

Technolog Group Limited
ESOS Group Final Report
Phase III

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26 July 2024

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Notice

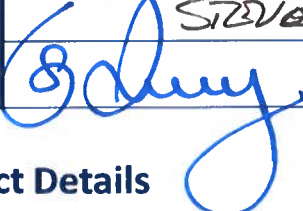
This report is put together by Consultus International UK (The Energy Brokers) Ltd, company registration number 2931618, hereafter referred to as Consultus.

Sign-Off

Board Director Sign-Off

A Board Director is required to counter sign the ESOS Report as *Technolog Group Limited* have utilised the services of an external ESOS Lead Assessor. This confirms that they:

- have reviewed the recommendations set out herein.
- are satisfied, to the best of their knowledge, that the organisation is within the scope of the scheme.
- are satisfied, to the best of their knowledge, that the organisation is compliant with the scheme at the date of this report.
- are satisfied, to the best of their knowledge, that the information provided in the notification is correct.

Director	STEVE DRAKE	
Signature		Date: 30/7/24

Board Director Contact Details

Email: *J.Russell@TECHNOLOG.com*
 Phone: *01629 823611*

Lead Assessor Sign-Off

See below the ESOS Lead Assessor Report Sign-Off:

ESOS Lead Assessor	Ellie Oakes	
ESOS Registration	Z316-0001	
Signature	E.Oakes	Date: 22-07-24

Personnel Involved in Report Production

This report is comprised of the work of the following people:

Data Collection: Emanuele Vacchina

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Site Assessor and Audit Report Author: Saurav Shahi

Executive Summary

The Energy Savings Opportunity Scheme (ESOS) is an energy assessment and energy-saving scheme established by the Energy Savings Opportunity Scheme Regulations 2014. The scheme is mandatory and applies to large undertakings and groups containing large undertakings in the UK (>250 employees, or turnover >£44 million and balance sheet >£38 million¹).

Technolog Group Limited are required to comply with the ESOS regulations by virtue of employing over 250 employees and is therefore deemed to be a large undertaking.

From Technolog Group Limited's five sites, one site was chosen to be a representative sample. This site was deemed to be representative of the portfolio due to the site consisting of warehouses, offices and manufacturing buildings. Factors such as site location, building age, energy consumption and building types were also taken into consideration when recommending sites to be audited. The sites were audited on 28/03/2024.

From these site audits, a total of six energy saving opportunities were identified, including a combination of short-term investments, long-term investments and controls improvements. The total energy savings identified across a sample of five sites came to 300,594 kWh, with an approximate annual energy saving of £41,113. When applied to the entire Technolog Group Limited portfolio, the total energy savings have been estimated as:

Total Energy Savings Potential kWh	Total Energy Savings Potential £
300,594 kWh	£41,113

Recommendations and key findings identified through the transport audit are as follows:

- Consider trialling energy efficient tyres
- Encourage practicing route optimisation where applicable

The intensity metrics identified for Technolog Group Limited's portfolio are:

Buildings – 122.3 kWh/m²

Transport – 0.84 kWh/person mile

Alternative – 4023.2 kWh/£M Sales Revenue

¹ At qualification date 31st December 2022

1. Introduction

1.1 ESOS Background

The Energy Savings Opportunity Scheme (ESOS) is an energy assessment and energy-saving scheme established by the Energy Savings Opportunity Scheme Regulations 2014. The scheme is mandatory and applies to large undertakings and groups containing large undertakings in the UK (>250 employees, or turnover >£44 million and balance sheet >£38 million²), which are required to complete energy audits (or equivalent) every four years. Its aim is to ensure that you actively look for energy and cost savings opportunities and it is designed to identify measures that could be implemented.

The scheme requires all qualifying organisations (stipulated as UK undertakings) to comply through means of the desktop analysis of the entire portfolio and sample audit of buildings said to represent the core business functions (e.g., Office use, retail use, manufacturing, transportation, hotel, catering, storage).

The ESOS Assessment should include a review of energy data, audits to produce a list of “cost-effective efficiency measures” using a ESOS Lead Assessor, sign off by at least one Board level Director and compliance reported to the regulator (Environment Agency). For Phase 3, the deadline is 5th June 2024. An additional compliance extension was granted until 6th August 2024.

