VENTNOR TOWN COUNCIL

Ventnor Town Council, Salisbury Gardens, Ventnor

Sustainability and Carbon reduction study

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This report has been written after the Sustainability and Biodiversity working group felt it prudent to confirm that Ventnor Town Council was actively looking to engage in reducing its carbon footprint and working responsibly towards sustainability with its outlook for the future. A review of the Council's processes and a short carbon audit have been undertaken as a means to assess the efforts which are currently and could be used as a means to reduce our carbon footprint and support sustainability in our area. The review and audit was undertaken over a number of weeks by Nigel Slater-Bishop visiting all of the sites which are covered by the Council.

To ensure sustainability is fully embedded within Ventnor Town Council, we need to have an integrated sustainability strategy that not only covers our own organisation, but our suppliers too. By doing this we can ensure all our Ventnor Town Council activities are provided in the most sustainable way possible.

All of the Councils assets have been included within the document and as such there are a number of sections covered. Reducing the carbon footprint of the Council will be a complex and lengthy process due to the very nature of its operational ability within the town of Ventnor. Notwithstanding this, as a council we must be forward thinking in our approach to planning for the future. This plan or strategy must therefore be inclusive in the current thinking for the Town Council in its efforts to reduce its impact on the environment wherever and whenever possible.

As a background to the subject , it is important that we understand the fundamentals of what a 'Carbon Footprint' entails for the Council. Below I have listed what the terms actually refer to.

- Carbon footprint. A measure of the total amount of greenhouse gasses released into the atmosphere as a result of an individual's, organisation's, or nation's actions. It's usually measured in tonnes of CO2e (carbon dioxide equivalent).
- Greenhouse gasses (GHG). Any type of gas in the atmosphere that blocks heat from escaping. In relation to your carbon footprint and climate change, the main ones to mention are carbon dioxide, nitrous oxide, and methane.
- The greenhouse effect. The process through which GHGs in the Earth's atmosphere trap heat from the sun. Although this is a natural phenomenon that keeps the planet habitable, our GHG emissions are causing the Earth to warm up at an unnatural rate.
- Climate change. A pattern of long-term change in the temperature and weather patterns either globally or regionally. Although these alterations occur naturally, man-made climate change is rapidly accelerating the pace of them.
- Global warming. The rapid increase in average surface temperatures on Earth caused by the accumulation of greenhouse gases in the atmosphere. It is just one element of climate change.
- Fossil fuels. Natural resources that produce carbon dioxide and other greenhouse gasses when burnt. Coal, oil, and natural gas are all examples.

At the Council here in Ventnor , we are currently around 25% over the target for 2022 in relation to the WWF in carbon footprint calculations. This was based on our current usage and supply of services. We have some way to go to reduce this footprint, a lot to do but in making some small changes we can make a difference indeed.

The nitty gritty of the audit is quite comprehensive, it highlights areas which we can achieve a difference obviously, but in reality, this will be a gradual change not a quick fix. The areas which are included within this audit you will find to be quite surprising, however the point of this document is not to dictate the changes but to understand where we need to make them. There are no answers in the document, suggestions yes, but this is an ongoing effort to prioritise a plan, or strategy for the future of the Town Council's reduction in its carbon footprint. This first stage is the initial look at our situation here at Ventnor Town Council, in reality the study needed to be for a period of at least 12 months to set a baseline for comparison of usage and the difference being made available. However due to the need for a start point I have therefore produced a document which clearly highlights where savings

can be made in our carbon footprint reduction. Our data is not one of manufacturing scales but usage within the Council's operational structure, therefore the parameters set are the ones which we can control ourselves from inside the council. These will mainly focus on our business activities within the council and the facilities it provides, thus our savings will be made on a sliding scale of re-education, reduction in our current usage of energy, and our choices in our upstream procurement of supplies and services.

Below is the list of Assets currently covered within the report.

1. **Buildings:**
    - Salisbury Gardens
    - Ventnor Central
    - Safety Hut, Beachfront
    - St Boniface Fields

1. **Car Parks:**
    - Dudley Road
    - Market Street
    - Pound Lane
    - Shore Road

2. **Facilities:**
    - Paddling Pool
    - Outdoor Gym
    - Putting Green
    - Spring Hill Gardens
    - Boniface Fields Allotments
    - Ventnor Park

3. **Toilets:**
    - Esplanade
    - Marlborough Road
    - Ventnor Park
    - Shore Road
    - New Build Toilets

The areas covered by the audit is by means exhaustive but have been concentrated on the criteria set out within guidelines issued by the government and energy saving bodies.

