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Carbon footprint and reduction initiatives in a French geosciences laboratory

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The impact of our productivist societies on our environment is now clearly demonstrated. As higher education and research staff working at the interface between science and society, we are aware of the need for an environmental transition based on the reduction of greenhouse gas emissions and environmental impacts. As a research lab, we are committed to participating in limiting the increase in the Earth's average temperature. This objective requires achieving carbon neutrality by 2050.

From 2021 the Sustainable Development & Social Responsibility working group of the research laboratory “Géosciences Rennes” has been created (i) to determine the C footprint by using GES1.5 (Research Consortium labo1.5), (ii) to communicate and raising staff awareness of the climate emergency, (iii) to propose indicators and action to reduce the carbon footprint, (iv) to convey a message to the supervisory authorities to work on the various reduction items.

The calculated C footprint includes heating of buildings, electricity, purchase of goods and services, scientific missions and commutes. Between 2019 and 2022, the C footprint ranges from 520 to 879 T CO₂eq, which corresponds to 3.6 and 5.8 T CO₂eq/person. The purchase of goods and services was the main item, representing 48 ± 7 % of the C footprint. Scientific missions represented 16 ± 8 % of the C footprint. Sanitary restrictions due to the covid pandemic induced a drastic decrease of the C footprint of scientific missions from 220 T CO₂eq in 2019 to 43 T CO₂eq in 2020.

Thanks to the GES1.5 toolkit, it is possible to identify the main emission items and to design and quantify specific actions to collectively reduce the C footprint. These data were the corner stone of collaborative workshops to invent our low-carbon laboratory. This presentation will feature the data and the process of collective decision in “Géosciences Rennes” laboratory. These results highlight a need of rethinking the way we do science and that this should be accompanied by considerations of equity. The experience of this laboratory shows that ownership of the issues takes time, which we no longer have. It emphasizes the need to go further than awareness measures.