Technolog Group Limited are required to comply with the ESOS regulations by virtue of employing over 250 employees and is therefore deemed to be a large undertaking.

This report is designed to provide the information required within the Evidence Pack, which is mandatory for ESOS compliance, the U.K Government’s implementation of Article 8 of the EU Energy Efficiency Directive (2012/27/EU). This report was produced for Technolog Group Limited by Consultus, who are acting as the ESOS Lead Assessor for Phase 3.

Further to the Evidence Pack, the Environment Agency must be made aware of Technolog Group Limited compliance with ESOS by filling out the online notification through the MESOS system. Consultus will be inputting the necessary information before the responsible person of Technolog Group Limited is required to confirm all details are correct.

1.2 Previous ESOS Phases

Phase 1 of ESOS caught many companies unawares, resulting in rushed assessments mainly focused on technical improvements, without considering wider options such as management processes, workforce engagement or operational changes.

Companies took a more measured approach to Phase 2, conducting their energy audits earlier. The deadline (or Compliance Date) was 5th December 2019.

In Phase 3 the de minimis reduced from 10% to 5%, requiring companies to audit more thoroughly than ever. Now an action plan for implementing the Phase 3 recommendations is required by 5th December 2024.

It is vital for organisations understand their consumption, to manage potential risks. Figure 1 shows the non-domestic sector’s average gas and electricity prices from 2004-2022. In the last decade electricity and gas prices have risen 126% and 86% respectively (excluding other charges and levies)

² At qualification date 31st December 2022

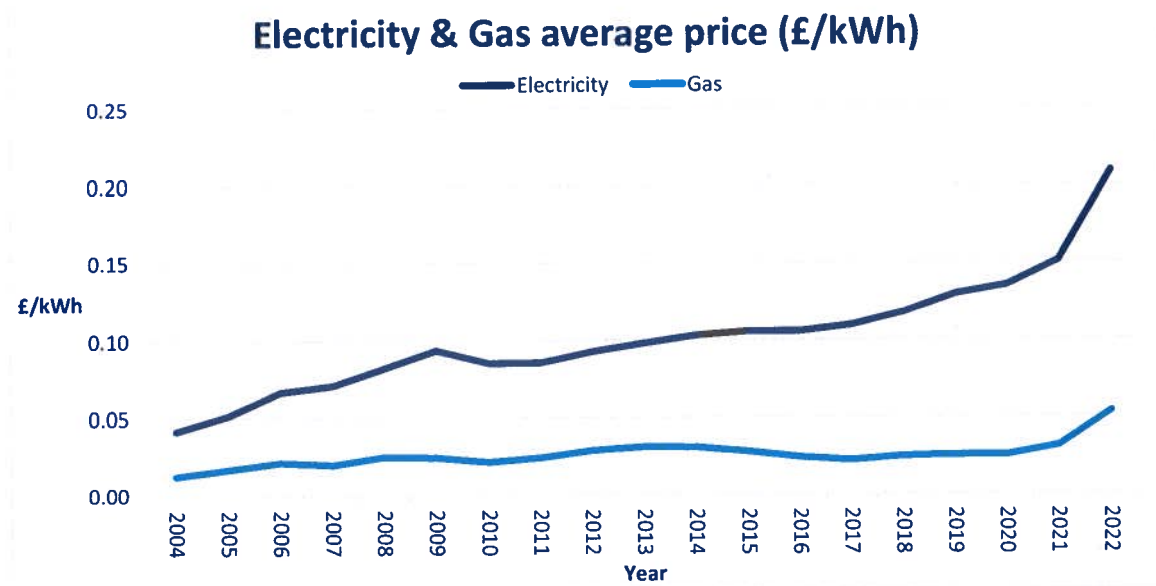
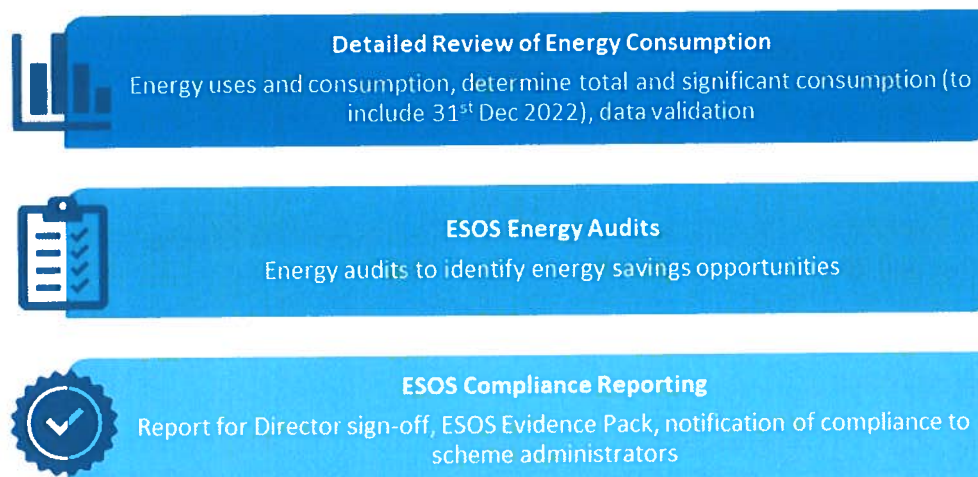


