

Sustainability is at the heart of Luciole Restaurant. Our “Small is Beautiful” philosophy aims to redefine the idea of luxury through the lens of small-scale systems. These systems ultimately focus upon the preservation of the natural world inside and outside of the restaurant.

We want to build our business upon values which are not only beneficial for ourselves but also our wider community and the future of gastronomy. It is therefore our mission to implement increasingly sustainable practices across all aspects of our operations.

We hope that by regularly publishing reports for Luciole Restaurant we can contribute to the wider goal and betterment of sustainable gastronomy across the entire Hospitality sector. Specifically, we hope this work serves to inspire existing businesses to improve their own practices. While the document itself pertains to Luciole Restaurant, it’s content and structure is free to use. In fact, we would encourage any entity that is exploring sustainability practices to tailor this document to their specific needs. In addition to this we are available to liaise, advise, guide and collaborate with any member of the culinary community that wishes to widen the scope of these reports alongside us.

Sustainability Report 2024 – Luciole Restaurant

Objectives

Luciole Restaurant aims to be an ever more responsible business. As a part of our “Small is Beautiful” ethos we are continuously working to conserve resources and reduce our impact on the environment. We aim to serve as a leading example within the luxury dining community in regards to the possibilities and capabilities of consciously-delivered luxury experiences. To that regard, we look to go beyond the hospitality sector’s net zero target and are committed to environmental protection. This report illustrates our management of Luciole Restaurant’s budding environmental goals and aims to highlight the feasibility of our commitment to growth (from record-keeping, to data-analysis and, finally, application of revised systems of operation within the restaurant).

THE OBJECTIVES OF THIS REPORT ARE TO:

- (I) BUILD A TRANSPARENT FRAMEWORK TO ALLOW FOR PUBLIC SCRUTINY AND ACCOUNTABILITY IN REGARDS TO THE SUSTAINABILITY OF LUCIOLE RESTAURANT
- (II) SET OUT THE BASELINE STANDARDS FOR LUCIOLE RESTAURANT’S OPERATIONS
- (III) PRESENT THE IMPLEMENTATION OF EXISTING SUSTAINABILITY PRACTICES AT LUCIOLE RESTAURANT FOR THE PERIOD OF FEB 2024 – DEC 2024
- (IV) EXAMINE THE IMPACT OF THESE PRACTICES AND IDENTIFY POTENTIAL SHORTCOMINGS
- (V) OUTLINE ACHIEVABLE SYSTEMS TO FURTHER REDUCE LUCIOLE RESTAURANT’S EMISSIONS IN THE FOLLOWING SEMESTER
- (VI) SERVE AS AN OUTLINE FOR ACTUALIZING ENVIRONMENTAL RESPONSIBILITY WITHIN THE WIDER SWISS GASTRONOMIC COMMUNITY

The decision to publish regular reports pertaining to Luciole Restaurant was made in December 2024. This choice followed first and second-hand accounts found in the gastronomy-related media. Indeed, it is topical for culinary entities and the press to shine a light on a variety of leading restaurant guides and featured 'sustainable' restaurants. How these sustainable goals are pursued and achieved are at the heart of these accounts. Luciole Restaurant hopes to strengthen the methodology with which these assessments and subsequent awards might be applied. To this effect, data pertaining to Luciole Restaurant's purchases, consumption, wastage and other relevant systems of operation was collected for analysis.

For this initial report, the data should be considered incomplete and, as such, has been supplemented with qualitative, observational and anecdotal accounts. Paired with national, international and field-relevant numbers from scientific reports, we do aim to outline a strong basis from which this bi-annual report can grow in accuracy and impact. An end of year deep-dive analysis will accompany these reports and assess evidence through both Qualitative and Quantitative lenses:

Qualitative – The Report will look at attitudes within and toward sustainability practices with an aim to contextualise the Quantitative data. The Report will attempt to achieve this with the use of relevant information that encompasses both contemporary and innovative visions. In the 2024 report, second-hand evidence which can be verified has been included.

Quantitative - The Report will use data-centric evidence with the aim to analyse Luciole Restaurant's results in a tiered and contextualized fashion; local-tier (Luciole Restaurant), regional-tier (Swiss Hospitality) and global-tier (Hospitality worldwide). Peer-reviewed data will be prioritized to compare and contrast data whenever possible. Calculations and extrapolations based in restraint will be used to contextualise Luciole Restaurant's emissions, wastage and operating systems.

