POLICY **BRIEF** 2024:14

Perspectives into topical issues in society and ways to support political decision-making.

This publication is part of the implementation of the 2023 Government plan for analysis, assessment and research. The producers of the information are responsible for its content and it does not necessarily represent the views of the Government.

Business and emission reduction potential for logistics through emissions reporting

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The purpose of the project was to find out the current state and needs for the collection, availability and utilisation of logistics greenhouse gas emissions data in Finland, taking into account the international context. As a result of the project, recommendations to develop logistics emissions reporting are presented. Implementing emissions reporting in companies requires education and guidance as well as support and participation from the authorities.

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Emission reductions through logistics emissions reporting

Finland's goal is to halve greenhouse gas (GHG) emissions from transport by 2030 compared to the 2005 level and to achieve zero emissions by 2045 at the latest. In order to achieve the emission reduction targets, a diverse range of measures is needed. Improving and developing the collection and availability of logistics emissions data as well as the usability of data can contribute to the achievement of emission reduction targets. The proposal for a CountEmissions EU regulation published during this project may solve some of the challenges identified in the project.

Commensurability of emissions data as a challenge

Emissions reporting in logistics is needed to monitor actual impacts and to set future targets, which in turn is needed to ensure effective emission reduction. The challenges of interoperability of emission data have been recognised from the perspective of businesses, researchers and authorities alike. In addition to the availability of emissions data, we need to improve the usability of the data and make the right kind of use. Improving the utilisation of data enables emission reduction potential and increases new business opportunities in transport and logistics. With new business opportunities, the level of reporting and monitoring will improve, which in turn will further increase the effectiveness of emission measures.

Collection, availability and utilisation of emissions data

The aim of this study was to find out the current state and needs for the collection, availability and utilisation of logistics GHG emissions data in Finland, without forgetting the international operating field. The study also assessed the emission impacts and emission reduction potential of logistics emissions reporting. The study takes into account the CountEmissions EU initiative and the government resolution on digitalisation in logistics. The aim of the study was to answer the following key research question: What kind of emission data is needed in logistics and how should the collection of emissions data be developed so that it can be utilised in the formation of new services that support the green transition? A roadmap of recommendations and measures for the development of logistics emissions reporting will be presented as a key result of the project.

Research material and methods

The research and data collection methods used in the study were literature review, interviews, online surveys and expert workshops. These were used to map the current state, prerequisites, development needs, challenges and solutions for emissions reporting. The aim of the expert workshops carried out based on interviews and surveys was to further develop logistics emissions reporting, enable interaction between different organisations, prepare the measures needed to develop emissions reporting and validate the results of the project. Participants included representatives of logistics service providers, trade and industrial companies, authorities, consultants and other experts in the field. In addition, the study assessed the emission impacts and emission reduction potential of logistics emissions reporting using the HEETRA model built by the Finnish Transport Research Centre Verne (Liimatainen et al. 2023).

Current state of logistics emissions reporting

Emissions reporting practices in companies are currently very diverse, and reporting is carried out at different levels depending on the company, or reporting is not yet done at all. There are large variations in the availability and accuracy of emissions data. Some operators are already well advanced in their emission reduction work, while others are only just planning to start them. Customer interest in emissions data and emissions reporting has increased especially in recent years, but widespread interest in the topic is not yet noticeable.

There is a difference between the actors

Emission reduction targets are directly correlated with the monitoring and reporting of emissions data. Shippers are currently more aware compared to logistics service providers, both in setting emission reduction targets and in monitoring emissions data and carrying out emission reporting. Small logistics companies, in particular, mostly do not monitor emissions, and no emission reduction targets have been set.

Challenges are strongly interlinked

Logistics emissions reporting involves a number of challenges at different levels that require solutions and measures. The most significant challenges recognised in the

project were, in particular, the following challenges: comparability of data and information, lack of resources, competence and experience, perceived reporting as less important, the different phases of the development of companies' emissions reporting, and the lack of political guidance. If implemented, CountEmissions EU initiative will solve some of the challenges, either fully or partially, but not all. Various network activities, training and clear guidance were needed to support the development of emissions reporting and the understanding of the calculation process and standards, taking into account the characteristics of Finnish transports.

Refining the collected emissions data poses challenges

For transport companies, data was collected extensively on sea, air and rail transport. The clearest factor causing the differences was the size of the road transport sector of enterprises, as the collection of data and thus also reporting was clearly less important for smaller companies than larger companies. Regarding data collection, the general view of the contracting organisations was that there is no problem with availability and quantity in itself, but refining and crystallizing the collected data are the biggest challenges. Another major challenge in terms of data collection and utilisation consisted of digital tools for collecting and transferring data.

Reliability of emissions data and competence affect the utilisation of emissions data

The utilisation of emissions data is still in its infancy in many companies. The value of emissions data has not been recognised in all companies. However, the majority of shippers seem to utilise emission data in some way, whereas transport companies, mostly only larger companies utilise emission data. The utilisation of emission data is essentially affected by the reliability and comparability of emissions data, the perception of the significance of emissions reporting, and competence and resources.

