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## EXAMPLES OF GOOD PRACTICE

### REDUCING ENERGY CONSUMPTION



Encouraging your guests and staff to save energy is good practice. Pictured here, energy conservation notice at Aahana The Corbett Wilderness.



Signage is placed on bedside tables at Jaagir Lodge to encourage energy conservation.



Energy saving notices are displayed in the office at Pashan Garh - Taj Safaris, part of their broader energy efficiency measures.



Oberoi Vanyavilas displays daily electricity and water consumption in back of house areas to encourage staff to conserve resources. [Read case study.](#)



Kanha Earth Lodge displays a notice to encourage energy conservation in guest rooms and uses a one switch system to turn off electricity.



A range of lodges have a key, one switch system to conserve energy when guests leave the room which can reduce energy consumption by 15-30%, pictured here at Golden Tusk Corbett.



Kanha Earth Lodge saves energy by turning off lights when the restaurant is not in use.



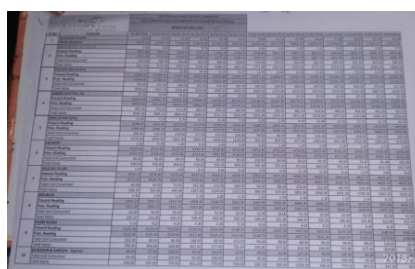
The best practitioners use LED lights throughout the property such as Dhole's Den pictured here, the most energy efficient option, followed by CFLs.



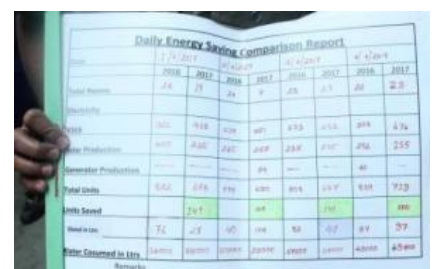
Mahua Kothi – Taj Safaris operates its laundry between 10.30pm-5.30am, a low usage time, which saves 20% of the cost of energy consumed, a tariff incentive offered by some power distributors.



Evolve Back Kabini uses cluster-based energy monitoring and monitors electricity use on a daily basis to increase its energy efficiency alongside the use of renewable energy. [Read case study.](#)



Daily energy monitoring using separately installed sub-meters is the building block for energy conservation initiatives at Fern Gir Forest Resort.



A daily energy saving comparison report at Spice Village Thekkady forms part of its integrated approach to energy conservation complemented by the use of renewable energy. [Read case study.](#)





High ceilings, wide eaves and tree planting at Dhole's Den have been used effectively to keep rooms cool and airy instead of using fans or air conditioning.



Kanha Earth Lodge uses BEE star rated energy efficient air conditioning and water geysers in all its guest rooms.



Chitvan Jungle Lodge uses Zeer Pots to store vegetables, a traditional technique, reducing the burden on electricity through refrigeration. The lodge has two solar heaters for cooking rice and vegetables.

## RENEWABLE ENERGY



A Supernova Technologies micro wind and solar power hybrid generator at Dhole's Den meets all the lodge's energy requirements apart from its water pump. [Read case study.](#)



Two off-site wind farms at Gajendragad in Karnataka and Thenkasi in Tamil Nadu, owned by Orange County Resorts & Hotels, parent company of Evolve Back Kabini and Coorg, generate more green and clean power than their resorts consume. The initiative saves 90% of the resorts' energy costs.



A 33.6 kw solar plant at Svasara Jungle Lodge meets 50% of the lodge's energy requirements. A subsidy is received for electricity supplied to the grid. [Read case study.](#)



Oberoi Vanyavilas has a 90 kw roof top solar plant and solar water heating.



Spice Village Thekkady has a 65 kw solar power plant meeting a substantial proportion of the resort's energy needs. Water is heated using solar power.



Singinawa Jungle Lodge's Kanha Museum of Life and Art and staff housing are powered by a 10 kva solar plant. Pathways are lit by solar powered lights.



Solar thermal panels at Barahi Jungle Lodge are used to heat water. [Read case study.](#)



Water at Khem Villas is heated through solar thermal boosted by heat pumps, an energy efficient technique when it is cloudy. [Read case study.](#)



A centralised solar water heater at Evolve Back Kabini supplies all its hot water needs complementing its off-site wind power (see above). [Read case study.](#)





Pench Jungle Camp has a separate solar water heating unit for each of its guest rooms, tents and cottages.



Jim's Jungle Lodge uses solar power to heat its hot water. It also uses solar power for fencing.



