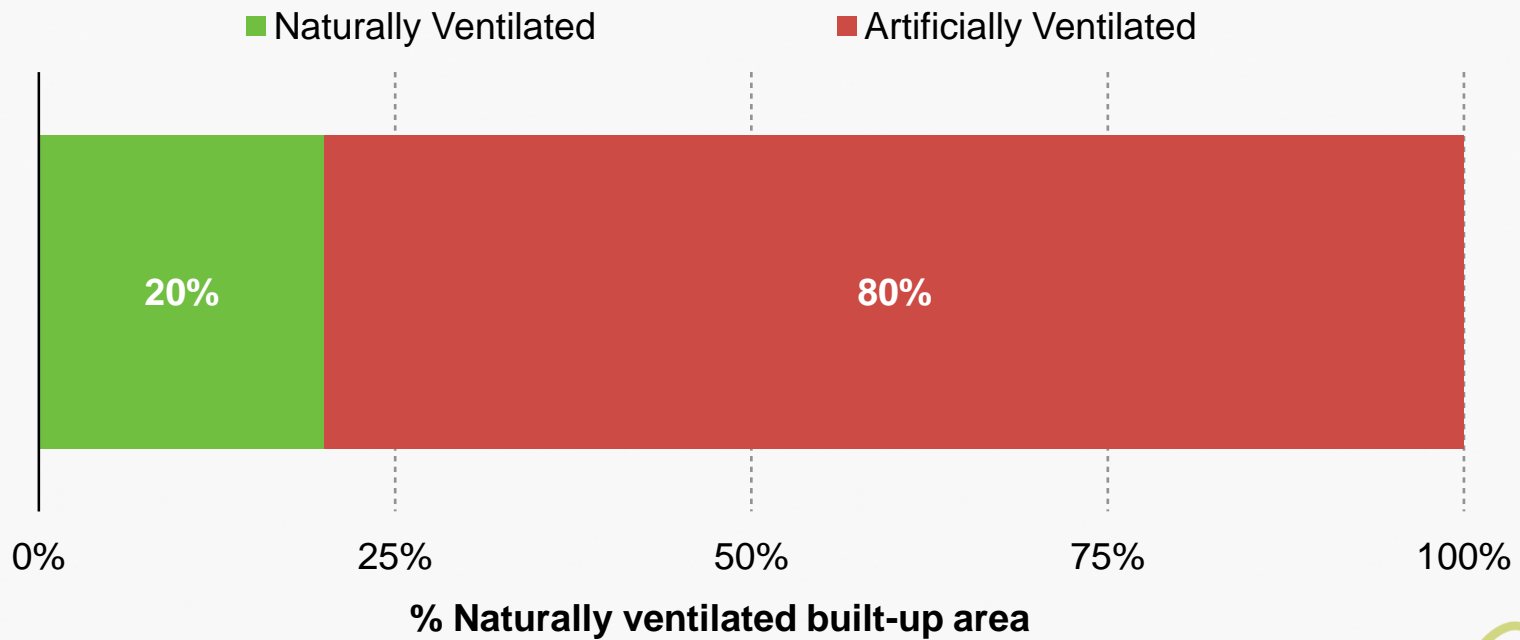
- Equipment – Piping -

Total Piping Length= 7,241 running-meter



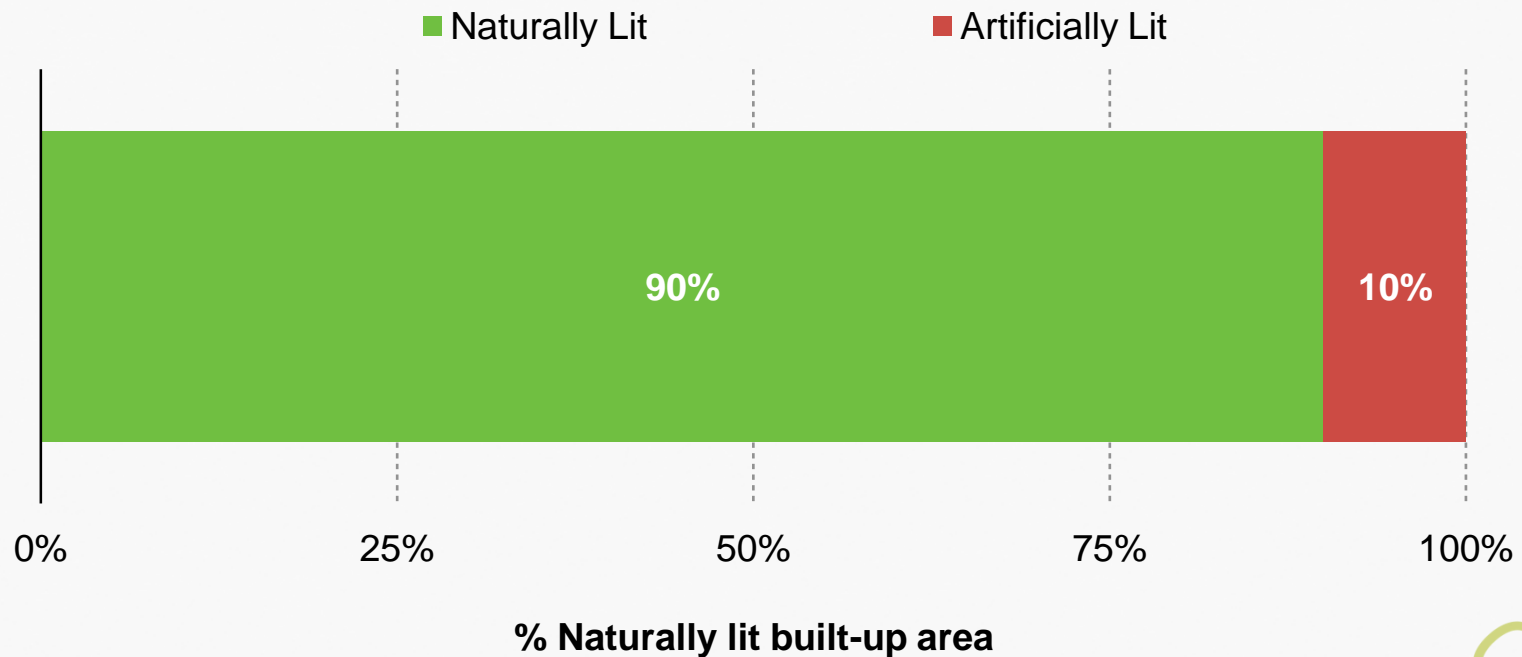
REDUCE COSTS / RISKS ENERGY (ELECTRICITY) - ARCHITECTURAL EFFICIENCY

Lemon Tree Hotel, Pune
- Architectural Efficiency -
Total Built-up Area = 6,118.97 m²



REDUCE COSTS / RISKS ENERGY (ELECTRICITY) - ARCHITECTURAL EFFICIENCY

Lemon Tree Hotel, Pune
- Architectural Efficiency –
Total Built-up Area = 6,118.97 m²



REDUCE COSTS / RISKS ENERGY (ELECTRICITY) - RENEWABLE ENERGY

Lemon Tree, Pune	
<i>Renewable Energy</i>	<i>Connected Load (kW)</i>
Solar PV	0%
Solar Thermal	0%
Wind Energy	0%
Geothermal Energy	0%

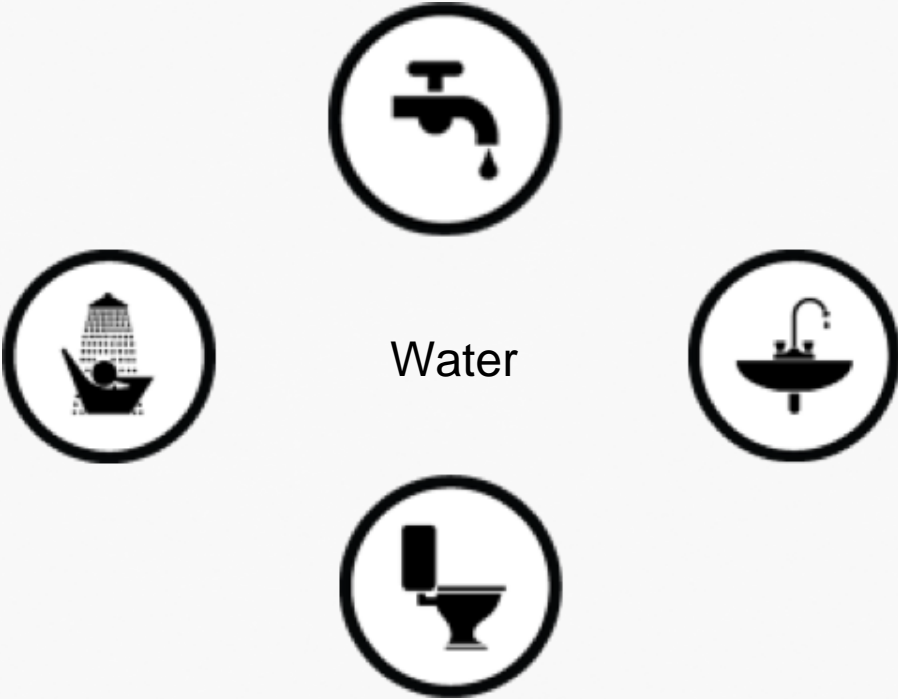
Key Learning:

