Paradise City Carbon Footprint 2023

January 2024

south pole The Climate Company

Overall Carbon Footprint Results

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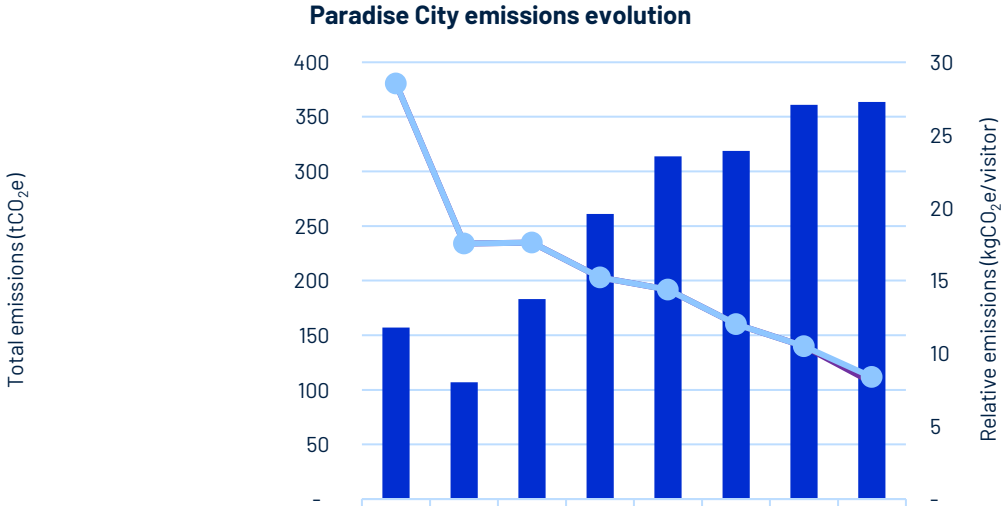
Overall, the CO_2e emissions have remained quite **stable** between 2022 and 2023 with total emissions amounting to **364 tCO_2e in 2023.** The decrease in emissions of all categories was partly compensated by an increase in emissions from commuting (+23%) in reason of a larger number of visitors (+32% visitors) and of campers (+25% campers), and in emissions from the waste generation (+53%). The main categories contributing to the overall emissions are linked to **mobility**: the commuting of the staff and visitors (48%), the suppliers transport (36%) and the artists transportation (9%).

This year, Paradise City hosted two new events (Deloitte event and Bewonersdag). The setting and infrastructure of the festival for those two events were the same as the usual festival but additional festival days were foreseen for those events. If we consider last year's scope, without the events, the relative emissions per visitor decreased to **8,37 $kgCO_2e$/visitor in 2023** (-20% compared to 2022). If we include the visitors of the events, the relative emissions per visitor amounted to **8 $kgCO_2e$/visitor in 2023.**