Limban Resort uses solar power for extracting water from its borewell and for its outdoor lights. It has also started to introduce roof top solar panels to reduce its carbon footprint whilst attracting a subsidy.



King's Lodge, Bandhavgarh uses a solar water pumping plant for ground water.



Solar cookers at Kanha Earth Lodge are used alongside cooking with LPG.



Tigergarh Wildlife Resort's solar sensor lights turn off automatically during daytime and at night light up only when there is someone within a radius of twelve feet.



Kipling Camp use solar lights with sensors to save energy and minimise light pollution.



Mahua Kothi – Taj Safaris uses portable solar lighting, one of several lodges harnessing renewable energy to light pathways.



Pashan Garh – Taj Safaris uses solar powered lighting for pathways and practices Earth Hour twice a week when all lights are turned off and visitors are given a unique dining experience.



Photo: Shutterstock





Portable solar lighting in guest rooms at Mela Kothi – the Chambal Safari Lodge.



Solar lighting at Aahana The Corbett Wilderness. The resort also uses solar power for heating its water.



Solar fencing is used for the elephant enclosure at Tiger Tops Tharu Lodge in addition to solar thermal for hot water. The domestic elephants, no longer used, roam freely within its large boundary.



A biogas unit at Evolve Back Kabini utilises methane produced from kitchen waste for cooking.



Khem Villas has its own professionally maintained dairy to meet the dairy needs of the lodge. Organic waste and cow dung are used for the lodge's biogas unit to produce biofuel for cooking.



The biogas plant at Spice Village Thekkady.

## LOW CARBON INITIATIVES

### LOCAL TRANSPORT



Numerous lodges provide bicycles for guests, a low carbon option to explore the area and enhance guest experience. Pictured here nature bike rides with the naturalist at Kanha Earth Lodge.



Mela Kothi – the Chambal Safari Lodge – is part of an innovative 207 km bicycle highway connecting 92 remote villages. Special two-day and gentler half day biking excursions are offered by the lodge for cycling clubs of all ages.



Bullock cart rides and bicycles at Evolve Back Kabini provide a low carbon opportunity to explore the local area.



*Exploring the area by canoe at Barahi Lodge, a low carbon option.*





Guests at Reni Pani Jungle Lodge exploring the Forsyth Trail on foot in Satpura.



Guests at Evolve Back Coorg experiencing traditional coracles.



Forsyth Lodge guests enjoying a canoe safari on Lake Tewa in Satpura.



E-rickshaws and e-buggies are used at a number of lodges including Aahana The Corbett Wilderness and pictured here, Oberoi Vanyavilas.



E-rickshaw at Singinawa Jungle Lodge.



Electric buggy at Barahi Jungle Lodge, Nepal, one of a range of low carbon options to explore the area.

## KITCHEN GARDENS AND LOCAL PROCUREMENT



Local procurement is standard good practice with the best lodges sourcing most of their produce locally. Svasara Jungle Lodge aims for its cuisine to be 100% locally sourced serving home-made regional dishes.



Aahana The Corbett Wilderness pursues a proactive grown-right-here organic approach, producing their own vegetables, herbs and spices. Medicinal plants grown at the lodge are used in the in-house naturopathy centre. An on-site dairy farm takes care of all milk needs.



Spice Village Thekkady's kitchen needs are supplied through local procurement and its organic garden which is certified by Lacon GmbH, based on European Union standards 2092/91. The ingredients for its restaurants are sourced within a 50-mile radius.



Forsyth Lodge buys its fruit, vegetables and meat 15 kms away and has a model organic vegetable plot in its grounds to show locals closer to home that produce can be grown more locally with existing water resources, a previous barrier in perception.



## BUILDING AND LANDSCAPES

(see also [Nature Education and Conservation profile](#) for landscapes)



Designing buildings to maximise natural light and air whilst reducing the need for cooling is a positive step for energy conservation. Large windows and sliding doors under projecting eaves at Dhole's Den are designed to maximise natural circulation of air and light whilst providing shade from the sun. (See case study in [Sustainable Building profile](#).)



Guest rooms at Pench Tree Lodge benefit from natural shading from trees during the day. Indigenous tree planting around the property provides additional natural cooling. Rooms have no TVs giving guests instead an experience of the wilderness and saving energy. [Read case study](#).



The site at Evolve Back Kabini has been restored from denuded farmland with numerous trees planted providing natural cooling and shade for guest accommodation. Local materials have been used in the construction to reduce the building's footprint. (See case study in [Sustainable Building profile](#).)



