Carbon Researchers
- Teachers and staff car emissions

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Summary

Our project was to estimate the carbon footprint from our staff's commute to and from school. We designed a survey to collect data about our staff's commute and used the data with the IRIS carbon calculator to estimate the resulting carbon footprint. About a third of our staff completed the survey and we found that collectively they emitted over 25 tonnes of carbon dioxide per year.

Research aims

In our initial background research, we found that "passenger cars are a major polluter, accounting for 60.7% of total CO_2 emissions from road transport in Europe"[1]. Some students in our carbon researchers group decided to look at how students come to school. However, we had noticed that quite a few teachers and staff were driving into school, and we wondered about their impact for our school's carbon footprint.

Experimental method

When we looked at the IRIS carbon calculator, we saw that there was a tab for cars that was described as "to calculate the emissions associated with staff travel on official business e.g. going to meetings"[2] and a tab for student's school runs, but no tab for teachers' commute. Therefore, we decided to investigate the carbon emissions from teachers and staffs commute, using the cars tab of the carbon calculator.

To do this, we sent out a form to all teachers and staff to find out information about their car (model, year, horsepower), their mileage per commute, and how many days per week they commuted to school. We analysed the data with an excel spreadsheet before entering it in the carbon calculator. The major analysis was to multiply the commute by 2 for a round trip and by the number of days for a school year (term time only) based on what they had indicated.

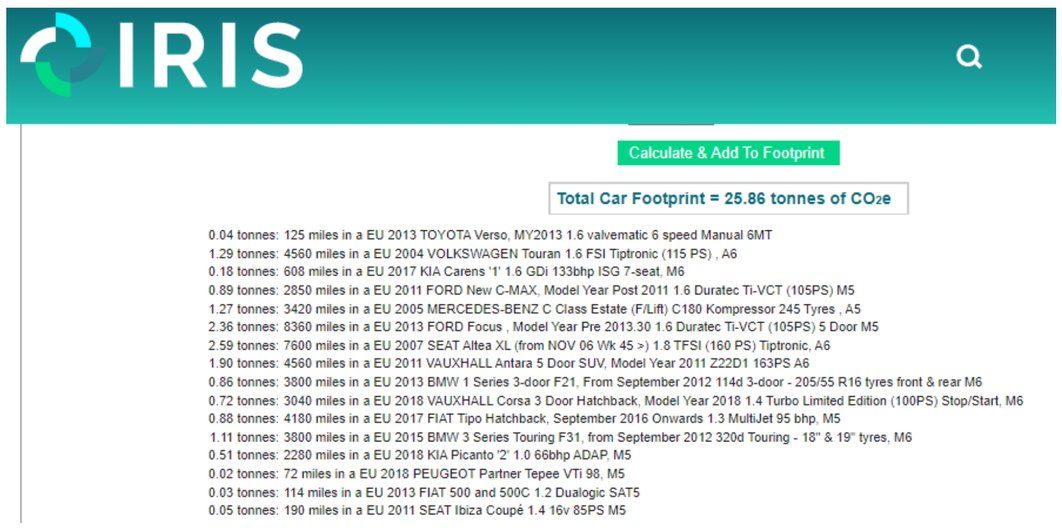

Figure 1 : Results of the responding teachers in the carbon calculator and overall usage of carbon in our school

Results

Thirty-eight staff members completed the survey out of 110 staff members in our school community, representing 35%. Four of them indicated never using a car or traveling by bus. They were removed from the analysis. The majority used their car every day. The shortest commute was 1 mile, and the longest commute was 22 miles. The result from the carbon calculator was that our staff's commute emitted 25.86 tonnes of CO_2 per school year (Figure 1).

Our data also indicated that the majority of our responding staff members own a petrol car with unleaded petrol (Figure 2). Less than 10 percent use super unleaded petrol. Furthermore, Figure 3 shows that about 75 percent of our responding staff members either thought their car had a high carbon footprint or did not really know, and approximately the same percentage would like to know their car's carbon footprint.