MEASUREMENTS AND DATA COLLECTION – SETTING THE SCENE

Post 1970, accumulated pollution in conjunction with controls on sulfur emissions led to notable increases in global temperature (Osaka, 2024). Efforts to minimize climate change will still result in effects which will be felt for centuries (Allen, 2018). However, without any efforts to minimize climate change the effects are far reaching. Continued warming has potentially irreversible effects to people and ecosystems (Masson-Delmotte, 2014) .

In Switzerland where the warming is considerably greater than the global average (the fastest recorded warming), Alpine glaciers have shrunk by around 65% (NCCS) It has been forecast that future effects could include water shortages in summer and autumn, increased extreme weather events, reduced tourism and decreased biodiversity (OcCC, 2007).

In brief, sustainability matters; The World Health Organisation has called climate change one of the biggest threats to global health in the 21st Century (WHO, 2023). Economic stability, food and water safety are at the heart of the issue (Cattaneo, 2019) and the predominant cause of climate change is human activity in the form of fossil fuel use, deforestation, agricultural and industrial practices

(Ritchie, 2020). These habits all feed directly into and have an impact on the hospitality industry and its survival.

MEASUREMENTS AND DATA COLLECTION – CONSUMERS AND GASTRONOMY

Consumer attitudes have changed as a result of raised awareness towards sustainability. This is particularly true as more information detailing the effects of climate change is widely available. More people than ever are concerned with the environment; Climate Change, Air Quality and Global Warming are the top three concerns consumers list when prompted. This concern translates to new habits even within the food industries; use of recyclable packaging, reducing energy when cooking, using refill products, purchasing ethically certified products (Mintel). In Switzerland, avoiding food waste, prioritizing short and local supply chains, reducing chemical intervention and conserving biodiversity are top concerns (FiBL, 2020).

According to the UN the food sector accounts for approximately 30% of the world's total energy consumption and 22% of its total greenhouse gas emissions (UN). Animal agriculture accounts for between 11% and 17% of total greenhouse gas emissions (Gambino). Fundamental pillars of the food industry are thus contributing to a system which represents more than a third of global emissions. The carbon footprint of a single meal resulting in as much as 8kg of Carbon Dioxide (Normand) highlights food waste and food related systems' importance. This is especially relevant when noting that Swiss Restaurants account for nearly 420,000 tonnes per of food waste per year (foodwaste.ch). It is estimated that 75% of this food still consumable. This food waste contributes to carbon emissions which occur at every step of the chain (production, transformation, transportation, etc.). With approximately 50,849 restaurants in Switzerland, one can estimate that each business on average accounts for around 8.3 Tonnes of food waste per year. This alone accounts for 45.65 tonnes of Carbon Emissions per year per establishment (or 2.3 million tonnes combined). This number does not yet consider other systems of operation within the establishment (such as energy use).

Results – Luciole Restaurant (February '24 to December '24)

Below you will find tables illustrating the emissions, wastage and, thus, a glimpse into the operating systems of Luciole Restaurant as of 11 months of life, ending in December 2024. You will find the standard measures of consumption, waste, etc. in the appropriate units for data-collection (i.e. kW, liters, etc.) then the conversion of these numbers to CO2 using the relevant Carbon Equivalency Index. CO2 emissions as a common unit for analysis and evaluation allows this Report to rest upon a solid foundation from which to extrapolate shortcomings, solutions and potential new and improved systems of operation for Luciole Restaurant.

The statistics **which have been highlighted in green** are statistics that we consider as “out of our control”. In brief, these numbers cannot directly be impacted by restaurant’s habits and we will thus not count this data towards our CO2 total. We feel that these impacts are under the purview of cantonal entities (when it is question of incinerating waste for example) and independent business entities (when it is question of delivery mode for example) respectively. Luciole wishes to include these numbers in the report in an effort to be transparent and to encourage these and other entities to update their *modus operandi*.

