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From carbon footprint to transition plan in a French geosciences laboratory

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From carbon footprint to transition plan in a French geosciences laboratory

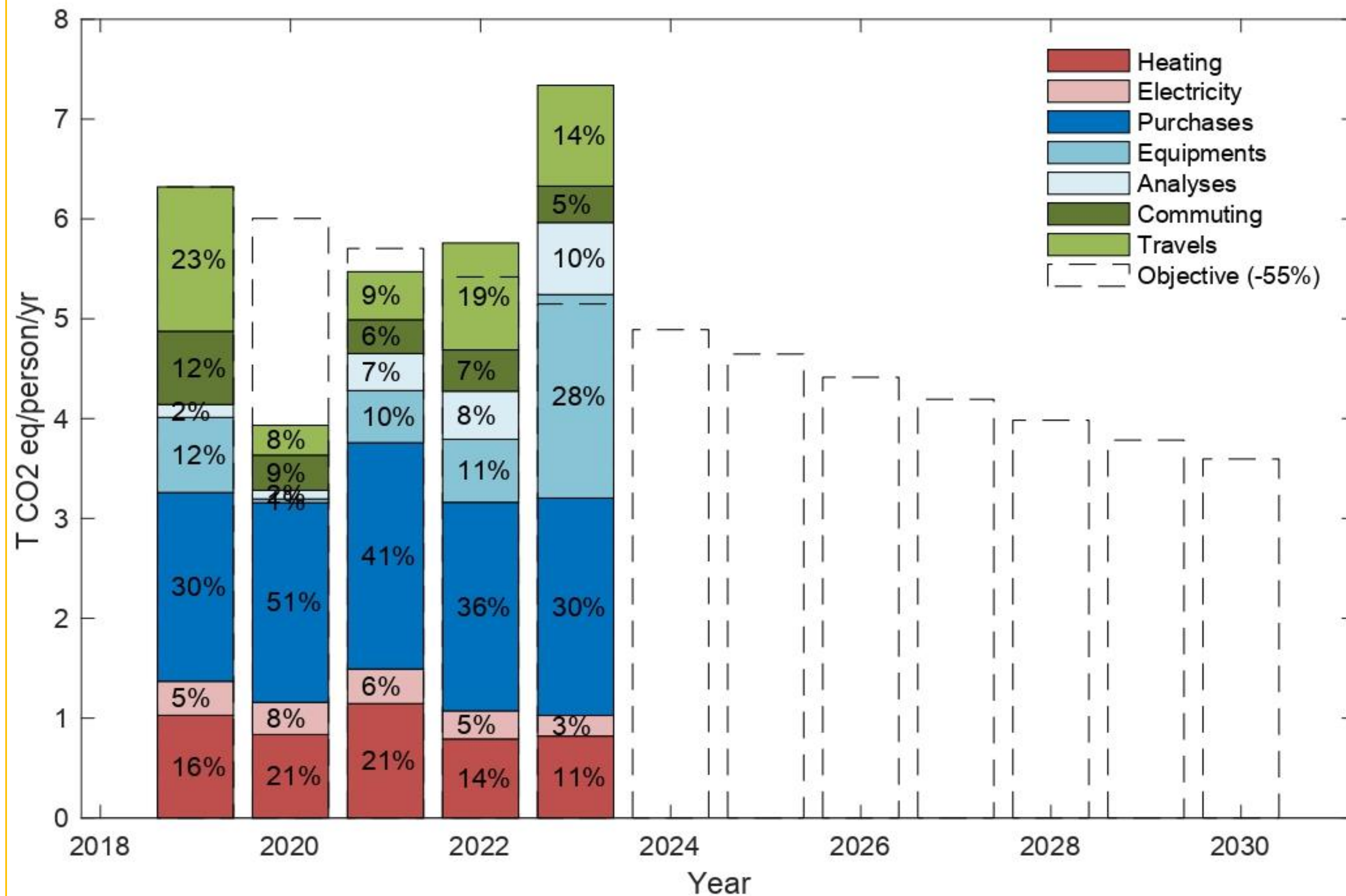
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Context. Géosciences Rennes is a laboratory of about 150 people conducting research in the fields of tectonics, sedimentology, hydrology and environmental sciences. From 2021, the Sustainable Development & Social Responsibility working group has determined the C footprint by using GES1.5 (Research Consortium labo1.5). This tool makes it possible to identify the main emission items to design and quantify specific actions to propose a transition plan to reduce the C footprint up to 2030.