- ▶ Renewable energy - 0 KJ/overnight stay

Next Step:

- ▶ Increase renewable energy load sharing up to 10%

VALUE ADDITIONS
REDUCE COSTS, REDUCE RISKS



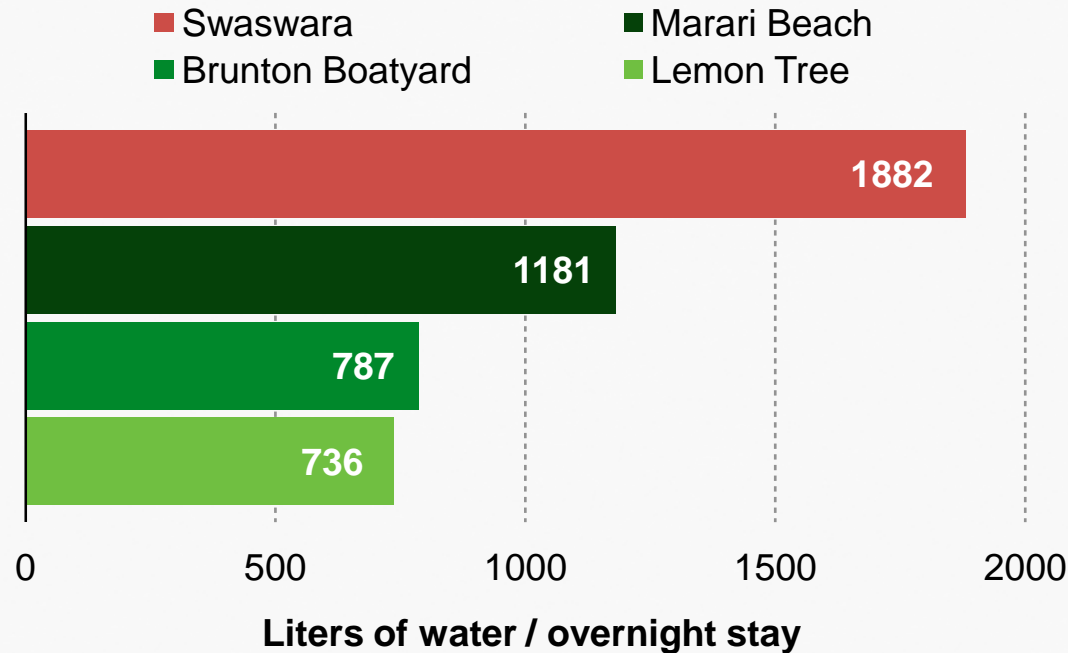
REDUCE COSTS / RISKS

WATER

Lemon Tree Hotel, Pune

- Water (liters) per Overnight Stay - 3 Star Hotel (Warm & Humid) -

Total Water Consumption = 20,018 kls/year, Total Overnight Stays = 29,867 nos./year



Next Step:

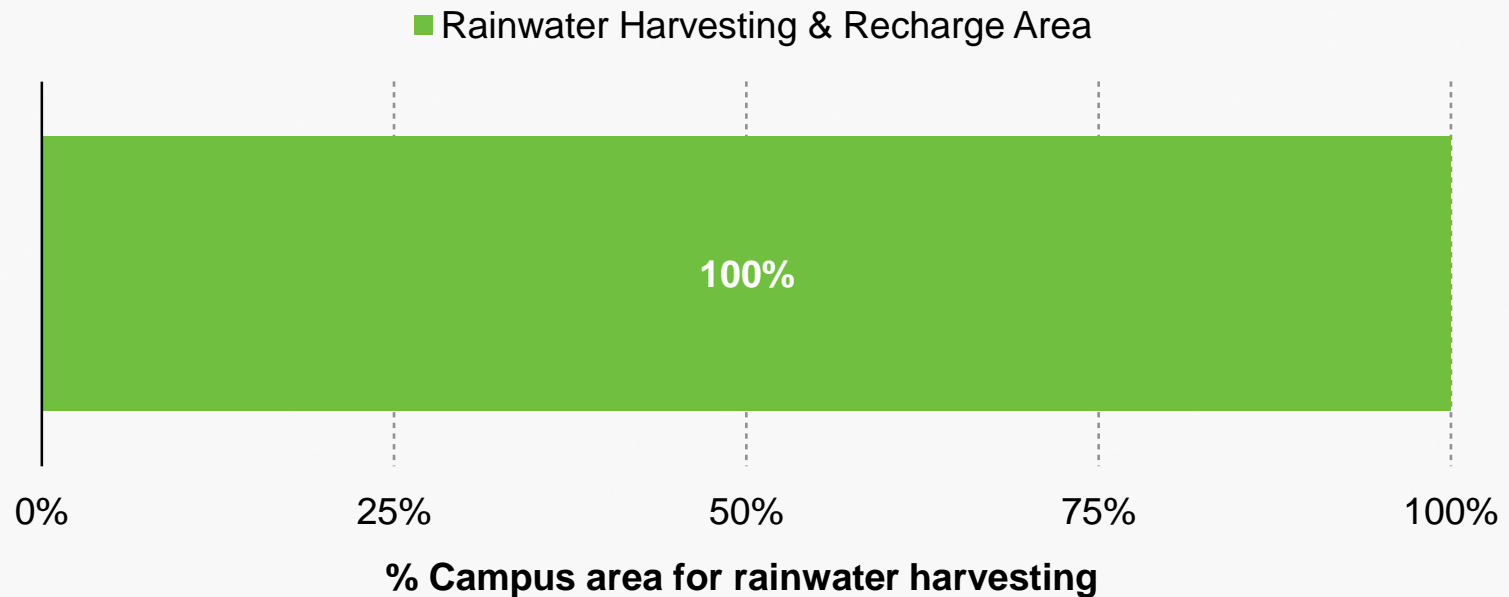
- ▶ Water use audit of inefficient properties

REDUCE COSTS / RISKS

WATER - RAINWATER HARVESTING

Lemon Tree Hotel, Pune

- Rainwater Harvesting Systems : % of Campus Area (m²) -
Total Campus Area = 2,430 m²

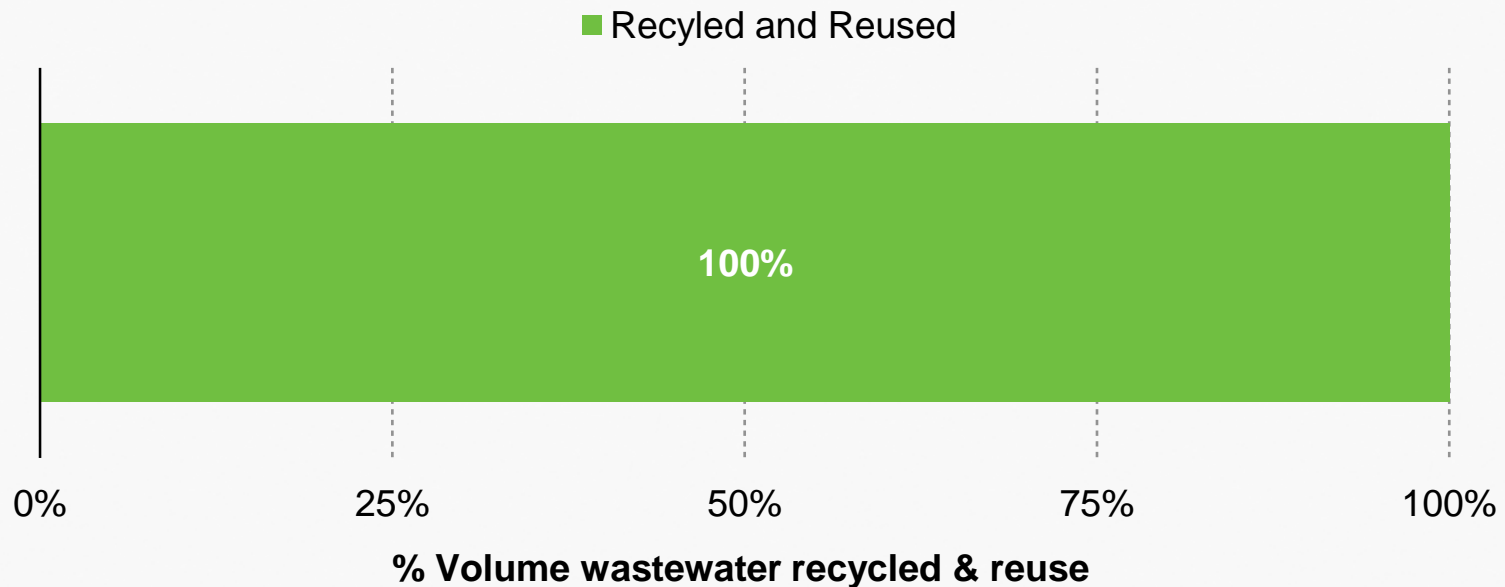


REDUCE COSTS / RISKS

WATER - WASTEWATER REUSE

Lemon Tree Hotel, Pune

- Wastewater Recycle & Reuse (% volume) -
Total Wastewater Generated = 18,256 kls/year



