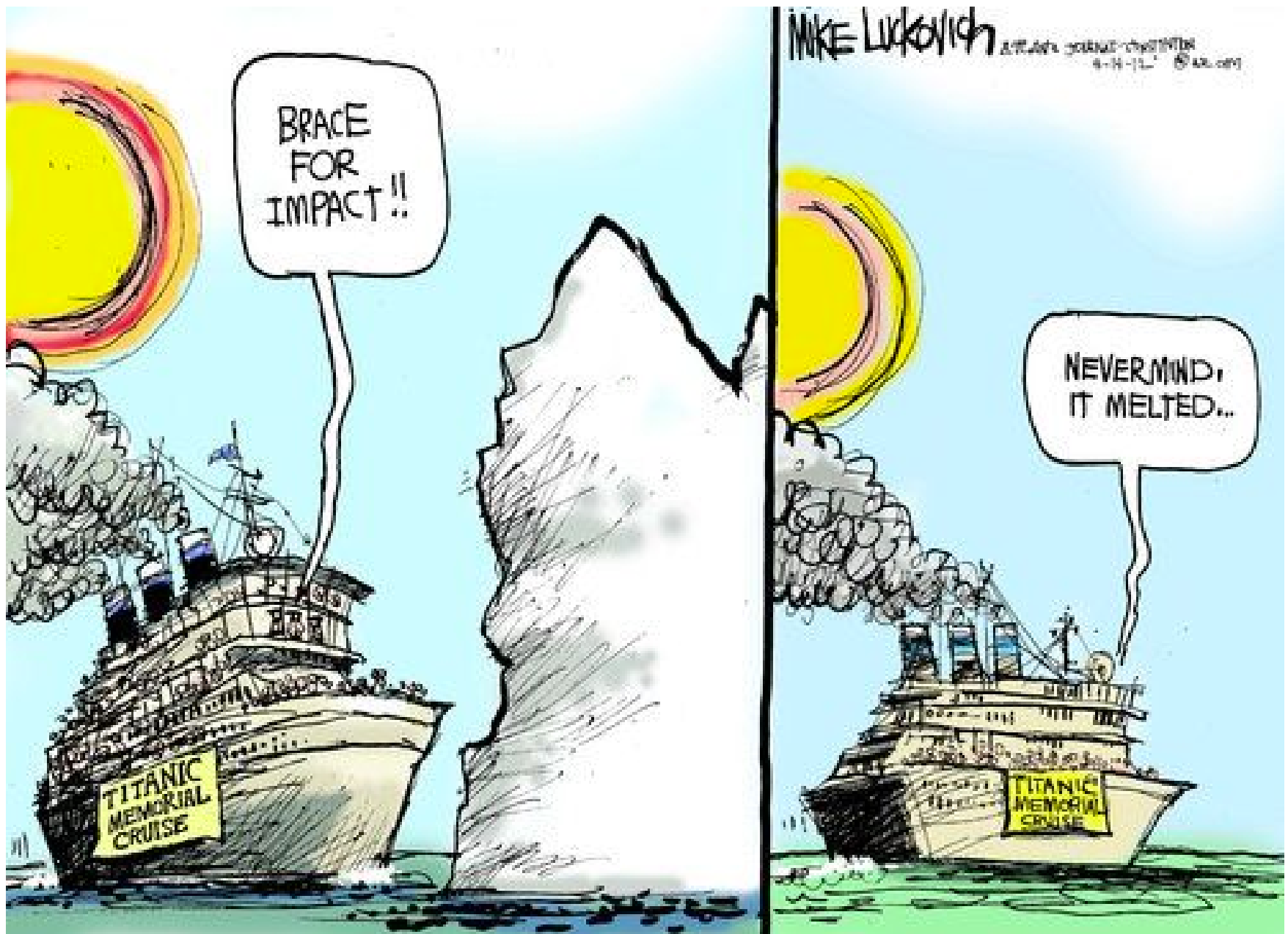




# Smarter Dharma

Sustainability in the Hospitality & Tourism Sector





# Impact Assessment and Management

Resource Management



Organisations



Policy Makers



Communities

Policy

Technology

Education

Implementation

Stakeholder Engagement

CONSTRUCTION

HOSPITALITY

MANUFACTURING

SERVICES

GOVERNMENT & COMMUNITY

EDUCATION



# The Problem

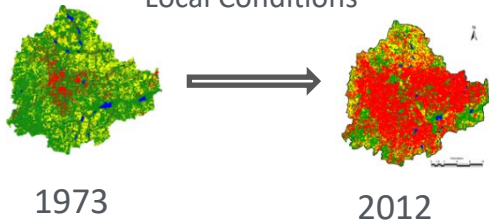
Environmental

## Energy

Global Limit

2°C by 2100

Local Conditions



Economic

Buildings getting warmer  
Higher demand for cooling

4% ↑ Cost for  
Every degree

How to deal with the heat?

## Water

Ground Water Table

5m ↓ In  
25m ↓ 10 years

In highly  
urbanized areas 500m

Dwindling Supply  
from Musi / Govt.

30% ↑ Annual  
Water &  
sewage board

7- 10  
times ↑ Cost from  
100 to 500m

Where will water come from?

## Waste

In 2016 >> 530mn tons

By 2030 >> 1.2bn tons

## Materials

40% Raw material  
for construction

Increasing scarcity

↓  
Exponential increase in cost

What about resources?



## Sustainability

*meets the needs of the present*

*without compromising*

*future generations to meet their own needs.*

CONTINUITY

## Development

*Continuous state of growth or advancement*

GROWTH

## Eco-Tourism

*tourism directed towards*

*natural environments,*

*intended to support conservation efforts and observe wildlife*

CONSERVATION

**we live with finite resources**



# Earth Overshoot Day:

EOD is the date on which humanity's resource consumption for the year **exceeds** Earth's capacity to regenerate those resources that year.

Year	Overshoot Date	Year	Overshoot Date
1987	December 19	2010	August 21
1990	December 7	2011	August 27
1995	November 21	2012	August 22
2000	November 1	2013	August 20
2005	October 20	2014	August 19
2007	October 26	2015	August 13
2008	September 23	2016	August 8
2009	September 25	2017	August 2





# THE LOOMING REALITY OF OUR CITIES

Vulnerable Region	Migrant Levels in 2100
West Bengal	~10 million
Coastal Maharashtra (around Mumbai)	~10-12 million
Coastal Tamil Nadu	~10 million
Coastal Andhra Pradesh	~6 million
Gujarat	~5.5 million
Coastal Orissa	~4 million
Western Rajasthan	~1.4 million
Northern Karnataka	~1.3 million
Madhya Pradesh	~1.2 million
Interior Maharashtra	~1 million
Northern Andhra Pradesh	~1 million
Southern Bihar	~1 million

TABLE: REGIONS IN INDIA THAT WILL LIKELY EXPERIENCE THE HIGHEST LEVELS OF OUT-MIGRATION DUE TO SEA LEVEL RISE, DROUGHT/ GLOBALISATION.



# Sustainability Development Goals



TRANSFORMING OUR  
WORLD:  
THE 2030 AGENDA FOR  
SUSTAINABLE  
DEVELOPMENT

**1** NO  
POVERTY



**2** ZERO  
HUNGER



**3** GOOD HEALTH  
AND WELL-BEING



**4** QUALITY  
EDUCATION



**5** GENDER  
EQUALITY



**6** CLEAN WATER  
AND SANITATION



**7** AFFORDABLE AND  
CLEAN ENERGY



**8** DECENT WORK AND  
ECONOMIC GROWTH



**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



**10** REDUCED  
INEQUALITIES



**11** SUSTAINABLE CITIES  
AND COMMUNITIES



**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



**13** CLIMATE  
ACTION



**14** LIFE  
BELOW WATER



**15** LIFE  
ON LAND



**16** PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



**17** PARTNERSHIPS  
FOR THE GOALS



# MOVING TOWARDS A SYSTEMS VIEW

**Shareholder  
Value**



**Shared  
Value**



**System  
Value**



A vibrant, colorful background featuring several decorated Easter eggs in various colors (blue, green, pink, yellow) and a small cartoon character with a yellow body and a red hat. The text is overlaid on a white rectangular area.