WASTE GENERATION & RECYCLING

Waste Type	Per Week (kg)	Per Month (kg)	Per Year (kg)	Per Customer (kg)
Glass	48	207.84	2208	1.2
Cardboard	3.47	15.03	180	0.087
Food	2.24	9.7	94.1	0.056
Other	20	86	920	0.5
Total	73.71	318.57	3402.1	1.843

Waste Type	CO2 Per Week (kg)	CO2 Per Month (kg)	CO2 Per Year (kg)	CO2 Per Customer (kg)
Glass	36.96	160.04	1700.16	0.924
Cardboard	46.85	202.91	2430	1.17
Food	12.32	53.35	517.55	0.308
Other	154	662.2	7084	3.85
Total	250.13	1078.5	11731.71	6.252

ENERGY USE

<i>Energy Type</i>	<i>Per Week (kW/h)</i>	<i>Per Month (kW/h)</i>	<i>Per Year (kW/h)</i>	<i>Per Customer (kW/h)</i>
<i>Coal</i>	24.423	105.02	1123.46	0.61
<i>Electricity</i>	317.9	1376.55	16530.8	7.95
<i>Gas</i>	114.84	497.25	5971.6	2.87
<i>Incinerator</i>	220.83	956.2	11483.23	5.5
<i>Total</i>	677.99	2935.02	35109.09	16.93
	457.16	1978.82	23625.89	11.43

<i>Energy Type</i>	<i>CO2 Per Week (kg)</i>	<i>CO2 Per Month (kg)</i>	<i>CO2 Per Year (Kg)</i>	<i>CO2 Per Customer (Kg)</i>
<i>Coal</i>	4.88	21	224.69	0.122
<i>Electricity</i>	254.32	1101.24	13224.64	6.36
<i>Gas</i>	20.67	89.5	1074	0.52
<i>Incinerator</i>	612.8	2653.46	31865.96	15.32
<i>Total</i>	892.67	3865.2	46389.29	22.32
	279.87	1211.74	14523.33	7

WATER USE

<i>Usage Type</i>	<i>Per Week (L)</i>	<i>Per Month (L)</i>	<i>Per Year (L)</i>	<i>Per Customer (L)</i>
<i>Cooking</i>	<i>17</i>	<i>73.1</i>	<i>644</i>	<i>0.425</i>
<i>In-Service</i>	<i>36</i>	<i>154.8</i>	<i>1656</i>	<i>0.9</i>
<i>Cleaning</i>	<i>30</i>	<i>129</i>	<i>1380</i>	<i>0.75</i>
<i>Total</i>	<i>83</i>	<i>356.9</i>	<i>3680</i>	<i>2.075</i>

<i>Usage Type</i>	<i>CO2 Per Week (kg)</i>	<i>CO2 Per Month (kg)</i>	<i>CO2 Per Year (Kg)</i>	<i>CO2 Per Customer (Kg)</i>
<i>Cooking</i>	<i>5.27</i>	<i>22.66</i>	<i>199.64</i>	<i>0.132</i>
<i>In-Service</i>	<i>11.16</i>	<i>47.99</i>	<i>513.36</i>	<i>0.279</i>
<i>Cleaning</i>	<i>9.3</i>	<i>39.99</i>	<i>427.8</i>	<i>0.233</i>
<i>Total</i>	<i>25.73</i>	<i>110.6</i>	<i>1140.8</i>	<i>0.643</i>

USE OF TRANSPORT

Transport Type	Per Week (km)	Per Month(km)	Per Year (km)	Per Customer (km)
Commuting	119	515.27	5474	2.98
Delivery (Region Lucerne)	300	1299	13800	7.5
Delivery (Region Neuchatel)	140.2	607.1	6449.2	3.5
Delivery (Region Lausanne)	83.3	360.8	3832.97	2.08
Other	78.5	339.9	3612	1.96
Total	978.98	4239.15	45034.17	24.46
	455.48	1972.25	20952	11.38

Transport Type	CO2 Per Week (kg)	CO2 Per Month (kg)	CO2 Per Year (kg)	CO2 Per Customer (kg)
Commuting	14.28	61.8	656.88	0.36
Delivery (Region Lucerne)	30	129.9	1380	0.75
Delivery (Region Neuchatel)	14.02	60.7	644.92	0.35
Delivery (Region Lausanne)	8.33	36.08	383.3	0.208
Other (imports)	199.4	863.3	9174.48	4.98
Total	266.03	1151.78	12239.58	6.65
	213.68	925.1	9831.36	5.342