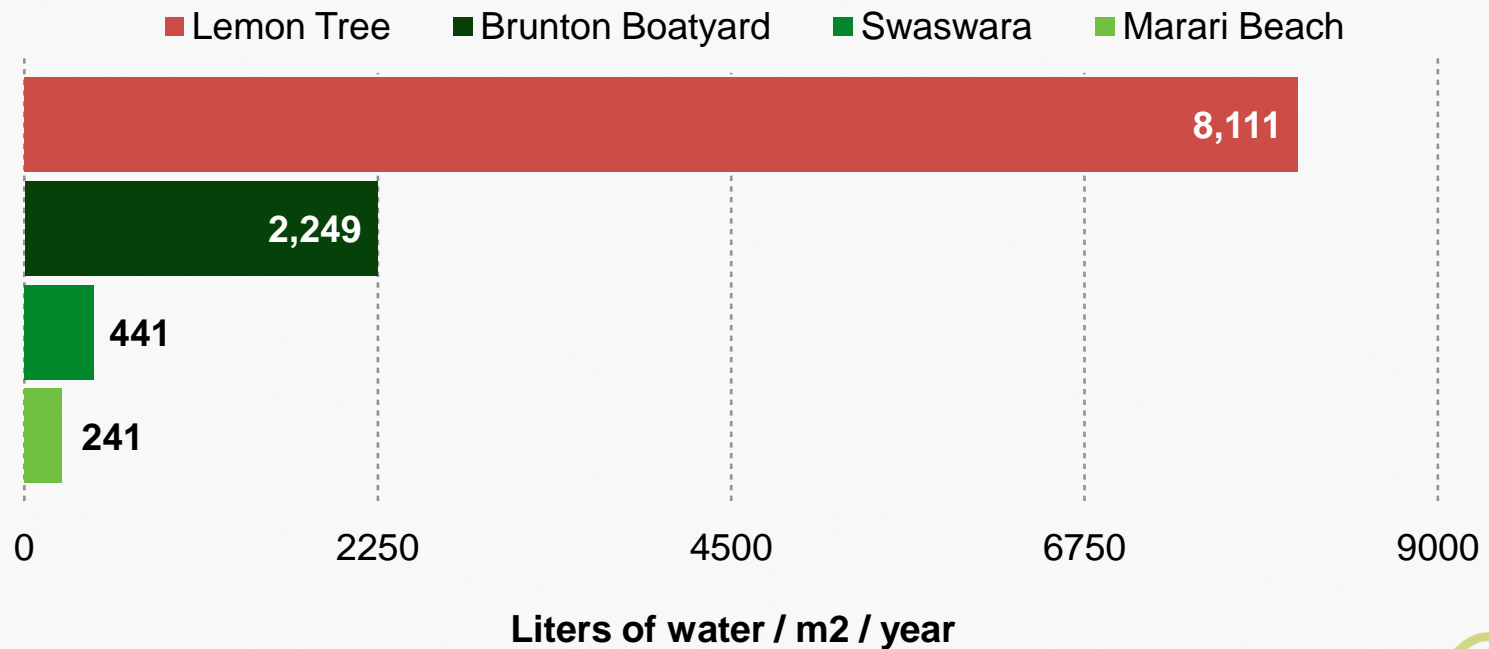
Effluent used for gardening and cleaning purposes throughout the year.

