



CCR INSIGHTS 2/2024

Outlook on Finnish cargo owners' scope 3 emission reductions

20.11.2024

By Titiana Ertiö and Antti Saurama



**UNIVERSITY
OF TURKU**

Turku School of
Economics



Content

Summary	5
Introduction.....	6
Survey for 300 Finnish cargo owners	8
Scope 3 emissions	10
Finnish cargo owners' views on emission reductions	12
Drivers behind emission reductions	13
Overall scope 3 emission targets	16
Targets for transportation emissions within scope 3	17
Competitive advantage from sustainability	20
Discussion.....	21
Key Insights.....	22
References.....	25
Background Information about this CCR Insights report.....	26



Summary

Managing scope 3 emissions from transportation is challenging since transport chains are often complex, global, multimodal, and involve numerous stakeholders. The role of transport within total scope 3 emissions can differ widely depending on the value chain and transport chain characteristics of a focal company. Scope 3 emission reductions make emission approaches less straightforward than controlling a company's own emissions.

Decarbonization and greenhouse gas (GHG) emission reductions are on the agenda of businesses internationally. Global standards divide GHG emissions into three main categories or scopes: scope 1 (direct emissions from owned or controlled sources), scope 2 (indirect emissions, e.g. from used electricity) and scope 3 (all other indirect emissions of an organization).

Most efforts have so far targeted companies' direct emissions. A growing number of companies now take steps to influence emission reductions in their supply chains. These scope 3 emissions, also referred to as value chain emissions, can reach very significant levels among total emissions.

This CCR Insights report seeks to understand on the current efforts of cargo owners as transport customers in navigating scope 3 emission reductions. The report is based on a nationally representative sample of 300 Finnish cargo owners and analyzes supply chain emission reductions from their perspective: decarbonization drivers, the precision level of the target setting for overall scope 3 emissions, specific targets for transportation, insights

into the role of sustainability in the broader competitive advantage context and expected leverages of transportation modes.

The results show that customers' demands are the top reason for pursuing carbon-neutrality, alongside taking responsibility for the environment and requirements set by regulation. About one-third of the companies surveyed have set scope 3 emission targets so far and about every fifth has set scope 3 emission targets for transportation, with some differences across sectors and company sizes. Respondents estimated that road transportation is expected to cut emissions the fastest. Broadly, half of respondents estimate their companies are at the same level of environmental sustainability as their competitors'.

Considering the potential for transport emission reductions globally there is huge potential for novel collaborative models across transportation chains, new sustainable transport concepts, customized services, differentiation in markets, and, ultimately, competitive advantage.



Introduction

The waves of decarbonization, or more broadly, greenhouse gas (GHG) emission reductions, have reached all businesses and sectors internationally. Besides political and regulative agendas, emission reductions have now gained a foothold in company strategies and actions alike. Most of the efforts have so far targeted companies' direct emissions; a growing number of companies now take steps to influence emission reductions in their supply chains, both upstream and downstream. These so-called scope 3 emissions, also referred to as indirect or value chain emissions, play an important role as they can, in some cases, rise to 90% of the total emissions generated by a company or industry (see World Economic Forum, 2021).

Procured logistics and transport services are scope 3 emission sources for a cargo owner, i.e., a manufacturer or wholesaler, among other emission sources. Attempts to manage and cut scope 3 emissions, therefore, influence the logistics and transportation sector directly. Many companies experience their daily logistics operations as challenging since transport chains are often complex, global, multimodal, and involve numerous stakeholders. Additionally, the complexity of emissions accounting, data gathering, and verification can still be seen as a major challenge globally (Kallionpää et al., 2024; World Economic Forum, 2021). As a bottom line, scope 3 emission reductions are part of the business relationship between the transport buyer and supplier, including many aspects of pricing, cost competitiveness, investments, value, and service characteristics, which, taken together, make emission approaches less straightforward than controlling a company's own emissions.

