LUPC Carbon Emissions Report 2020-21

Introduction

LUPC's carbon emissions have been calculated for the period 1st August 2020 – 31st July 2021. This first year of calculations is a preliminary exercise to finalise the methodologies and calculations required from the 2021-22 academic year onwards. The aims of calculating the carbon emissions figures for LUPC are to identify the areas where the company's environmental impact may be reduced and to guide the procurement of carbon offsetting services with the eventual target of reaching net zero emissions. Our next report covering 2021-22 emissions will provide our baseline figure.

The environmental impacts set out in this report are all measured in tCO_2e. This is the total of all greenhouse gas emissions represented as an impact equivalent to a number of tonnes of carbon dioxide, taking into account the varying impacts of different greenhouse gases such as methane and nitrogen oxides.

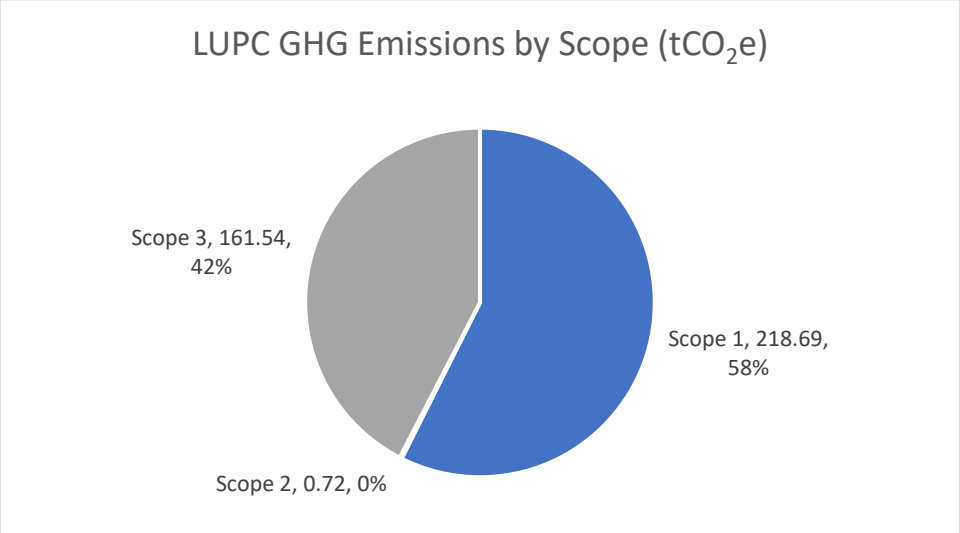
Emissions to be Reported

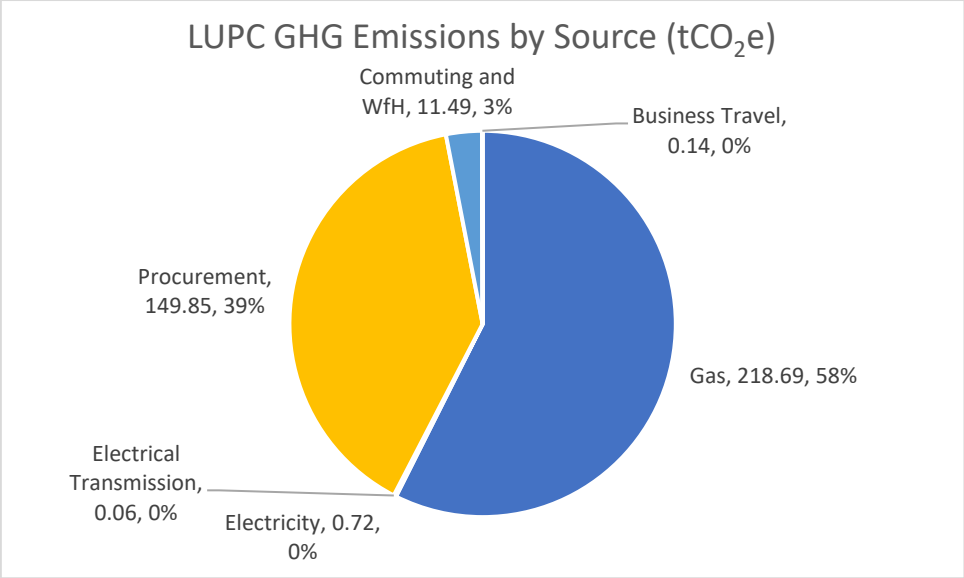
The total environmental impact is categorised under the following standard:

- Scope 1: Direct emissions (burning of fuels on site)
- Scope 2: Indirect emissions through purchased energy (electricity)
- Scope 3: Indirect emissions through goods and services

Emissions for 2020/21

LUPC has calculated a total of 380.95 tCO_2e greenhouse gas emissions for the year 2020-21. These have been calculated using carbon conversion factors released by DEFRA.





Emissions Scope	Emissions Source	Impact (tCO_2e)
Scope 1	Gas (Heating)	218.69
Scope 2	Electricity	0.72
Scope 3	Electrical Transmission and Distribution	0.06
	Procurement of Goods and Services	149.85
	Commuting and Working from Home	11.49
	Business Travel	0.14
Total		380.95

Comments, Limitations and Plans for Improvements

Scope 1

Mains gas, for the building heating, is supplied via the landlord to LUPC and 16 other businesses. The emissions are therefore calculated as a proportion of the total usage of the building, using the floor area of the LUPC office and the entire building.

Reductions in mains gas usage are unlikely to be adequately reflected in any reporting, due to the nature of their calculation. LUPC could reduce the usage of gas used directly by turning down the radiator thermostats, but will only be able to calculate usage as a proportion of the building's usage, of which LUPC represents only 1.27% by floor area. Indeed, 98.73% of the emissions figures reported would still remain even if LUPC actually used no gas at all.

Additionally, it is noted that the calculation of emissions using the floor plan of the building does not take into account the scale of usage of the other 16 businesses, such as shops on the ground floor with doors constantly open to the street.

Discussions will be taking place with the buildings landlords to see what can be done to reduce the impacts in this area, though not much reduction is likely until if/when LUPC moves to new premises in Spring 2024, when a premises that can be heated using renewable energy sources will be preferred.

Scope 2

LUPC already source only renewable energy for our building electricity, which will continue in the future.

Scope 3

Commuting emissions were calculated using mileage supplied by staff members, where personal transportation was used, and precise railway data (to the nearest 20m) where public transport was used. Working from Home emissions were calculated based on the methodology found in the 2020 Homeworking Emissions Whitepaper using the most conservative Base Case modelling. The emissions reported for the 2020-21 period are not representative of the usual environmental impact of LUPC's operations. This is primarily due to the COVID-19 pandemic, which necessitated almost complete working from home. Commuting emissions are likely to increase significantly in future reports, as will most other sources of emissions.

The calculation on Working from Home emissions can be improved by determining the power requirements of the exact devices used by staff, as well as by surveying staff with regards to their heating usage. A more accurate calculation of these emissions is likely to produce a much-reduced figure.

Emissions as a result of LUPC's procurement were calculated using the Higher Education Supply Chain Emissions Tool (HESCET) which calculates emissions based on categorised spend values. Each line item of LUPC's procurement was categorised using Proc HE coding to Level 2.

Summary

Due to the increase in prices of goods and services, emissions calculated from the procurement of goods and services is likely to increase for the next three years, where the change in prices will not be reflected in the carbon conversion factors published by DEFRA. This is due to the methodology behind calculating those conversion factors, which is a lengthy process requiring collection and analysis of global market data. The carbon conversion factors are always 3 years behind the most recent period, which leads to an increase in emissions figures which will not be representative of LUPC's activity.

Despite the limitations of the calculations of mains gas and goods & services emissions, LUPC is satisfied that the most appropriate methodologies are being used throughout the reporting of its environmental impact, and notes that any deviation from the correct impact will be an overcalculation, which is more appropriate than the opposite.

Don Bowman

Director, LUPC