Buildings at Spice Village Thekkady use local thatch and wide eaves to provide natural cooling. Rooms have no air conditioning. (See case study in [Sustainable Building profile](#).)



Red Earth Kabini has used a traditional rammed earth technique for its construction with the earth sourced on site minimising the use of concrete and steel, carbon intensive materials. (See case study in [Sustainable Building profile](#).)



A wide range of lodges leave their paths natural or use natural materials such as pebbles or sand avoiding concrete, reducing their carbon footprint and enabling water to percolate back into the ground. Pictured here a pathway at Taj Safaris – Banjaar Tola.

## COMMUNITY INITIATIVES



The Prakratik Society, set up by the owner of Khem Villas, has provided more than 600 biogas digesters to local villages around Ranthambhore replacing cooking with wood with a cleaner fuel.



A range of lodges are supporting local villagers through providing solar lamps and power. Pashan Garh – Taj Safaris, pictured here, has distributed 200 solar lamps to approximately 60 homes without electricity.



Singinawa Conservation Foundation, set up by Singinawa Jungle Lodge, has provided solar units to two anti-poaching camps and donates 50 solar lamps annually to local village residents to help improve local lives.



Banjaar Tola - Taj Safaris - one of many lodges selling locally produced, traditional arts and handicrafts, a positive low carbon option supporting local livelihoods - see [Cultural Heritage](#) and [Local Economy](#).











## Evolve Back Kabini, Nagarhole

### Putting Back More Green Energy Than the Resort Consumes



Two off-site wind farms owned by Orange County Resorts & Hotels at Gajendragad in Karnataka and Thenkasi in Tamil Nadu generate more green and clean power than their resorts consume.



Solar thermal supplies all the resort's hot water.

Evolve Back Kabini, part of family run Orange County Resorts, has an impressive approach to energy use setting out to minimise consumption alongside its use of renewable energy. The jewels in the crown are two off-site wind farms owned by Orange County at Gajendragad in Karnataka and Thenkasi in Tamil Nadu. These two sites combined generate more green and clean power than Orange County's two resorts consume and save 90% of their energy costs in grid payback after administrative costs have been covered.

Hot water at Evolve Back Kabini is heated by a centralised solar water heating system meeting all the resort's requirements.

A biogas plant using food and organic waste provides gas for cooking supplemented by LPG, a cleaner alternative to wood.

The resort has an active Green Team and monitors energy use on a daily basis with a cluster-based power consumption monitoring system in place to help identify opportunities for energy saving. Targets are set annually. Rooms have a one key system turning off all electricity as guests exit the room.



Biogas unit using food waste to power cooking.



Cluster based monitoring.

Evolve Back Kabini Daily HLP			
Watts	380 KVA	140 KVA	25
Volts	110	110	110
Consumption	1.60	1.60	1.60
Unit	2.40	2.40	2.40
Cost	2.40	2.40	2.40
Electricity	Consumption	Cost	
CON	Total Fuel Utilization Cost		

Daily energy monitoring.

A combination of CFL and LED bulbs are used throughout the property and most appliances in use are star rated to maximise energy efficiency. Guest rooms have no TV; cultural performances are provided as an alternative entertainment.





*Bullock cart rides - low carbon combined with cultural insight.*



*Cultural performances are offered instead of TV.*

Evolve Back Kabini has carried out extensive replanting on-site making a positive contribution to carbon sequestration. The resort has also provided LED lights in the village with electricity from their solar photovoltaic panels which also power the Resort's staff quarters.

The resort offers a range of low carbon options to explore the area including bicycles, bullock cart rides and coracles.

Local farmers are encouraged to supply organic food for the resort's kitchen. Local cuisine is served in the restaurant and cookery classes give guests an inspiring insight into local culture.



*Local cuisine.*



*Extensive tree planting provides natural shade and cooling for guest accommodation.*



## Dhole's Den, Bandipur

### Leading the Way in Energy Conservation and Renewable Energy



*Combined wind and solar generation at Dhole's Den.*



*Tree planting and wide eaves provide natural shade and cooling.*

Trees planted around guest accommodation provide natural cooling. Natural light has been exploited to the maximum extent with large windows and doors. High ceilings, proper insulation in the rooms and wide eaves help maintain ambient temperature.