Key factors looked at included the below:

- Insulation
- Heating
- Switching to renewables (Green Tariffs)
- Buying energy efficient appliances and equipment
- Water consumption savings
- Lighting, buildings , outside, energy efficient bulbs (LED)
- Vehicle
- Digital usage, Cloud based storage, video conferencing, reduced printing
- Reduce, re-use, recycle
- Eliminate single use plastics
- Computers, low energy switch offs
- Waste
- Carbon offset schemes
- Education

Buildings

Some of the buildings on the council's asset list are old, some even being in the historic building category. Looking at these premises we can ascertain that a lot of our footprint is indeed on energy costs. Electricity is our only source of energy at all of these buildings and so therefore massively impacts on our ability to make any major impact on the footprint quickly.

This will require a lot of investment from the council to enable a reduction on the carbon footprint we currently have from just this alone. There are a lot of suggestions we can put into practice to make a start to achieve a smaller size of footprint.

Listed below are a number of these:

- Low energy lighting, LED bulbs, CFL tubes
- Reduce the output by 2 degrees on the heating thermostats. Auto timers on units.
- Movement sensors on lights
- Switch off (traffic light) system in place for offices.
- Minimise plug load
- Outside lighting on timers
- Energy efficient appliances
- Tariff change: renewable energy suppliers (carbon offset options)
- PC and laptop shut down
- Printer shutdown

Some of these changes can be initialised quite easily, however such as changes the lighting system would require a large investment by the council. In reality this couldn't be done quickly and would have to be a rolling plan of change over time.

Moving over to solar panel energy based supply for the buildings is a thought, although the roof at Salisbury Gardens is unsuitable in its present state to be able to accommodate panels.

Water usage within the buildings can be controlled by the installation of save water devices and limited flush toilets. Again this requires investment from the council over a period of time on a rolling plan of change.

Insulation is a key factor in saving energy. This can be looked at, although we are constricted somewhat by the age of the buildings. Double glazing has reduced heat loss tremendously and as such sores us highly on our footprint rating.

Waste is adequate presently, apart from moving away from single use plastics if possible.

Car Parks

The installation of electric charging points would be way to offset some of the carbon footprint and also encourage alternative energy, hybrid vehicle owners to visit more and use the carparks. Low energy lighting is a possible option.

Facilities

All of these facilities need to be well lit, however these should be changed over to low energy lighting systems with daylight savers fitted to all lights where necessary.

Toilets

All of the toilet facilities within the town council remit should be fitted with water saver devices on all systems, low energy water heaters and driers. Lighting should be activated with movement sensors and daylight savers fitted. Shut down systems procedures whilst the toilets are locked overnight and out of season monitored to see if these are indeed needed out of hours at all.

Vehicle

Presently the council only operates 1 vehicle. This being the maintenance manager's van.

This is used continuously and as such any alternative fuel options are limited, especially taking the VTC area terrain variations. An electric variant at the moment seems logical but however the research into this has shown that it to be impracticable presently until these commercial vehicles are more adept at continual heavy use and not occasional use. These are being developed and in the future the change would seem inevitable for the council to make the decision over to electric. Hybrid diesel electric could be another alternative in the future. However it must be said this change would be very costly indeed for the council and the charging infrastructure for the vehicle. A matter for future discussions at full council meetings when the change is possible.