REDUCE COSTS / RISKS

WATER - MANAGED IRRIGATION

Lemon Tree, Pune

- Managed Irrigation (liters of water/m²/year) –
Total Garden Area = 900 m²

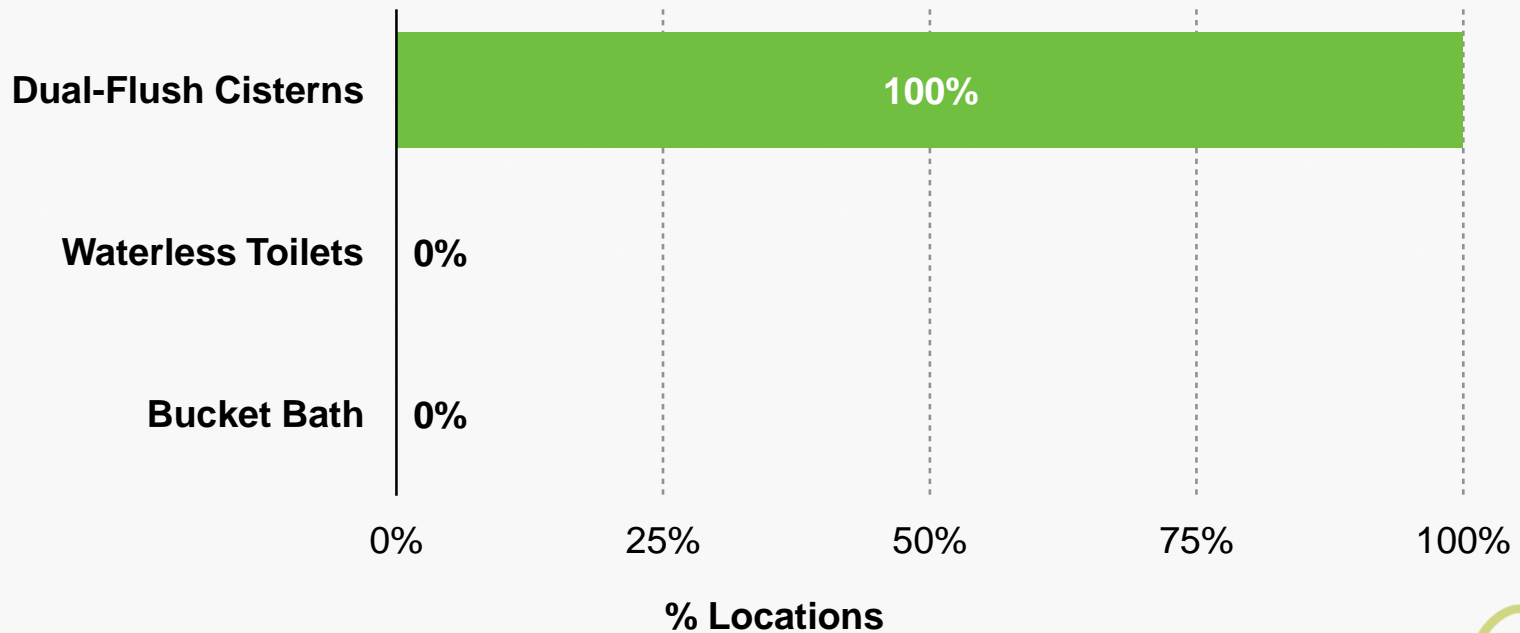


REDUCE COSTS / RISKS

WATER - WATER USE REDUCTION PRACTICES

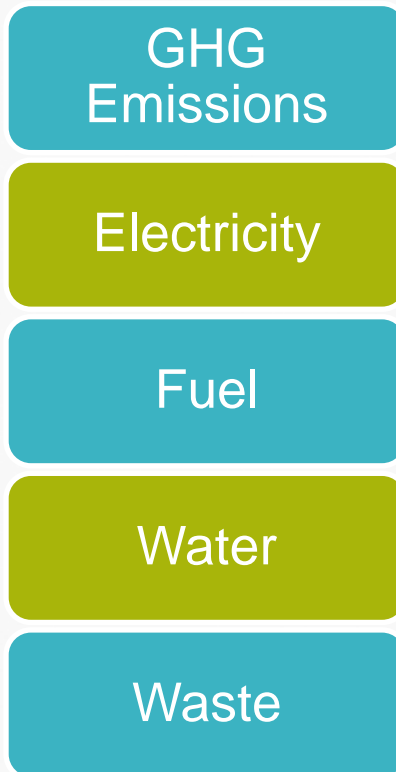
Lemon Tree, Pune

- Water Reduction Practices (% locations) -



VALUE ADDITIONS **REDUCE COSTS, REDUCE RISKS**

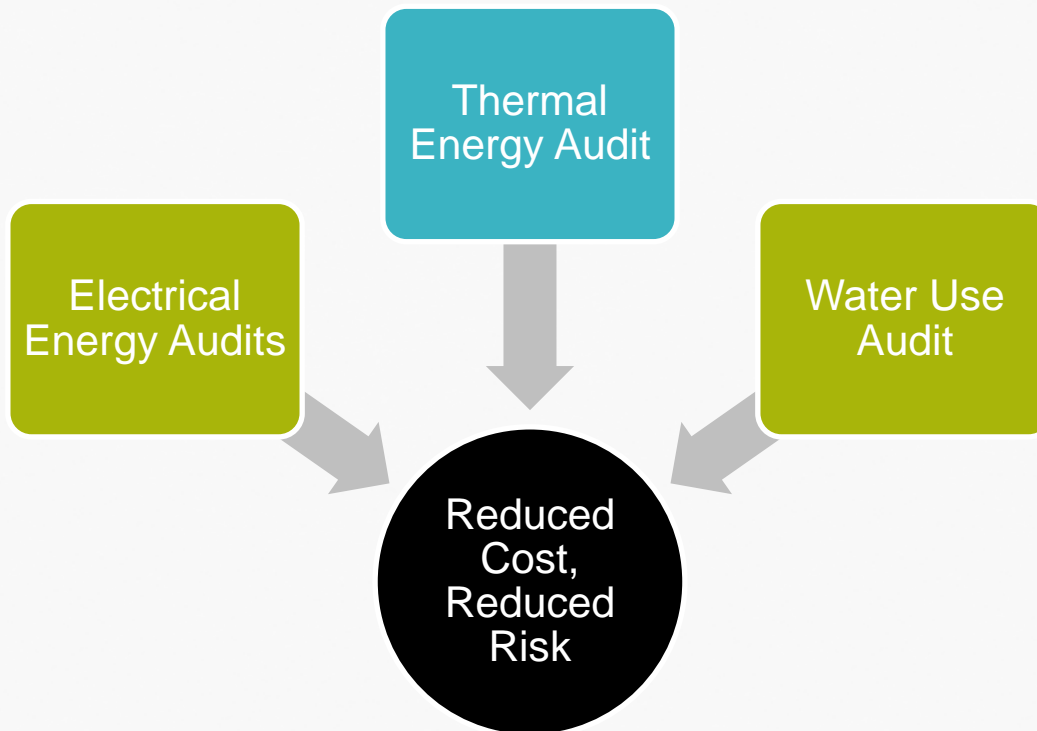
POTENTIAL 



VALUE ADDITIONS

REDUCE COSTS, REDUCE RISKS

NEXT STEPS



VALUE ADDITIONS **REDUCE COSTS, REDUCE RISKS**

NEXT STEPS

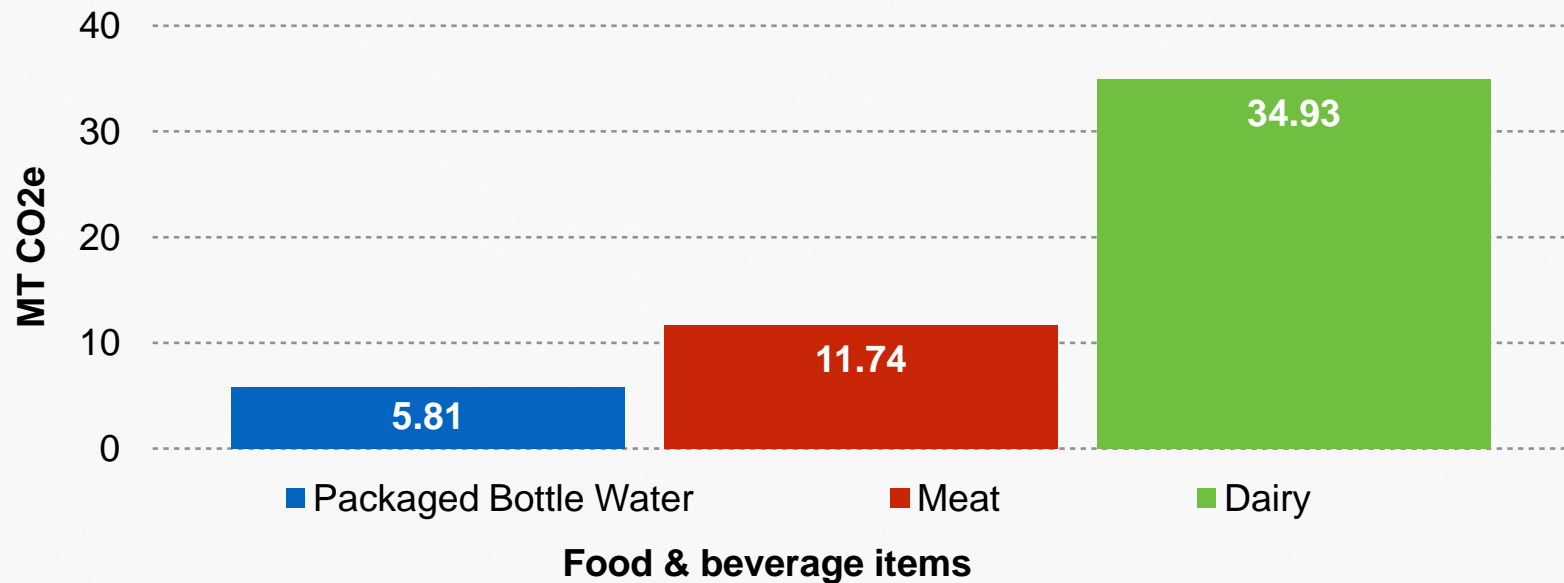


REDUCE COSTS / RISKS

MATERIALS - F&B

Lemon Tree, Pune

- Food & Beverage Emissions (Life Cycle Emissions) –
Total Food & Beverages Emissions = 52.47 MT CO₂e/year



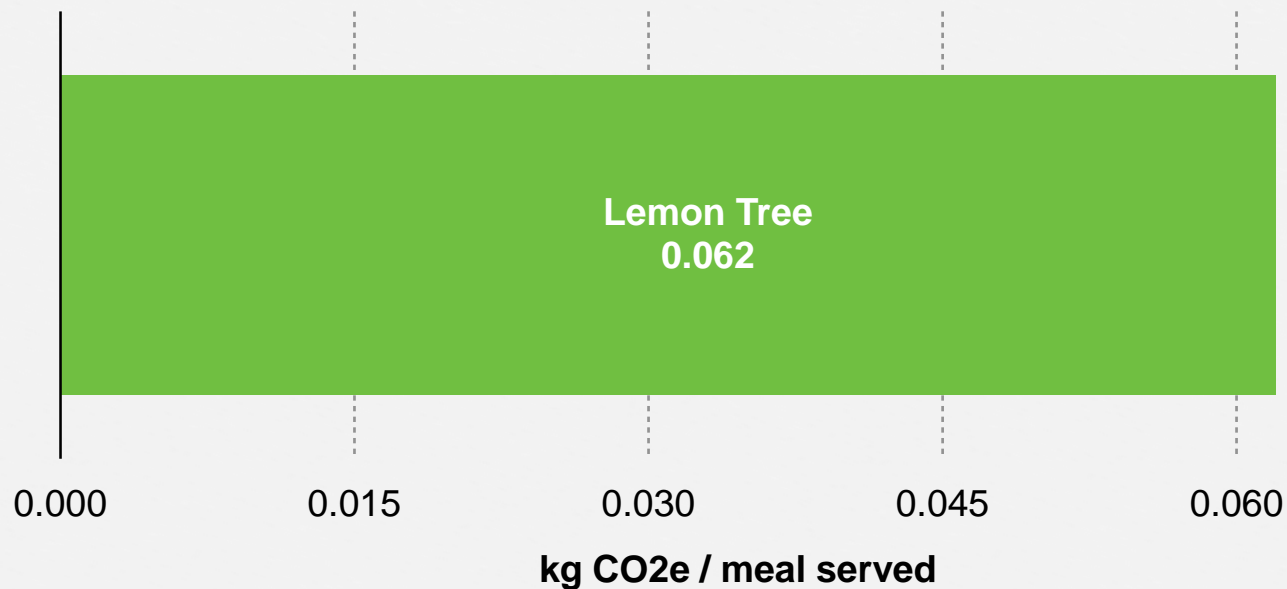
REDUCE COSTS / RISKS

MATERIALS - F&B

Lemon Tree Hotel, Pune

- Food & Beverages Emissions (Life Cycle Emission) - kg CO₂e/meal served –

Total Food & Beverages Emissions = 52.47 MT CO₂e/year, Total Meals Served = 8,41,602 nos./year



REDUCE COSTS / RISKS MATERIALS

Lemon Tree, Pune	
<i>Biodegradable/Low Carbon/Recycled Material Procurement</i>	<i>% Annual Cost</i>
Paper	0%
Plastic	0%
Glass & Ceramic	0%
Chemicals	0%
Construction Material	0%
Wood Sstitutes	0%
Cloth	0%
Packaging Material	0%