Dhole's Den has led from the front in energy conservation around Bandipur National Park. A micro wind and solar power hybrid generator from Supernova Technologies, Gujarat, producing about 10 kwh of power, is enough to take care of almost all the lodge's energy needs. Power from the grid is used only for pumping water. Separate decentralised solar energy units from the same company have been installed for use in the kitchen, bungalow and other areas. Fencing is solar powered.



*Decentralised solar energy units.*





*Room interiors exploit natural light and air with energy saving measures in place to minimise energy consumption.*



*Encouraging guests to save power and water.*

The rooms do not have coffee-makers, air-conditioners, jacuzzies and televisions to minimise electricity consumption. LED lighting is used throughout the property, reducing the energy consumption of a guest bungalow (1,200 sq ft) to 60 w when all lights are used and under 25 w when only dedicated green energy is used. All appliances used on the lodge premises are BEE star-rated. Lights have been fixed only where required to reduce light pollution and disturbance to wildlife.

Biogas is produced from kitchen waste producing fuel for cooking. The lodge has its own sizeable organic garden growing produce for the kitchen and maximises local procurement to reduce its carbon footprint. Guests are informed through verbal briefings and signage to conserve energy and water.



*Biogas unit.*



*Solar powered fencing.*



*Kitchen garden and local procurement to reduce carbon footprint.*



## Spice Village, Thekkady, Periyar Harnessing Renewable Energy and Minimising its Carbon Footprint



65 kw solar power plant.

Spice Village meets a substantial proportion of its energy needs from solar energy as part of the resort's low carbon approach. A 65 kw solar plant generates approximately 400 units of electricity on a bright day with the aid of panels, inverters and batteries and has produced nearly 1,36,000 units of clean energy since the system was installed in 2012. Water is heated through solar power. The use of biogas produced from biodegradable waste supplemented with LPG (liquid petroleum gas) for cooking is a further positive step.



Biogas plant.

Rooms at the resort have been designed to maximise use of natural light with adjacent trees providing natural cooling. Guest rooms have no air conditioning or TVs. Mini bars are CFC free to minimise carbon footprint. A key one switch system is used to save energy turning off electricity when guests leave their rooms. BEE star rated appliances and LED bulbs are used throughout the property, a further positive step in energy conservation. Energy is monitored on a daily basis to encourage energy reduction.

	17/1/2019				17/2/2019				17/3/2019			
	2018	2017	2016	2015	2018	2017	2016	2015	2018	2017	2016	2015
Total Rooms	14	15	16	17	14	15	16	17	14	15	16	17
Electricity	100	100	100	100	100	100	100	100	100	100	100	100
Water Production	100	100	100	100	100	100	100	100	100	100	100	100
Gas Production	100	100	100	100	100	100	100	100	100	100	100	100
Total Units	100	100	100	100	100	100	100	100	100	100	100	100
Units Saved	100	100	100	100	100	100	100	100	100	100	100	100
Water Use	100	100	100	100	100	100	100	100	100	100	100	100
Water Consumed in Liters	100	100	100	100	100	100	100	100	100	100	100	100
Remarks												

Daily energy saving comparison



Sizeable organic garden to reduce carbon footprint.

A sizeable organic garden tended by locals employing traditional crop raising methods and certified by Lacon GmbH to European Union standards (2092/91) reduces carbon emissions. The resort has a 50-mile radius policy for local procurement for its cuisine. Electric rickshaws combined with the resort's renewable energy generation provide a clean mode of transport. The resort has an Urjam (Green) Team in place to ensure energy conservation is a priority item on the agenda.



## Barahi Jungle Lodge, Chitwan, Nepal

### Building Renewable Energy into Operations from The Outset



*Solar thermal.*

for energy conservation. Guest rooms use a one key card system to avoid wasting energy after guests leave the room.

Barahi Jungle Lodge, built in 2013, has harnessed renewable energy from the outset. A 10 kwp off grid solar system is used for hot water. Biodegradable waste is used to generate biogas for cooking complemented by the use of LPG (liquid petroleum gas), a cleaner fuel than wood, the most widely used material in Nepal.

Cottages are well insulated with local materials such as mud, thatch, stones and tiles. Natural light and air is maximised in the design through the use of big windows to reduce energy use. LED bulbs are used throughout the property, a further positive step



*Biogas unit converting biodegradable waste into fuel for cooking.*



*Large windows maximise natural light with shading provided by thatched balconies.*

Extensive use of local produce minimises carbon footprint in packaging and transporting goods. The shop likewise stocks local goods, a further positive step for minimising its impact whilst contributing to the local economy.

The lodge has battery operated carts. Bicycles, walking and traditional paddle boats are offered to explore the area, low carbon options, in addition to jeep safaris.



