

A hand is shown holding a glowing lightbulb in the center of the frame. The lightbulb is illuminated, casting a warm glow. To the left and right of the lightbulb are three crumpled balls of white paper, representing discarded ideas. The background is a dark, textured wooden surface. The overall composition suggests a process of creative thinking and finding a viable solution.

Carbon Footprint and Reduction Possibilities –

November 2021

A glowing lightbulb is positioned on the left side of the image, resting on a wooden surface. The lightbulb is illuminated from within, casting a warm, golden glow. The wooden surface has a prominent grain pattern and is lit from the side, creating a gradient of light and shadow. The background is dark, making the lightbulb and the text stand out.

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2021**



Objectives



Method



Analysis & Findings



Recommendations



Summary

Agenda





1 - Objectives



Establish key carbon footprint contributors and their significance



Convert key contributors into approximate carbon emissions levels KgCo2e



Analyse 2019 (Pre-COVID), 2020 (In-COVID) & 2021 (Covid build back) periods



Recommend carbon footprint reduction possibilities

Objectives



A glowing lightbulb is centered in the upper half of the image, resting on a wooden surface. The lightbulb is illuminated from within, casting a warm, golden glow. The wooden surface has a natural grain pattern and is lit from above, creating soft shadows and highlights. The background is dark, making the lightbulb stand out.

2 - Method

Method



Office “Energy Walk-round”



Electricity usage study



Staff Questionnaire



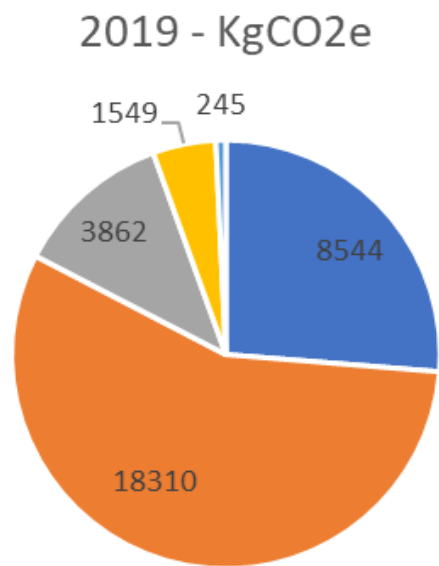
**Data collation, interrogation,
analysis & summarizing**





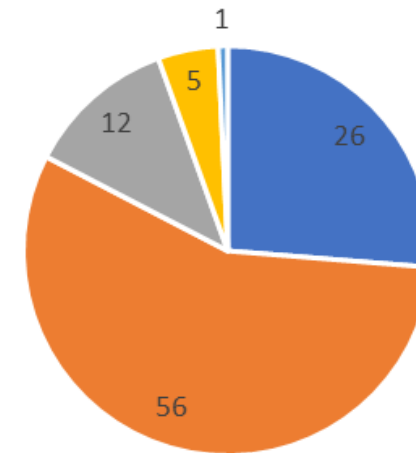
3 - Analysis & Findings

2019



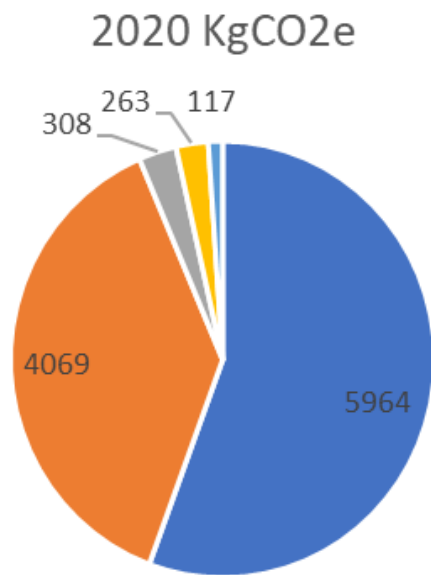
■ Electricity ■ Car Travel ■ Flights ■ Rail ■ Bus/Coach

2019 - KgCO2e Source %



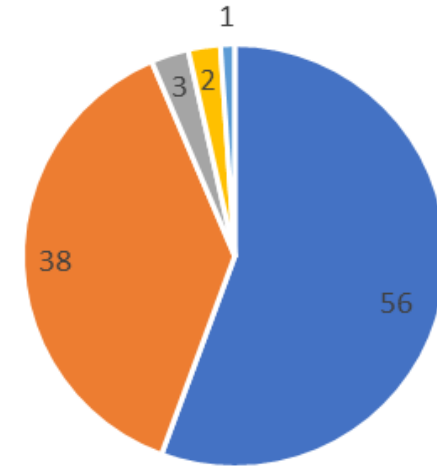
■ Electricity ■ Car Travel ■ Flights ■ Rail ■ Bus/Coach