# 2017 International Year of Sustainable Tourism for Development

A roadmap for celebrating together!

**Ecological:** Resource efficiency, protection of natural resources, biodiversity

**Social:** Social inclusiveness and employment creation

**Cultural:** Protection and Promotion of cultural values, Diversity and Heritage

**Economic Growth:** Creation of Business opportunities – enhance bottom-line



## Environmental

- Physical Integrity
- Biological Diversity
- Resource Efficiency
- Original/ Native Environment Quality

## Social

- Community Wellbeing
- Cultural Richness
- Social Equity
- Visitor Fulfilment
- Local Control

## Economic

- Economic Viability
- Local Prosperity
- Employment Quality

## Sustainability Development Goals



*By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products*

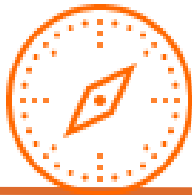


*Develop and implement tools to monitor sustainable development impacts for sustainable tourism which creates jobs, promotes local culture and products*



*By 2030 increase the economic benefits of SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism*





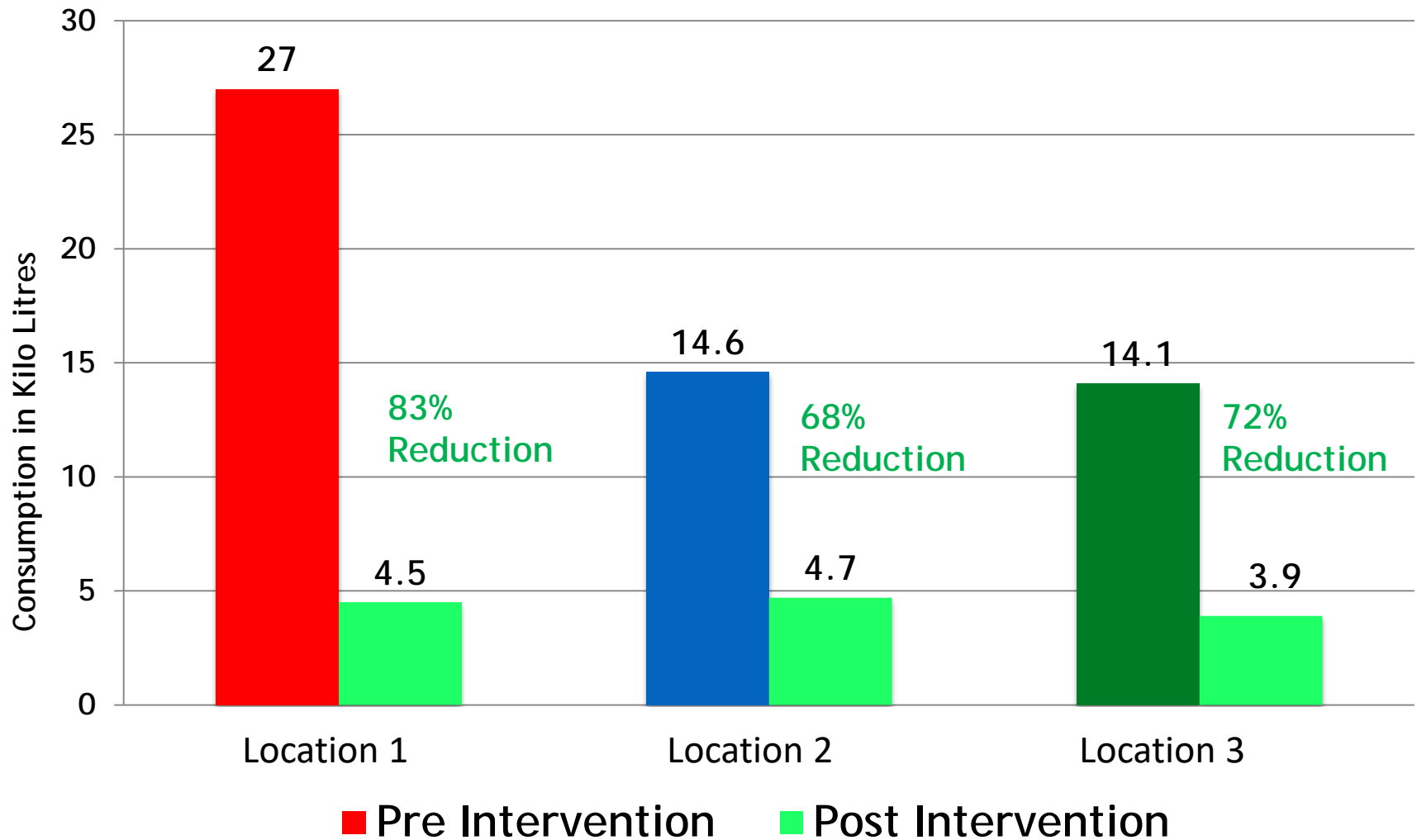
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# Examples on Intervention in Hospitality Sector