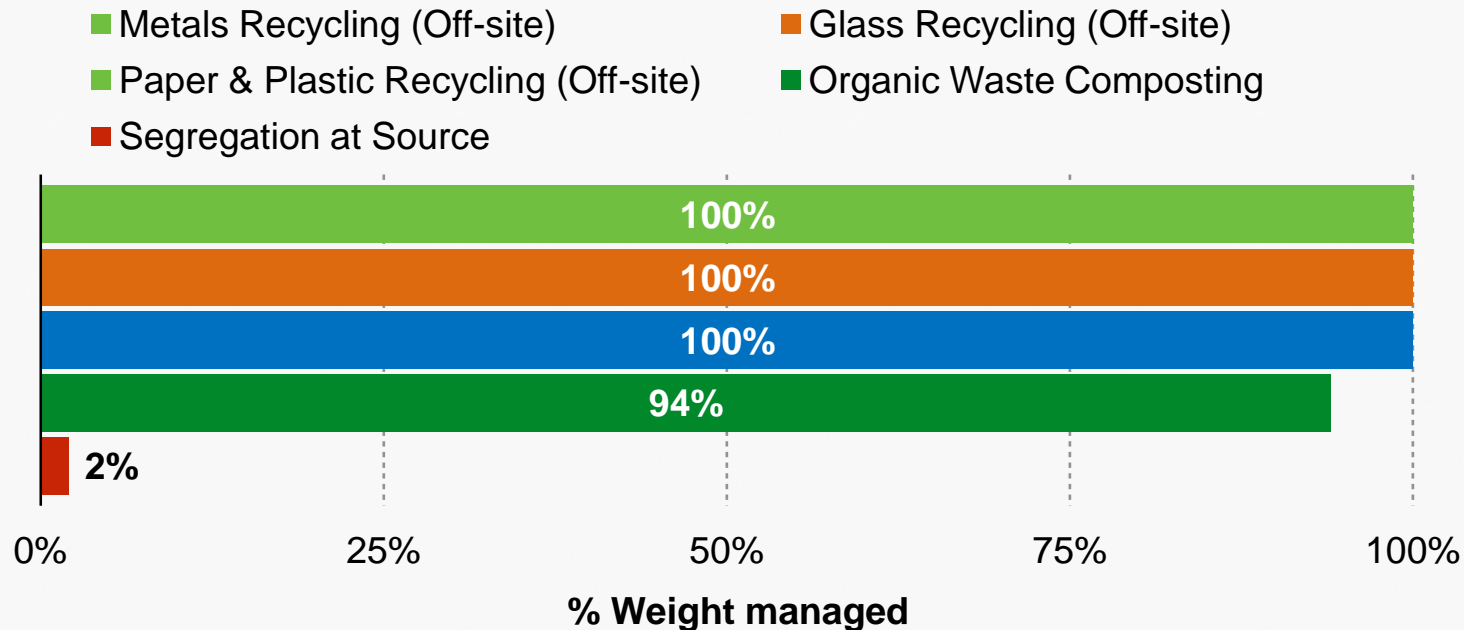
REDUCE COSTS / RISKS

WASTE – MUNICIPAL SOLID WASTE MANAGEMENT

Lemon Tree, Pune

- Waste Management Practices (% weight managed) -

Total Organic Solid Waste = 46.72 MT/year, Total Inorganic Solid Waste = 6.05 MT/year



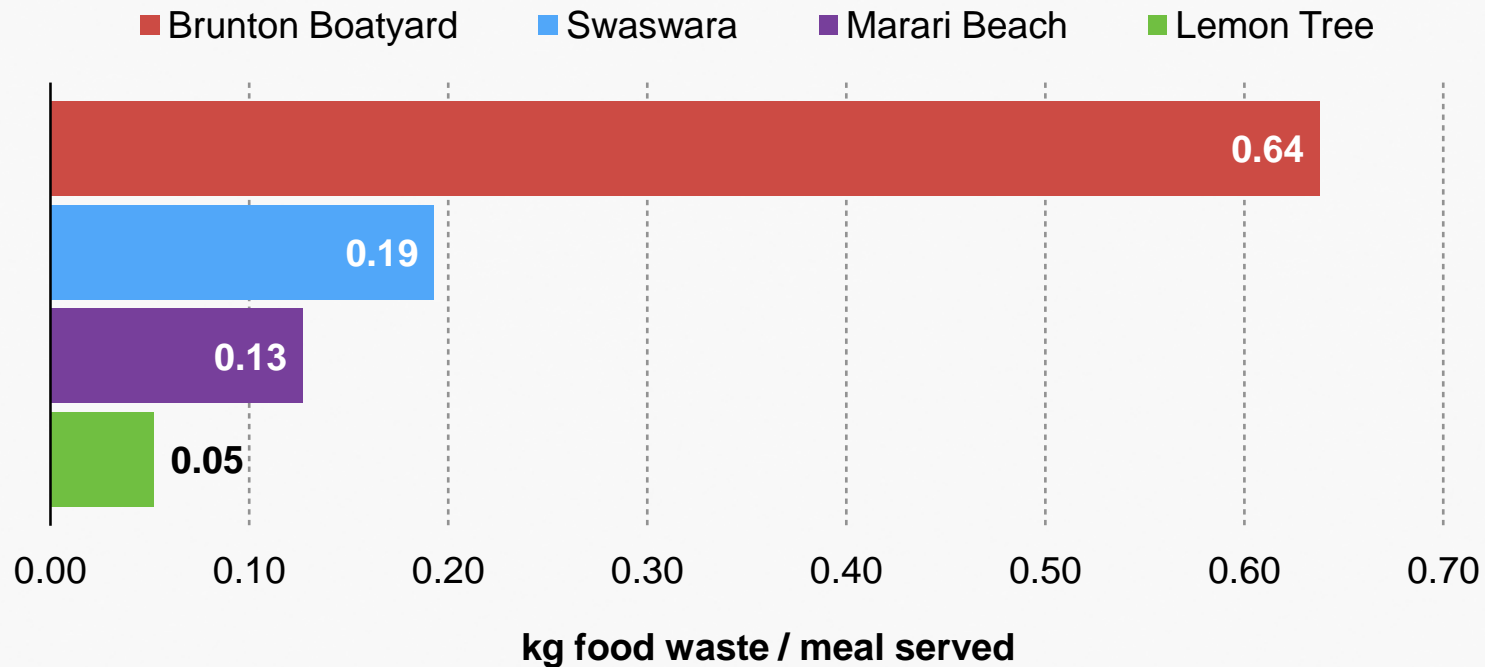
Near 100% off-site recycling achieved through scrap dealers and old clothes are donated to local orphanage.

REDUCE COSTS / RISKS

WASTE – MUNICIPAL SOLID WASTE GENERATION

Lemon Tree, Pune

- Food Waste Generation (kg food waste/meal served) 3 Star Hotel -
Total Food Waste = 43.8 MT/year, Total Meals Served = 8,41,602 nos./year