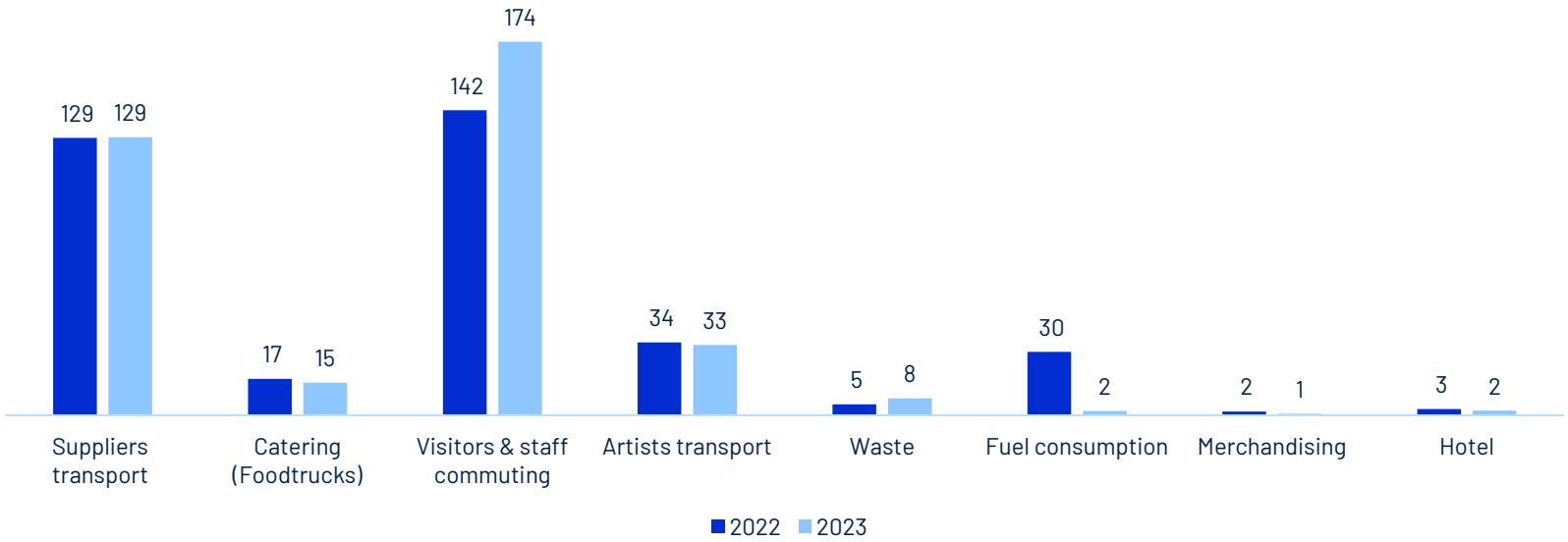


	2015	2016	2017	2018	2019	2021	2022	2023
Total carbon footprint Upstream + direct emissions tCO2e	157	107	183	261	314	319	361	364
Relative carbon footprint Upstream + direct emissions / visitor	28,5	17,5	17,6	15,2	14,4	12,0	10,5	8,0
Relative carbon footprint Upstream + direct emissions / visitor without events	28,5	17,5	17,6	15,2	14,4	12,0	10,5	8,4

Carbon Footprint Evolution

The emissions have **increased by 0,7%** between 2022 and 2023. This can be explained by an increase in the emissions linked to the **waste (+53%)** and the emissions linked to the **visitors and staff commuting (+23%).** This is partly linked to the increase in the **number of visitors**. This emissions increase was compensated by a decrease of emissions for the other categories, mainly the emissions related to the **energy consumption** which decreased by **93%** between 2022 and 2023, thanks to the exclusive usage of green electricity and hydrotreated vegetable oil (HVO).

Emissions evolution between 2022 and 2023 per source (tCO_2e)



Carbon Footprint Results per Category*

* Including the festival and the events

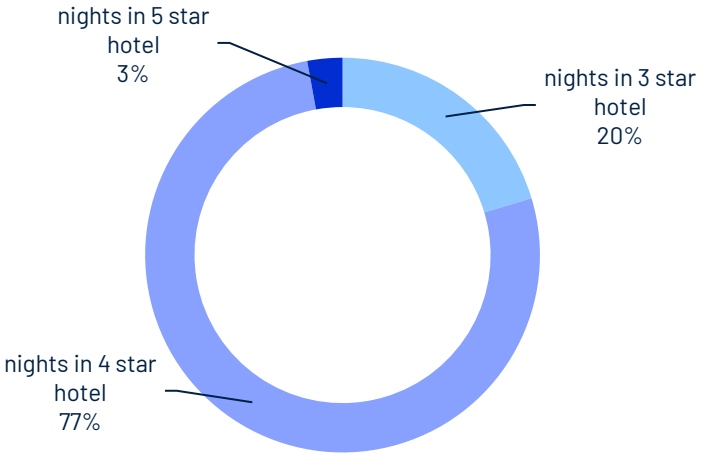
Hotel Carbon Footprint Results

2 tCO_2e – 0,6% of the total festival emissions

The emissions linked to the hotel stays have **decreased by 26%** between 2022 and 2023. This is explained by, on one hand, a decrease in the emission factors related to hotel nights and, on the other hand, a decrease in the number of artists and staff members staying at a 4 stars hotel by 28% in favor of 3 stars hotel. Besides, the number of artists and staff members to be housed has decreased by 6% compared with last year.

