



IESF CONVENTION ON KNOWLEDGE

Environmental assessment

Life cycle assessment (LCA) – Summary

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2025 – 2026

We thank the steering committee of the IESF Convention on
Knowledge for reviewing the report.

This document is the English translation of the summary of the environmental assessment of the IESF Convention on Knowledge. The [full report](#), in French, details the method, the inventories and all the results. The assessment follows the principles of the ISO 14040 and ISO 14044 standards, with the [Environmental Footprint 3.1](#) impact method – EF 3.1 – and the [ecoinvent 3.11](#) and [Agribalyse 3.2](#) databases. It was carried out with [brightway 2.5](#) and its graphical interface [activity browser](#). The data and notebooks published with this document reproduce all its figures and numbers.

Note on the use of generative AI: several models of [claude code](#) were used at various stages, notably to generate the python code that processes the data – including the [RailTrace](#) and [AgribalyseAutoderive](#) tools –, to lay out the report with [typst](#), and to translate this summary. The analysis and interpretation of the results are the human work of the authors, who take full responsibility for them.



Summary

The [IESF Convention on Knowledge](#) was a deliberative process of four in-person working weekends that brought together about fifty PhD holders and doctoral students, complemented by online work between the weekends and by the work of a steering committee. The steering committee started organising the event one year before the weekends, which took place between September 2025 and January 2026. This study quantifies the environmental footprint of the convention, from the start of the steering committee's work, including the training of the facilitators, up to the last weekend, which produced the [report of the convention](#). The restitution phase, after the last weekend, is outside the scope. The study uses an attributional life cycle assessment (LCA) approach, which accounts for material and energy flows from extraction to waste production or recycling, and assesses several impact categories.

With a deterministic approach, without uncertainties, the carbon footprint of the convention amounts to 11 237 kg CO₂ eq, or about 225 kg CO₂ eq per participant. When uncertainties are taken into account, the Monte Carlo simulation places the median at 10 800 kg CO₂ eq, with a 90 % confidence interval from 9 532 to 12 386. Water use amounts to 7 688 m³ world equivalent deprived, or 154 m³ per participant. With uncertainties, the Monte Carlo simulation places the median at 8 238 m³, with a 90 % confidence interval from 6 588 to 10 941.

With the characterisation factors of this study, the 225 kg CO₂ eq per person are equivalent to 916 km driven alone by car, or 11 939 km by high-speed train (TGV). In other words, the whole convention costs about one Paris–Marseille trip by car per participant. The water result needs care. The water impact indicator of [EF 3.1](#) (AWARE method) assesses the net amount of water actually consumed, evaporated or embedded in products, and weights it by the scarcity of the resource in the basin where it is withdrawn. A resident of France uses about 53 m³ of drinking water per year: the 154 m³ equivalent per participant are thus of the order of three years of this domestic use. This water is not consumed only during the convention but also upstream, in production chains. [Figure 1](#) summarises the results and the breakdown by component for these two impact categories.

Transport is the largest contributor in fifteen of the sixteen impact categories. It accounts, for example, for 68 % of climate change, 86 % of fossil energy use and 91 % of ionising radiation. The other components change rank depending on the impact category. As often in LCA, focusing on climate change alone is of little relevance: accommodation accounts for 16 % of climate change but 30 % of water use, and food for 13 % of climate change but 61 % of ozone depletion. Digital use is marginal in all impact categories except mineral resources, where it reaches 20 %.

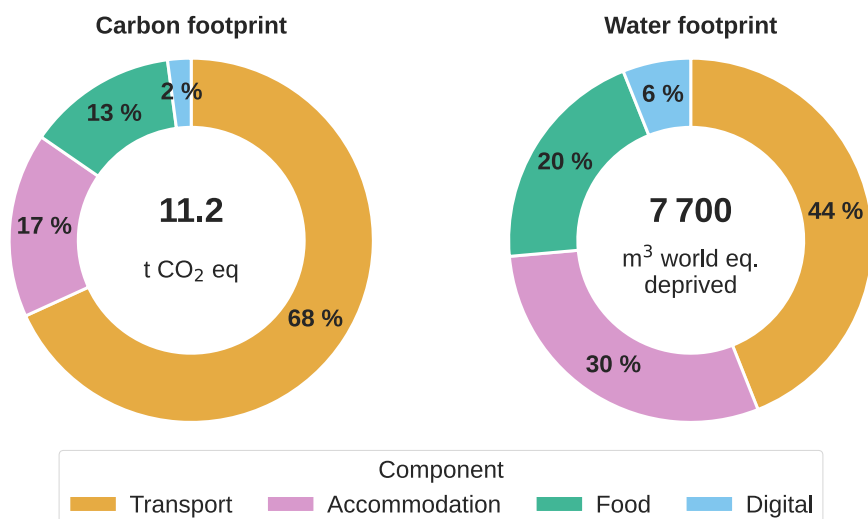


Figure 1. Totals of the convention and breakdown by component, for the carbon footprint and the water footprint. Conservative scenario for food. Percentages are rounded to the unit.

Online work between the weekends accounts for only 0.5 % of the carbon footprint, while each in-person weekend accounts for 22 to 26 %. From the outset, the steering committee sought to minimise the environmental impacts of the convention: train was the default mode for everyone, with a few exceptions allowed, and all the food served was vegetarian. The results presented here are therefore probably close to the best achievable in France today, given the practical needs of any organisation. There can be legitimate reasons not to take the train, and four host venues spread travel times between participants more fairly than a single venue in Paris would have, while anchoring the event in a variety of territories. Scenarios lifting these constraints were nevertheless assessed: holding the four weekends in Fontainebleau would have reduced the carbon footprint by 18 %, replacing all avoidable car trips by train by 23 %, and combining both by 34 % – Section 6.6 of the full report.

With the same organisational constraints, the remaining room for improvement is narrow; it is detailed in Section 8 of the full report. The first lever, the number of in-person weekends, cannot in practice be used without undermining the deliberative approach. What remains is reducing the use of individual cars, which accounts for 28 % of the total carbon footprint (for few people), adding a water-saving criterion to the choice of host venues and, to a lesser extent, the choice of food products.

Three of the sixteen impact categories, the toxicity ones, cannot be reliably interpreted as they stand – Section 6.3 of the full report. The uncertainty propagation for accommodation also shows an anomaly in four categories – Section 6.2.