European Commission

GPP In practice

Issue no. 47
December 2014

Calculating the environmental impact of catering services
City of Helsinki, Finland

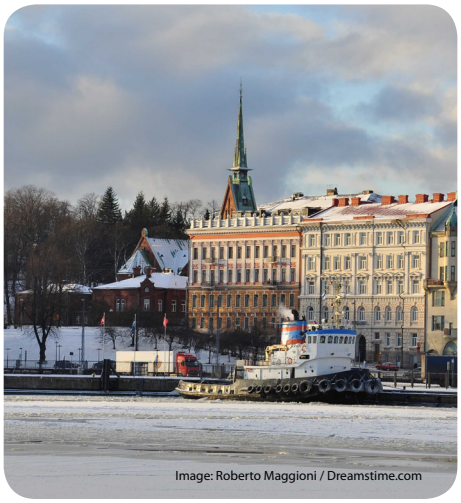
Image: Roberto Maggioni / Dreamstime.com

Background

Palmia catering services, a municipal enterprise owned by the City of Helsinki, provides catering services to the cities' schools, daycare centers, staff restaurants, hospitals, social service centers, retirement communities, and also delivers warm meals to homes. The catering service serves approximately 22 million meals per year.

During the course of the City of Helsinki's Culinary Culture strategy in 2010, the City realised that the global food chain has a much higher impact on climate than traffic and logistics. As a result, the "Responsible Meal 2012-15" project was launched. Calculating the CO_2 emissions of the catering services of the City was part of this project. The overall aim of this multidisciplinary project is to raise awareness of the climate impact of food amongst Helsinki's and Palmia's food service customers, stakeholders, and personnel.

Development of approach

Senior management from both Palmia and the City of Helsinki's environmental center were involved in the project steering group, and involved in delegating and providing contact information for data collection. Particularly when there was no data available, experienced experts from Palmia were able to provide qualified approximations.

Additional resources and expertise that contributed to the project were:
- Palmia employees (from the operational level, as well as planning and strategic departments)
- Helsinki Environment Center (for general Helsinki climate information, environmental strategies and general expertise)
- City of Helsinki, Procurement centre
- Agrifood Research Finland (MTT), The Finnish Environmental Institute (SYKE) and the Food Information Association (Ruokatietory) experts contributed to the work (e.g. in the steering group and providing feedback and comments)
- Natural Interest Ltd was responsible for the CO_2 calculations, visualizations, and calculation platform (Footprinter.com)

The suppliers of Palmia Catering were not directly involved in the work. Part of the information as regards food procurement came from Palmia's ERP system's (Aromi) recipe database, and part was directly requested from suppliers.

Implementation of approach

Calculation of the City of Helsinki's food services' climate impact was the first step in the entire food chain climate impact evaluation. The calculation boundaries were set based on the international GHG protocol (control approach), adding the following criteria:
- Possibility to determine the best information sources
- Possibility to repeat the data collection without bigger resource needs or investments
- Data availability in the necessary format for calculation (compatible with CO_2 factor data)

The process of turning food procurement information into a carbon footprint: data from food service suppliers –> procurements statistics –> consumption data (kg/year) –> emission factors (kg CO2e) –> carbon footprint.

The CO_2 calculation was based on:
1. Food procurement
2. Direct energy consumption of food production
3. Internal logistics

Energy consumption was estimated by scaling the actual data from earlier research, and the quality was satisfactory. The quality of logistics

data was good, for it was based on the actual kilometers, transportation vehicles used, and the data collected during this project. Each one of the information sources was evaluated systematically so that the further development of a calculation was simple and transparent. The calculation tool used was a cloud based service called Footprinter.com that is developed by the consultant's partners.

Approach Results/Outcomes

Anticipated outcomes:

- Decrease in the climate impact of the City of Helsinki's/Palmia's food services (Helsinki Culinary culture strategy 2010). The City of Helsinki will use the results of this study, to procure catering services which produce less CO_2 emissions and have a lower environmental impact in future.
- Increased awareness of the carbon footprint of an average meal; understanding the largest emission sources of the food services value chain.
- Development of CO_2 as an indicator and an action plan on how to decrease the climate impact of food services; strategic decision-making to decrease the climate impact of the food services value chain.
- Communication as regards the climate impact of City of Helsinki's/Palmia's food services.

Catering services encompass a wide range of activities, stakeholders and information. In addition, the decision making process is multidimensional. This means that no single action or directive will reduce the carbon footprint, but rather a series of interrelated activities. The available information needed to calculate the carbon footprint calculation was relatively disjointed, so it was not possible to define one single indicator for the climate impact of Palmia catering services.

Food purchasing and ingredients were responsible for the largest proportion of the carbon footprint (58%). Of this, 35% came from meat and 46% from dairy products. Direct energy consumption accounted for 41% of the carbon footprint. Logistics accounted for only 1% of the whole. Although it was difficult to define "average" meal for the catering services, the carbon footprint per meal was calculated at 1.1kg CO_2 emissions, with contained the main raw materials. This "average" meal varied from lunch at a school, to a breakfast in a retirement community.

In order to access the impact of this study, the CO_2 emissions not only of the kitchen needed to be taken in consideration, but rather for the full decision and planning processes, including procurement, contract terms and conditions, and long term guidelines (i.e. strategies, city council decisions).

Lessons learned

- Carbon footprint is an indicator that provides information on how to proceed towards various goals - not a goal in itself. There should always be some follow-up and clear targets that guide the climate work, i.e. a calculation or indicator is not enough. These targets should be aligned with the other targets and strategies that apply to CO_2 related work, such as political strategies and organic food quotas.
- The focus of carbon footprint work should be on long-term strategic sustainability goals, not just on the immediate facts (such as in this case the carbon footprint per an average meal). This is the only way to get real advantage of the work, and make it "produce" fun facts (for communication, campaigns, etc.) down the line, not just as a result of a project.
- A multidisciplinary, systems approach is needed to integrate CO_2 work to larger actions and strategies. This means that a wide range of experts is needed to provide input on what is relevant and what is outside the scope of the project. Also (preferably) a visual working method for an efficient sharing of understanding is valuable (e.g. MEI diagrams, flowcharts of the procurement process, understanding the decision making system and customer feedback loops).
- Several indicators are recommended to be used (CO_2/meal, CO_2/kg, CO_2/kcal etc.), so the follow-up will be easier (these are developed in Helsinki).
- An easily achievable databank/statistics of raw materials, energy consumption, customers, etc. eases the calculation a great deal.
- An effectiveness and reality analysis of different measures could be a good way to proceed towards the goals of reducing carbon footprint in a real life situation (one of next phases for Helsinki).

For more information, please see European GPP criteria for Food and Catering.
Contact: Petteri Huuska, Petteri.Huuska@hel.fi