To further decrease the emissions linked to the hotel stays, **nights in 3 stars hotels** should be preferred to nights in 4 and 5 stars hotels. This would allow the carbon footprint from hotel nights to decrease by a further 30%.

Breakdown of hotel stays GHG emissions (tCO_2e)



Merchandising Carbon Footprint Results

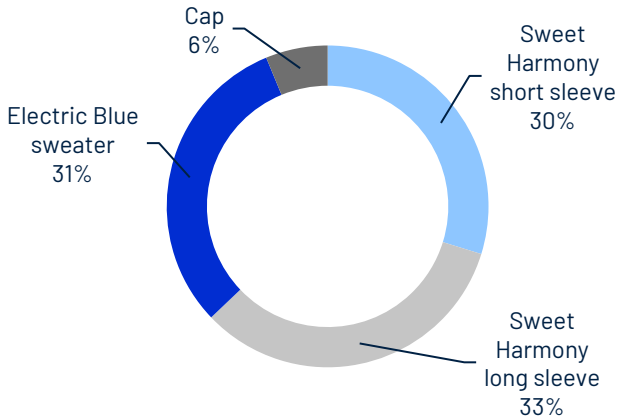
0,7 tCO_2e – 0,2% of the total festival emissions

The emissions linked to the merchandising **decreased by 60%** between 2022 and 2023, driven by a decrease of the total weight of products sold (-61%). While 932 products were sold in 2022, this amounted to 430 in 2023.

All products sold in the 2023 edition of the festival are made of organic cotton while in 2022 there was still a small amount of polyester used.

To further decrease the emissions related to the merchandising, products made of **recycled cotton** should be preferred to products made of organic cotton since it is less carbon intensive. Recycled cotton has a 11% lower carbon footprint per kg of fiber than organic cotton while this latter is 14% less GHG emissions intensive than 1 kg of conventional cotton.

Breakdown of merchandising GHG emissions per product type (%tCO_2e)

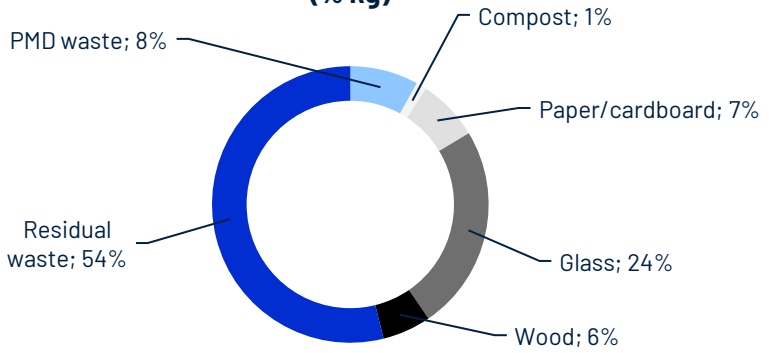


Waste Carbon Footprint Results

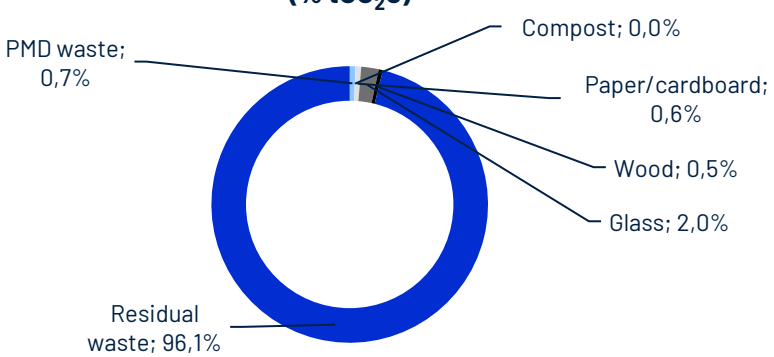
7,8 tCO_2e – 2,1% of the total festival emissions