-Water



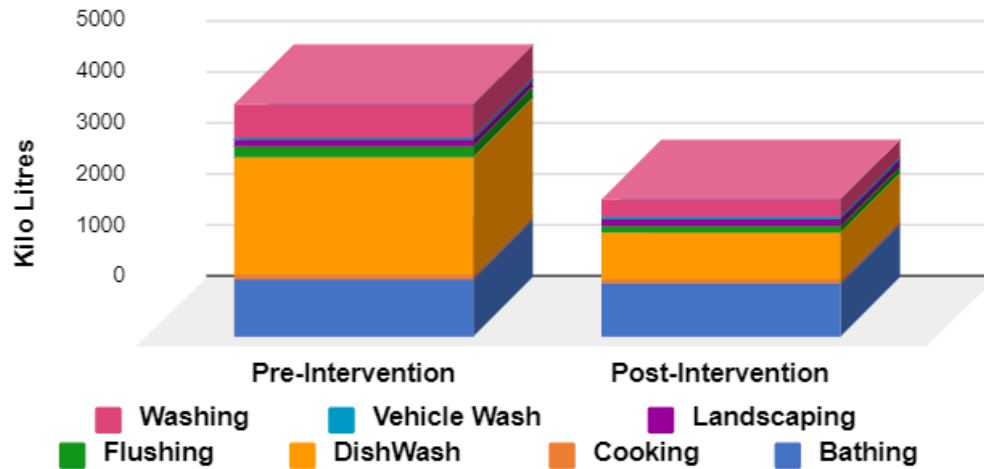
# Water Interventions





# Annual Water & Expense Savings

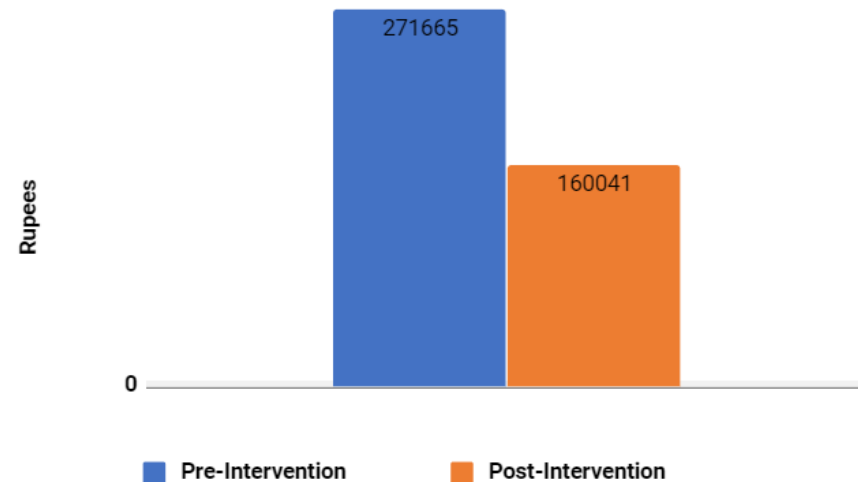
Reduction in Annual Water Consumption



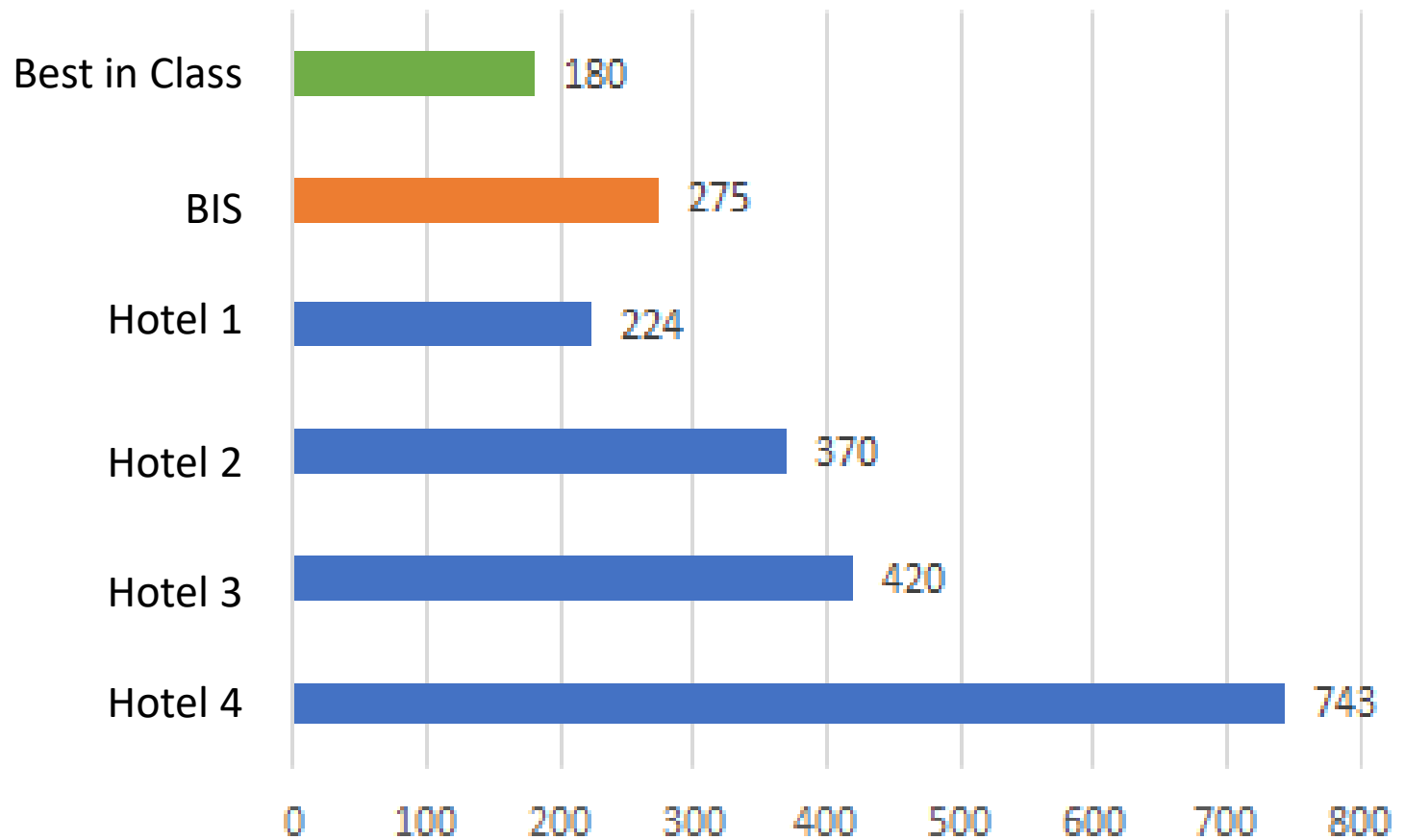
**1860 KL Annually Saved**

**INR in 6 digits Annually Saved at Utility Rates**

Reduction in Annual Water Cost

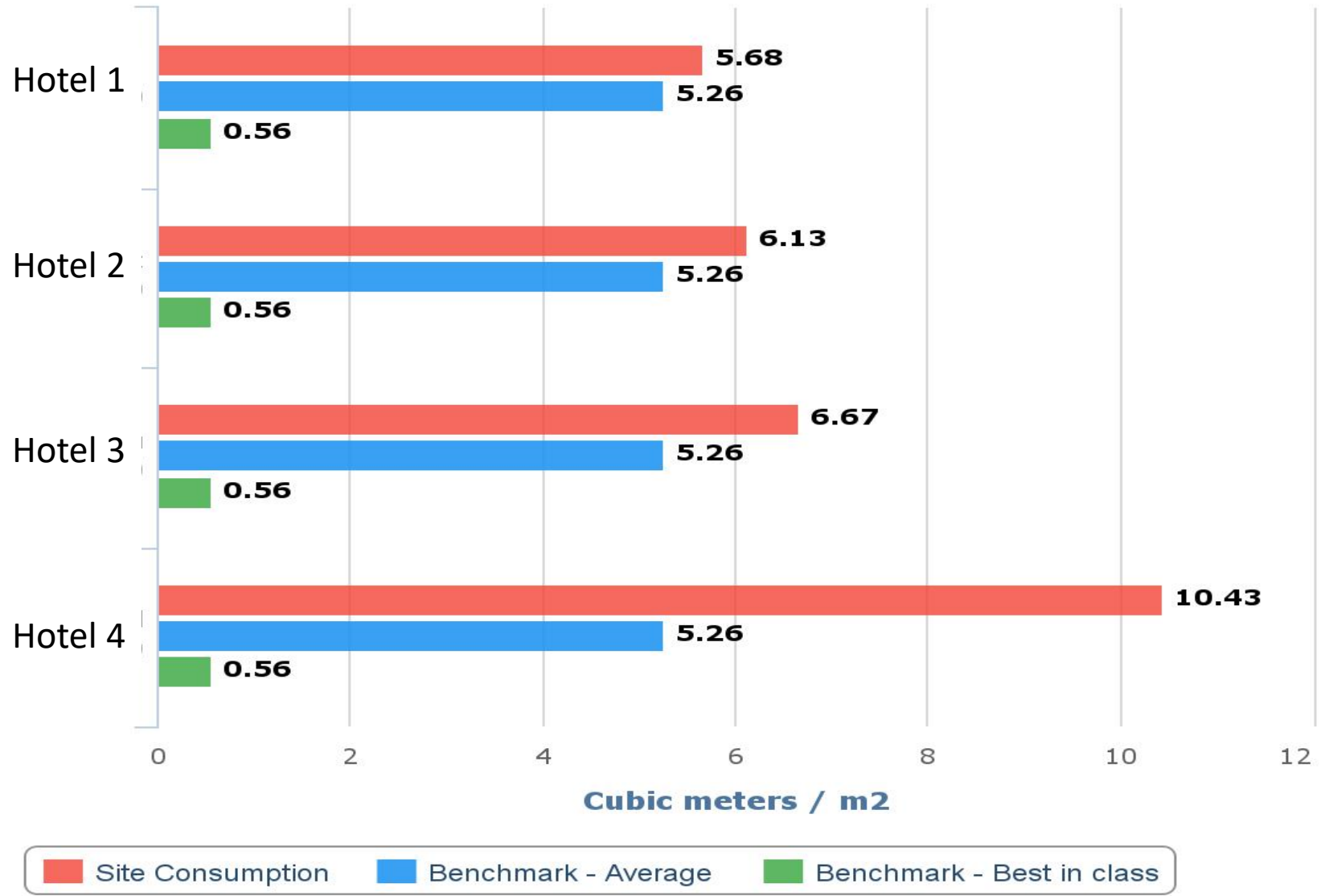


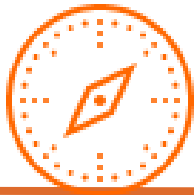
## Average Per capita Water Consumption in liters





## Water Consumption compared to EnergyDeck global database





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# Examples on Intervention in Hospitality Sector