Value of emissions data will increase in the future

The value of emissions data will increase in the future and it will be one of the criteria for decision-making. Ideal emissions reporting is real-time, reliable and commensurable. At the target level, emissions reporting promotes competitiveness in society, and companies implement their emission obligations on their own terms. All in all, reporting itself was seen as a clear milestone. It alone is not the end product to be sought,

but it is a way to achieve concrete measures and provide an opportunity to measure the success of the measures in terms of emissions development.

Drivers and obstacles to the development of emissions reporting

In order to achieve the necessary change, several drivers can be identified that enable the development of emissions reporting towards ideal emissions reporting. The following themes describe the key drivers identified in the project for the development of emissions reporting: incentives, customers, regulation, digitalisation, training, transparency, certification and policy. Lack of resources, skills and understanding, lack of standard, lack of digital solutions, costs, conservatism in the transport sector, lack of customer requirements, regulatory delays and political indecision were identified as obstacles to the development of emissions reporting.

Impacts of the utilisation of emissions data

The utilisation of emissions data generates value and many benefits for both logistics service providers and shippers. With the help of emission data, it is possible to monitor the effectiveness of the emission reduction targets set, and the measures taken, the company's own operations can be further developed and optimised based on the data, and the right effective and profitable emission reduction measures can be identified. At the minimum level, emissions reporting by companies indirectly supports the implementation of Finland's emission commitments. At the target level, emissions reporting in logistics will generate new service business that also has export potential, e.g. digital solutions related to emissions reporting.

Emission impact assessment and potential

Logistics emissions reporting requires enhancements in digitalization, which may on its part help to realise the emission reductions related to total haulage and vehicle mileage. In addition, logistics emissions reporting enhances the capacity of logistics service providers to implement energy efficiency measures. It is difficult to accurately estimate the emission impacts of logistics emissions reporting, but estimating the magnitude can be done by creating scenarios with different assumptions. As the result of the calculation, annual emission and cost impact is estimated compared to a baseline scenario. Logistics emissions reporting gives the tools for collaboration, which leads to emission reductions and reduced costs. The emission reductions

achieved through reporting may be around 0,08 Mt (5% of truck emissions) and cost reductions around 100 million € in 2030.

Recommendations for the development of logistics emissions reporting

The recommendations for developing logistics emissions reporting and implementing the digitalisation of logistics have been formed based on the results of the project. Based on the recommendations, a roadmap for developing logistics emissions reporting was drawn up, presenting in more detail the tasks and responsible parties for the necessary actions, taking into account the objectives and existing resources and practices. The roadmap is presented as an appendix to the final report of the project. The recommendations and, at the same time, the five key task groups of the roadmap are:

- Support and involvement of the authorities
- Knowledge to the field
- Preparation of supporting material
- Assessment of the need for a national calculation tool
- Development of a new national unit emissions database

Support and involvement of the authorities. The development of logistics emissions reporting requires the support and participation of the authorities. The primary task of the authority is to monitor and manage the holistic view, to make up-to-date information available centrally and/or to guide companies to such information. The risk of spreading false information is also reduced to significant levels if the authorities provide the right instructions to those who need it at once. It is important to define strategic and operational tasks and responsible authorities.

Knowledge to the field. In order to implement emissions reporting and develop competence, active communication and training are needed through different channels for different target groups. It is important to make use of existing associations and networks. The training includes training at different levels and lengths, of which continuing education for working life and degree education are examples.

Preparation of supporting material. The support material increases understanding and competence and speeds up the implementation of emissions reporting. The calculation method of ISO 14083:2023 standard requires clear, understandable and simple, concise instructions in Finnish. In addition, it is necessary to draw up separate simple instructions on the calculation process and the practical implementation of the calculation process to support the calculation process. It is recommended that the

training material in video format be prepared both for the condensed guidelines of the standard and for the implementation of the actual calculations.

Assessment of the need for a national calculation tool. In addition to preparing the support material for ISO 14083:2023 standard, it is necessary to determine the need for a national calculation tool and evaluate its concrete benefits. It must also be assessed whether the technical guidance for practical calculation examples and the calculation process (separate and complementary compared to ISO 14083:2023 guidelines) would be a more cost-effective and effective measure than the actual implementation of the calculation tool. The need for both of these measures should be assessed, especially for small operators.

Development of a new national unit emissions database. In order to develop a new national unit emissions database, a suitable funding model (business network-based, user-driven, possible direct government funding, etc.) must be explored in order to develop the database and ensure its continuity. In addition to developing a national unit emissions database, opportunities for regional cooperation should also be assessed.

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The business and emission reduction potential of logistics through emissions reporting (LOLIPOP) has been carried out as part of the implementation of the Government's plan for analysis, assessment and research for 2023.

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