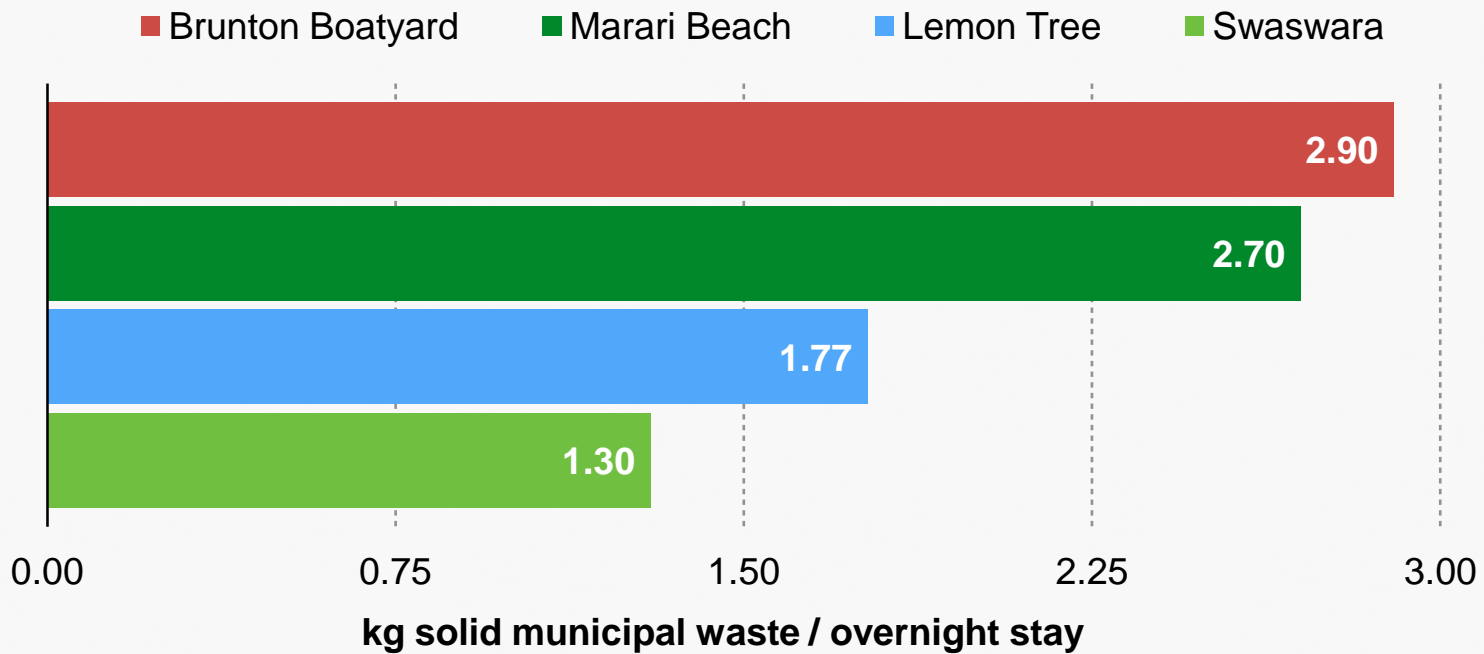


REDUCE COSTS / RISKS

WASTE – MUNICIPAL SOLID WASTE

Lemon Tree, Pune

- Municipal Solid Waste Generation (kg/overnight stay) -
Total Solid Waste Generation (Organic & Inorganic Waste) = 52.77 MT/year,
Total Overnight Stays = 29,867 nos./year



VALUE ADDITIONS MEASURABLE, REPORTABLE, VERIFIABLE PRACTICES

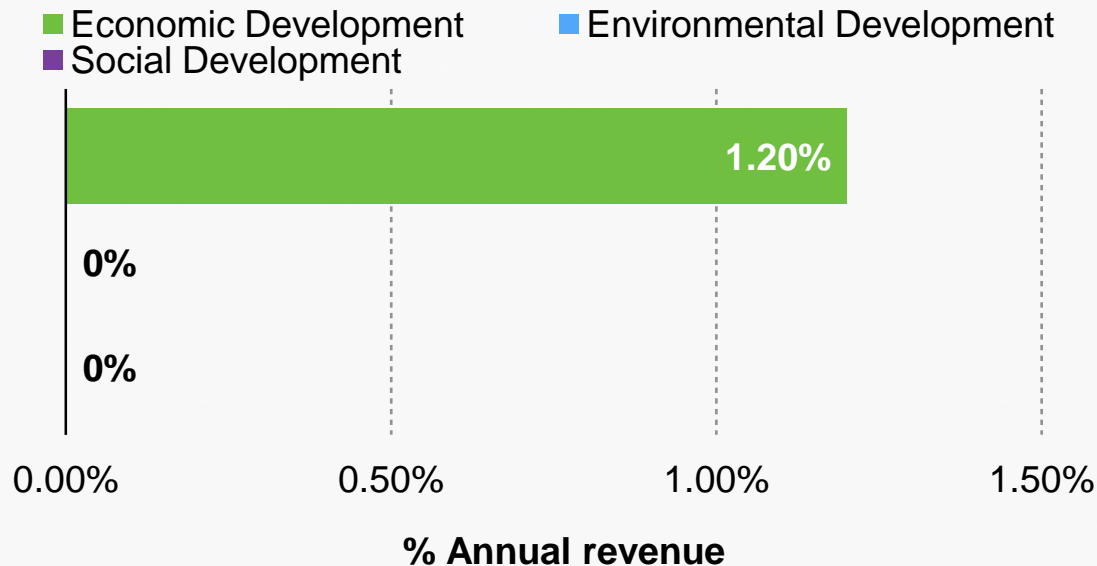


REDUCE COSTS / RISKS

MRV – COMMUNITY SOCIO ECONOMIC DEVELOPMENT

Lemon Tree, Pune

- Community Socio-Economic Development Practices (% annual revenue) –
Total Annual Revenue = 9.31 Crores (INR)/year



Next Step:

- ▶ Organizational sustainability policy for Lemon Tree Hotels

REDUCE COSTS / RISKS

MRV – OTHER SUSTAINABILITY PRACTICES

Lemon Tree, Pune		
<i>Sustainability Practices</i>	<i>KPI</i>	<i>Unit</i>
Guest Environmental Activity Involvement	0%	Event- hours or % guest participation
Laundry Load Reduction (due to linen laundry-reduction policy)	0%	% Laundry Load Reduction
Carbon Tax	0%	% annual revenue
Trees Planted (since land procurement date)	315	no.
Wooded Area	900	m2



**OVERALL
ENVIRONMENTAL
PERFORMANCE
METRICS**



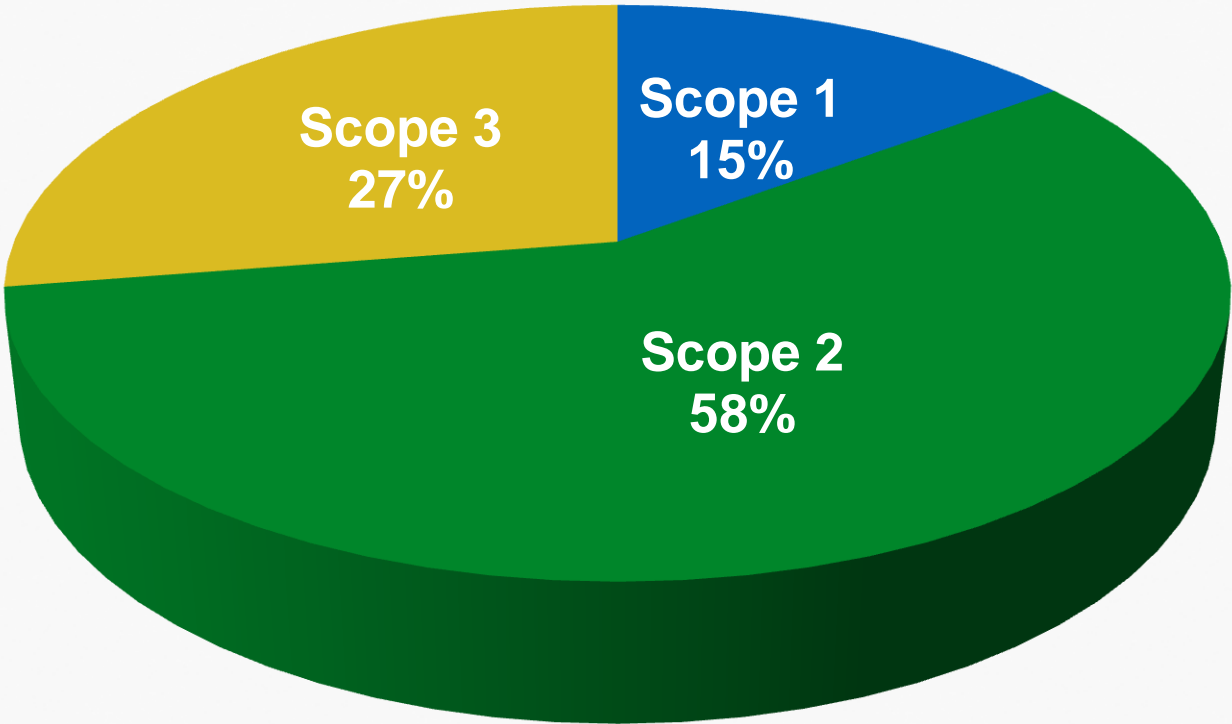
**GHG EMISSIONS
WATER
WASTE
WASTEWATER**