The emissions linked to waste **increased by 53%** between 2022 and 2023. This can be explained by an increase in the overall quantity of waste production by 24% between 2022 and 2023, due to an increase in the residual, paper/cardboard, glass and wood waste quantities, partly linked to an increase in the number of visitors.
In order to decrease the emissions linked to this category, Paradise City should consider **reusing products** whenever possible, by buying recycled items for example or products with an **environmental label** (such as the EU Ecolabel) and with **a long lifespan**. It should try to send **food waste to compost**. A **good communication** to the staff, foodtrucks and participants of the festival on the recycling initiatives and waste management systems is crucial. The festival could also introduce **a garbage fee** that campers would pay at the beginning and get back at the end of the festival when they have cleaned up their campsite and returned their filled trash bags. The ultimate goal is to avoid waste going to landfill and small amounts going to incineration and energy recovery.

Breakdown of waste production per source (% kg)



Breakdown of waste emissions (% tCO_2e)



Artists Mobility Carbon Footprint Results

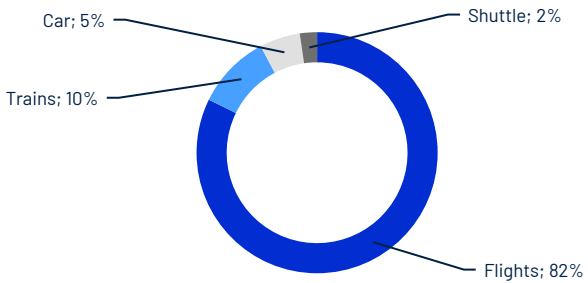
33 tCO_2e – 9% of the total festival emissions

The emissions linked to the artists' mobility have **decreased by 3%** in 2023 compared to the previous year with a decrease of emissions linked to flights (-2%), cars (-6%) and shuttle (-73%). Emissions linked to the train are the only ones that increased (+2%), with longer distances travelled by train (+13%).

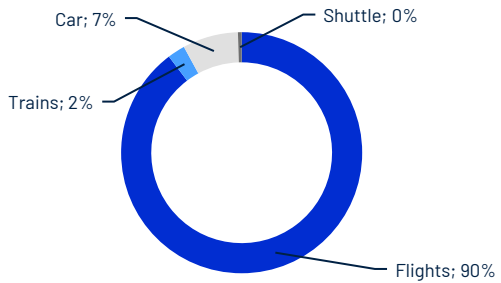
Information on the class for the flights could not be retrieved, so the assumption was made that all air travels were made in economy class which can explain the slight decrease in emissions linked to the flights this year. To further decrease emissions, artists should be encouraged to come to the festival **by train** rather than by plane which should be considered as last resort when all other options have been considered. If taking the plane is inevitable, air travel in **economy class** rather than in business class should be preferred. Indeed, a medium haul flight (between 460 and 3700km) in business class has 50% more impact in terms of emissions than the same flight in economy class. Moreover, hiring more **local artists** could be also a way to reduce emissions.

On the other hand, the lower emissions from cars are fully related to the lower carbon intensity of an average car. Finally, emissions relative to the shuttle use were smaller this year since only electrical cars and busses were used, while diesel vehicles were used last year.

Breakdown of distance travelled per transport mode (% Tdkm)



Breakdown of emissions per transport mode (% tCO_2e)



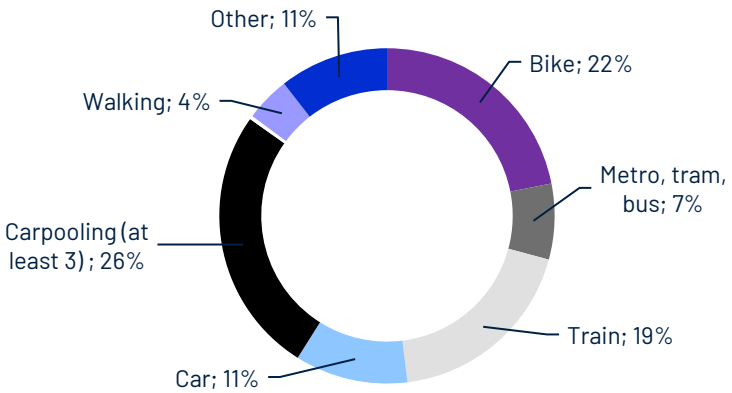
Commuting Carbon Footprint Results (1/2)

