3 Acorns Eco-audits

Inspiration
Information
Implementation

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Eco-audit Update Report: Sawbridgeworth Town Council

FAO: Chris Hunt ,Town Clerk

The original eco-audit was carried out in 2019.

This summary update was carried out by Donnachadh McCarthy FRSA, from ***3 Acorns Eco-audits*** and this is your resulting update report.

It is important that this update should be read in conjunction with the recommendations from your original main eco-audit report, as the update process consists just of a data collection process and a review meeting with your officers, with no site inspections.

We would like to thank Joanne Sargant and the rest of the team for their help with this update report.

Taking environmental action has become even more urgent since the original eco-audit. The UN now says that there is now no credible path to not breaching a catastrophic 1.5C rise in temperatures, which the BMA Journal editorial warns will be devastating for human health. Chatham House now states we have less than 5% chance of staying under 2C.

Since the 1970's we have lost over 70% of global wildlife populations and continue to lose that at a rate of 1% per annum. The UK is one of the most nature depleted nations in the world.

We also face a soil crisis, with globally over 50% of fertile soils lost since the agricultural revolution.

The UK government has warned that some soils in the UK, have been so damaged by industrial agriculture, that they have less than 40 crops left in them.

We are now in a race against time to prevent a human civilisation ending 3C rise in temperatures and to ensure any remaining populations of wildlife can be saved and regenerated for future generations.

Since the original eco-audit, there have been reductions in consumption of electricity (10%), paper (18%), diesel (9%) and total office waste produced (24%).

The office recycling rate has positively gone from 0% to 66%.
2.5 trees were saved by the switch to recycled paper.

But reported consumption of gas, cemetery waste and water are up.

Greening Finances

Since the original eco-audit was carried out, there have emerged useful metrics to estimate the significant associated carbon emissions with the council's bank accounts and pensions.

We suggest tackling these should be one of the council's priorities for tackling its own internal carbon emissions over the coming year. And seeking to reduce cemetery waste production and introducing recycling if possible is a key operational priority.

We hope the updated recommendations in this report will be helpful in guiding your next steps in improving the council's environmental performance over the coming year and enabling the planning of your actions over the coming six years to achieve a carbon-free Sawbridgeworth 2030.

To achieve energy carbon-free status would involve switching to a green electricity tariff, replacing gas heating and hot water at the civic centre, replacing bus fleet with EVs and switching any diesel operated open-spaces machinery to electricity supplied by a green tariff.

The cost of the green mains electricity consumption would ideally be mitigated by the production of your own on-site renewable energy.

We were delighted to learn the council had liaised with the local wildlife trust and were taking new steps to improve the wildlife potential of the council's open spaces.

Headline Eco-Data

	2018/19	2023/24
Building Energy Consumption		
Electricity kwh:	18,700	16,777
Electricity CO_2 (tons)	5.2	4.0
Gas kwh	21,000	37,500
Gas $C0_2$ (tons)	4	7.1
Building Energy Carbon Footprint (tons)	**9.2**	**11.1**
Flights CO_2 (tons)	0	0
Diesel vehicles CO_2 (tons)	15.5	14.1
Total Energy carbon footprint (tonnes):	**24.7**	**25.2**
Square meterage	238	238
Mains water consumption (litres):	51,000	119,000
Water supply CO_2 (tons)	0.05	0.05
A4 Sheets virgin photocopying paper	27,500	22,500
% made from recycled paper	0	100
Paper CO_2 (tons)	0.6	0.2
Trees consumed	3	2.5
Total annual office waste (tons)	6.2	4.7
Non-recycled waste (tons)	6.2	1.6
Recycled (tons)	0	3.1
Waste CO_2 (tons)	2.9	0.7[1]
Recycling rate (%)	**0%**	**66%**
Cemetery waste (tons wt)	**28**	**73**[2]
Cemetery recycled waste	0	0
Cemetery waste CO_2 (tons)	13	34
Utility Bills		
Electricity	£ 3,000	£5,400
Gas	£ 840	£2,400
Water[3]	£ n/a	£ 460
Finances		

Bank a/c (Lloyds) year-end cash	n/a	£356,474
Bank CO_2 (tons)	n/a	25
Investments: (CCLA) year-end reserves	n/a	£100,000
Investment CO_2	n/a	7
Total Financial Reserves CO_2 Emissions[4]	**n/a**	**32**
Pension Provider (Herts LGPS x 2 + 2 Nest)		
Number of staff pensions	n/a	4
Age deciles of Staff 1x40s,2x50s,1x60s		
Total estimated pension pot	n/a	£193,300
Estimated pension CO_2 [5]	**n/a**	**(58E) 94**

Notes

[1] Presuming all waste is landfilled.