-Materials





# MATERIAL MANAGEMENT

## DIFFERENT CATEGORIES OF WASTE & WASTE HANDLING PROCESS



Dry Waste



Recycling



Kitchen & Food Waste



Composting



Bio-Sanitary Waste



Incineration



Garden Waste



Composting



Debris & Hazardous Waste



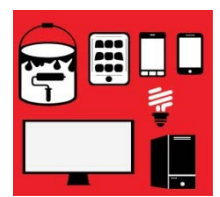
Landfill



Medicine Waste



Incineration



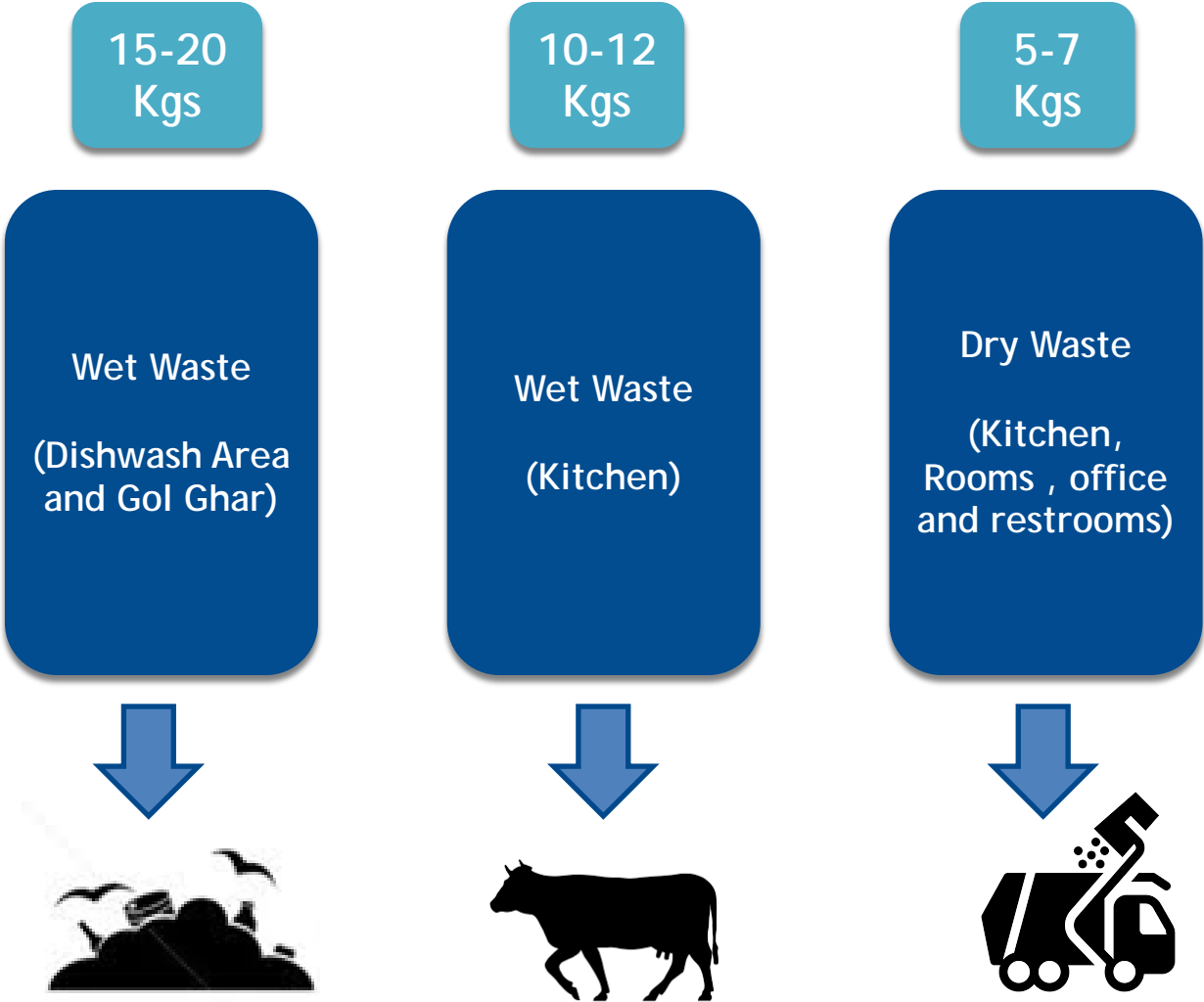
E -Waste



Recycling



# Current Daily Waste Scenario



# Waste Management Strategy: Wet waste

## Composting Unit

CAPEX in INR (15 Kgs)	Annual OPEX in INR	Benefit
20,000	5,000	Rich Compost used for gardening or sold to visitors in Souvenir shop

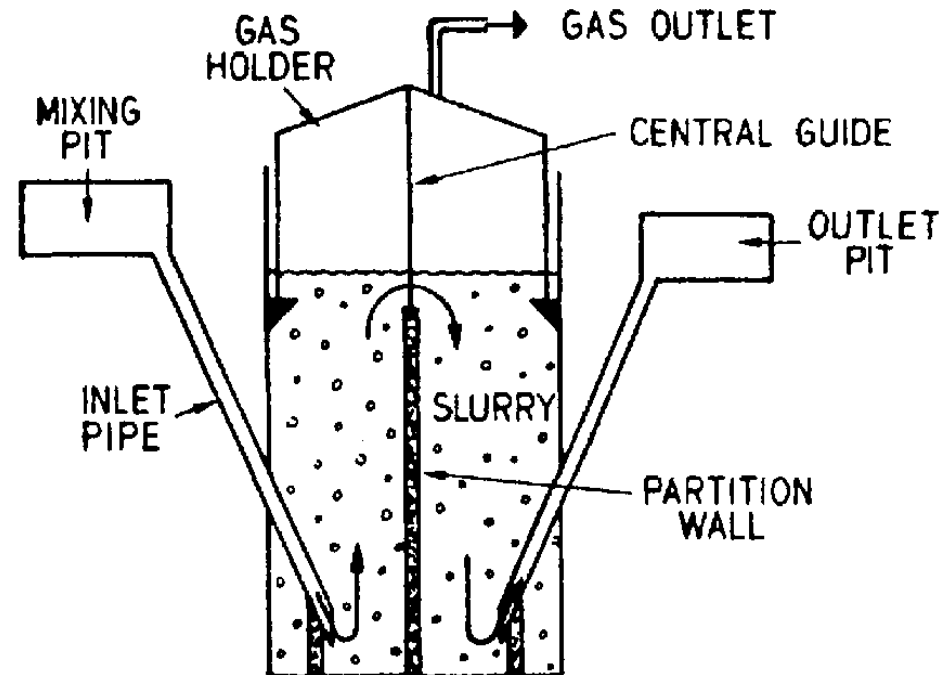




# Waste Management Strategy: Biogas Plant for Wet Waste

## Biogas Plant

Average Daily Wet Waste Generated in Kilos	CAPEX in INR (20 Kgs)	LPG Equivalent kg/day	Monetary Savings on LPG/Year	ROI in Years
20	81,600	0.8	15,840	4



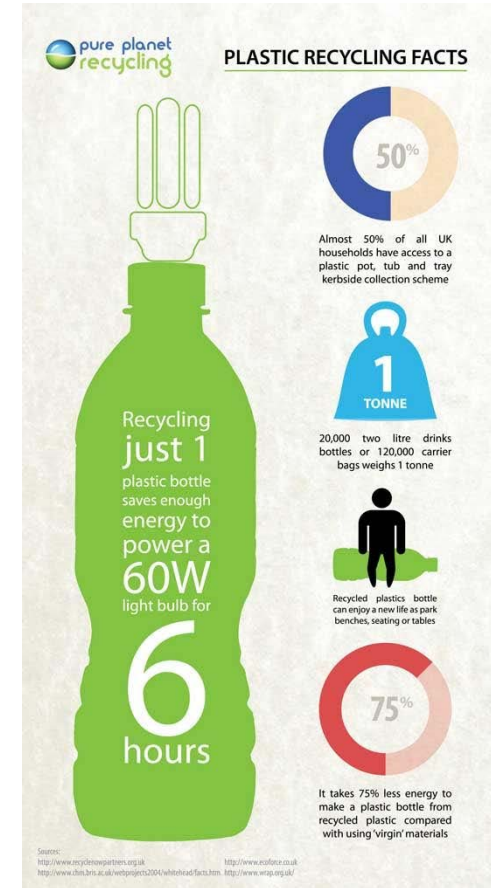
# Waste Management Strategy: Conscious consumption and recycling