174 tCO_2e – 47,8% of the total festival emissions

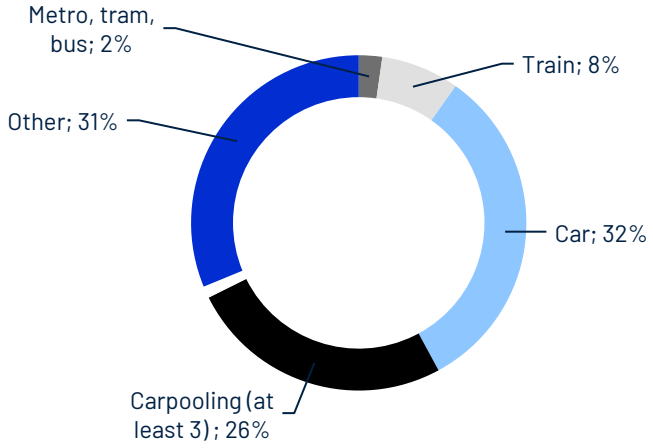
The emissions related to commuting have **increased by 23%** between 2022 and 2023 in reason of an increase in the number of visitors by 32% and in the number of campers by 25%.

Carpooling remains the most used transportation mode to travel to the festival (26% of the overall distances travelled). The train and the bike represent also a high share of the distance travelled but have lower emissions per km travelled than cars (bike are considered as emissions free). The car was less used in 2023 (from 13% of the distances travelled in 2022 to 11% in 2023). The high carbon intensity of this transportation mode implies a high impact (32% of commuting emissions).

Breakdown of commuting distances per transport mode (%km)



Breakdown of commuting emissions per mode of transport (%tCO_2e)



Commuting Carbon Footprint Results (2/2)

174 tCO_2e – 47,8% of the total festival emissions

To further decrease emissions linked to this category, an easy first step could be to ensure **communication** regarding transport options, routes and incentives are given out well in advance of the event, and regularly repeated, to allow for proper planning and to avoid unnecessary travel or people getting lost. Also, **social media, the festival website and public advertisements** could be used to encourage visitors to choose low-carbon transportation modes.

Additional incentives could be offered to the visitors choosing a low-carbon transportation mode such as refreshments on route, free shower on arrival, earlier access to the site, etc.

Moreover, providing **safe and secure bike parking** as well as **on-site bike repair shops** could also favor the use of the bike. Arranging **shuttle services** from the nearest bus and train stations and major transport hubs could encourage visitors to come by bus and train to the festival as the last mile can sometimes be a barrier to opt for public transportation.

Another way to avoid people coming with the car to the festival is to **add a car parking fee** and invest the revenues from it in sustainability projects. A more radical way could also be to **reduce or get rid of car parking**. **Carpooling** as well as **cycling groups** could be organized on the website or social media and **safe routes** could be planned by working with the local authorities. Finally, **hybrid events** (e.g. live streaming of the concerts) could be offered in order for people to be able to experience the festival without having to travel to the festival.

Energy Carbon Footprint Results

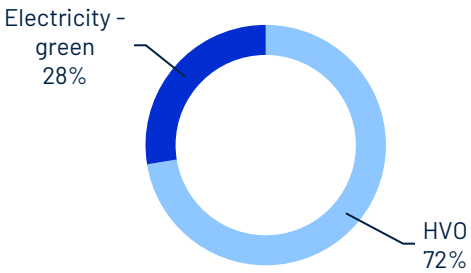
2 tCO_2e – 0,6% of the total festival emissions

The emissions related to the energy consumption have **decreased by 93%** between 2022 and 2023 as there was no industrial fuel oil used in 2023 for back-up generators.

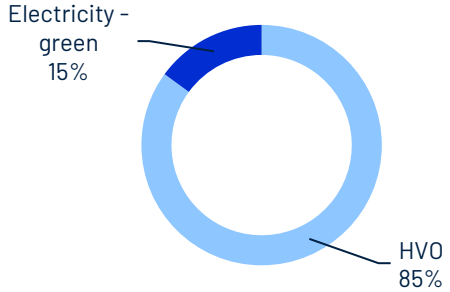
To further decrease emissions linked to the energy consumption, **energy efficiency measures** are the first actions to consider as they also allow for cost savings. Those can materialize by turning off the lights and heating/cooling systems when rooms/areas are not in use, favoring energy efficient technical equipment when purchasing new ones, making sure fridges and freezers are correctly sealed, using energy saving bulbs and LEDs and considering automatic lightning.