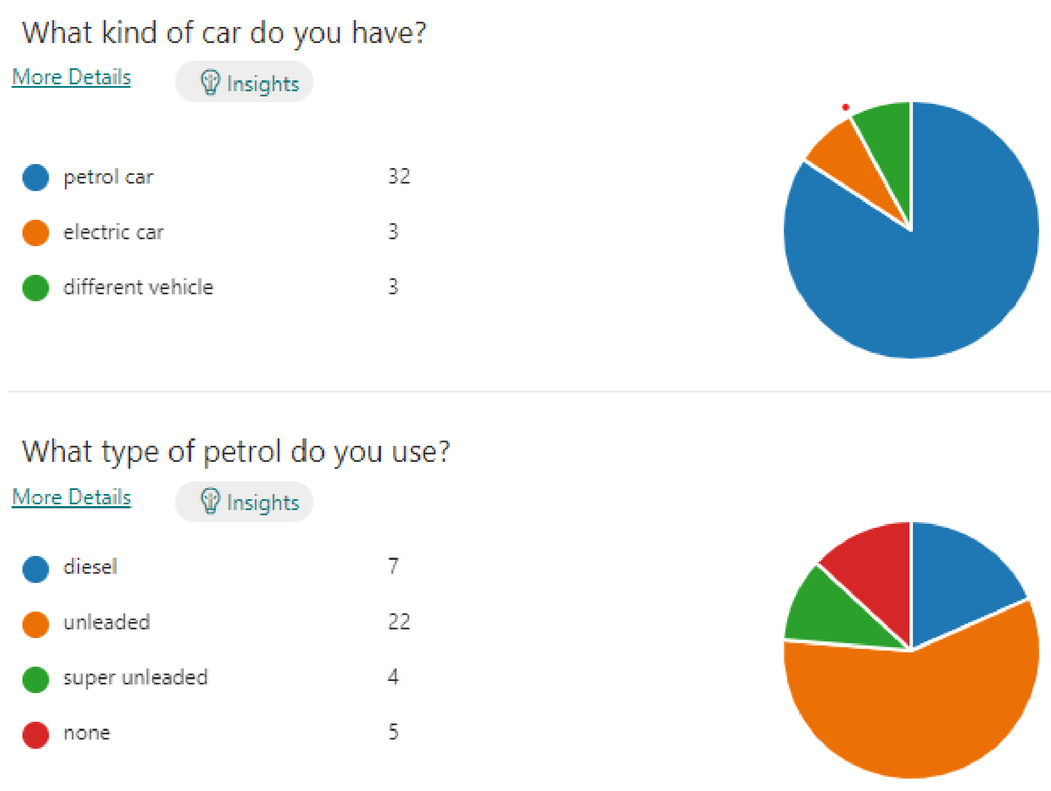

Figure 2: Types of cars and petrol used by responding staff members

Analysis & conclusions

After calculating how much carbon dioxide was emitted by our staff who completed the survey (a third of our school's community), we were surprised by its seemingly high value (26 tonnes). Our project is still very preliminary and our next steps include to research in the literature whether or not 26 tonnes of carbon dioxide emitted is a lot for a school, and to complete a new survey in the next academic year to obtain a better response rate. To increase the response rate, we would like to write a summary of our research in the school's staff newsletter, so that they would see a concrete result of their participation in the survey and hopefully would want to do more for our school's emissions next year by participating in the survey.

We also noticed that some staff members only commute for 1 mile, which is not much, but which adds up over a year. We believe that they could either walk or cycle. Therefore, we are considering designing a leaflet to encourage them to use their car less.

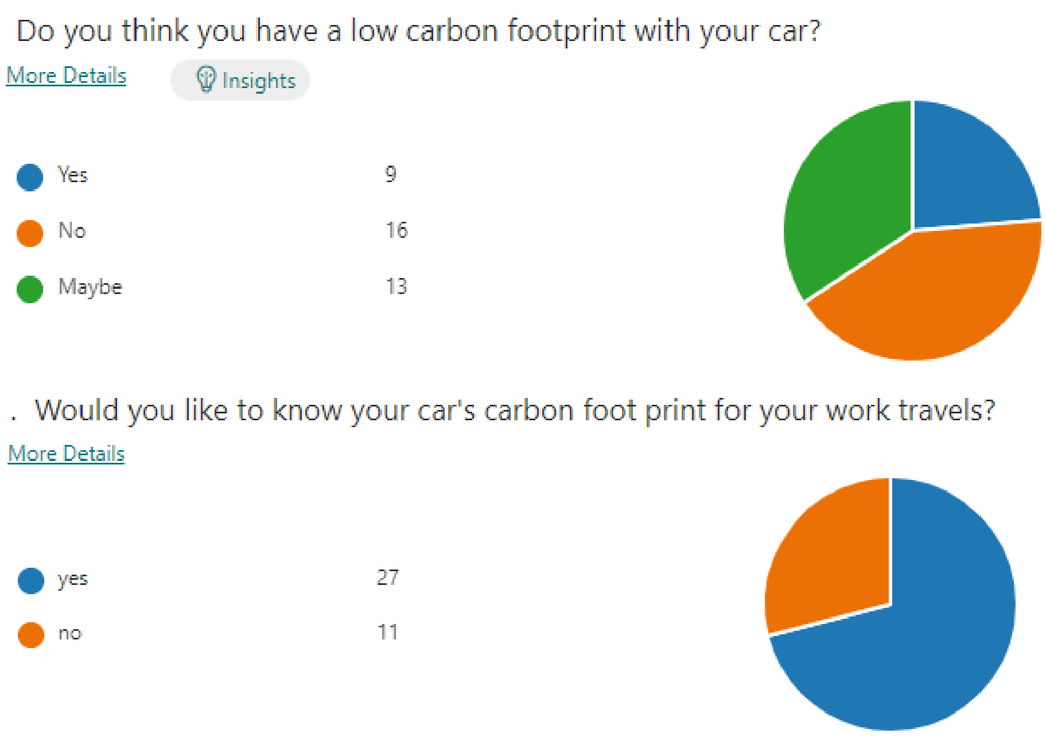

Figure 3: survey answers showing if the staff think they have a low carbon footprint and if they want to find out their carbon footprint.+

References

1. CO2 emissions from cars: facts and figures (infographics) | News | European Parliament (europa.eu)
2. Calculator - IRIS (researchinschools.org)