OVERALL METRICS

Lemon Tree, Pune

- GHG Emissions per Scope -

Total GHG Emissions (Scope 1, 2, and 3) = 1,737 MT CO₂e

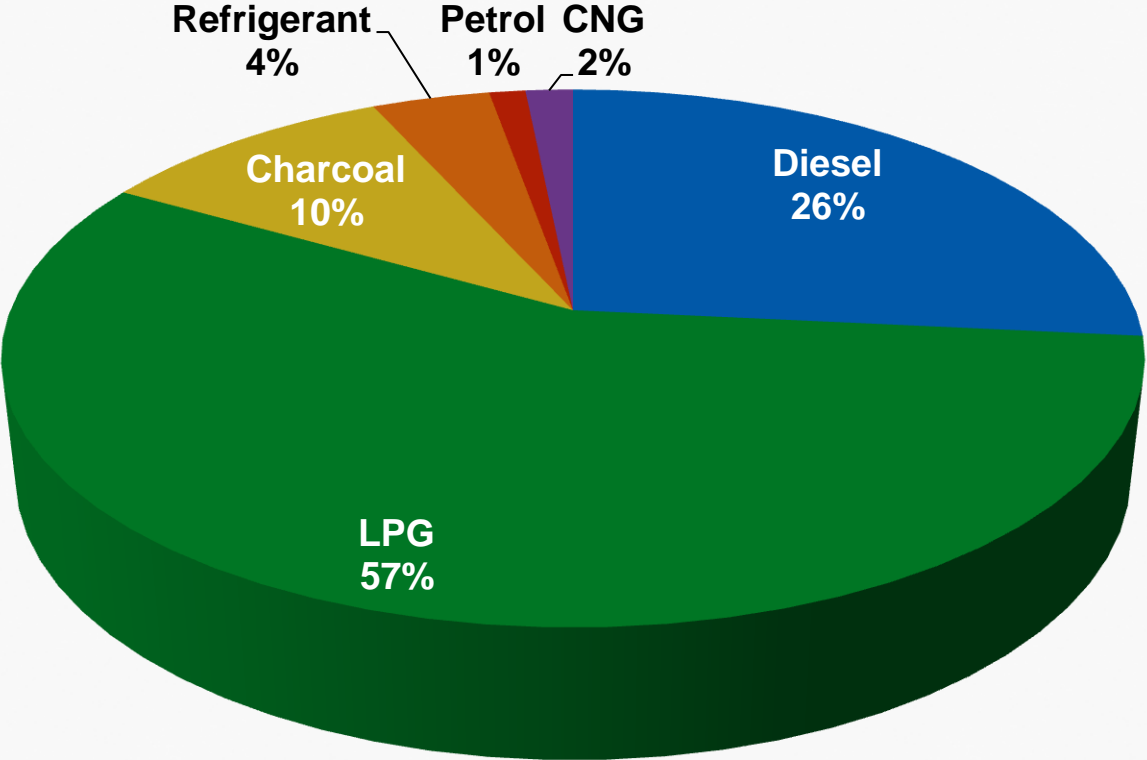


OVERALL METRICS

SCOPE 1 EMISSIONS

Lemon Tree, Pune

- Scope 1 GHG Emissions Breakdown -
Total GHG Emissions (Scope 1, 2, and 3) = 256.96 MT CO₂e

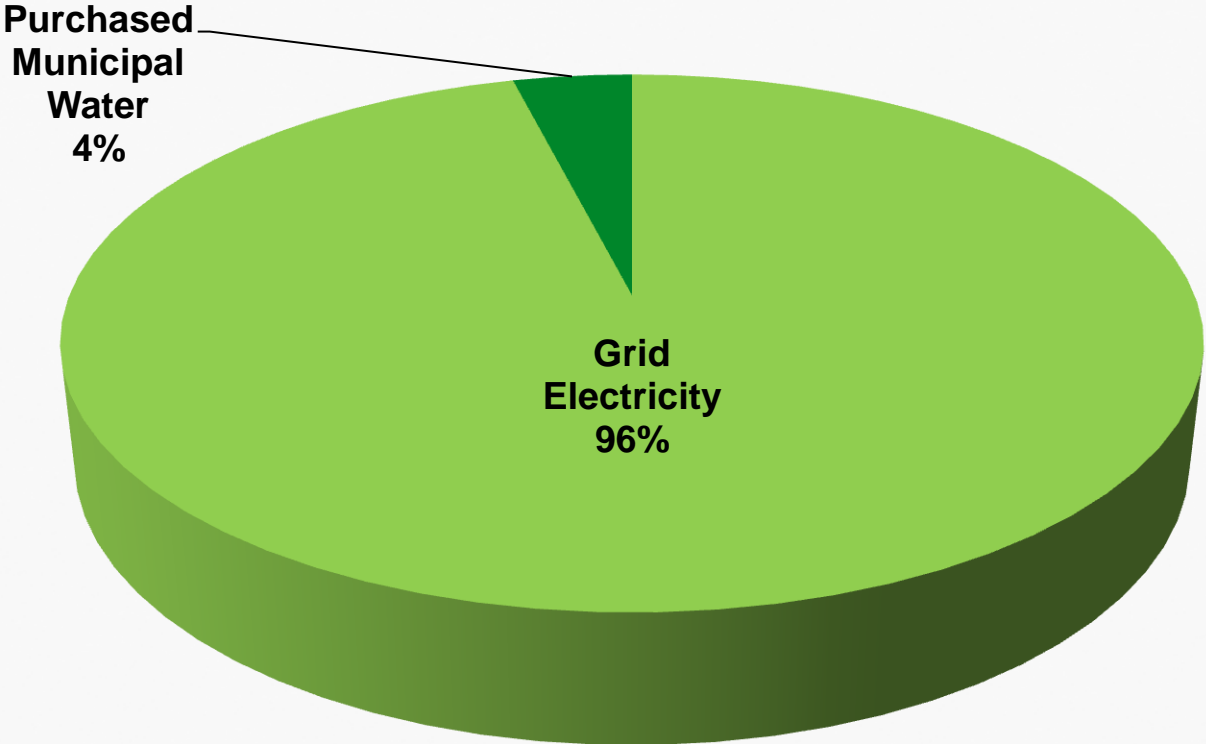


OVERALL METRICS

SCOPE 2 EMISSIONS

Lemon Tree, Pune

- Scope 2 GHG Emissions Breakdown -
Total Scope 2 GHG Emissions = 1,002 MT CO2e



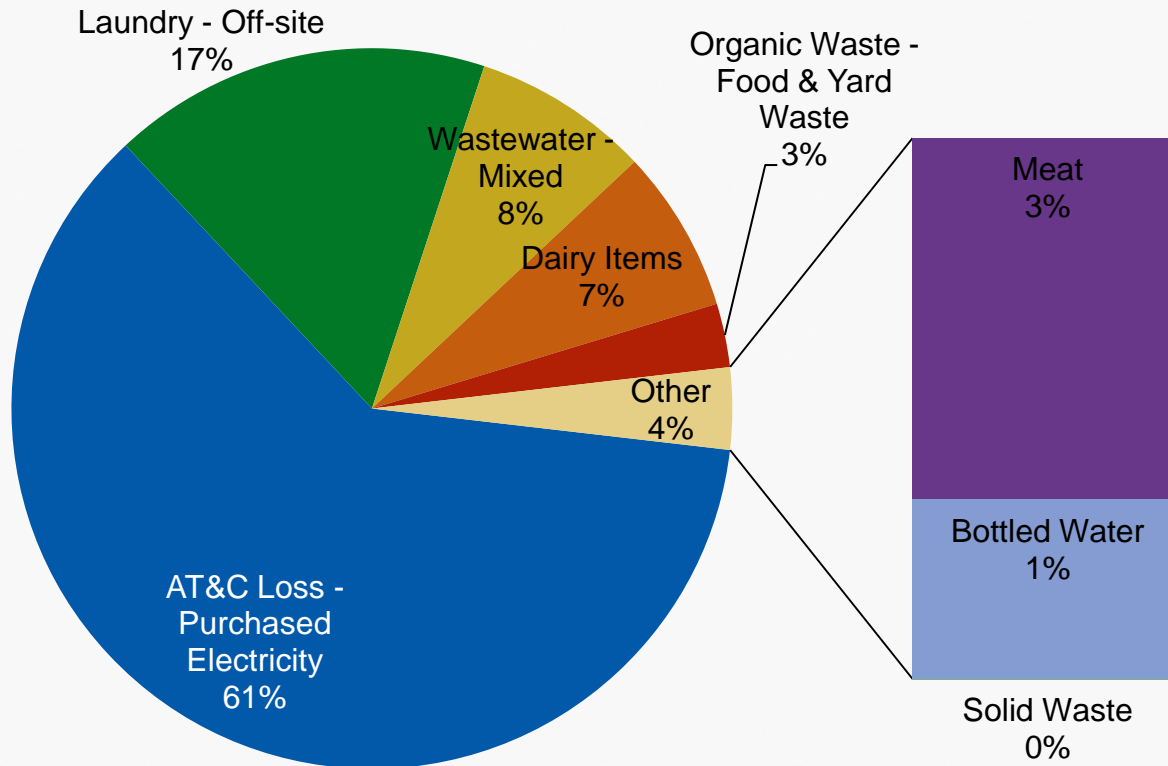
OVERALL METRICS

SCOPE 3 EMISSIONS

Lemon Tree, Pune

- Scope 3 GHG Emissions Breakdown -

Total Scope 3 GHG Emissions = 482 MT CO₂e



Solid Waste (Paper, Plastic, Metals, Glass) given to scrap dealer for recycling off-site.