[2] Estimate for 2024 cemetery waste based on 2 x 8-yard skips/month.

[3] Reported water consumption is only for the civic centre and excludes water usage at cemetery and allotments.

[4] Financial carbon metrics taken from the My Mother Tree website tables. https://www.mymothertree.com/

Estimate based on all reserves being with Lloyds, as My Mother Tree do not have a metric for CCLA
If they were all with Barclays = 85 tons
Thus currently saving = 53 tons.

If they were all with Co-op = 15 tons
Thus, potential further saving = 17 tons.

[5] We do not have a carbon metric for the Herts pension fund, so we have provided the estimated emissions for all four pensions being invested with the Nest non-ethical option and the ethical option.

Data Analysis

Carbon

Your largest sources of estimated carbon pollution are your cemetery waste and pension investments.

Pension	94.0
Cemetery Waste	34.7
Cash Reserves	25.0
Diesel	14.1
Gas	7.1
Investment account	7.0
Electricity	4.0
Office waste	0.7
Paper	0.2
Total	**186.1**

This is the equivalent of the annual energy emissions for about 62 UK homes.

To get to net zero for your premises would require you to switch the remaining gas boiler to some form of electric heating, powered by a green tariff & with the costs mitigated by producing as much of your own green electricity as possible.

Electricity

There was a 10% reduction in electricity consumption. It would be carbon-free if you moved to a green electricity contract.

Gas

Gas consumption was up significantly. We do not know the cause of this. However, as the flat is now unoccupied, this consumption will be radically reduced in next data set.

Gas is largely only used for heating in the flat upstairs and some hot water. If you replace this with a form of electric heating powered by a genuine green electricity tariff, then you will have achieved net zero carbon for your premises energy consumption.

Paper

There was a drop of 18% in paper usage and the switch of the remaining paper consumption to recycled paper, saved the equivalent of 2.5 trees.

Greening Finances

Banking and pensions are now by far your largest estimated source of carbon emissions.
You could move your bank account to a lower emitting bank and ensure existing staff know about the lower carbon emitting ethical option from NEST and make the ethical option the default for new staff members, with or without the option to opt-out for the non-ethical fund.

Waste

Recycling has not only been introduced since the initial eco-audit, but total office waste has been reduced and the recycling rate of 66% is above the national average of 43%.
However, waste emissions remain a significant proportion of your operational emissions, due to the high waste arisings at the cemetery.
Carry out a waste audit to identify opportunities to eliminate or reduce the various waste streams.

Water

Reported office water consumption more than doubled. We were unable to determine the cause of this. No data was available for the allotments and cemetery.

It is important to reduce consumption, due to its impact on nature and the energy used to transport it.
Set a target for your allotments being mains-water free.

Some Significant Achievements Since 2019

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This is a list of some of the positive actions implemented since the original eco-audit report. It is not an exhaustive list but gives a taste of actions taken to date.

Electricity

1. Electricity consumption is down 10%.
2. Inefficient fluorescent lamps have been replaced with more efficient LED lamps.

3. Light movement sensors were installed in relevant locations.
4. EV charging point is planned for the council's vehicles to be installed in the spring.
5. Use of windows is prioritised in preference to use of air-conditioning.

Waste reduction/ Purchasing / Recycling

1. Recycling system has been introduced.
2. Office recycling system has reached 66%, well above national 43% rate.
3. Spoil from grave digging is no longer dumped.
4. Total paper consumption was reduced by 18%.
5. Three quarters of councillors now being sent electronic reports rather than on paper.
6. Have switched to photocopying paper made from post-consumer recycled paper.
7. Bathroom tissue and paper towels etc have switched to products made from recycled paper also.

Open Spaces / Water

1. Some experimentation with wildflower meadows have taken place.
2. Mulching mowers have been introduced which eliminate need to dispose of grass cuttings.
3. Push button taps were installed at the allotments, to stop water wastage from taps being left on.
4. Hedging has been installed at the cemetery boundary, including 200 hedgerow trees.
5. Cemetery manager liaised with local wildlife trust on how to maximise wildlife at the cemetery.

Management Issues

1. Original eco-audit report circulated to councillors and placed on council's website for the public to see.
2. Council has adopted a net zero target date of 2030 for both the council's own carbon pollution and to do all it can to enable the town to do likewise.
3. It has set a target of May 2027 to do all it can to have minimised its own emissions.
4. Green rider added to staff employment contracts.

Additional Recommendations 2024

Pensions
New metrics have emerged since your original eco-audit for carbon emissions associated with banking cash reserves and pension funds.

We made an estimate of the amount in the collective staff pension pot by taking the national average for people in each age group and with staff numbers as being: 1 in 40s, 2 in 50s and 1 in sixties.

Two are with the Herts pension scheme and two are with the Nest pension fund.