Temporal evolution of the C footprint 2019-2023



861 ± 217 T eCO₂ / year

5.8 ± 1.2 T eCO₂ / pers / year

2019-2023 C footprint:

purchases (56 ± 8 %) > buildings (22 ± 6%) > travels (14 ± 6%) > commuting (8 ± 3%).

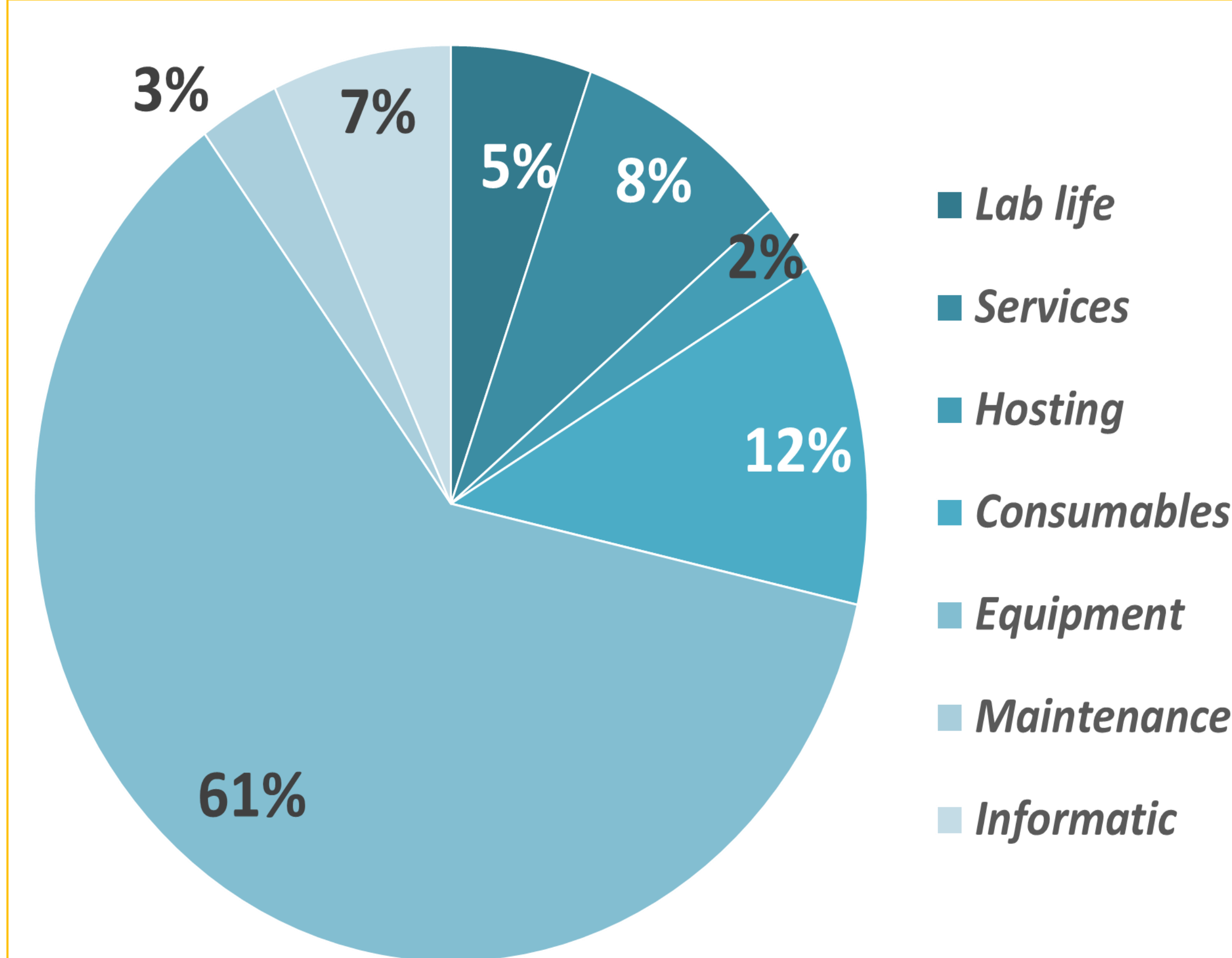
Covid pandemy:

-41% compared to 2019
-81% for travels and -54% for purchases.