OVERALL METRICS

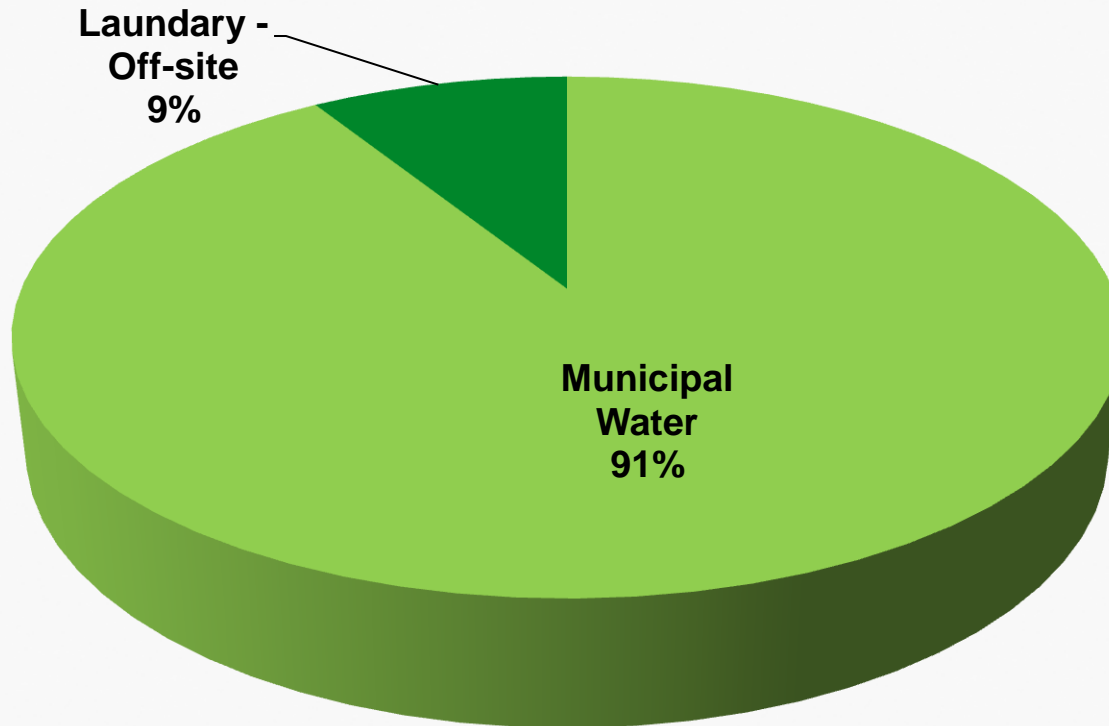
WATER

Lemon Tree, Pune

- Water Footprint Source Breakdown (% annual volume) -

Total Water Footprint (including water consumption for laundry) = 21,989 kls/year

Avg. Water Consumption/overnight stay = 736 liters



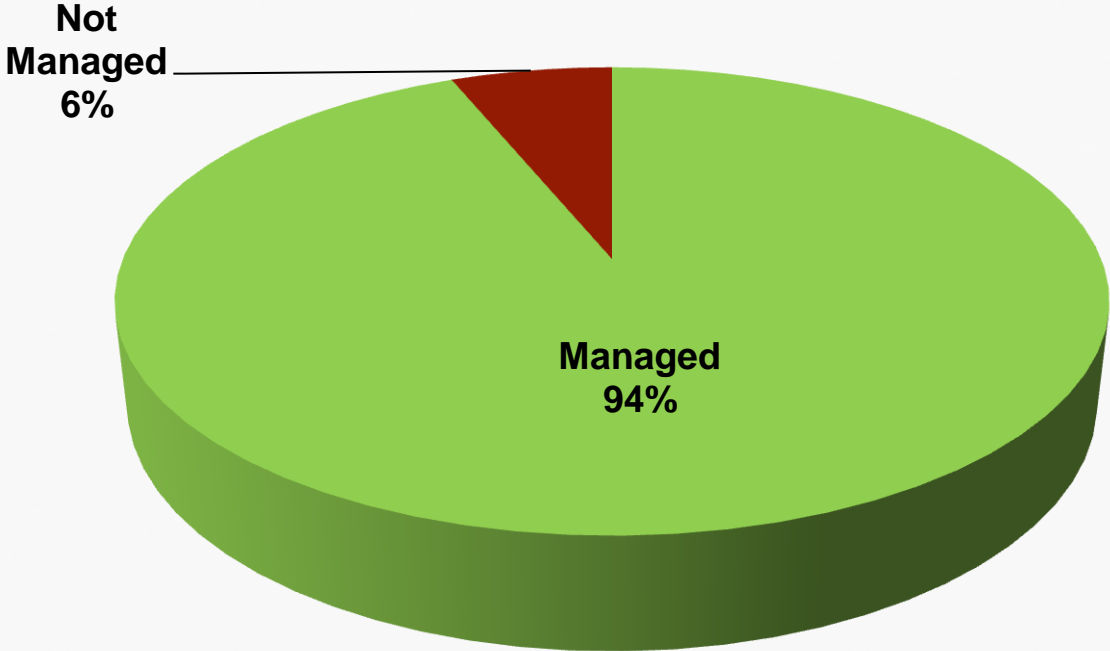
Zero use of ground water, tanker water and rain water.

OVERALL METRICS

WASTE

Lemon Tree, Pune

- Biodegradable Waste Management (% weight treated) -
Total Biodegradable Waste Footprint = 46.72 MT/year

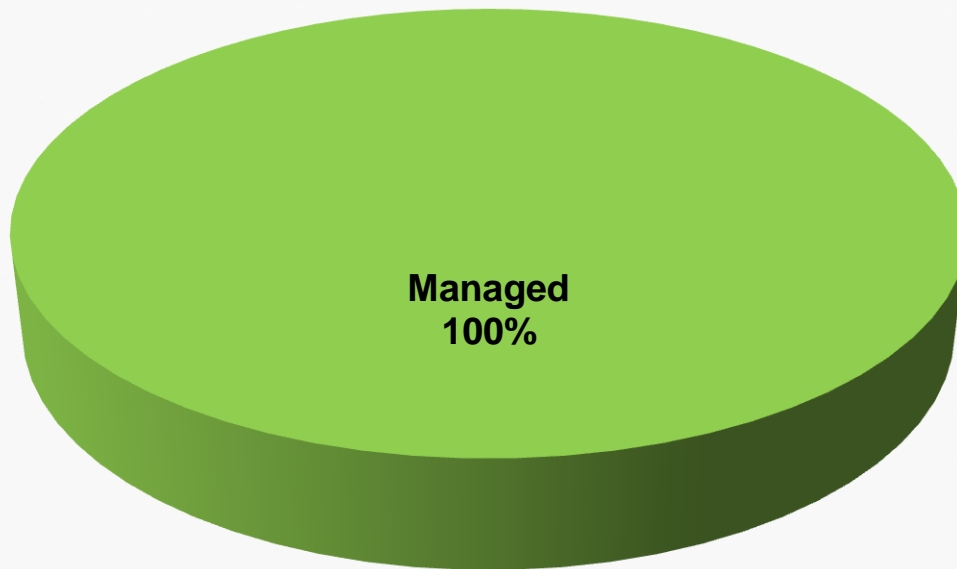


OVERALL METRICS

WASTE

Lemon Tree, Pune

- Non-Biodegradable Waste Management (% weight treated) -
Total Non-Biodegradable Waste Footprint = 6.05 MT/year



100% off-site recycling achieved through scrap dealers and old clothes are donated to local orphanage.



OVERALL METRICS

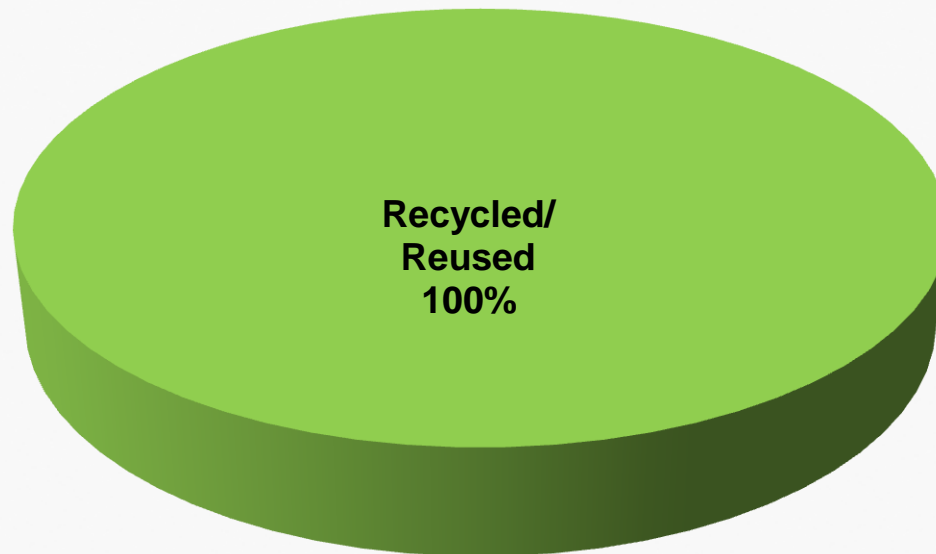
WASTEWATER

Lemon Tree, Pune

- Wastewater Management (% volume recycled / reused) -

Total Wastewater Footprint = 18,256 kiloliters/year

Avg. Wastewater Generation /overnight stay = 736 liters



100% on-site treatment (50,000 litres/day) of generated wastewater through STP Plant and effluent used for gardening purposes throughout the year.