Figure 1 – Average Electricity and Gas prices (£/kWh)

1.3 Route to ESOS compliance

Without an ISO 50001 Energy Management System, Display Energy Certificates (DECs) for their buildings or historical Green Deal assessments, an ESOS Energy Audit has been chosen as the route to compliance. Energy audits are considered a valuable tool in understanding and improving the energy performance of an organisation.

There are three stages to an ESOS Assessment, as follows:



This energy audit report details the review of consumption and the findings of the energy audit. The next stage will be to produce the ESOS Evidence pack and make the notification of compliance.

1.4 Energy audit methodology

The auditing methodology selected for the Energy Audit was developed based on BS EN 16247, Energy Audits.

The energy audit was carried out following the analysis of 12 months of energy data and following a tour of the site provided by site staff.

The audit covered the following areas:

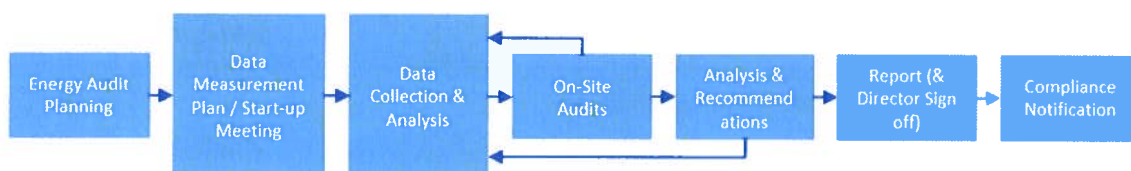
Building fabric

Heating systems

Cooling systems

Lighting systems

The overall process of ESOS is shown below:



2. The Organisation

Table 1 lists all Undertakings, Franchises, Entities and Companies belonging to Technolog Group Limited that have been assessed in this report.

Table 1 - All entities belonging to Technolog Group Limited

Franchise/Entity/Company/Undertaking	SIC Code	Company Registration Number
Technolog Holdings Limited	64209	04025830
Utilitec Limited	70100	01677595
Utilitec Services Limited	74909	03411545
Utility Data Services Limited	62030	03492015
Technolog Group Limited	64209	03041827
Technolog Limited	26511	01574170

An organisational chart can be found in Appendix A.

3. ESOS Phase 3 Energy Data

3.1 Organisation consumption

Table 2 below lists the data relevant to the ESOS Phase 3 report.

