

GLEC's recommendations for measures to reduce the carbon footprint of LOCEAN

Preamble of the LOCEAN Laboratory Council

Groupe LOCEAN Empreinte Carbone (GLEC), mandated by the Laboratory Council (CL), has developed a paper that identifies three main proposals to reduce the footprint carbon in the laboratory. The CL dedicated one of its meetings to the review of the document, and to obtaining clarification from GLEC representatives and laboratory management. After clarification of some minor points, the CL decided by a very large majority (13 votes in favour, 2 abstentions) to support the text, and the modalities of its vote, such as described in the final document below. The CL would like to emphasize that the proposals are intended to encourage, in a progressive and benevolent manner, practices that will place the laboratory on a trajectory compatible with the Paris Agreement, and that he was convinced by the direction that the spirit of application of the text will be to complicate as little as possible the work of the members of the LOCEAN (including annual review of proposals and the possibility to discuss regularly with management). The CL invites members of the laboratory to read carefully the proposals and their specificities, designed to preserve our core business.*

** GLEC was composed of Frédéric Boller, Jean-Benoit Charrassin, Clément Haeck, Nicolas Lebas, Juliette Mignot, Lucile Ricard, Jérôme Vialard.*

The CLIMATIONS group of LOCEAN has estimated the carbon footprint of LOCEAN for 2018 at 1750 teCO₂ (9.5 tCO₂/pers (9.5 tCO₂/pers) for professional activities, compared to 12tCO₂/pers for the personal and professional total at the national level). Business travel (missions) accounts for nearly half of these emissions. At the same time, France is committed to the Paris Agreement, which aims to reduce global emissions by 50% by 2030 in order to keep global warming below 2°C. At the end of 2019, CLIMATIONS has formulated proposals to put the laboratory on this trajectory. At the request of the Laboratory Council, the LOCEAN management mandated, in February 2020, 7 people from the laboratory ("Groupe LOCEAN Empreinte Carbone" or GLEC) to make an independent review of these proposals and to suggest a process to put them in place taking into account the opinions of the laboratory members. The result of this review is as follows:

- A first round of proposals concerns better monitoring of the laboratory's carbon footprint, an incentive to use eco-friendly caterers, measures to save paper, better information on emissions related to computer equipment. GLEC recommends that the laboratory management adopts these measures directly, after discussion and amendment by the Enlarged Management Committee (CDE). The operational implementation of these proposals and the tools to implement them (e.g. site for monitoring the individual carbon

footprint of travel, carbon footprint box for purchases) will be provided by the laboratory's governance.

- A second set of proposals concerns a broader framework than the laboratory (energy performance of buildings, carbon consumption of research vessels, computing center, etc.). The GLEC recommends that these proposals be the subject of CLIMACTIONS work with the competent authorities concerned.
- The third set of measures concerns CO₂ emissions related to business travel. In view of the new issues that these measures raise for the life of the laboratory, GLEC recommends that the laboratory be consulted by a vote on 3 points :
 1. The principle of the laboratory's commitment to a reduction in the emissions of GES following a trajectory compatible with the Paris Agreements
 2. A proposal to promote rail travel
 3. A proposal to reduce air travel

The first point is a general principle that aims to provide a framework for all measures. The GLEC suggests that the following two be implemented, for example by amending the internal regulations, only in the event of a qualified majority (2/3 of the votes cast, voting procedures below), in order to implement only those proposals that would gain broad support.

As perceptions of the carbon footprint issue are rapidly changing, the laboratory governance may propose to expand or reduce some of the measures by the end of the current management's term, with further consultation with the laboratory if necessary. In general, the GLEC recommends that the eventual implementation by management of the measures to limit the environmental footprint should be done in the collegiality that characterizes the governance of the laboratory (role of CDE and LC, dialogue within the teams).

Proposed voting modalities

- Each proposed measure is voted on independently of the others.
- Voting is electronic and anonymous (directors: F. Boller and a second person outside the laboratory).
- 3 answers are possible for each measure
 - a. For,
 - b. Against,
 - c. Not stated
- Electoral list: permanent staff of the LOCEAN and staff of the OSU EcceTerra and IPSL hosted at the LOCEAN; contractual staff present for at least 6 months at the LOCEAN on the date of the vote, including IPSL doctoral students hosted at the LOCEAN.
- This document will be distributed and the vote will take place over two days on a date that will allow the laboratory time to discuss the proposed measures beforehand. The participation at the end of the first day will be communicated to the whole laboratory.

- The GLEC will be able to answer questions on the organization of the vote during this period via Rocketchat and/or by e-mail.

Propositions

A) General question of principle, aimed at assessing the willingness of LOCEAN personnel to commit to reducing their GHG emissions.

Proposition 1: LOCEAN is committed to the principle of reducing its GHG emissions along the path proposed by the Paris Agreements (i.e. 50% reduction by 2030).

- For
- Against
- Not stated

B) Measures to Reduce Mission-Related Emissions

Air travel accounts for 97% of the carbon footprint related to travel in LOCEAN's 2018 carbon footprint, which in turn accounts for nearly half of the laboratory's carbon emissions.