SUPPLY CHAIN

<i>Service</i>	<i>Per Week (CHF)</i>	<i>Per Month (CHF)</i>	<i>Per Year (CHF)</i>	<i>Per Customer (CHF)</i>
<i>Food</i>	<i>1200</i>	<i>5196</i>	<i>55200</i>	<i>30</i>
<i>Drinks</i>	<i>750</i>	<i>3247.5</i>	<i>34500</i>	<i>18.75</i>
<i>Ceramics</i>	<i>260</i>	<i>1125.8</i>	<i>11960</i>	<i>6.5</i>
<i>Glassware</i>	<i>146</i>	<i>632.18</i>	<i>6716</i>	<i>3.65</i>
<i>Other</i>	<i>254</i>	<i>1100</i>	<i>11685</i>	<i>6.35</i>
<i>Total</i>	<i>2610</i>	<i>11301.48</i>	<i>120061</i>	<i>65.25</i>

<i>Service</i>	<i>CO2 Per Week (kg)</i>	<i>CO2 Per Month (kg)</i>	<i>CO2 Per Year (kg)</i>	<i>CO2 Per Customer (kg)</i>
<i>Food</i>	<i>84</i>	<i>363.72</i>	<i>3864</i>	<i>2.1</i>
<i>Drink</i>	<i>60</i>	<i>259.8</i>	<i>2760</i>	<i>1.5</i>
<i>Ceramics</i>	<i>20.8</i>	<i>90.064</i>	<i>956.8</i>	<i>0.52</i>
<i>Glassware</i>	<i>20.44</i>	<i>75.86</i>	<i>805.92</i>	<i>0.44</i>
<i>Other</i>	<i>203.2</i>	<i>880</i>	<i>9348</i>	<i>5.08</i>
<i>Total</i>	<i>388.44</i>	<i>1669.4</i>	<i>17734.7</i>	<i>9.64</i>

TOTAL

Source	CO2 Per Week (kg)	CO2 Per Month (kg)	CO2 Per Year (kg)	CO2 Per Customer (kg)
Waste	250.13	1078.5	11731.71	6.252
Energy	892.67	3865.2	46389.29	22.32
	279.87	1211.74	14523.33	7
Water	25.73	110.6	1140.8	0.643
Transport	266.03	1151.78	12239.58	6.65
	213.68	925.1	9831.36	5.342
Supply Chain	388.44	1669.4	17734.7	9.64
Total	1823	7875.48	89 236.08	45.5
	1157.85	4995.34	54961.9	28.877

PRODUCE: ANALYSIS

Pure plant-based cuisine is at the heart of what we do. Luciole wishes to embody the push towards ethical, conscious dining experiences. Our produce is sourced almost exclusively within Switzerland. We prioritise produce from the Canton of Neuchâtel before looking further afield. Focusing on the Romandie region before reaching out into the wider Swiss area with only minute imports (i.e. seaweed, pastry-grade plant-based butter, vanilla, Binchotan charcoal, olive oil and spices).

We work directly and indirectly with at least a dozen growers of various sizes. Focusing on small-scale operations is a time-consuming but crucial choice that enables the core of our produce to come from within a 40km region. The furthest our produce travels is 150km from Lucerne. We prefer bio produce that has been grown with minimum intervention as we are aware of the positive impact organic products has, despite the heightened price. In addition to this, wild and foraged products play an important role in our kitchen; we work with responsible suppliers who source the ingredients for us in a manner that minimizes their impact on the environment.

In 2024 our menus were seasonal, changing 4 times across the year. This was not without its own set of challenges given the tumultuous growing environment and meteorological anomalies faced by producers this year.

PRODUCE: SYSTEM IMPROVEMENTS

In 2025 we will work to eliminate the following ingredients with high carbon emissions from our menus: vanilla. We will also work towards significantly reducing the volume of Chocolate we use.

In 2025 we aim to complete the Organic Certification with BioSuisse as a means to maintain a completely transparent supply chain for clients. We will aim to maintain a 90%+ ratio of Bio ingredients used and will continue to champion Suisse producers. This goal is ambitious but we will strive to work towards it in increments if necessary.

In 2025 we will also work more micro-seasonally and scrutinize our supply chain with more depth: our menus will be drafted and published with the aim to maximize the breadth of swiss produce we utilize, all whilst consolidating our system of supply wherever possible. This will allow us to play a more reactionary role in representing our terroir and work with the ebb-and-flow of the natural world, producing new menus monthly rather than seasonally. Moreover, we hope to achieve this without compromising the diversity and quality of our small producers' list.