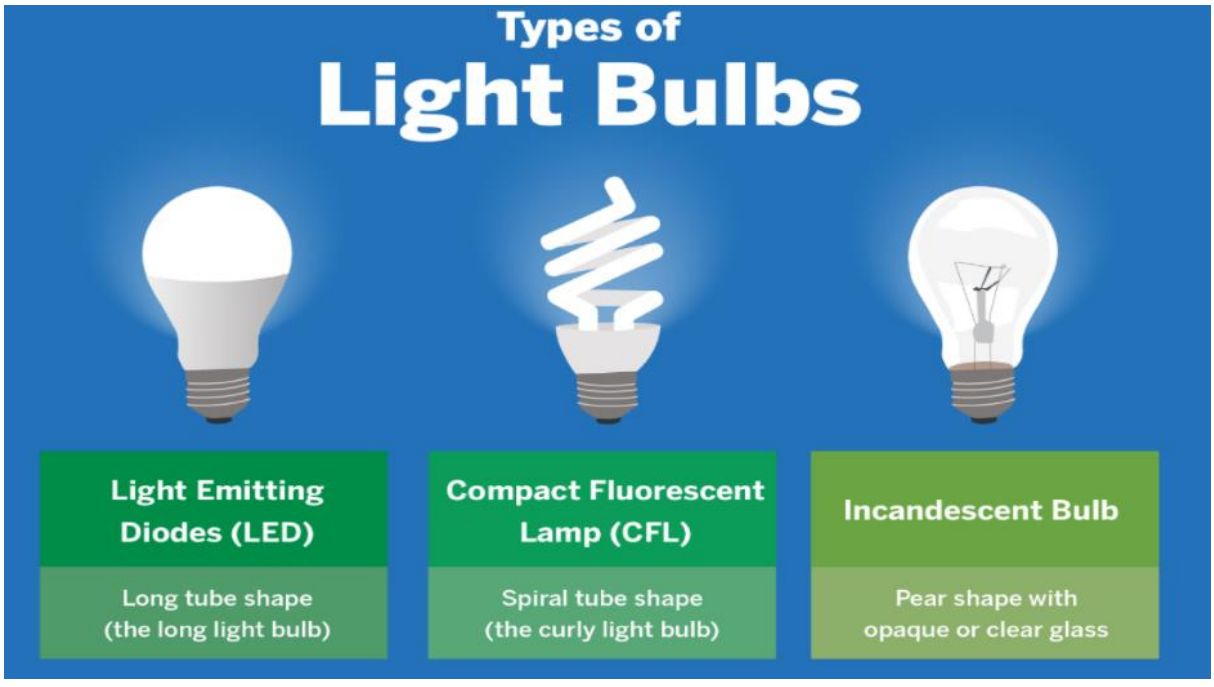
Alternative options available for energy saving lighting

CFL vs. LED bulbs

In the CFL vs. LED battle for energy efficiency, life span and cost, the winner is the LED bulb.

We've come a long way in energy-efficient light bulb technology. While incandescent bulbs remain on the market for now, the benefits of newer technology are driving the switch to LED bulbs. To understand the advantages of LED bulbs vs. CFL, or even incandescent, it helps to know a little bit about how they work.

In an incandescent bulb, electricity passes through a filament that gets so hot that it produces light. About 95% of the energy is wasted as heat, with only 5% of it going toward light.



Comparisons of Lighting energy variation

Type	Incandescent	CFL	LED
			
Watts	60W	14W	10W
Average Rated Lifespan	1,000-2,000 hours	8,000 hours	25,000+ hours
Initial Cost	£2-6	£2-13	£2-12
Dimmable?	✓	✓ (select bulbs only)	✓ (select bulbs only)
# of Replacements in 25,000 Hours	15-20	3	0-1
Colour Temperature Range	Warm white	Warm white to daylight	Warm white to daylight
Cost Per Year to Operate	£23.88	£5.07	£3.60
Heat Generation	Releases 90% of energy as heat radiation	None	Beam emits no heat
Heat Sensitivity	No	Yes	Some
Cold Sensitivity	No	Yes	No
Moisture Sensitivity	Some	Yes	No
CO2 Emissions per Year	172.68 kg	44.02 kg	28.80 kg
Warm-up Time	Instantaneous	Slight delay	Instantaneous
Impact of Switching On/Off	Some effect	Shortens lifespan	No effect
Physical Durability	- Fragile filament - Glass bulb	_ No filament - Typically made of glass	+ No filament + Often made of durable plastic
Disposal	▪ Treat as normal household waste ▪ Should not be recycled	▪ Contains mercury, lead, and cadmium ▪ Considered hazardous waste ▪ Must be recycled at a proper recycling site	▪ Does not contain hazardous materials ▪ Can be recycled

Indoor Water Conservation

Tap Aerator

Aerators are the screw-on tip at the end of taps. Aerators control the flow of water through your bathroom and kitchen taps by mixing air with the water as it flows through your tap. Water Sense labelled aerators and taps can reduce water flows by 30% or more without sacrificing performance.

Cistern Fill Cycle Diverter

A fill cycle diverter is the most efficient, established device used to retrofit older toilets that use 3.5 gallons per flush or more. The diverter directs more water to the toilet's cistern tank and less to the bowl while they refill so that they finish filling at roughly the same time. Once installed, a fill cycle diverter will save about half a gallon of water per flush, a great interim step before replacing older toilets.