Table 2 – Technolog Group Limited Phase 3 Summary

Participant Organisation	Technolog Group Limited		
Phase 3 ESOS Compliance Deadline	5 th June 2024		
Reference Period	01/01/2022 – 31/12/2022		
Participant's Total Energy Consumption	6,817,529 kWh		
Participant's Assessed Energy Consumption (>95%)	6,817,529 kWh		
Total Cost-Effective Energy Saving Potential	£41,113		300,594 kWh
Intensity Metric	Building: 122.3 kWh/m ²	Transport: 0.84 kWh/person mile	Alternative: 4023.2 kWh/£M Sales Rev

The intensity metric chosen for Technolog Group Limited is 122.3 kWh/m². This is the metric that best applies to Technolog Group Limited's portfolio and represents the energy consumed over the occupied area of all sites. Whilst Technolog Group Limited do manufacture products, that metric would not be applicable to the entire organisation, so an alternative intensity metric was provided in the form of kWh/£M Sales revenue.

Buildings –122.3 kWh/m²

Transport –0.84 kWh/person mile

Alternative – 4023.2 kWh/£M Sales Revenue

Table 3 – Portfolio fuel consumption breakdown

Fuel	Consumption (kWh)	Total Energy Consumption %	De Minimis
Electricity	369,085	5	No
Gas	193,547	3	No
Transport Fuels (Diesel and Petrol)	6,254,897	92	No
Total	6,817,529	100%	0%

Total energy consumption (TEC) for the period 01/01/2022 – 31/12/2022 amounted to 6,817,529 kWh, with 97% arising from the transport fleet fuel consumption (diesel and petrol) and 3% from gas and electricity site consumption. No fuels have been excluded from this report as part of the de minimis. As the transport fleet energy consumption makes up the majority of the TEC, a transport audit will be conducted.

3.2 Energy Consumption by Organisational Purpose

Figure 2 below shows Technolog Group Limited's energy consumption, categorised by organisational purpose. This highlights the areas where consumption could be easier to reduce.

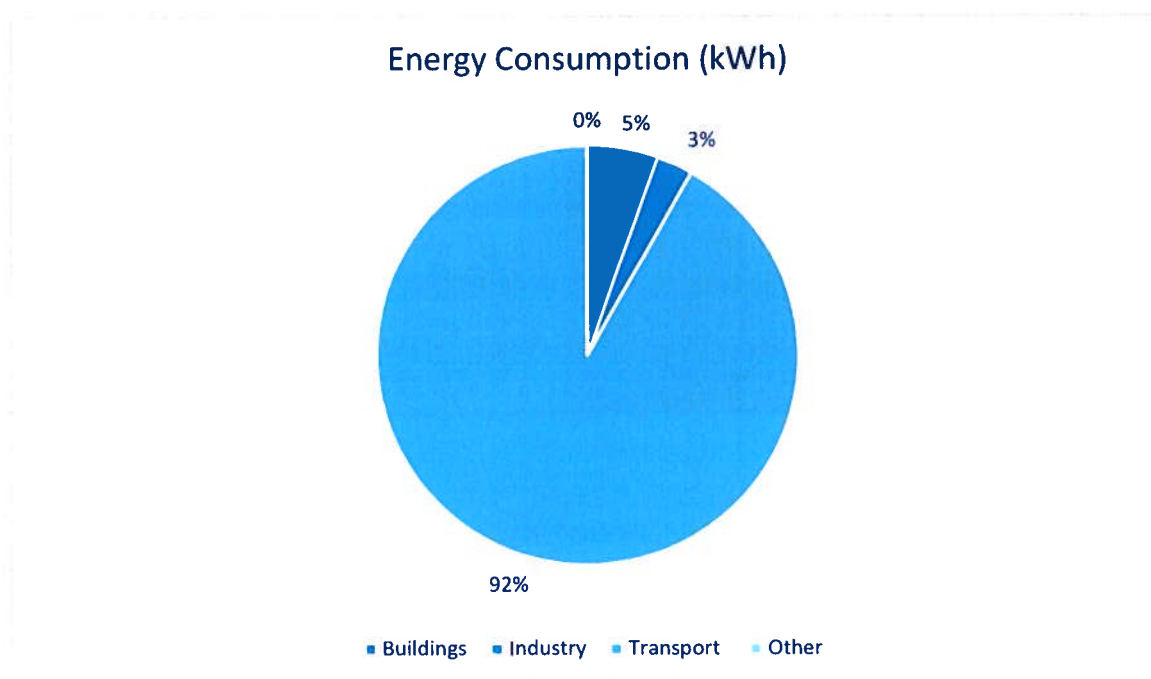


Figure 2 – Energy consumption (kWh) by organisational purpose

The chart in figure 2 above splits the total energy consumption by organisational purpose. The electricity and gas consumption for each site was split between building and industrial energy usage, depending on the site purpose. Some sites have a higher ratio of industrial to building energy consumption where they had been marked as manufacturing or servicing sites.