**SEGREGATION OF DRY WASTE FOR PROPER RECYCLING** - Glass, metal cans, paper etc



**REDUCE NON-RECYCLABLES**



**STEER TOWARDS BECOMING A PLASTIC FREE ZONE**

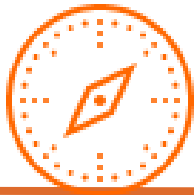




# PROBLEM - ??

- Creating a dialogue that celebrates forests and biodiversity
- Promoting responsible ecotourism
- Towards Resource Positivity
  - Energy savings ~ 76%
  - Water savings ~ 27%
  - Waste - 100% landfill free!
- Stakeholder Engagement
  - Customer
  - Staff
  - Vendors
- Carbon Neutrality
  - Driven by SDGs





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# Monitoring, Assessment & Global alignment



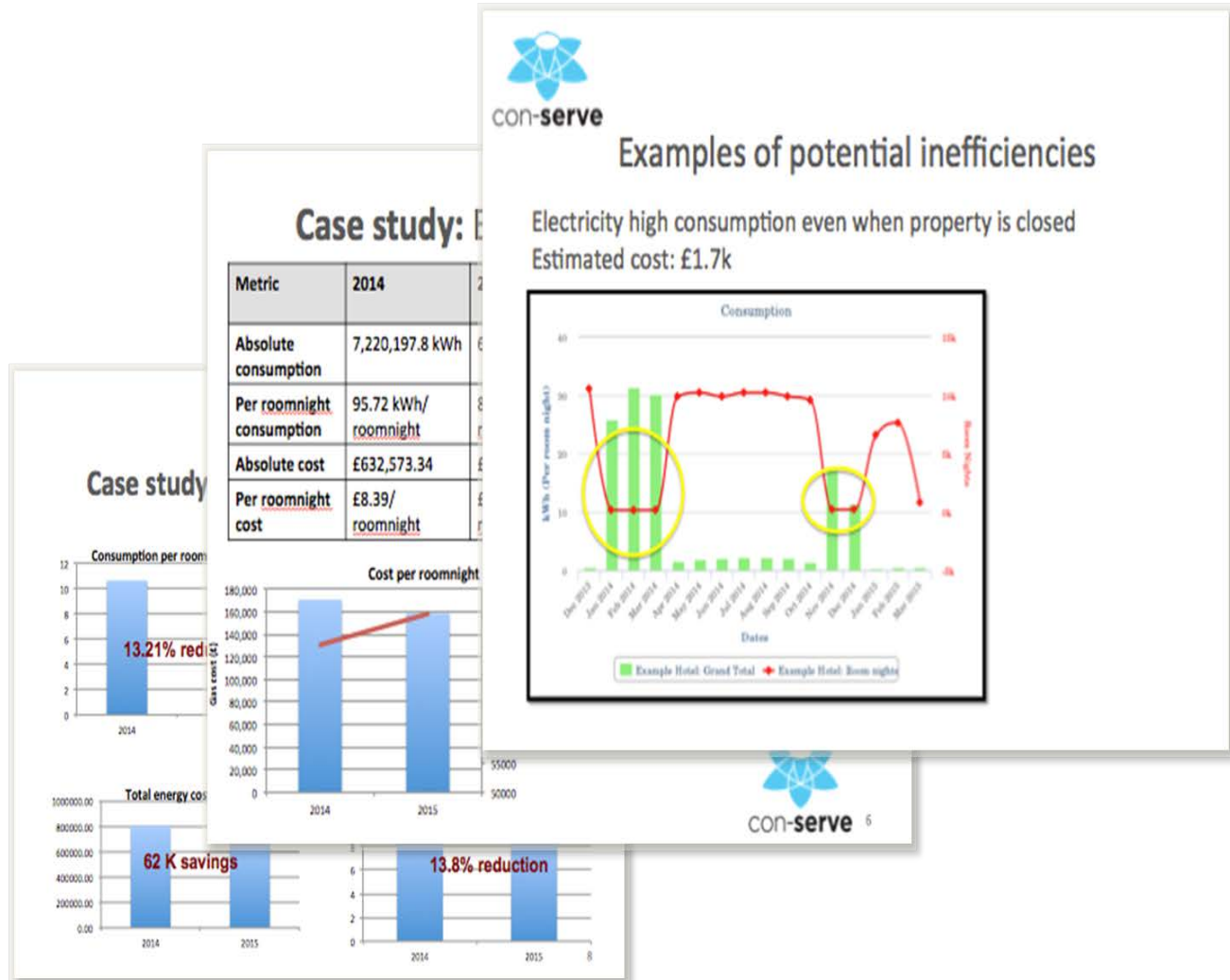
# PLATFORM TO MANAGE SUSTAINABILITY



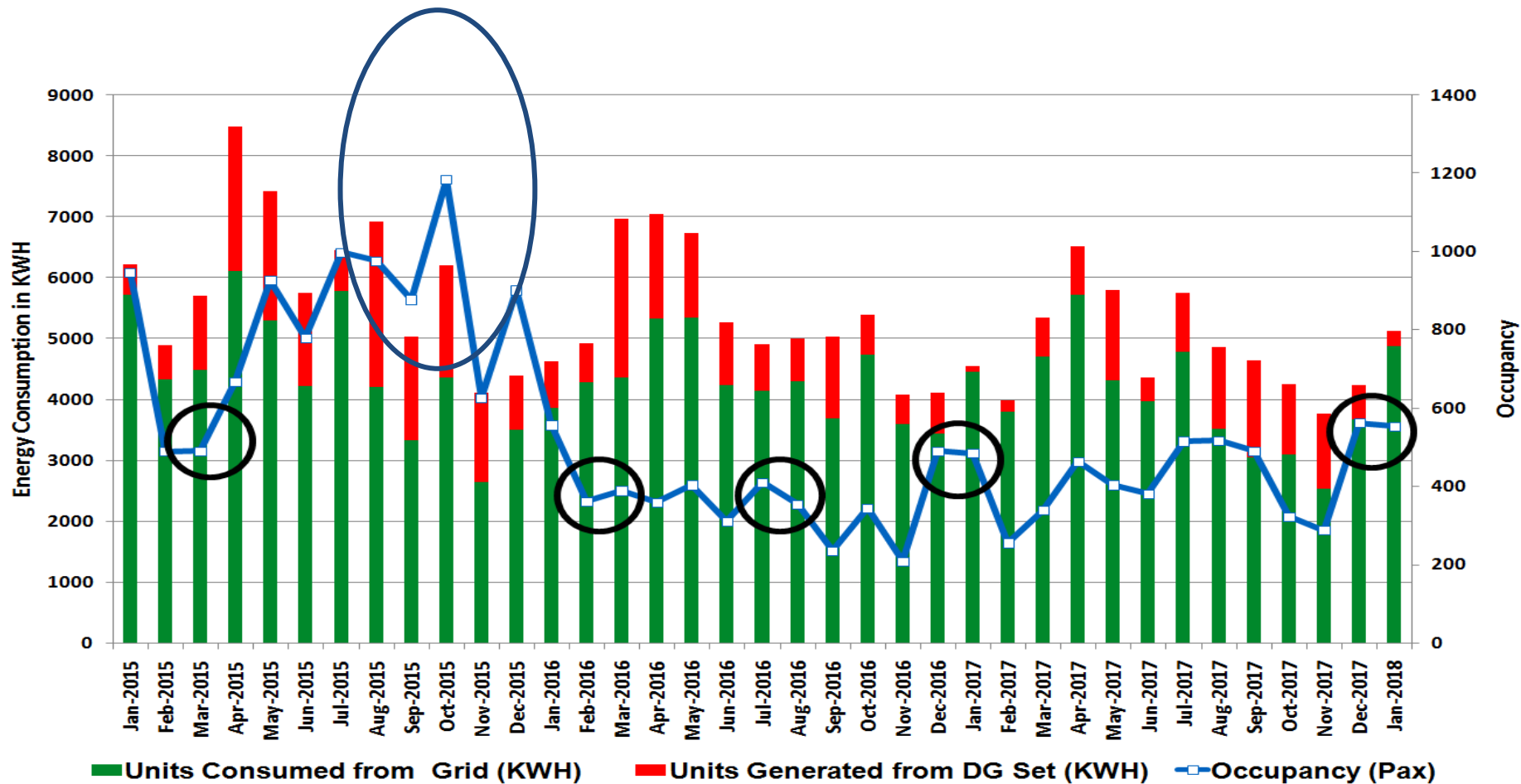
- Comprehensive data management system
- Benchmarking resource use against industry
- Record, identify and realise saving opportunities