Other actions can be to install **energy metering** on all foodtrucks so that they pay for their exact energy consumption which will in return presumably motivate them to reduce their energy consumption. Last but not least, generators should continue be fueled by **renewable energy** as done in 2023.

Breakdown of the energy consumption per source (%kWh)



Breakdown of energy GHG emissions per source (%tCO_2e)



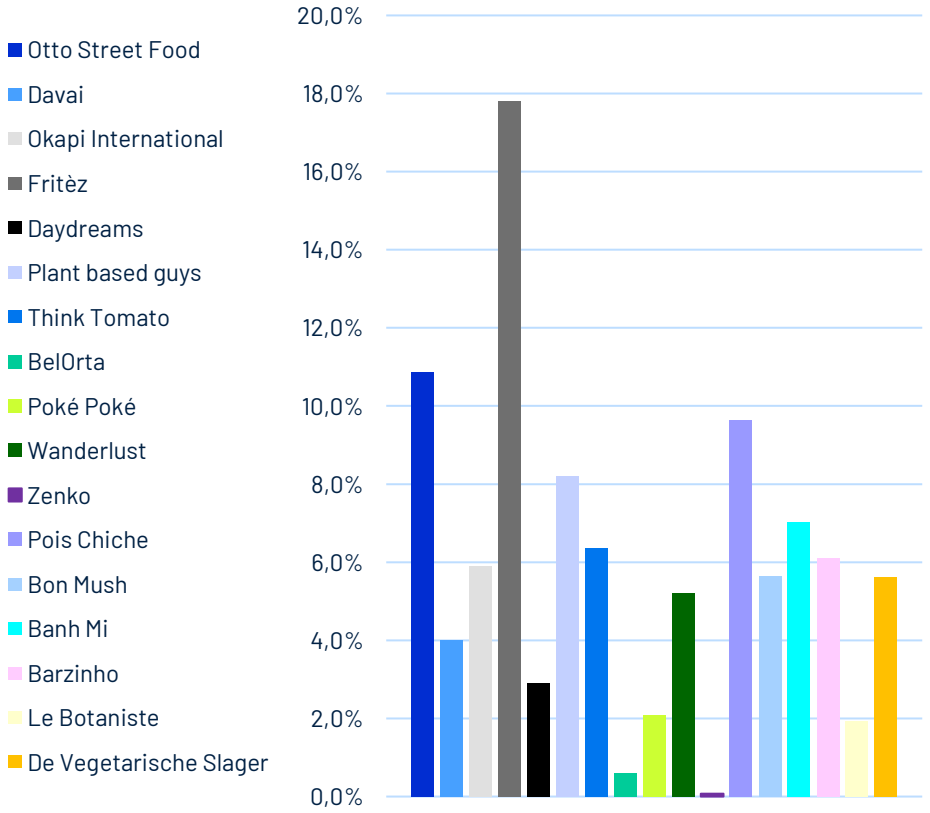
Foodtrucks Carbon Footprint Results (1/2)

15 tCO_2e – 4,2% of the total festival emissions

The overall emissions linked to the foodtrucks **decreased by 11%** between 2022 and 2023 with average emissions per meal going from 0,57 $kgCO_2e$/meal in 2022 to 0,44 $kgCO_2e$/meal in 2023. The higher average of emissions per meal last year were driven by several foodtrucks offering meals made of fish which have a high impact while the foodtrucks assessed this year are **fully vegetarian**.

Agriculture is the main driver of the ingredients' emissions. In order to limit the impact of the meals, it is recommended to avoid ingredients of **animal origin** (e.g., butter, cheese, etc.) as they require more agricultural resources or ingredients potentially linked to deforestation (e.g., cocoa).