2020



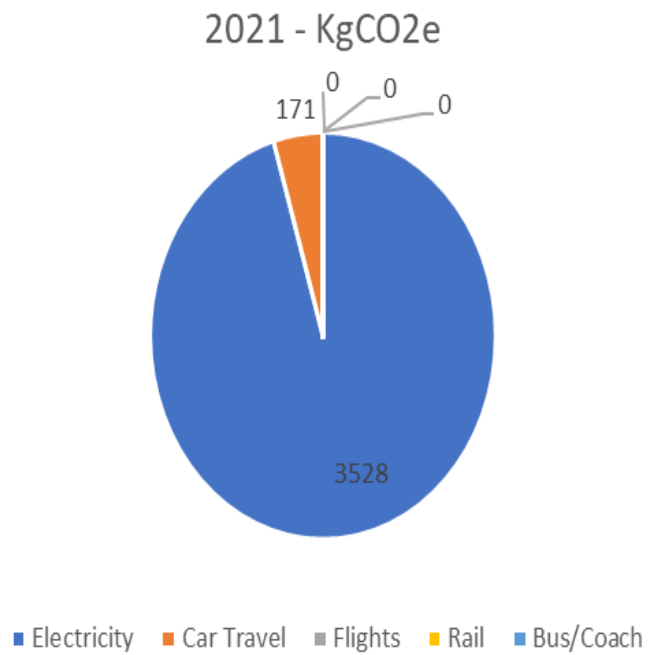
■ Electricity ■ Car Travel ■ Flights ■ Rail ■ Bus/Coach