DRINKS: ANALYSIS

Almost all of our drinks are sourced within Switzerland with a focus on Bio and Demeter products. Exceptions for non-bio products have been made this year as we wish to offer a well-rounded and affordable range of drinks. We do not work with any brand conglomerates. Indeed, whilst we provide a 'Coda' and 'Rivella' option on the menu, these are made in-house from organically-sourced and local ingredients.

Our drinks menu is one of the few systems of Luciole in which product import takes place. A selection of exceptional British products is offered to our guests with the aim to celebrate Luciole Restaurant's

Anglo-Swiss heritage. This carefully selected range of British products aims to spark conversations around sustainability as we work with wine producers like Gusbourne; the founding member of SWGB (Sustainable Wines of Great Britain) and avid consolidators of their Sustainable Reports data. The provenance of these wines also helps us raise awareness at the dinner table as English wines are only growing in popularity as a direct result of the rising temperatures recorded along the Southern Coast of England. In brief, we source our English products specifically from producers who place sustainability and environmental protections at the core of their philosophy.

DRINKS: SYSTEM IMPROVEMENTS

In 2025 we will be growing our organic drinks range to bolster our clientele's access to sustainable-minded wines and alcohol-free beverages. We will continue to support artisans and wineries that place sustainability at the heart of what they do.

In 2025, we pledge to retain a drinks list that continues to meet the 90%+ swiss suppliers, as per Swiss Wines' criteria. We will also work to increase the number of Bio drinks available. With the aim of a drinks menu that is 60% Bio by the end of 2025.

ENERGY: ANALYSIS

Our energy use accounts for an average of 2935.02 kW/hr p/month. This figure totals almost half the average consumption of Swiss Households (Report on the activities of EICOM 2023). Appliances, lights and other equipment are only on when in use and Luciole Restaurant has always strived to be very careful in managing consumption during service hours. The Report has revealed that our consumption is higher than anticipated due to the incineration system used city-wide in La Chaux-de-Fonds.

ENERGY: SYSTEM IMPROVEMENTS

In 2025, we hope to curb this figure by investing in Luciole Restaurant's infrastructure; the old building that is our location could benefit from some insulation-centric improvements that would lessen our energy consumption.

In 2025, we will reach out to our local energy supplier to enquire as to which sustainable options (that divest from the incinerator source of energy) are available to us.

WASTE: ANALYSIS

Wherever possible ingredients are used to the fullest of their ability. Off-cuts and 'waste' are transformed with slow-impact methods for use in current and future menus. Including and not limited to: fermentation, dehydrations, stocks and sauces. At this point approximately 7% of ingredients purchased by Luciole Restaurant end up as true raw waste. We are conscious that this number can only be lowered with the addition of labour and, thus, time dedicated to food preparation. This is an obstacle we do not expect to be able to surpass until 2026. Growing our team does not yet seem to be a viable option.

We are aware that quick fixes are possible from menu to menu when it comes to reducing food waste. This is especially true when all factors are aligned; seasonality of ingredients, reactivity of suppliers, mise en place and menu-related labour. In fact, we noticed a reduction in raw waste of approximately 3% during the autumn period.

All materials that can be recycled are recycled. This relates to all of our cardboard, plastic, glass and food waste. We do not currently work with any cellars that offer bottle-back schemes. We do work with a Brasserie that reclaims their beer bottles for cleaning and reprocessing.

WASTE: SYSTEM IMPROVEMENTS

In 2025, we will aim to reduce our percentage food waste from 7% of purchased goods to approximately 2% (by weight) by the end of 2025. The goal will always be to reach 0%. New learning and adapting should be continuous (even between menus) and we will endeavor to further our knowledge and awareness, taking inspiration from establishments like Silo (London), Speak in Code (Manchester) and NOMA (Copenhagen), that occasionally share valuable insights on how to achieve lower waste production.

FRONT OF HOUSE: ANALYSIS

Sustainability doesn't end in the kitchen. Every detail front of house is also scrutinized. From our tables which have been restored by a local carpenter, to the complementary sanitary products we offer which are made by a local seamstress. These are 100% washable and re-usable in addition to being made from 100% off cuts from her main body of work. The restaurant is cleaned daily by a local, environmentally sustainable cleaning company (EcoNettoyage) who also provide the restaurant with 100% environmentally friendly cleaning products for almost all our cleaning needs. In addition to this we also work with a local eco-friendly cosmetics producer (Sensha Cosmetics) to provide 100% eco conscious hand wash and hand cream. Glassware, Tableware, Cutlery, Napkins are not left out of the equation. Carefully selected for their environmental impact as well as their comfort and durability.