Breakdown of foodtruck emissions per foodtruck (%tCO_2e)



Foodtrucks Carbon Footprint Results (2/2)

15 tCO_2e – 4,2% of the total festival emissions

In order to further decrease emissions, the festival could try to ensure that all the meals provided to the visitors are made from **vegan, local, seasonal and organic ingredients.** Moreover, the festival could ensure that products coming from developing countries are **Fair Trade certified** and products from forests and oceans are respectively **FSC/PEFC and MSC certified.**

Also, **the containers** could be at 100% reusable/compostable and sustainably sourced, or the festival could even favor meals not requiring any containers to limit waste.

Many non-perishable and unspoiled perishable foods could be donated to **local food banks, soup kitchens, and shelters.**

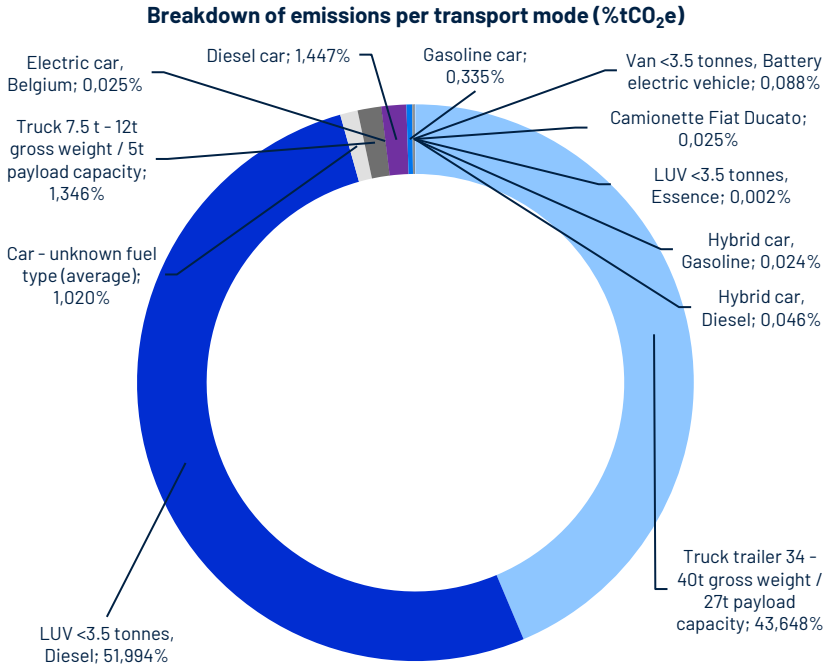
Finally, the festival could consider **modifying menus and quantities** following visitors' tastes to reduce uneaten food by launching a survey or comparing the purchased inventory with customer orders in previous years. Going further, festival goers could order their food while booking their tickets in order for foodtrucks to order the exact quantities needed for the meals.

Supplier Transportation Carbon Footprint Results

129 tCO_2e – 35,6% of the total festival emissions

The emissions linked to the supplier transportation **increased by 0,3%** between 2022 and 2023. While the emissions linked to the transportation of the road plates have increased by 21% because of a higher loading weight, the decrease of the carbon intensity of certain types of vehicles have compensated this increase. There are however inconsistencies in the data provided for this category. Hence, assumptions and estimations based on last year's data had to be made.

To further decrease emissions linked to the supplier transportation, Paradise City can encourage suppliers to use sustainable, **low-carbon transportation modes** for deliveries, such as electric vans or combined deliveries. Also, the festival can ensure that materials/products are **stored close to the site** to reduce transport emissions; this also means purchasing and renting **from local suppliers**. Last but not least, Paradise City should try **ordering in bulk** and arranging for the collection or delivery of multiple items in the same journey to avoid unnecessary transportation.



Contacts

Maxence Finot

Managing Consultant
m.finot@southpole.com

Camille Henrotte

Analyst
c.henrotte@southpole.com

Offices and representations worldwide:
Amsterdam, Bangkok, Beijing, Bogotá, Brussels, Hanoi, Jakarta, London, Madrid, Medellín, Melbourne, Mexico City, Milan, New Delhi, New York, Paris, San Francisco, Singapore, Stockholm, Sydney, Zurich.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