We do not know the carbon emissions associated with the Herts CC scheme that you are a member of.

So we calculated the estimate as if this total was all placed with The Nest Pension scheme.

The estimated emissions according to My Mother Tree would be about 94 tons if placed with the non-ethical fund and if placed with their ethical option, it would be 58 tons.

If all four pots were placed with the Nest ethical option, the notional saving could be 36 tons.

Recommendations

1. The most urgent task with your pension emissions is thus to seek information from the Herts pension providers as to what their carbon metrics are and to then develop a strategy in consultation with your staff based on the information provided.

2. As all new staff are now offered the NEST pension rather than the Herts scheme, it is important that the default option for new staff is the ethical fund.

3. The council should decide as to whether they allow an opt-out from the ethical fund, if the new staff member wishes this.

4. Ensure current staff know that they can switch to the ethical option if they so wish and that they understand the carbon impacts of their pension choices.

Banking/ Cash Reserves

Divesting cash reserves from fossil-fuel funding banks is even more important than divesting shareholdings and pensions, as it can help restrict the flow of funds for new fossil-fuel expansion.

Since the last eco-audit, a new metric estimating carbon emissions from bank reserves has been launched by Mother Tree.

This estimates that for each £1,000 deposited with Lloyds, it emits about 0.0704 tons of CO2 but with the Co-operative Bank only 0.0328tons. The worst carbon polluting bank is Barclays.

Estimate based on all reserves being with Lloyds,
as My Mother Tree do not have a metric for CCLA = 25 tons
If they were all with Barclays = 85 tons

Thus you are currently saving an estimated 53 tons by being with Lloyds instead of Barclays.

But if they were all with Co-op = 15 tons
Thus, potentially saving a further17 tons.

The full Mother Tree list is here:
https://www.mymothertree.com/bank-league-table

Recommendations

1. Thus, we suggest you consider switching where you bank your cash reserves be a top priority.
   If you need a local high-street bank account, you could still maintain your high-street bank account but switch your reserves to a lower CO_2 bank.
   The Co-operative Bank account can be used at local post office branches.

2. Ask the CCLA for their carbon metric per £1,000 deposited and whether they invest with fossil fuel corporations and then decide using the My Mother Tree banking carbon metric table, how to proceed.

Management

1. Include an eco-audit report, including the above eco-data in parallel with your annual accounts. This will help keep your focus on your annual environmental progress in future years.

2. Keep implementation of the eco-audit and the update recommendations as a standing item on relevant management meeting agendas.

3. Take meter readings from all your utility meters on the last day of the financial year. This will make future reporting much easier, as you will not have to depend on the erratic nature of estimated billing.

4. Allocate responsibility to a named member of staff for collecting your eco-data and collating it for reporting at the financial year end.

5. Check that areas designated to be suitable for wind-energy are included in the next area plan.

6. Develop an EV charging strategy for the town.

7. Create a section on your website with advice for local residents on how to reduce their carbon pollution and how to make a positive contribution to restoring local wildlife.

Electricity

1. Your electricity contract is up for renewal next spring. It is important to use this opportunity to switch to a green supplier. SSE is a mainstream supplier who provides green electricity to its commercial customers at competitive prices. So worth getting a quote from them and others.

2. The main council chamber has an air-conditioning system. It was reported to be now very rarely used. Ensure if it is used that the recommended coolest temperature for operation is 25C.
   Place a locked box around the controls and ensure only a trained member of staff is allowed to change temperature settings and timer.

3. Commission a feasibility study on the potential for solar and wind energy across your properties, including ground located solar and solar carports in any carparks e.g. cemetery.

   The new UK government has indicated it plans to launch a major local renewable energy programme with local councils. So, the more that you already have scoped your potential for such schemes and have costings ready, the faster you will be able to move, once the programmes are launched if they include local councils.

4. Once the EV charging point is in place, prioritise replacement of diesel vehicles with EVs.

5. Move to the cloud for server functions, as it uses up to 90% less energy.

6. Install 7-day timers on water cooler and hot-drinks machine, so that they are only on when required.

Heating

1. Ensure heating temperatures are no higher than the CCC recommended 18C.

2. Ensure that cooling temperatures are no lower than the CIBSE recommended 25C.

3. Ensure bathroom heating is set at frost-protection.

4. If keeping the central heating system, ensure that pipes are properly insulated and heat-reflectors are installed on radiators on outside walls.

Carbon Free Premises Energy

The area of the civic centre heated by the air-conditioning system would be carbon free (net zero) if you switched to a green electricity supplier.

To achieve carbon-free status for the rest of your civic centre, would require your 15-year-old gas-boiler central heating and hot-water system to be converted to some form of electric heating.