Inevitably, breakages do happen. In all cases, priority is given to providing broken items with a second lease of life. Whether they are 'retired' from public view for alternative uses or, as in the case for broken plates, repaired utilizing the Japanese art of Kintsugi. In all cases, disposal to recycling centres is a last resort.

FRONT OF HOUSE: SYSTEM IMPROVEMENTS

In 2025, plans to better front of house include; exploring the addition of emission offset options for clients as a tool to strengthen steps already taken by Luciole. We will aim to organise a meeting with our Booking System specialist to discuss various advantages, disadvantages and considerations of such a step.

In 2025, we will continue to be inspired by sustainable bars such as Speak in Code (Manchester) that have a zero-waste approach to running their front of house. As such, we will further develop our collection of homemade tinctures, oils and garnishes (all made with reclaimed ingredient) in an effort to reduce Luciole Restaurant's food wastage. Furthermore, we will continue to seek out technical sheets, spec sheets and insights published by other establishment on how they work sustainability into every facet of their establishment.

STAFF: ANALYSIS

We do not currently have any staff and are a two-person operation. However, we have begun building an infrastructure for when this time comes. As individuals who have a combined twenty years of experience as employees in restaurants and bars, we truly wish to be mindful of what a healthy and sustainable work-environment will look like for staff.

This includes well balanced hours, fair pay, and career development opportunities. We are collecting our knowledge and new experiences with the hope of developing in-house sustainability education. Furthermore, we are eager to collaborate with 'The Burnt Chef Project', a UK-based organization centred around mental health and working conditions in hospitality. Our future team having access to such resources and peer-reviewed support is an imperative in our eyes.

STAFF: SYSTEM IMPROVEMENTS

In 2025, we aim to be ready for each shift without any undue pressure. We therefore have decided to close Thursday lunches in an effort to better balance our work life.

In 2025, we look forward to continue our training through a wide variety of means; discovering the journey of each food item through visits with suppliers, growing our sustainability-focused knowledge with the help of various media (books, workshops, etc.), and so forth.

COMMUNITY: ANALYSIS

Luciole understands the importance of community on all levels of the spectrum. In particular we are committed to nurturing local relationships that improve the well-being of entities near us. In brief, choosing to support suppliers and small business owners close to the restaurant is a priority.

In-fact, while 'average' restaurant operations may be conducted with 3 or 4 suppliers, we actively choose to avoid wholesalers. Luciole Restaurant employs wholesalers exclusively for specialist and/or hard to acquire products. For example: our chairs come from Meubles Leitenberg in La Chaux de Fonds, our menus are printed with Valimpressions in Cernier, when our tables need reupholstering they are brought to our woodworker in Coffrane and our fresh produce hail from over a dozen regional growers.

COMMUNITY: SYSTEM IMPROVEMENTS

In 2025, we will donate 211 trees to the Almighty Tree project in Switzerland.. We will share these trees' tracking information publicly. These 211 trees will offset the entirety of Luciole Restaurant's 2024 CO2 emissions, making the restaurant carbon neutral for the period from 01.01.24 to 31.12.24.

In 2025, we will endeavor to continuously highlight and celebrate local producers. We will continue to partake in projects with entities such as Swiss Wines, Neuchâtel Vins & Terroir, etc.

In 2025, we hope to grow as a restaurant that can continuously work with and work to support our community in any way possible.

In 2025, we will aim to donate additional trees when possible as an attempt to offset future emissions. We are currently investigating the number of trees Luciole Restaurant would have to plant to offset the emissions of ALL the independent restaurants in La Chaux-de-Fonds.

AS THE MAJORITY OF OUR EMISSIONS ARE DUE TO GENERAL WASTE, IMPORTS, CERAMICS, GLASSWARE AND 'OTHER' SUPPLY CHAIN SERVICES, WE WILL SCRUTINIZE THESE AREAS METICULOUSLY. WE COMMIT TO REDUCING OUR CO2 EMISSIONS PER CUSTOMER BY 20% BY JULY 2025.

Limitations

The biggest limitation of this exercise centres around available data. This limitation is two-fold.