The majority of energy consumption is made up of diesel used in Utilitec's transport fleet. Further breakdown of the transport fuel consumption can be found later in this report.

4. Energy Savings since ESOS Phase 2

4.1 Energy Savings by Organisational Purpose

Table 4 below shows the estimated savings made by Technolog Group Limited since the ESOS Phase 2 compliance deadline of 5th December 2019. These savings have been listed by organisational purpose.

Table 4 – Post Phase 2 energy savings by organisational purpose

Organisational Purpose	Energy Measure	Identified Savings (kWh/year)	CO ₂ e Avoided (Tons)	Identified Cost Savings (£)	ESOS Recommendation
Buildings	LED Upgrade	20,017	3.87	3,403	NO
	Boiler Replacement	2,244	0.41	202	NO
	AC reduction & Controls	4,922	0.95	837	NO
	Smart TRVs	178	0.03	16	NO
Transport	-	-	-	-	-
Industrial Processes	-	-	-	-	-
Other	-	-	-	-	-
TOTAL	-	27,361	5.26	4,458	-

These savings were all categorised as buildings energy savings due to the effect that implementing the measures would have on buildings, manufacturing processes or the transport fleet. All measures contribute to energy consumed for the purposes of maintaining a comfortable building environment.

4.2 Energy savings by Category

Table 5 below lists the same energy savings made since Phase 2 but separated into categories such as Capital Investments, Behaviour Change interventions and Training.

Table 5 – Post Phase 2 energy savings by energy saving category

Energy Saving Category	Energy Measure	Identified Savings (kWh/year)	CO ₂ e Avoided (Tons)	Identified Cost Savings (£)	ESOS Recommendation
Energy Management Practices	Smart TRVs	178	0.03	16	NO
Behaviour Change Interventions	-	-	-	-	-
Training	-	-	-	-	-
Controls Improvements	AC reduction & Controls	4,922	0.95	837	NO
Short Term Capital Investments (Payback <3 Years)	LED Upgrade	20,017	3.87	3,403	NO
Long Term Capital Investments (Payback >3 Years)	Boiler Replacement	2,244	0.41	202	NO
Other Measures	-	-	-	-	-
TOTAL	-	27,361	5.26	4,458	-

The savings listed in table five above have been sorted by energy savings category. Installing smart TRVs will automate the energy consumed for heating and so manages the energy saved instead of manual adjustment. The AC reduction and controls upgrade has been listed as a controls upgrade due to the controls upgrade being the more impactful aspect of the measure implementation.

LED and boiler upgrades are classed as capital investments due to the overall energy savings and indicative investments leading to varied payback periods.

5. Audits

5.1 Site Audits

This report gives the findings of the energy audit and will make up part of the final ESOS Evidence Pack.

The objectives of the energy audit are:

- to understand energy uses, consumption and current energy management practices
- to identify opportunities for reduction, considering behavioural, operational, and technological options

Technolog Group Limited portfolio consists of five sites. The site audited has been split across five buildings, as listed in Table 6, and was deemed to be a representative sample of Technolog Group Limited portfolio due to the range of building uses across the site. Aspects such as site location, building age, energy consumption and building types were all considered when recommending sites to be audited. The 12-month period in which consumption is gathered from is 01/01/2022 – 31/12/2022.

Table 6 – ESOS Phase 3 site audit details

Site Name	Date Audit Completed	Site Use	Energy Consumption (kWh)
Ravenstor Rd, Wirksworth DE4 4FY	28/03/2024	Building 1 - Manufacturing	131,236
		Building 2 - Office	208,542
		Unit 2B - Warehouse	36,188
		Unit 2C - Workshop	56,163
		Unit 2D - Office	32,316
		Total	464,445

5.2 Transport Audit

Alongside site audits, a desktop audit of the transport data provided by Technolog Group Limited has been conducted. This data is analysed to identify any potential consumption trends or saving opportunities.