*Electric buggy.*



*Low carbon options for exploring the area.*





## Khem Villas, Ranthambhore

### Harnessing Renewable Energy for its Operations and the Local Community



*Solar water heater combined with water treatment to save energy and water.*

Khem Villas heats all its water using solar energy backed up by heat pumps, an energy efficient source of energy, when it is cloudy. A biogas unit turns waste from its dairy and kitchen into fuel for cooking alongside LPG, a cleaner cooking fuel than wood. Hot water is fixed from 6am-1pm and 6pm-9pm to conserve energy. A substantial amount of produce is sourced from the lodge's kitchen garden, dairy and local procurement, beneficial for reducing carbon emissions and supporting the local economy.

All power at the lodge other than air conditioning is operated with a battery back up to minimise fossil fuel use if power goes down. Air-conditioning uses VRV technology with the highest energy rating made by Daikin. LED lighting is used throughout to minimise energy consumption further.

The Prakratik Society, founded by Khem Villas' owner, Dr Rathore, has been internationally recognised for providing clean energy to local communities surrounding Ranthambhore. The foundation won an Ashden Award in 2004 for its pioneering efforts in installing 250 biogas digesters in villages on the fringes of Ranthambore providing cleaner and safer fuel for cooking for poor local communities and compost from the digester output.



*Lodge biogas unit.*



*Traditional method of cooking (left) replaced by biogas made from cow dung (right) through support by the Prakratik Society.*

Khem Villas and the Society combined have planted more than 700,000 trees, capturing carbon and transforming denuded dry landscape into an oasis for wildlife.



*Land restored at Khem Villas and the surrounding area.*



## Oberoi Vanyavilas, Ranthambhore – Energy Conservation and Renewable Energy



*90 kw rooftop solar plant.*

Oberoi Vanyavilas' energy conservation team meets regularly to review weekly energy audits and ways in which energy can be saved. Daily electricity is displayed in back of house areas to encourage staff to save energy. LED lights are used across the property. Guests are encouraged to save energy through notices.

A rooftop Azure 90 kw solar plant has been installed to reduce the resort's carbon footprint. A solar water heating system meets all the resort's needs and saves approximately 6,000 litres of high street diesel per annum. Waste heat from three

noise free low polluting diesel generators is used to heat the swimming pool in winter to save energy.

A large area has been allocated for growing organic vegetables and crops. The use of local produce is maximised to reduce carbon emissions. The lodge has installed battery operated golf carts for room service and other internal services and has electric buggies for guests.



*Electric buggy.*

## Svasara Jungle Lodge, Tadoba – Solar Power and Local Procurement



*Solar photovoltaic panels.*

Installation of energy efficient equipment including 100% use of LED bulbs throughout Svasara Jungle Lodge has helped to reduce the consumption of electricity. The need for artificial lighting has been reduced by enhancing natural light sources. A single-switch system operates to ensure guest room lights, TV, fans and other appliances are not left on when guests are not in their room. Employee training and guest briefing through leaflets in rooms encourages energy conservation.

A 33.6 kw solar grid enables the property to meet 50% of its energy through renewable sources with plans to expand the solar plant's capacity further. A subsidy is received for electricity they supply to the grid.

The lodge sets out for its cuisine to be 100% locally sourced serving home-made regional dishes with produce from its organic farm and local communities. The lodge offers shared safaris to guests to reduce greenhouse gas emissions further.



*Locally sourced cuisine.*

## Pench Tree Lodge, Pench – Sustainable Building and Natural Landscape



*Exploiting natural shade.*

All treehouses are situated next to trees which provide shade during the day and indigenous tree planting around the property provides natural cooling. The lodge uses a combination of LPG for cooking, a cleaner energy than wood combined with solar cookers.

Rooms have no televisions. Energy efficient BEE star rated electric appliances and LED bulbs are used throughout the property. A one switch system is used in guest room to switch off electricity.

A Farm to Table concept allows the lodge to source over 30% of their fresh produce from their in-house farm. Produce is otherwise sourced mainly from local farmers; menus are designed to avoid the use of canned and tinned goods.

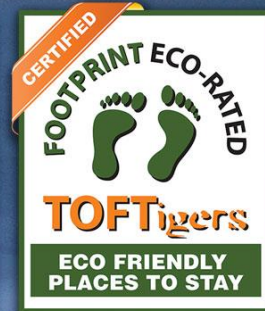


*Protecting natural landscape and planting trees.*



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