LUCIOLE-CENTRIC DATA

As the decision to produce these reports was made in December 2024, we have not been actively collecting data in respect to all the categories reported on. To achieve the fullest, and most realistic representation of our systems' emissions, we intentionally over-estimated in almost all the categories of this report. For example:

Wastage emissions were calculated using the average weight of a 35L refuse bag (5 kilos), discarded on average four times/week.

Supply chain emissions were calculated using 'the emissions produced/unit' VS 'the monetary value of unit'.

We are confident that this exercise, whilst imbued in mild conjecture, has still produced a valuable framework for future reporting. It will serve as a useful baseline for future comparisons and reflection. To be candid, it is extremely difficult for a small establishment to set aside time to collect data so, whilst we will effort to better track systems-based data, one should expect that approximations will be a long-standing element in these reports.

DATA PERTAINING TO THE HOSPITALITY INDUSTRY

Data focusing on the hospitality industry is difficult to acquire. Most hospitality-driven data banks focus on customer habits and costing which are not helpful to scaffold this particular report. This is especially the case for the fine dining sector of hospitality.

We are strong believers in transparency and hope to see more reports and data-collection efforts industry-wide. Only when in-depth data collection becomes mainstream can comprehensive data-analysis occur and, subsequently, system evolution within and without the hospitality industry.

Without active participation from everyone, it is incredibly difficult to define what a truly sustainable restaurant looks like.

Conclusion

A pure plant-based diet produces 3.8 kilos of CO2 emissions, almost 50% less CO2 than an omnivore diet at 7.2 kilos (Afrouzi). It is with this finding in mind that we reflect on our 45 kilos/29 kilos of CO2 per customer and our <10 kilos of CO2 per customer for supply chain (not all of which accounts to food). One might glance at these findings and conclude that at Luciole Restaurant, a meal produces more CO2 than the average individual's meal.

We do not concur with this conclusion for the following reasons:

- (i) it is incredibly difficult to define what constitutes an average meal (volume of food, ingredients' seasonality, ingredients' origin and number of courses, to name but a few, are factors that could all impact greatly the final CO2 total of a meal)*
- (ii) if one were to assume that the average meal is made up of two courses (starter-main/main-dessert, for instance) and tallies approximately one and a half hours of duration, then one*

can claim, with taster menus in mind, that the output per dish/time is a more comprehensive way of calculating CO2 emissions for fine dining establishments...

(iii) ... therefore:

- a. Average meal output = 2.67 kilos of CO2 per dish per hour*
- b. Luciole meal output = 1.9 kilos/1,2 kilos of CO2 per dish per hour*

With a recalibrated approach that better considers the multitude of ways in which meals, establishments and ingredient lists differ, we can determine that a meal at Luciole Restaurant (eight courses over three hours) is approximately 80% below the national average. We find this especially satisfying because each dish at Luciole, on average, will include over 30 ingredients that will have been worked on for days, weeks and/or months. The highly worked and extensive nature of fine dining food could be presumed to expend more CO2 – this is not the case for Luciole Restaurant.

In any case, particulars we would highlight the following systems for further scrutiny and improvements: General Waste, Energy Use and Supply Chain. We expect that other systems experienced higher peaks in emissions due to the expenditures that are elicited with starting-up a restaurant (for example, the high numbers relating to ‘Other’ transports linked to the import of goods for the opening of Luciole) and, thus, focusing on the aforementioned systems will better outline the evolution of our data over time. In fact, we would expect to witness a much lower level of CO2 generation per customer as of July 2025 even if none of our commitments were enforced as a result of this.

We truly hope that our additional actions will amount to a sizable impact.

We can and will go further to reduce Luciole’s impact on the environment. This report has been a helpful exercise in identifying systems within the restaurant that we can develop, with purpose, in the short and long-term. In a tangible manner, we feel we can declare that the report has achieved its goal; it has established the framework we require to enact real change to our business practices.

The report does aid in outlining the baseline of data-collection and analysis going forward yet we feel that this baseline should be amended when necessary. These addendums and/or modifications of the data collection/analysis should reflect current practices at the time of the publication of the report.

In conclusion, we have approached reporting on our restaurant with transparency and eagerness to uncover answers. Our suppositions may need refining and we look forward to broaden this data-collection journey alongside our peers. We hope to see more content revealing the impacts of accountability; bettered environment, enriched communities, sustainable practices becoming the new normal... within and without restaurants!

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