5.2.1 Transport Breakdown

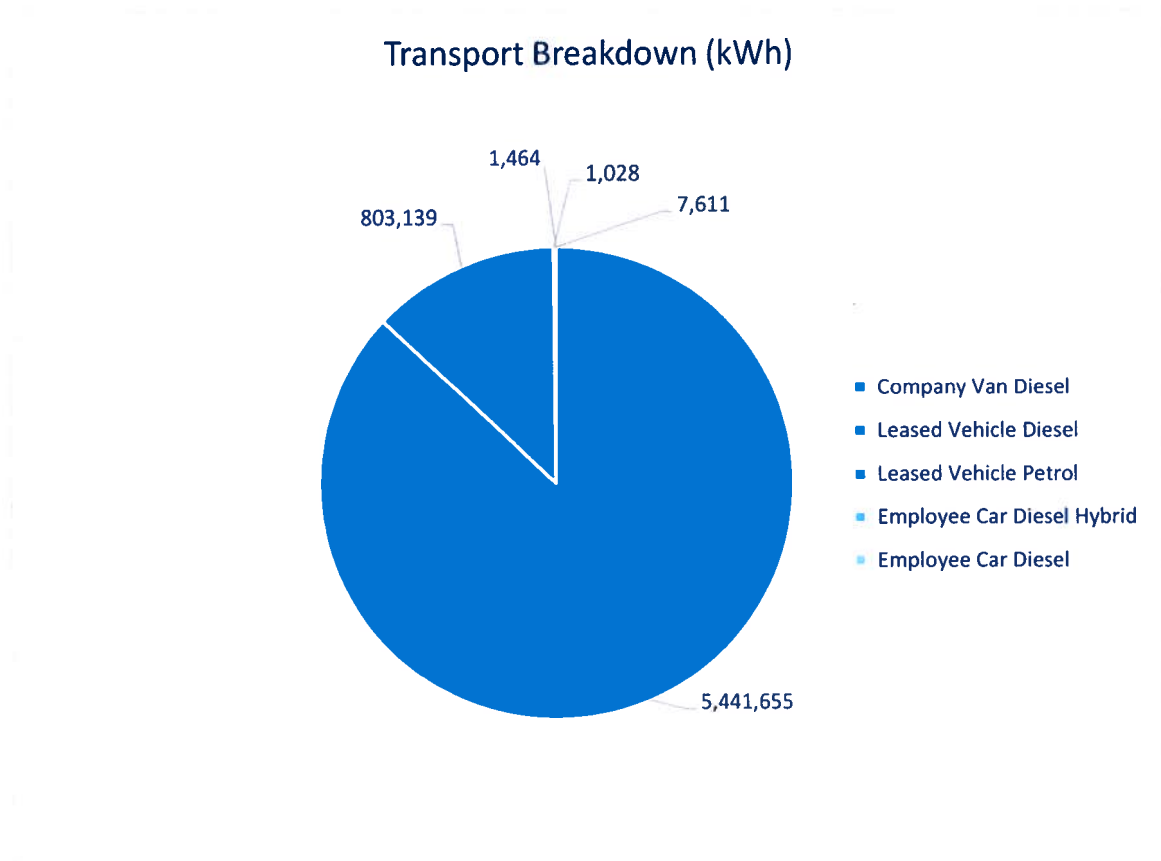


Figure 3 – Transport breakdown of energy consumption, sorted by vehicle fuel and ownership

Figure 3 above shows the energy consumed by the vehicles that make up Technolog and Utilitec's fleet. Three values that may be difficult to discern in the chart above are Company Van Diesel (1,464 kWh), Employee Car Hybrid Diesel (1,028 kWh) and Employee Car Diesel (7,611 kWh). The majority of fuel is consumed by Leased Diesel Vehicles, which makes up 87% of all fuel consumption.