There are currently several reasons why industries reach toward scope 3 emission reductions more progressively. Among all scopes, for many, scope 3 provides significant impact potential in cutting emissions. Technological development also offers new possibilities for low-carbon solutions. Importantly, global emission standards and emission reporting legislation efforts such as the Corporate Sustainability Reporting Directive (CSRD) in the EU have made companies' environmental footprint transparent, visible, and comparable. Efforts to reduce their emissions encourage some companies to engage their value chains to join the effort. On a fundamental level, companies start to acknowledge the potential business value of emission controls and reductions in their commercial relations and when selling products and services to customers, who are increasingly seeking proof of and actions in support of sustainability. Logistics and transportation play a crucial part in these efforts.

This CCR Insights report seeks to understand and shed light on the current efforts of cargo owners as transport customers in navigating scope 3 emission reductions. More specifically, it analyzes supply chain emission reductions from the Finnish cargo owner perspective: decarbonization drivers, the precision level of the target setting for overall scope 3 emissions, specific targets for transportation, and expected leverages of transportation modes. We investigate the current situation among three Finnish industry sectors, i.e., groups of cargo owners: manufacturing, construction, and wholesale and retail trade, aiming to raise awareness about these three groups of cargo owners regarding the impacts and implications for the logistics and transport sector, which include both opportunities and challenges.

Survey for 300 Finnish cargo owners

This report utilizes survey data that was collected from 300 cargo owners with juridical business entities in Finland. The survey was planned by the Turku School of Economics (TSE) and carried out by a market research company, Taloustutkimus Oy, which collected the national sample responses. The survey was carried out between May and July 2024.

The survey was focused on three standard industrial classification categories: manufacturing, construction, and wholesale and retail trade (Fig. 1). The shares of each category in the sample were 48%, 17%, and 35%, respectively. Companies of personnel below 50 were excluded from the original sample. In terms of company size (Fig. 2), the sample consists of 28% large companies (personnel over 250 employees) and 72%

medium-sized companies (between 50 and 249 employees). As regards the corporate function held by the respondents (Fig. 3), 55% represent either sustainability or logistics/procurement positions, 18% general management, and 27% other positions. The survey sample is representative of Finnish company structure in terms of size, location, and sub-sectors of companies.

The survey was conducted by phone interviews following a structured questionnaire protocol. It consisted of items measuring sustainability and, in more detail, scope 3 overall emission targets and transportation mostly on binary scales. In addition, respondents were able to detail their answers through open-ended responses.

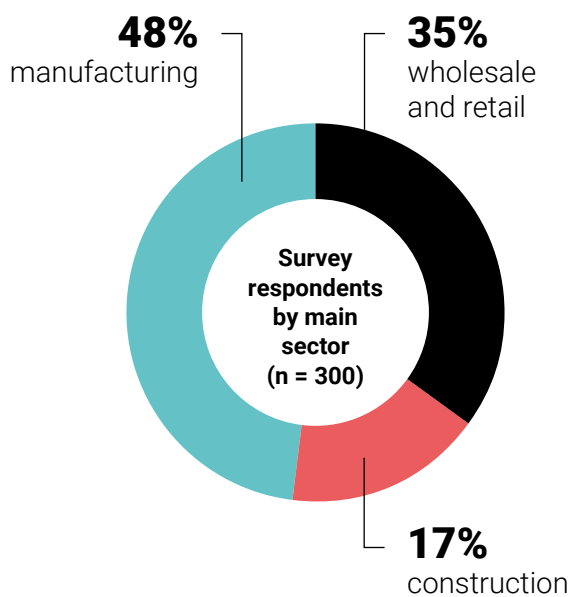


Figure 1. Survey respondents by main sector (n = 300).