# CONSERVE - WHAT CAN BE DONE?

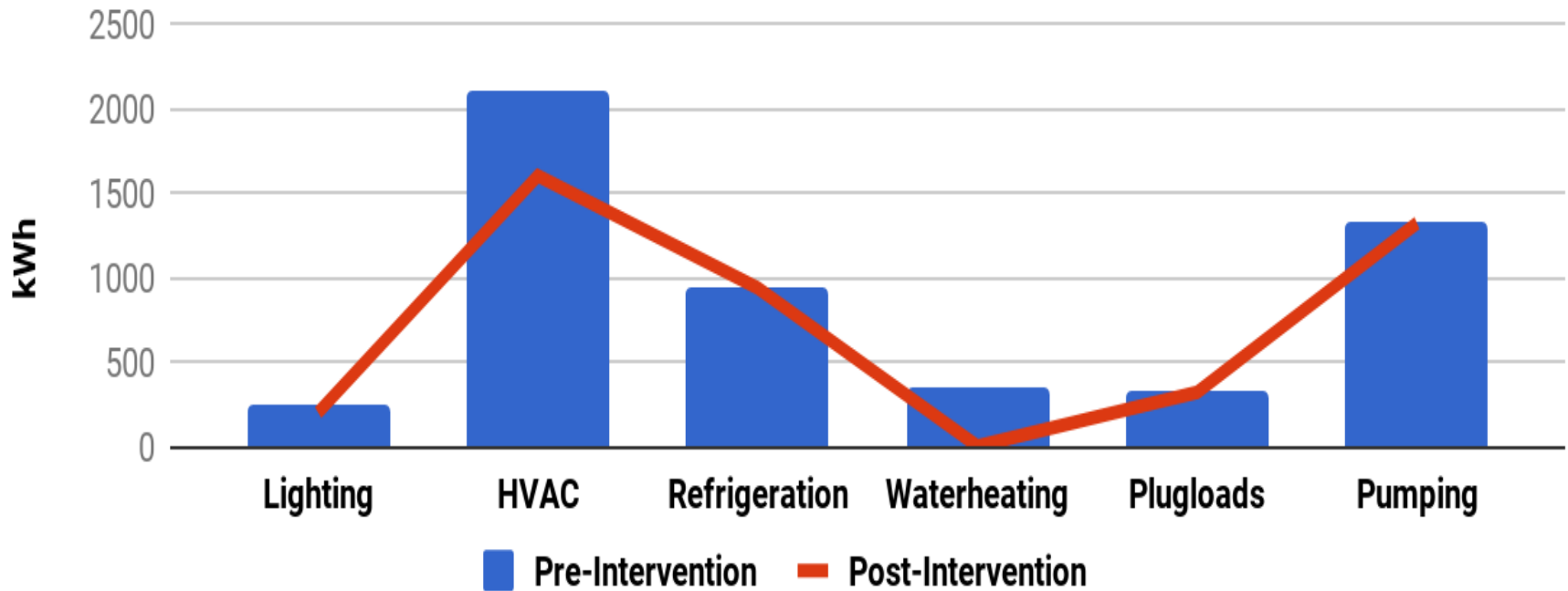


# Identifying Anomalies



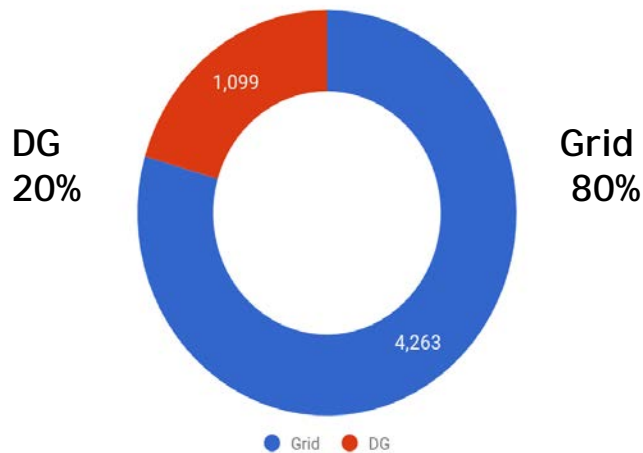
# Pre & Post Intervention - Service Wise Monthly Energy Consumption