2023 far away from the objective:

+19% compared to 2019
-28% for travels, but +83% for purchases

Typology of purchases: high increase in 2023 (compared to 2019)



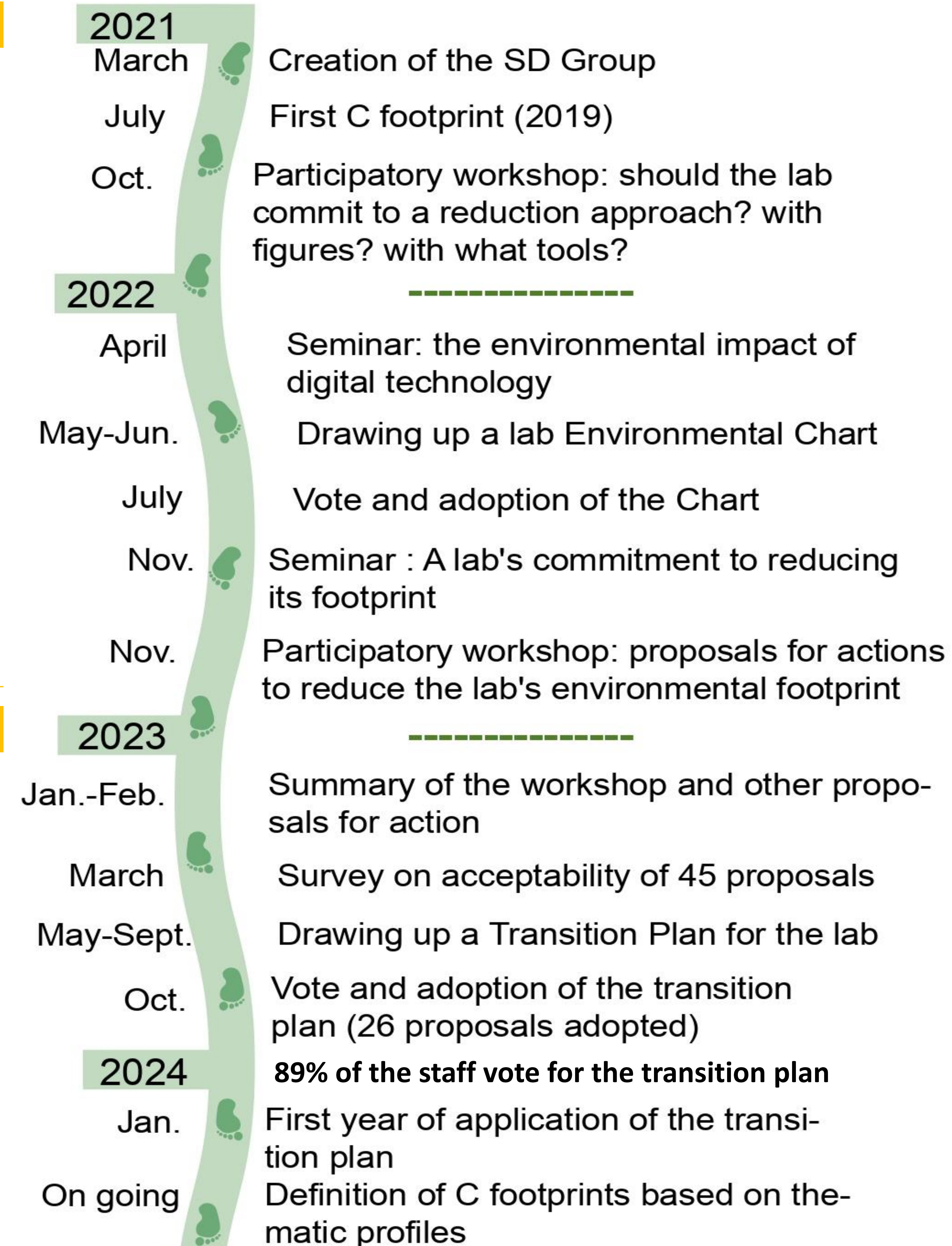
44% of the purchases of the lab passing through the 2 supervisory bodies (Univ Rennes and CNRS) and **56%** of the purchases passing through our OSUR observatory (mainly lab equipments and analytical platforms).

> Need to pay **close attention to the lab's scope in order to take into account all the lab's purchases.**

Main item: Lab equipment 61%, Consumables for laboratory (chemicals) 12 %

Efficient mitigation strategies must deal with laboratory equipment to induce a significant decrease in the total C footprint

> Share lab equipment
> Increase in their lifetime along with an increase of repairs and maintenance



Visit the website of the SD&SR group of the lab



Take-home messages. Our experience shows that ownerships of the issues takes time, which we no longer have. It emphasizes the need to go further than awareness measures. Achieving the European Union targets will probably require transforming the way we do research to adapt to environmental constraints our societies are facing. In 2024, work is on going on downscaling the C footprint from the laboratory level to more precise thematic profiles level in order to design adapted reduction strategy.