

Carbon Footprint Calculation for the Food Services of the City of Lohja

Summary of the pilot report 04/2023, the CO2 DataHub project

Name of the pilot	Carbon Footprint Calculation for the Food Services of the City of Lohja
Project team	Vastuu Group and Sitowise Group Oyj
Participants	City of Lohja

Finland aims for carbon neutrality by 2035.

The CO2 DataHub research and development project supports this goal by developing methods for the gathering, evaluation and data-based management of carbon dioxide emissions in the supply chains of companies and cities.

In the CO2 DataHub project, Sitowise and Vastuu Group executed a pilot project for the following five cities: Espoo, Lohja, Porvoo, Tampere and Raisio. The pilot project for the City of Lohja was divided into two different cases. In this second project, the aim was to calculate the carbon footprint of the city's food services. After a materiality assessment, the scope of this calculation process was limited to the carbon footprint of the production process of the ingredients used in the meals.

The pilot examined how the carbon footprint of food services could be calculated automatically based on the city's food product procurement data. Thanks to the produced emission calculation and visualization prototype, the development of the carbon footprint caused by food product purchases can be monitored and compared between different months, product groups and products.

With the carbon footprint calculation of food services, the City of Lohja wishes to provide information to the people responsible for planning the food production as well as the inhabitants of the municipality and the users on how large CO2 emissions different ingredients and meals have. In the future, the City of Lohja wants to provide an environmentally conscious menu that their customers will like and, through this, also impact the emissions of food services.

The carbon footprint calculation of food is a strongly developing area and the environmental impacts of restaurant and food services have been studied both internationally as well as nationally in Finland. Based on the executed materiality assessment, the production, processing and transportation of ingredients used in the meals constitute a significant portion of the emissions of food services.

The City of Lohja's food services produced about 2.7 million meals for 9,000 customers in 2022. The production of meals takes place in two separate preparation kitchens and the rest of the kitchens are just heating and service kitchens. The current menu covers six weeks, and the aim is to take into account the national school meal recommendation. The recommendation defines that sustainability should be taken into account in meal choices. Vegetarian food has a favorable role in an environmentally friendly diet.

An emissions calculation and visualization of the City of Lohja's food services' food product purchases were executed as a prototype of this project. Before starting the pilot project, the available data on the pilot site and the data usable for the needs of the prototype as well as the data needs were mapped. The available food product purchase data (in kg) by food type were in Excel format and they were delivered by Kespro to the City of Lohja and passed on to Sitowise as an email attachment. The carbon footprint data of different ingredients and semi-processed products was missing, but it was retrieved from a Danish emission database (Den Store Klimadatabase) and included in the calculation.

Thanks to the prototype, the development of the carbon footprint of different food products purchased can be monitored and compared between different months. The prototype enables the assessment of the carbon footprint of food products also purchased on product group and product levels. The prototype can be used for assessing the development of a specific product group's carbon footprint or assessing what products make up the most significant portion of the product group's carbon footprint. With the help of this prototype, the carbon footprints of different product groups can also be compared with each other. Additionally, the prototype visualizes the shares of domestic and international food product purchases.

The results of the carbon footprint calculation from the prototype were visualized into Sitowise's Louhi system's Power BI environment that simulates customer's user interface. To ensure the transparency of the calculation process, the prototype also presents where the emission factor data have been acquired from and what is included in the calculation. As a result of the pilot, the City of Lohja will receive information on how different products and product groups affect the carbon footprint of the city's food services as well as a possibility to monitor the development of the carbon footprint of the food product purchases.

Kespro's ABC report is an excellent source of information for the carbon footprint calculation of the food product purchases. However, it would ease the emission calculation process if the report had more precise product groups. This, however, would require co-operation with Kespro. For future purposes, the possibility to automatically deliver the procurement report for the purposes of a carbon footprint calculation via the city server, for instance, should be examined. This way, the data could be updated automatically without the need for manual work. If the data connections were automated, the emission calculation model could be utilized by other municipalities using the same food service vendor too.

The pilot case report was prepared in co-operation by Vastuu Group Oy and Sitowise Oy. In accordance with the principles specified by the project steering group, the full report is only available to the organizations that participated in the research and development project.

Further information:

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