## Monthly Energy Consumption per Energy Service

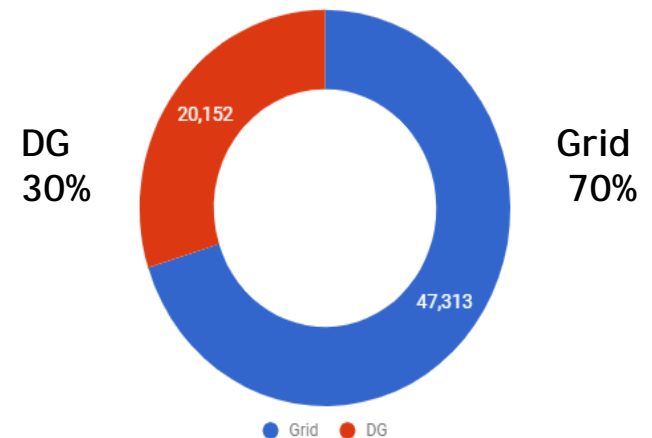


# Current Energy Scenario

Monthly Average  
Consumption



Monthly Average  
Expense

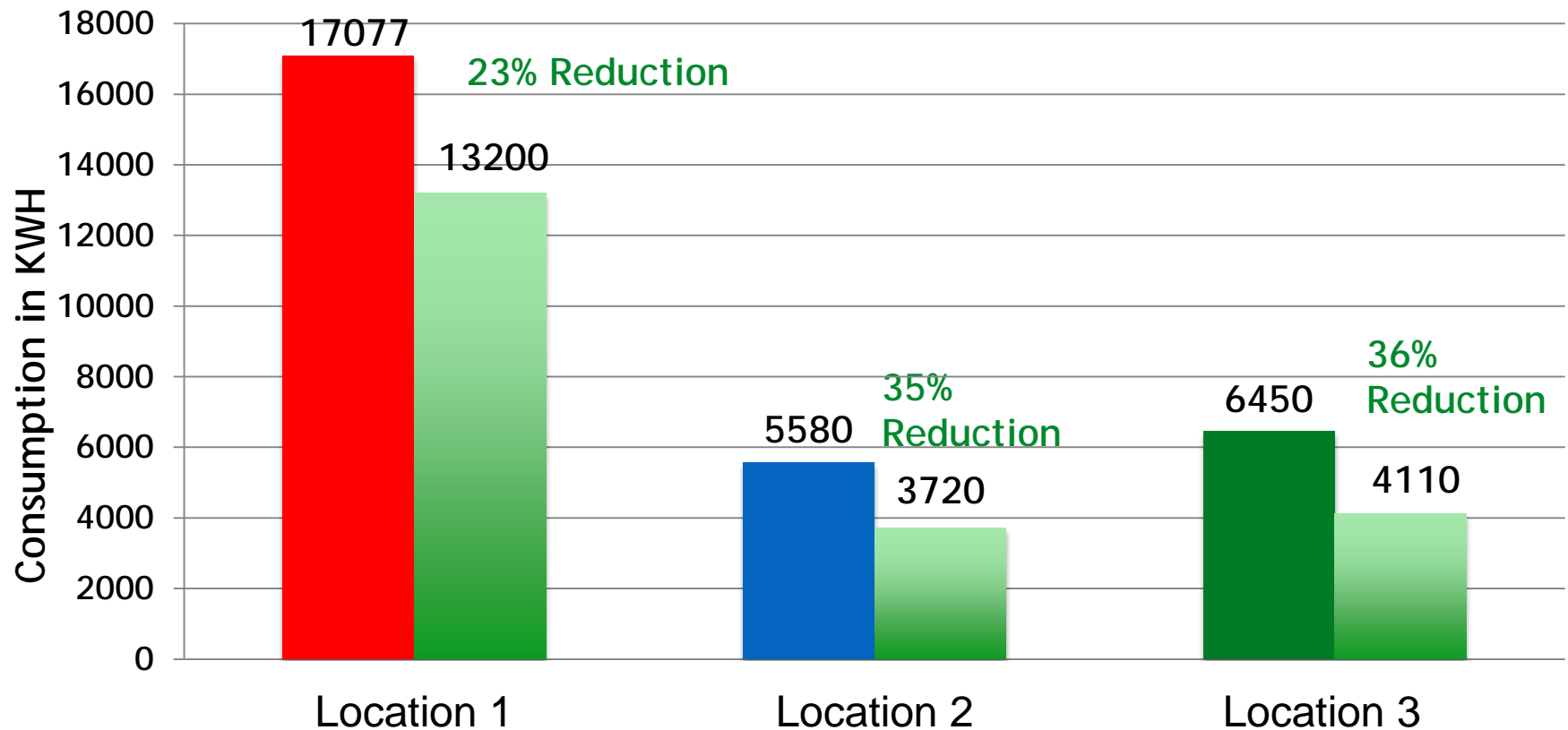


Hotel ZZZ spends **30%** of its overall energy cost on Diesel for just **20%** of the energy !!



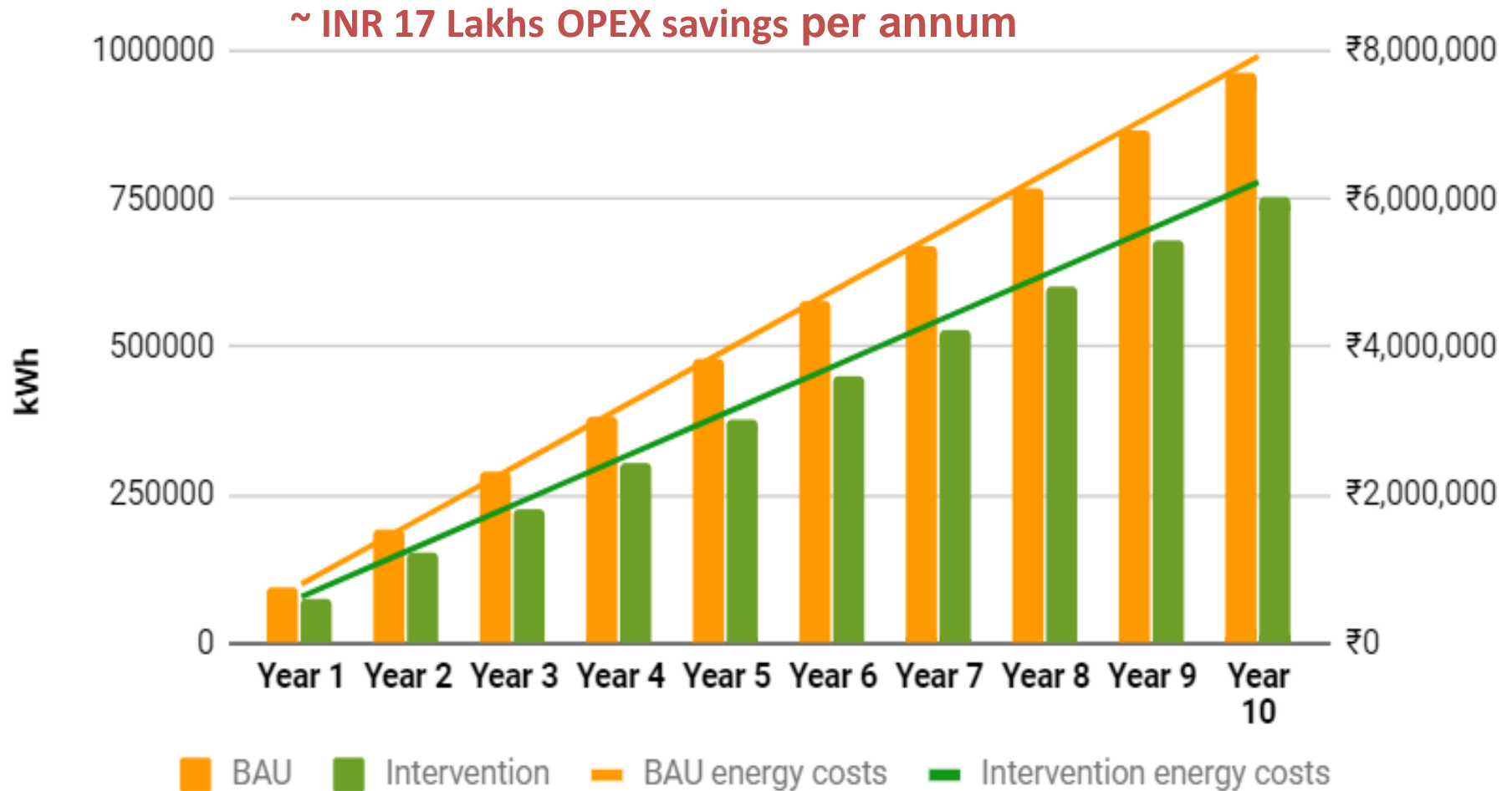
# Energy Interventions

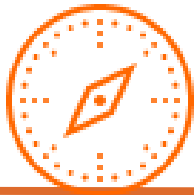
## Consumption Pre & Post Interventions





# Cumulative Electricity & Expenses over 10 Years





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# Evidence Based Policy Intervention



