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Energy Management Policy (Energy Audit & Action Plan)

Zenith Nurseries Ltd recognises its responsibility for ensuring full and safe provision of all energy requirements across its business.

Zenith Nurseries uses fuel oil for the provision of energy for road transport and agricultural machinery. Electricity is required for glasshouse, cold stores, pack house, Irrigation operations/systems, and offices and on site accommodation for seasonal staff.

All energy usage will be controlled through the guidelines laid out below.

The Energy Audit – consists of all sources of energy used on farm over the last 12 months, including any gas, electricity and fuel consumption.

The Energy Audit will highlight the most significant use(s) of energy in the business. This is to help inform management decisions, recognise priority areas for monitoring, and set strategies in the Energy Action Plan. The cost of energy should also be considered, either in the Energy Audit or monitoring. When combined with the amount of energy used, it ensures comparisons can be made between different sources of energy. **Energy Consumption Monitoring** - regular monitoring of energy consumption throughout the year (at least quarterly).

The Energy Audit should include reference to renewable and non-renewable energy.

2021 Audit Results

LEAF energy monitoring spreadsheet: **YEAR A**

Reporting period:	1/06/21-1/06/22	
Reporting area:	90.00	hectares
Annual turnover		
Total yield for this reporting period, from this reporting area:	700.00	**tonnes**

Do not include electricity generated on-site; report this separately in the 'Elec gen YrA' sheet.

Item	Location / Reference	Energy type	Total units used	Unit *of measurement*	Emission factor	Total emissions (kgCO2e)	Total kWh	Total cost of energy consumed (£/€/$)	Cost per kgCO2e (£/€/$)
1	All Farm	LPG (Liquid petroleum gas)	3.40	tonnes	2941.78	10002.05	43418.00	£ 7,001.44	£ 0.70
3	All Farm	Mains gas	1550.00	tonnes	2715.83	4209530.29	20584000.00	£ 261,830.09	£ 0.06
4	All Farm	Red diesel	63000.00	litres	2.97	186840.22	635375.43	£ 63,000.00	£ 0.34
5	All Farm	Diesel (average biofuel blend)	85000.00	litres	2.61	221988.14	850000.00	£ 11,000.00	£ 0.05

	2021-2022
Total energy consumption (kWh)	220.00
Net energy balance (kWh)	220.00
Total emissions, kgCO2e	404.19
Total energy cost, local currency	342831.527
Total energy cost per kgCO2e	848.1939854
kgCO2e per 1000 £/€/$ turnover	0.85

Energy Action Plan

An Energy Action Plan evaluates all energy management opportunities in the farm based on information from the Energy Audit, regular monitoring and CO2 emission records.

Energy action plan is reviewed annually and following points are discussed:

- Assessing conservation opportunities, enhancing energy use efficiency and minimising energy consumption where possible.
- estimating the cost to implement changes, the savings that will be generated and an estimation of the payback period
- review the costs of purchasing energy from a variety of suppliers
- Consideration of the use of alternative energy sources - wind, solar, combined heat and power (CHP), crop residues/wastes, wood/biomass, biodiesel, water, and ways to reduce greenhouse gas emissions.

Zenith Nurseries is committed to improve energy efficiency through:

- Planned preventative maintenance - Vehicles and equipment that are correctly maintained and serviced against a pre-planned schedule are more likely to be fuel efficient than those that are not. Incorrect tyre pressure and type can have a big influence on fuel efficiency.
- Cold stores to be regularly inspected and maintained by Specialist Company.
- Cold Rooms Door Management - Properly insulated cold rooms, with doors that can and are shut when not being used, are significantly more energy efficient than those that are not.
- Use of farm maps to identify how transportation could be minimised or avoided to reduce energy costs and improve efficiency.
- A generator is used for emergency power supply in event of lack of energy continuous energy supply. This runs from an i.c. power unit which operates on diesel fuel oil. It is built to relevant specification which provide for economy of operations, noise emissions and pollution control.
- Efficient control of the glasshouse environment through use of a modern Priva computer system.
- Site commitment for Tractor size to be chosen to match power requirements and type of job whenever possible.
- Ad-blue additive being used on all our new tractors to reduce Co 2 from exhaust cases.
- Electricity consumption to be minimised by matching motor size to pumping and ancillary equipment requirements.
- Inverters for irrigation pumps are fitted to save energy and to help to prevent power spikes.
- LED lights are replacing current halogen lights, to help save energy.
- Multispan tunnels erected to create a warmer growing environment. Front and side vents installed to help control temperature and humidity through the summer season.

Additional Actions are included/updated in Document Name: Environmental Policy Document Reference: Environpolmain (latest revision)