

Carbon footprint of property maintenance

Summary of the pilot report 11/2022, the CO2 DataHub project

Name of the pilot	The carbon footprint of property maintenance
Project team	Vastuu Group Oy and VTT Technical Research Centre of Finland
Participants	Ilmarinen Mutual Pension Insurance Company, KONE Plc, Bravida Oy, Granlund Oy, Onway Oy and Sitowise Group Plc

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.

Ilmarinen's buildings at Aleksanterinkatu 17 and Keskuskatu 7 in Helsinki were chosen as the pilot cases. Property maintenance-related services are provided for these buildings, such as basic maintenance, technical maintenance, outdoor area maintenance, cleaning, waste management and security services.

The pilot focused on studying what information relating to the carbon footprint of the services is currently available and in which format it is provided. The services of two property maintenance service providers were chosen for a more detailed review: lift maintenance (KONE Oy) and technical and daily maintenance (Bravida Oy).

The study focused on determining both direct and indirect emissions by using reliable data. Today, larger companies already have to report their environmental impacts. National and international emission reduction goals will probably become more detailed in the near future with respect to calculations and reporting, and emission regulation will become stricter. In addition to complying with rules and regulations, companies want to monitor their emissions to generate information for their customers and also to be able to manage their environmental measures as efficiently as possible on the basis of calculated data.

The pilot reviewed the maintenance services provided for Ilmarinen's properties in Helsinki (Aleksanterinkatu 17 and Keskuskatu 7), particularly focusing on the lift services provided by Kone and the technical and daily maintenance services provided by Bravida. The carbon footprint of property maintenance services consists of the carbon dioxide emissions from the service provider's services. These emissions come from the materials and products used, the transport of materials, the maintenance personnel's travel from their workplace to the site and the electricity consumption of machines and equipment.

Property maintenance services can be paralleled with a product's carbon footprint, which is reviewed in accordance with the ISO 14067 product standard. This standard does not take into account employees' travel to the workplace. If indirect scope 3 emissions are reviewed in accordance with the GHG protocol, employees' travel to work is included.

Calculation of the carbon footprint of maintenance services requires understanding of the products and materials used for the maintenance services as well as their quantities and the carbon dioxide emission information. The emission information of a product can be obtained from the environmental product declaration (EPD), if it exists for the product. Many manufacturers publish EPDs on their websites, or they can be searched for in EPD databases. In addition, information about the kilometres travelled by the materials/products and the maintenance personnel as well as information about the driving power is needed for the calculation. Finally, information is needed about the electricity consumption of the machines and equipment as well as the indirect emissions of electricity. The maintenance service carbon footprint calculation is obtained by multiplying the quantities by the emissions information and adding up the figures. Emissions from transports to the sites visited during the same maintenance round are allocated according to the distance to the workplace.

On the basis of the results of the workshops arranged, the reporting of the carbon footprint of maintenance services requires a development path. In the first phase, service providers may report the required information site by site, produced by means such as a spreadsheet program. In the next phase, the information can probably be reported directly into the property owner's service history, delivered through a digital platform. The providers of property maintenance services want to promote this development by providing data required for the emissions calculation and by improving the reliability of the data. During the early stages of the automation of the gathering and reporting of carbon footprint information, companies may gain a competitive edge by standing out from their competitors as trailblazers. In addition, the reporting of direct and indirect emissions, as well as the

identification of measures to reduce emissions, help companies to reduce their carbon footprint.

The pilot case report was prepared in co-operation by VTT Technical Research Centre of Finland and Vastuu Group Oy. In accordance with the principles specified by the project steering group, the full report is only available to the organisations that participated in the research and development project.

Further information:

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Image: pilot case prototype