2020 - KgCO2e Source %

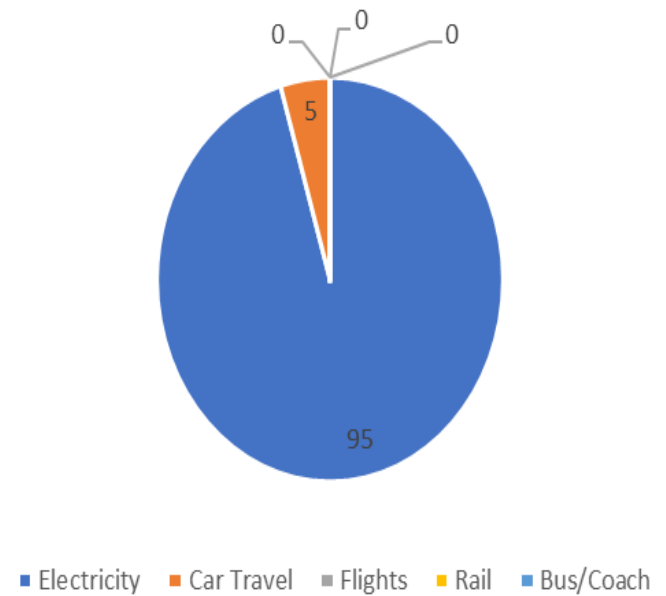


■ Electricity ■ Car Travel ■ Flights ■ Rail ■ Bus/Coach

2021

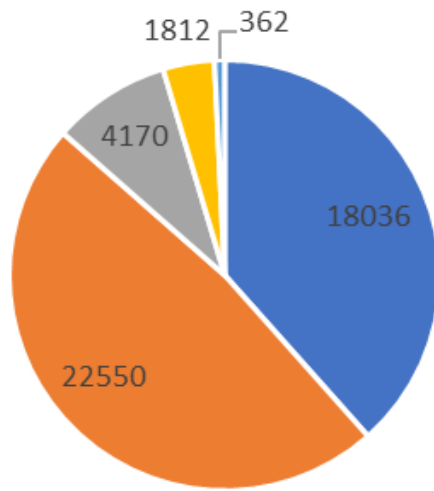


2021 - KgCO2e Source %



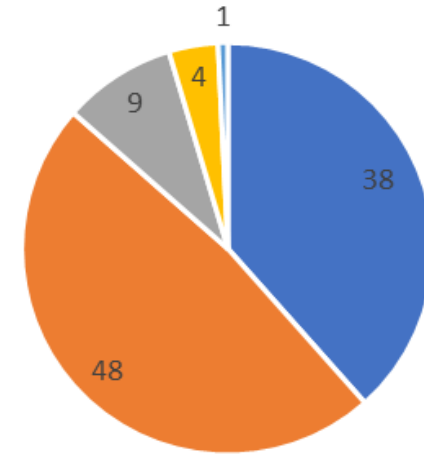
2019 - 2021

Jan 2019 - Aug 2021 - KgCO2e



■ Electricity ■ Car Travel ■ Flights ■ Rail ■ Bus/Coach

Jan 2019 - Aug 2021 - KgCO2e Source %



■ Electricity ■ Car Travel ■ Flights ■ Rail ■ Bus/Coach

Jan 19 - Aug 21			2019			2020			2021		
Energy Source	Total Kg CO2e	%	Energy Source	Total Kg CO2e	%	Energy Source	Total Kg CO2e	%	Energy Source	Total Kg CO2e	%
Electricity	18036	38	Electricity	8544	26	Electricity	5964	56	Electricity	3528	95
Car Travel	22550	48	Car Travel	18310	56	Car Travel	4069	38	Car Travel	171	5
Flights	4170	9	Flights	3862	12	Flights	308	3	Flights	0	0
Rail	1812	4	Rail	1549	5	Rail	263	2	Rail	0	0
Bus/Coach	362	1	Bus/Coach	245	1	Bus/Coach	117	1	Bus/Coach	0	0
Total	46930		Total	32510		Total	10721		Total	3699	
%	100		%	69		%	23		%	8	

CollegesWales ColegauCymru - CO2e - Electricity (Building)

Year	Av Month Kwh Electricity	Kg Co2e Per Month	Kg CO2e Annual	Kg Reduction on 2019	% of 2019 Kgs
2019	2785	712	8544		
2020	2131	497	5964	2580	70
2021	1384	294	3528	5016	41

CollegesWales ColegauCymru - CO2e (Car Travel)

Year	Av Month Litres of Fuel	Kg Co2e Per Month	Kg CO2e Annual	Kg Reduction on 2019	% of 2019 Kgs
2019	641	1525.83	18310		
2020	146	339.08	4069	14241	22
2021	9	14.25	171	18139	1

Year	Commute Mileage	Business Mileage	Total Mileage	% Commute Mileage	% Business Mileage
2019	51,429	11,582	63,011	82	18
2020	11,915	2,573	14,488	82	18
2021	565	50	615	92	8
Total	63,909	14,205	78,114	82	18

CollegesWales ColegauCymru - CO2e (Flights)

Year	Kg Co2e Per Month	Kg CO2e Annual	Kg Reduction on 2019	% of 2019 Kgs
2019	322	3862		
2020	26	308	3554	8
2021	0	0	3862	0

CollegesWales ColegauCymru - CO2e (Rail Travel)

Year	Kg Co2e Per Month	Kg CO2e Annual	Kg Reduction on 2019	% of 2019 Kgs
2019	129	1549		
2020	22	263	1286	17
2021	0	0	1549	0

CollegesWales ColegauCymru - CO2e (Bus/Coach Travel)

Year		Kg CO2e Annual	Kg Reduction on 2019	% of 2019 Kgs
2019		245		
2020		117	128	48
2021		0	245	0

Electricity Mar 2019 - Aug 2021 KWh Usage



A glowing lightbulb is centered in the upper half of the image, resting on a wooden surface. The lightbulb is illuminated, casting a warm, golden glow that highlights the wood grain around it. The background is dark, making the lightbulb the focal point.

4 - Recommendations



Voluntary Carbon Champion



**Individual / Team Carbon
Calculator Insight**



**Office Specific Energy Usage
Reductions**



Live / Dormant Office

Recommendations





Necessary Only Travel Policy



“All In Days” / Home Working Options



Face-to-Face vs TEAMs / Zoom Meetings



Carbon Footprint Dashboard

Recommendations





Presentation to Management & Staff



Repeat Study 2024 for 2022/3



Continuous Awareness Generation



Whole Team Engagement

Recommendations





The TEN Step Action Plan

TEN STEP ACTION PLAN	
1	Carbon champion role
2	Personal carbon calculator – Team review
3	Office specific energy usage reductions
4	Periods of complete office shutdown
5	Travel only, when necessary, policy
6	“All In” days & work at home options
7	Zoom / TEAMS options as alternative to face-to-face meetings
8	Carbon Footprint dashboard
9	Report presentation to management and staff
10	Q1 2024 - 2022 and 2023 review study



5 - Summary



Inform / Educate



Generate Awareness-The WHY?



Motivate



Change

Summary



Q&A Follows...



THANK YOU