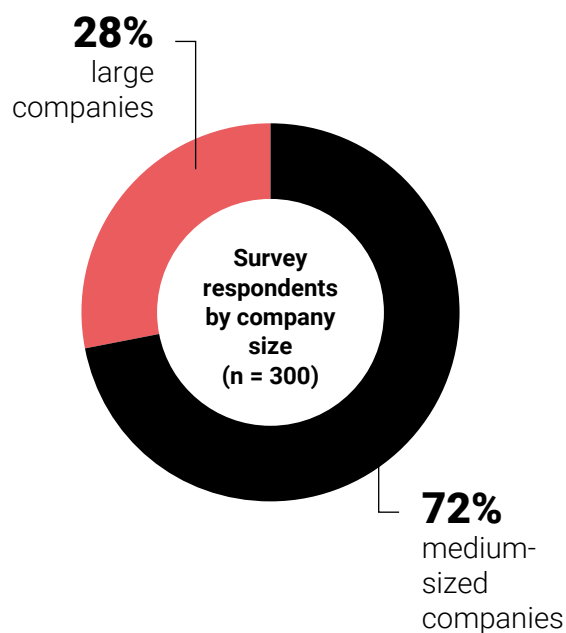


Figure 2. Survey respondents by company size (n = 300).

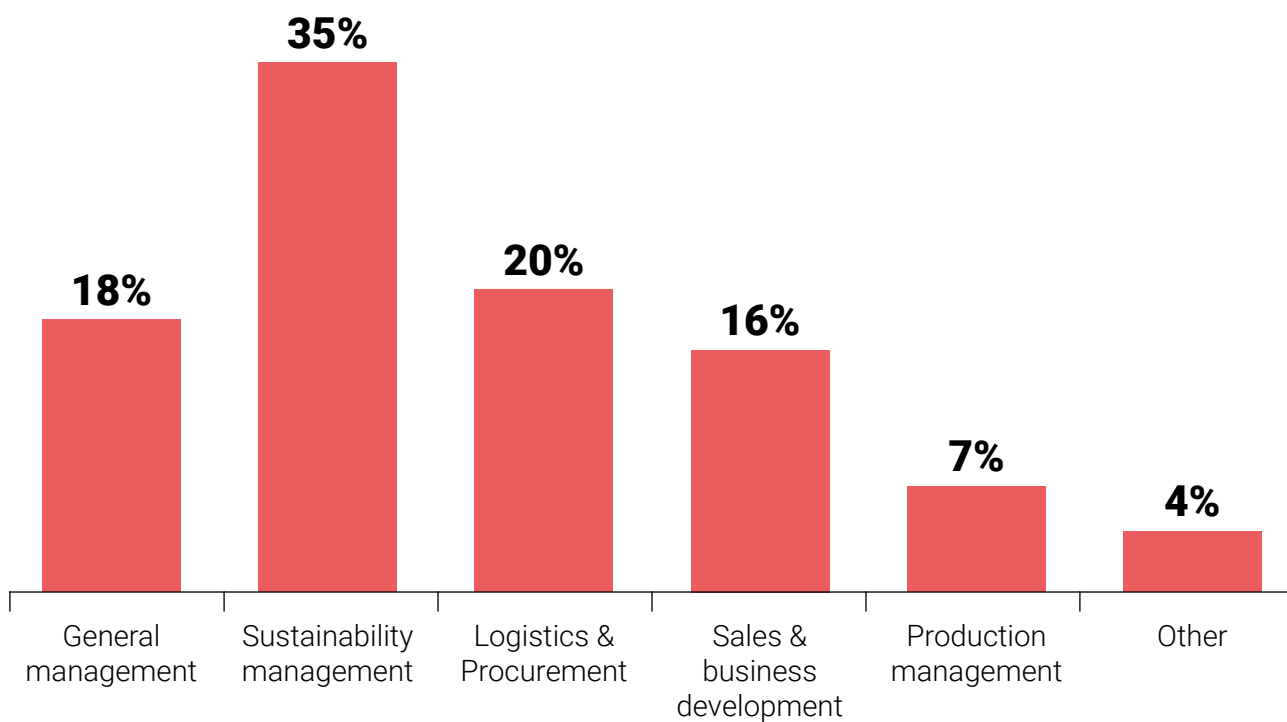
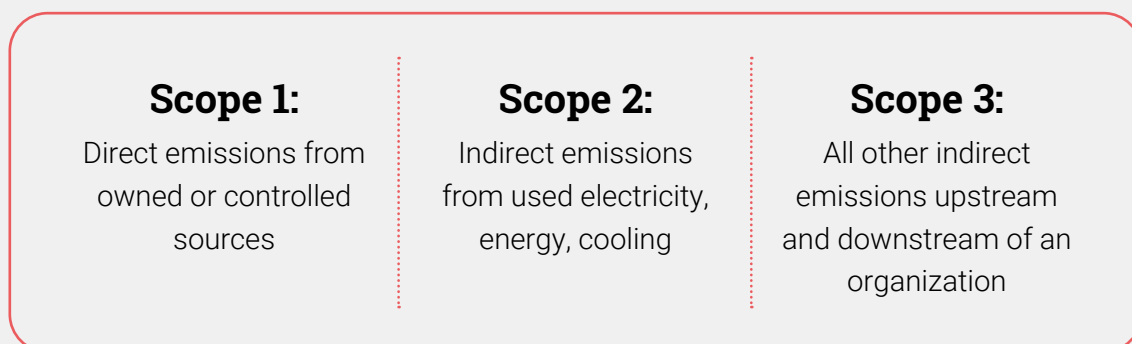