5.2.2 Mileage Records

99% of vehicles in the fleet are leased by Technolog or Utilitec for their employees. Each employee has a fuel card, the data from this fuel card is recorded by AllStar and exported monthly in order to track fuel consumption. The exported data is collated by Technolog and stored on a spreadsheet for an annual overview of consumption. The fuel card data includes the driver MPGs, however this has not been shared with Consultus for the purpose of this report and cannot be commented on.

Quarterly reports are generated and sent out to drivers and managers, highlighting the best and worst examples of vehicle efficiency. In order to ensure vehicles are running efficiently, leases last approximately three years before the vehicle is replaced. This has not always been possible due to

supply chain issues linked to covid etc., but the typical lease period does not exceed three to four years. Between vehicle replacements, the vehicles are checked monthly for basic vehicle care and serviced in line with manufacturer guidelines.

Technolog has displayed a willingness to adopt more electric vehicles, however, were left unimpressed by the current electric van performances and have returned to hybrid models for the time being.

In order to encourage safe and efficient driving, Technolog has implemented a robust system for tracking driver speed and has a discipline process in place for driving infractions. Alongside speed tracking, they also provide internal driving courses and external courses that cover winter preparedness.

5.2.3 Vehicle Profiling

As discussed in the previous section, this report does not have access to the data required to assess specific vehicle MPGs, however it is understood that Technolog has this well in hand with quarterly internal reports assessing driver efficiency.

Considering the leased vehicle data, there are currently one hundred and sixty-six vehicles leased, of those, 77% are vans and 23% are cars.

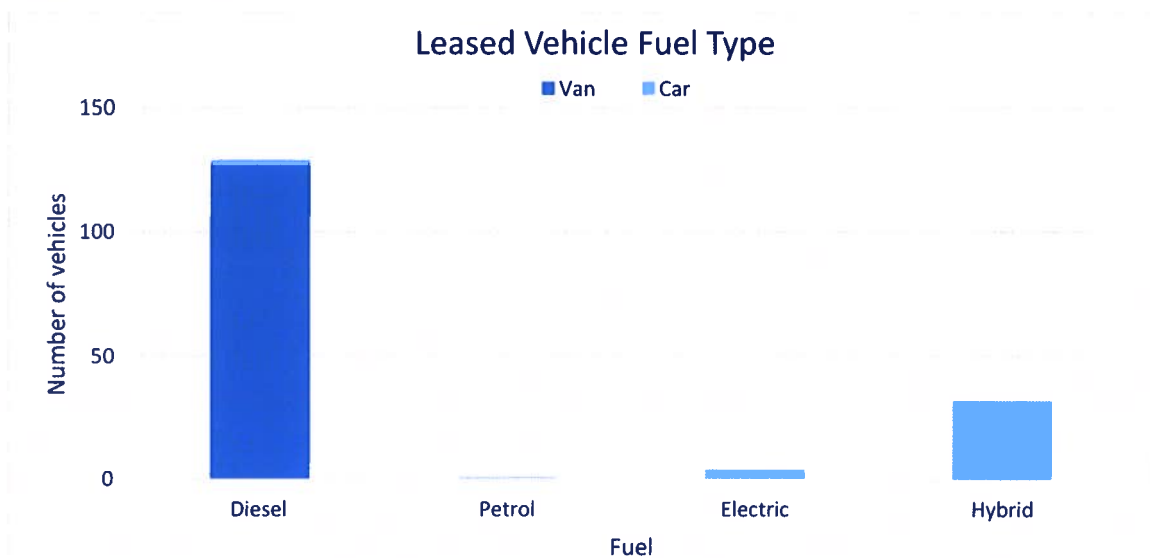


Figure 4 – Graph displaying the fuel split across the fleet of leased vehicles

As figure 4 above shows, the leased vehicles are mostly diesel vans, however the majority of cars are hybrids.

5.3 Transport Recommendations

Technolog and Utilitec's fleet of vehicles is large and the vehicles are replaced through out the year at the end of their leases. Despite the daunting nature of tracking a fleet of this size, there is a robust process in place to track driver efficiency and maintain vehicle performance. Technolog is presently employing almost every measure that Consultus recommends to reduce vehicle fuel consumption and increase MPG.

