

Climate inventory

Uppsala University

Summary

A climate inventory has been conducted at Uppsala University to obtain an overall picture of the University's carbon dioxide emissions. Climate-impacting emissions in the form of carbon dioxide equivalents (CO_{2e}) have been calculated for the University's various activities. This has been done by means of an environmental spend analysis based on the financial income statement, and life cycle analysis (LCA) calculations for energy use, business travel, computers and monitors.

The climate inventory includes the parts of Uppsala University's value chain that the University pays for in one way or another and that are therefore taken up in the income statement. This means that commuting by employees and students' emissions due to studying at the University are not included. The calculations also disregard salaries for employees and financial assets such as Uppsala University Foundations Management of Estates and Funds.

Detailed calculations using the LCA method have been conducted in three areas: *business travel*, *energy* and *computers and monitors*. Since good data was available for business travel, a comparison has also been made between emissions levels in 2019 and 2020. This comparison revealed a 79% reduction of emissions from business travel between 2019 and 2020, probably primarily because of COVID-19.

The results indicate that the most climate-impacting emissions come from *business travel*, *buildings* and *purchases of goods*. These are followed by *staff* and *research and consulting services*.

CONCLUSIONS AND WAY FORWARD

The climate inventory shows that the categories that account for the largest shares of emissions are *business travel*, *buildings* and *purchases of goods*. Business travel accounts for 36% of emissions while buildings account for 33%.

Regarding business travel specifically, air travel is responsible for the largest emissions. Considering the reduction of emissions between 2019 and 2020 associated with COVID-19, there is great potential to cut emissions from business travel after the pandemic as well. This could be done by looking at alternative travel options such as rail within Europe or by promoting the development of digital meetings and conferences. Emissions from business travel involving road vehicles constitute a small proportion of total emissions, but it may still be of interest to take a closer look at the University's own vehicle fleet. The University's vehicle fleet consists mainly of vehicles based on fossil fuels, while a relatively small proportion of vehicles run on biofuels and other fossil-free fuels. There is potential here to reduce emissions, for example by switching to a completely fossil-free vehicle fleet.

With regard to buildings, it is above all energy use in the University's own and rented premises that leads to the largest emissions. Uppsala University needs extensive premises for its educational and research activities and currently rents approximately 399,300 square metres of premises, which use a large amount of energy. The University is working actively with landlords to increase energy efficiency and reduce emissions from energy use but there is still potential for improvement here, since reducing electricity consumption is one of the most effective strategies for reducing emissions at societal level.

Future premises needs can be reviewed, so as to optimise the use of premises and prevent them from being empty for as much of the day and the year as is currently the case. Here, strategies for online teaching come into play, as well as sharing premises with other parties, coworking, etc.

With regard to purchases of goods, it may be of interest to go into this emissions category in greater depth and look more closely at which goods generate most emissions. The goods that are purchased in the largest volumes should be examined to ensure that good alternatives are being used. Moreover, other solutions could perhaps help to reduce volumes. Perhaps some products could be reused more extensively or shared between departments at the University.

Waste management figures only marginally in the reported emissions, since it was not possible to extract the actual emissions from both management and transport of waste from the income statement at account level. This calculation could be improved by taking into account the size of emissions generated by waste transport and the proportion of waste that goes to recycling and energy recovery. This would also provide better data for identifying future improvements in waste management and possible ways to reduce waste.