Figure 3. Survey respondents by corporate function (n = 300).

Scope 3 emissions

Global protocols, standards, and regulations divide GHG emissions into three main categories or scopes (see also Fig. 4):



(see, for example, European Union, 2022; World Economic Forum, 2021; and World Resources Institute and World Business Council for Sustainable Development, 2011)

Scope 3 emissions happen in a company's supply chain. By definition, they occur from sources owned or controlled by other entities in the value chain (e.g., materials suppliers, third-party logistics providers, waste management suppliers, travel suppliers, lessees and lessors, franchisees, retailers, employees, and customers). They can be further divided into *upstream emissions* (GHG emissions related to purchased or acquired goods and services) and *downstream emissions* (GHG emissions related to sold goods and services). The Greenhouse Gas Protocol standard categorizes scope 3 emissions into 15 distinct categories. For the purposes of this report, two of these, namely

Upstream transportation and distribution and *Downstream transportation and distribution*, are particularly relevant (World Resources Institute and World Business Council for Sustainable Development, 2011).

The share of scope 3 emissions *among all scopes* varies substantially between companies and business sectors, from only a few percent up to 90%, according to some estimates (see, e.g., World Economic Forum, 2021). Likewise, the role of transport within total scope 3 emissions can differ widely depending on the value chain and transport chain characteristics of a focal company. Estimating and calculating the vastness

of these emissions is a complex endeavor, as they include both upstream and downstream activities outside the company. Regardless of the impact of scope 3 emission reductions on decarbonization, the complexity and

the broad range of activities have made scope 3 emission reductions and overall target setting much more complicated and slower to adopt compared to the other two scopes.



Figure 4. Scope 1, 2, and 3 categorizations. Own elaboration based on World Economic Forum, 2021



Finnish cargo owners' views on emission reductions



This section of the report introduces the survey results. First, we present the driving forces behind companies' goals towards low-carbon and carbon neutrality. Second, we survey the overall views on scope 3 emissions in general and transportation in particular. Finally, we provide insights into the role of sustainability in the broader competitive advantage context.

Drivers behind emission reductions

We asked respondents to choose the top three reasons for pursuing low-carbon or carbon neutrality out of a list of eight items, including not pursuing carbon neutrality (with no responses).

Fig. 5 shows the three most crucial driving forces behind companies' pursuit of carbon neutrality, namely customer demands, responsibility towards the environment, and regulatory requirements. *Customer demands* was the most mentioned reason overall (76% of all respondents chose the statement; 32% of them chose the statement as their most important reason, 27% as their second most important, and 16% as their third most important). The second most popular

reason was *taking responsibility towards the environment* (66% of all respondents chose the statement; 35% of them chose the statement as their most important reason, 13% as their second most important, and 18% as their third most important). *Regulatory requirements* came in third (54% of all respondents chose the statement; 14% of them chose the statement as their most important reason, 18% as their second most important, and 22% as their third most important, respectively).

On the other hand, tightening financial requirements is not perceived as an essential driver by the respondents in the survey (10% of all respondents who chose the statement).