This could be air-source heat-pump (ASHP), electric boiler or infrared heating, if combined with a genuine green electricity tariff, supplemented wherever possible by your own green energy.

These have varying capital requirements and running costs:

- An electric boiler – cheaper than an ASHP capital wise but more expensive running costs. Current radiators and pipes can be kept.

- An air-source heat-pump powered central-heating system - high capital but lower running costs, but all radiators and pipes *may* need to be replaced.
  Not suited for spaces that have erratic usage patterns or high ceilings.

- Infra-red panels - lower capital cost than ASHP and more flexible to erratic usage patterns, but they may have higher running costs, depending on the circumstances. No pipes or radiators are required and entire system will not fail if one boiler fails.
  https://www.herschel-infrared.co.uk

The hot-water supplied by the gas-boiler could be replaced by a local mini electric water-heater.

We suggest you get quotes for the capital and estimated running costs for each electric heating option and then take a decision, as to the best option for you.

Purchasing / Waste Reduction/ Recycling

1. Landfilled unrecycled waste has high carbon emissions, of about 0.467 tons CO2/ton of waste.
   Examining potential to recycle some of the cemetery waste is thus important.

2. Carry out a waste audit, to identify waste streams that you might be able to reduce or eliminate entirely.

3. Avoid use of anti-bacterial soap, which poisons water sources. The FDA states that ordinary soap is perfectly adequate for non-clinical uses. Bio-D provides liquid plant-based soap for refillable dispensers.

4. Ensure cleaner is using microfibre cloths, which if used regularly only need water and no additional chemical products.

5. Buy organic catering for events and organic teas, coffee, plant and dairy/plant milk, sugar etc for staff hot drinks etc.
   Globally we have already lost over 50% of planet's fertile soils. In the UK, UK government states that we have only about 40 crops left in much of our soils. Thus, seeking to promote as much sourcing of organic produce as possible is crucial.

6. See if it is possible to estimate the number and length of car and cab trips that providing the local bus service removes from your streets.

   This could then be translated into a positive carbon footprint impact it is having for the community, in addition to providing a much-needed service, reducing congestion and local air pollution.

Open Spaces/ Water

1. The southeast of England has less water per person than Madrid, due to high population densities. This means in drier years water is over-extracted from rivers, lakes and aquifers, thus damaging the wildlife dependent on it.

   This is an even more critical issue in your area, due to the impacts of over-extraction on the region's rare chalk stream ecosystems.

   Thus, it is important that the council provides leadership in this area by reducing its mains water consumption, especially at the allotments and cemetery. In future years, include mains water consumption at the allotments in your annual eco-data report.

   Set a target to eliminate mains water consumption for your four allotments, cemetery, hanging-baskets and open spaces as far as practical.

   Wendover Parish Council grounds-team have installed very simple wood-framed

lean-to roofs at their allotments, (similar to one in the picture below but bigger) which feed an array of IBC rain-storage tanks (Intermediate Beverage Containers) which are readily available pre-used on eBay.

This has eliminated almost all mains-water consumption at their allotments.

2. Include native fruit and nut bearing trees in future tree plantings.

3. The UK government has signed up to the COP15 Biodiversity Treaty which committed us to protecting a minimum of 30% of UK land and oceans for nature.

   The council could consider making a commitment to supporting this on its own open spaces (if not achieved already) and launching an initiative on how to take this out to the wider community.

4. Carry out a survey to see what % of your open spaces are protected for nature.

5. Britain has lost about 75% of our ponds in the last 100 years. They are invaluable for helping repair our decimated wildlife and insect populations. Identify suitable locations for new ponds in your open spaces including your allotments.

   With industrial farming, insect populations have plummeted by as much as 80%, which has had the knock-on impact of causing starvation among many of our declining bird and small mammal populations.

6. Replace any diesel-powered parks equipment and machinery with electrical options, as they come up for replacement, but with a target date for all to be converted by 2027 or 2030 at the latest.
   As electrical equipment has much lower noise and vibrations and emits no local pollution, it improves workplace safety for staff.

7. Also get quotes for the replacement of your bus fleet with EV buses and establish a replacement schedule, with a target of completion by 2030 at the latest.

8. Continue with experiments with wild-flower meadows at your grassed open spaces and cemetery. It is crucial that they have neatly mown borders and clear signage explaining the purpose and benefits of them, for them to gain public acceptance.

9. Check any water meters quarterly overnight, to check for any water leaks.

Thanks!

Many thanks again for the help officers kindly provided to ***3 Acorns Eco-audits*** in the carrying out of this update report and good luck with further reducing the council's environmental impacts over the coming years and achieving your carbon-free energy target for 2030.

Report author: Donnachadh McCarthy FRSA pp 3 Acorns Eco-Audit September 2024