# Evidence based BI

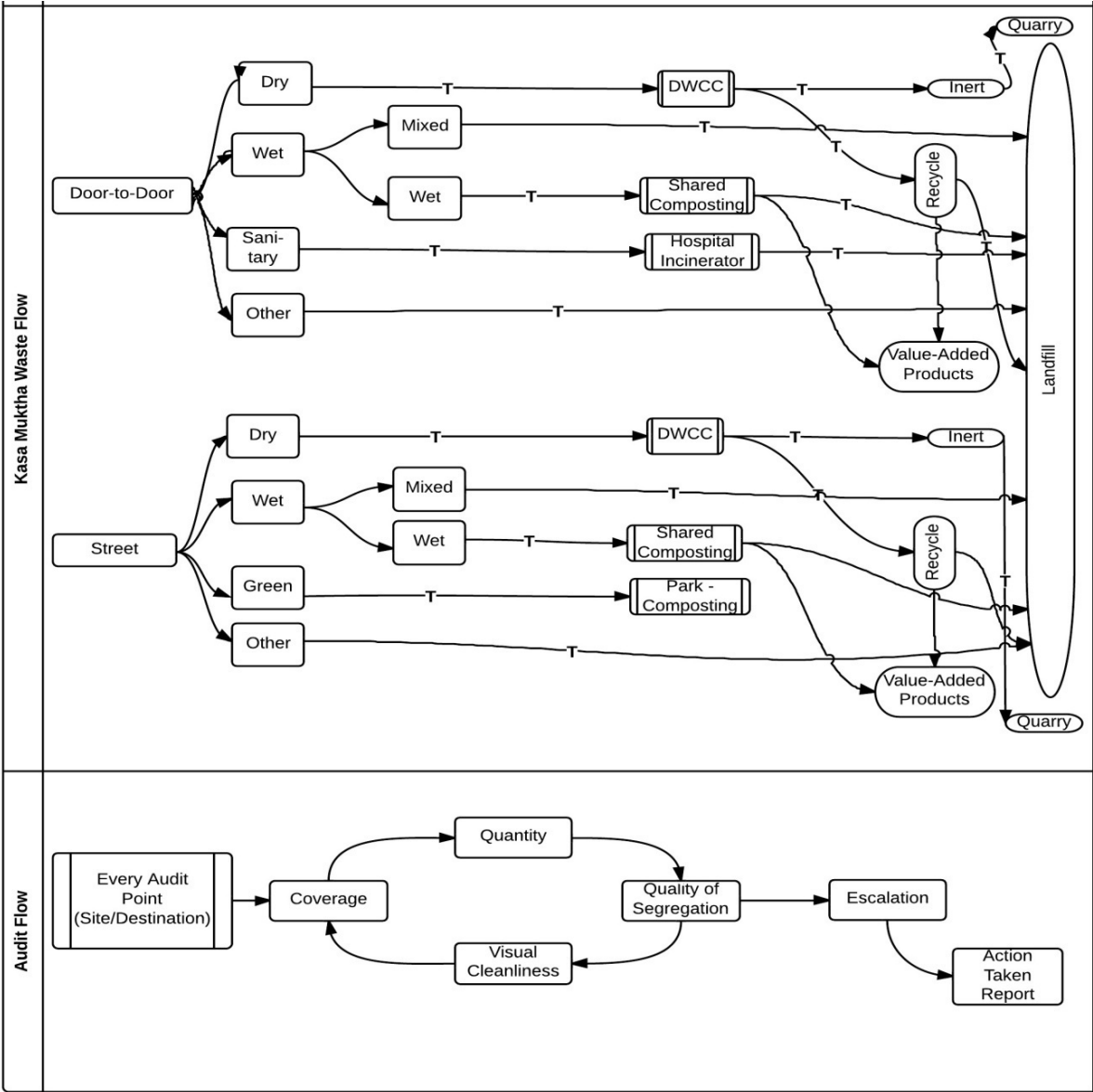
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## Feet on the ground

- 5000 households reached for waste segregation training and awareness programs
- Created a revenue stream for housekeeping staff in many communities
- Created a sustainable plan for medical waste management which included a revenue plan for a low-income entrepreneur

# Kasa Muktha Process – for Bengaluru Municipal Corporation



# Federation of Hotels & Restaurant Association of India – Sustainability policy

## Short term guidelines

- No/ Low cost interventions - tangible
- ROI based process & behavioural changes
- Employee and stakeholder involvement
- Increased efficiency and better bottom-lines

Low cost.  
High impact.  
Resource mgt.

## Medium term guidelines

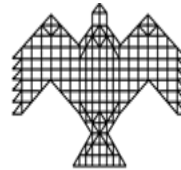
- Structured & high impact interventions
- Carbon measurement and offset program
- Customer engagement & resource efficiency
- Software analytics for decisive management & action

Org intervention.  
Resource efficiency.  
Happy bottom-lines

## Long term guidelines

- A long term roadmap for sustainable development
- Roadmap for expansion
- Carbon and biodiversity management
- Supplier management program

Leadership.  
Expansion.  
Supply mgt.



Smarter  
Dharma

# Sustainability Policy Guideline – Karnataka Tourism

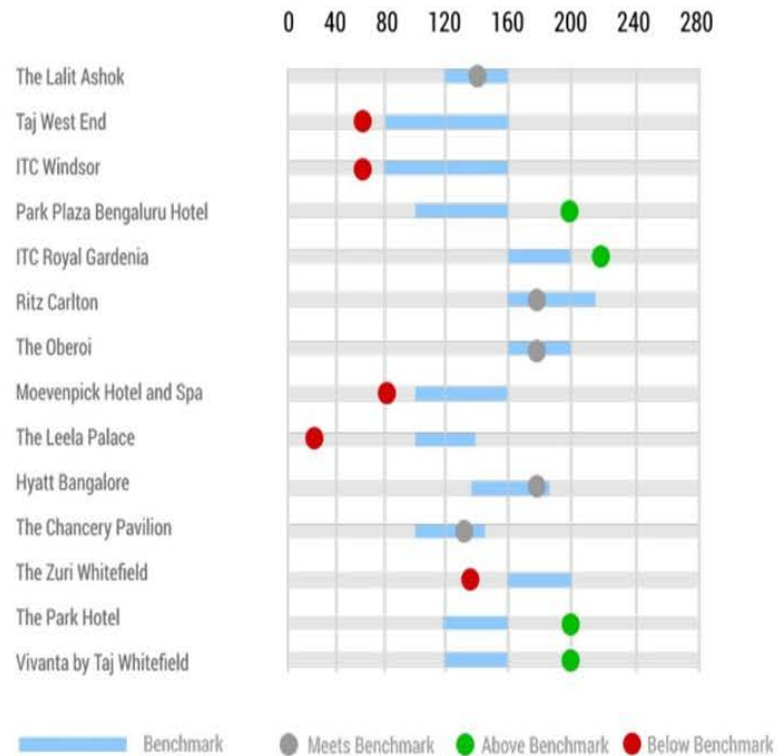


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Dharma

# Sustainability Hospitality Dashboard

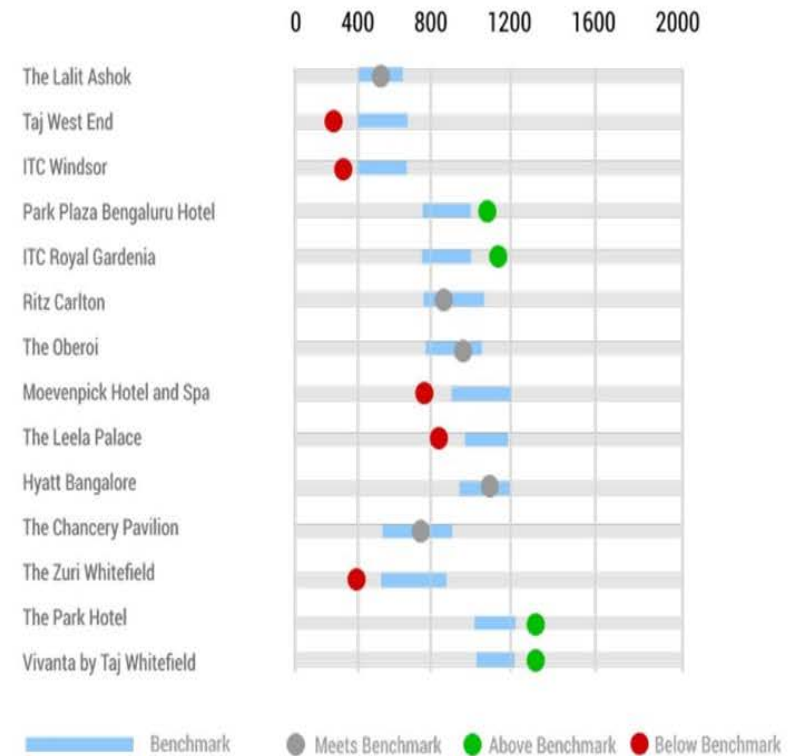
## GREEN HOUSE GAS EMISSIONS

Kilograms CO2-e Per Guest Night



## ENERGY CONSUMPTION

Megajoules Per Guest Night



# FACILITATING BEHAVIOUR CHANGE

## THE SUSTAINABILITY CATALOGUE.

### RESOURCE MANAGEMENT

*(energy, water, materials)*

Optimizing consumption & costs  
Responsible sourcing  
Shared economy  
Resource Creation

### TECHNOLOGY

Dharmameter  
Monitoring

### OPERATIONAL IMPACT ASSESSMENT & MANAGEMENT

Emissions (*carbon*)  
By-products (*waste*)

### STAKEHOLDER ENGAGEMENT

Identification  
Interviews  
Drivers  
Action plan

### SUSTAINABILITY POLICY

Vision Mission Statement  
Interviews  
Focused group discussions





“There are no passengers on  
Spaceship earth.  
We are all crew.”

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Marshall McLuhan

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