There are two recommendations that are suggested by this report:

- Implement the use of energy efficient tyres where applicable
- Encourage drivers to practice route optimisation/provide training on how to optimise route planning

6. Energy Saving Opportunities

Examples of good practice energy management were observed during the survey, however there are often opportunities to further reduce energy consumption. Recommendations are provided in the following table.

Full details of these recommendations can be found in the Audit Report, where estimated annual savings for each item are given in energy (kWh) and cost (£). Cost savings are price of electricity/gas only and do not account for other charges (for example: energy levies/taxes, standing charges or VAT). The prices of items listed are only approximate and should not be seen as a properly costed proposal.

As well as technical solutions particularly relating to buildings, capital investments alongside control improvements are thought to be of importance, and therefore recommended. A formalised energy management processes (good data monitoring, setting responsibilities targets and/or KPI's) will keep the momentum going.

An action plan will be put in place before 5th December 2024.

6.1 Energy Saving Opportunities by Organisational Purpose

Table 7 below lists the energy saving opportunities identified in the audits, separated into organisational purposes and scaled appropriately to represent the whole portfolio.

Table 7 – Potential energy savings by organisational purpose

Organisational purpose	Energy Measure	Identified Energy Savings (kWh/year)	Identified cost savings (£)	CO2e Avoided (tons)	Payback (Years)
Buildings	Motion Sensor Installation	5,653	887	1.09	3.3
	BMS/VEM	55,733	6,620	10.58	13.5
	AC Upgrade	68,418	10,947	13.2	4.1
	Pipework Insulation	33,923	1,187	6.19	6.3
	LCD to LED Monitor Upgrade	4,867	779	0.94	14.0
	Solar	132,000	20,693	27.0	8.6
Transport	-	-	-	-	-
Industrial processes	-	-	-	-	-
Other energy uses	-	-	-	-	-
TOTAL	-	300,594	41,113	59.0	8.1

All potential energy saving measures listed in table 7 above have been classed as building energy savings out of the organisational purposes. All measures would not impact the energy efficiency of any industrial processes or transport fuel consumption, so have been classed as building.

6.2 Energy Saving Opportunities by Category

Table 8 lists the same energy saving opportunities as listed in Table 7, split instead into energy saving categories such as Behavioural change or Training scaled appropriately to represent the whole portfolio.

Table 8 – Potential energy savings by energy saving category

Energy saving category	Energy Measure	Identified Energy Savings (kWh/year)	Identified Cost Savings (£)	CO2e Avoided (tons)	Payback (Years)
Energy management practices	-	-	-	-	-
Behaviour change interventions	-	-	-	-	-
Training	-	-	-	-	-
Controls improvements	Motion Sensor Installation	5,653	887	1.09	3.3
	BMS/VEM	55,733	6,620	10.58	13.5
Short term capital investments (payback <3 years)	-	-	-	-	-
Long term capital investments (payback >3 years)	AC Upgrade	68,418	10,947	13.2	4.1
	Pipework Insulation	33,923	1,187	6.19	6.3
	LCD to LED Monitor Upgrade	4,867	779	0.94	14.0
	Solar	132,000	20,693	27.0	8.6
Other measures not covered by the above	-	-	-	-	-
TOTAL	-	300,594	41,113	59.0	8.1

The potential energy saving measures listed in table 8 above have been classed as either controls improvements or long-term capital investments.

The installation of light motion sensors and an upgraded BMS (Building Management System) are classed as controls improvements due to the savings being achieved by providing more in-depth

control of the appliances/equipment. The other measures are classed as long-term capital investments due to the requirement of capital investment and a long-term payback period. The measures range in size from discrete appliance upgrade to building wide fabric improvement.

7. Evidence Pack

An evidence pack containing all organisational & site details, energy saving measures can be requested for viewing and auditing purposes.

You must keep the ESOS Evidence Pack for the compliance period to which it relates (Phase 3: 6th December 2019 - 5th June 2024) and the subsequent compliance period.

Appendix A – Organisational Chart