1. Promoting train travel

Context:

- A round trip Paris-Marseille by train emits about 30 kgCO₂e and 410 kgCO₂e by plane.
- As of January 1, 2021, the government will ban air travel for all air services and public bodies when the outward journey is less than 4 hours by train (6 hours return if return during the day). A similar rule (a little less strict) already exists at the CNRS.
- The GLEC proposes to retain the proposal of CLIMACTIONS to go a little more far away, by not authorizing air travel for a journey of less than 5 hours by train, to limit the use of air travel on the Paris-Toulouse and Paris-Brest routes in particular. GLEC notes that many arrangements are possible to accompany this measure - for example, the use of 1st class, as well as cabs when the train schedule does not allow the use of public transportation.

Proposition 2: LOCEAN members will have to take the train for any outward journey lasting less than 5 hours (by train).

- For
- Against
- Not stated

2. Management of air travel

Context:

Medium and long-haul flights represent 80% of the LOCEAN's "displacement" footprint. GLEC supports CLIMACTION's proposal for a 50% reduction of the laboratory's air travel emissions by 2030. The implementation of individual scalable quotas, presented below, will, in principle,

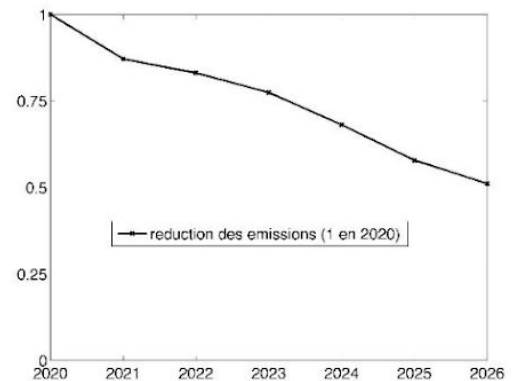
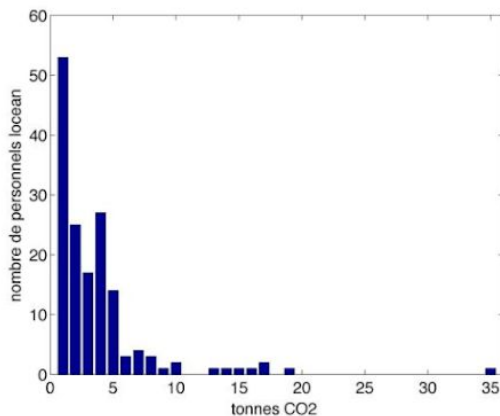
enable this objective to be achieved (see Table 1 and Figure below for a simulation). The main objective of this measure is to encourage LOCEAN staff to carefully select their participation in international conferences, and to optimize their travel (e.g. combining a conference and an international panel). GLEC recommends exemptions for specific laboratory missions (offshore campaigns, field work, long missions and teaching activities, especially in the South), as well as a bonus for young researchers (details below).

As an indication, a round trip Paris-New-York represents a footprint of about 2.4 tCO₂e. A round trip from Paris to Vienna in Austria emits the equivalent of 0.7 tCO₂e.

Table 1: Proposed reduction in individual CO₂ quotas for LOCEAN agent flights:

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
10 t	8 t	6 t	4 t	3 t	2.5 t				

NB: this proposition aims at a 50% reduction in 2026, which is a little faster than the trajectory of the Paris Agreement, as it does not take into account the exemptions provided for (see proposition 3 below). The LC points out that a 50% reduction in air emissions, which are the most directly actionable by the laboratory, would result in an 25% reduction in LOCEAN emissions. This trajectory is to be revised annually if necessary.



Left: distribution of individual issues for LOCEAN missions in 2018. Individuals who have not carried out a mission are not counted. 5% (respectively 14%) of the personnel account for 30% (respectively 50%) of the carbon footprint of the lab's business travel.

Right: Anticipated effects of the proposal to regulate business travel. The curve represents the anticipated evolution of the total emissions of the laboratory induced by business travel based on the distribution of individual footprints observed in 2018 (see Figure on the left). The scale of

this figure is normalized to the 2020 value. A 50% reduction would theoretically be achieved in 2026 but the calculation does not take into account the exemptions proposed below.

Proposition 3: Each LOCEAN agent will be allocated an annual carbon emissions quota for his or her missions, according to the following rules :

- Individual emission quota related to the missions according to the table above
- These quotas are non-transferable.
- Quotas not used in a given year are transferable over the following years within the limit of the individual quota in Table 1 + 4 tonnes.
- Air travel for the following activities is out of quota (i.e. that they are not included in the calculation of the individual carbon balance):
 - Trips linked to participation in a campaign at sea
 - Travel for field missions or teaching activities
 - Travel for missions of 1 month or more in duration
- Non-permanent staff (doctoral students, post-docs, fixed-term contracts) benefit from an international flight outside the quota every two years.
- The monitoring of each agent's individual quota is done via ad hoc software, without the intervention of a third party. The agent individually informs his destination and mode of transport, and the software calculates and provides him with his balance sheet. The agent's manager, in addition to the agent, will simply be alerted if the quota is exceeded and will switch the request to the management.
- The evolution of LOCEAN's GHG emissions is examined in LC once a year and the details of the measures (quotas, application rules) can be re-evaluated (quotas upwards if major problems arise but downwards if the measures prove insufficient) on the proposal of CL or management.

- For
- Against
- Not stated

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