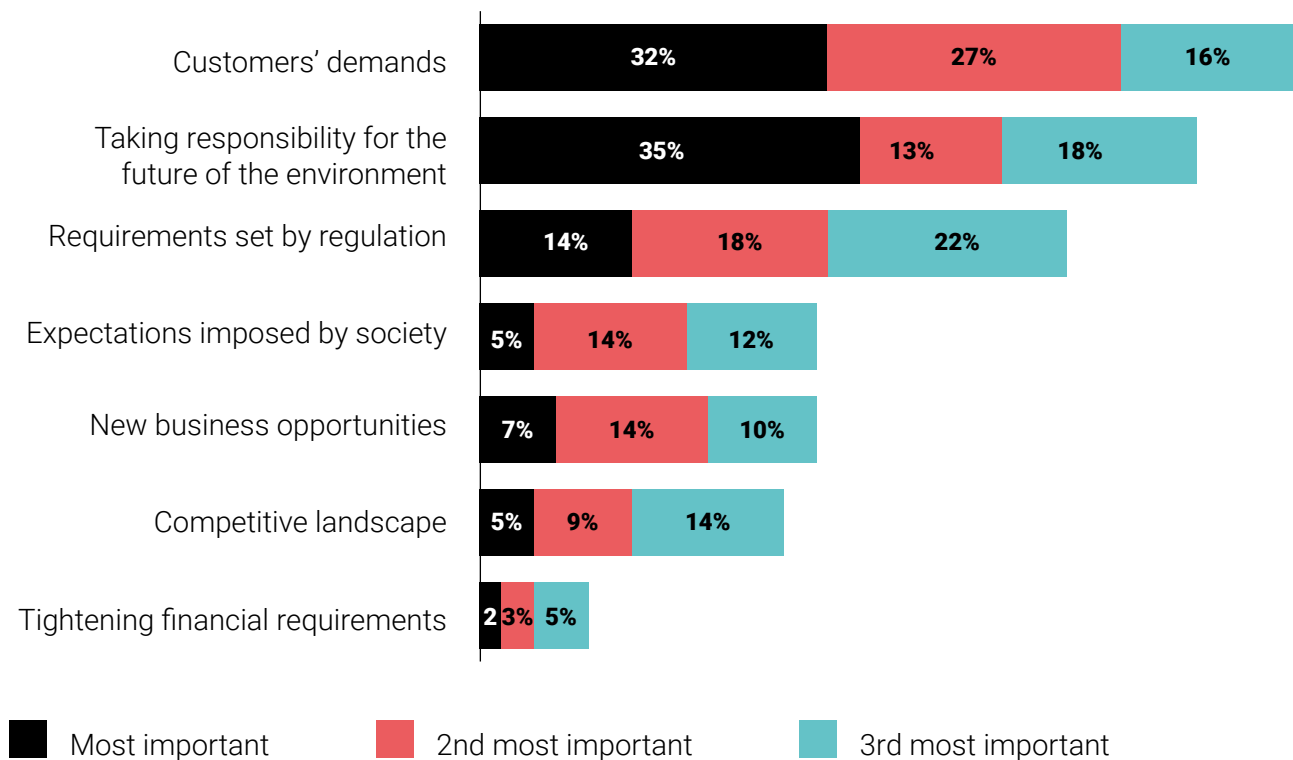


Figure 5. Respondents' views on their company's most important reasons for pursuing low-carbon or carbon-neutrality (n = 300). Do not know/not available are not shown.

When analyzed from the vantage point of company size, large and small companies differ somewhat in their reasons for pursuing carbon neutrality (Fig. 6). The proportion of large companies who stated that their most important reason is taking responsibility for the environment was 28% compared to the corresponding proportion of medium-sized companies, which was 37%. The proportion of

large companies who stated that their most important reason is regulatory requirements was 18% compared to the corresponding proportion of medium-sized companies, which was 12%. Lastly, the proportion of large companies who stated that their most important reason is customers' demands was 28% compared to the corresponding proportion of medium-sized companies, which was 34%.

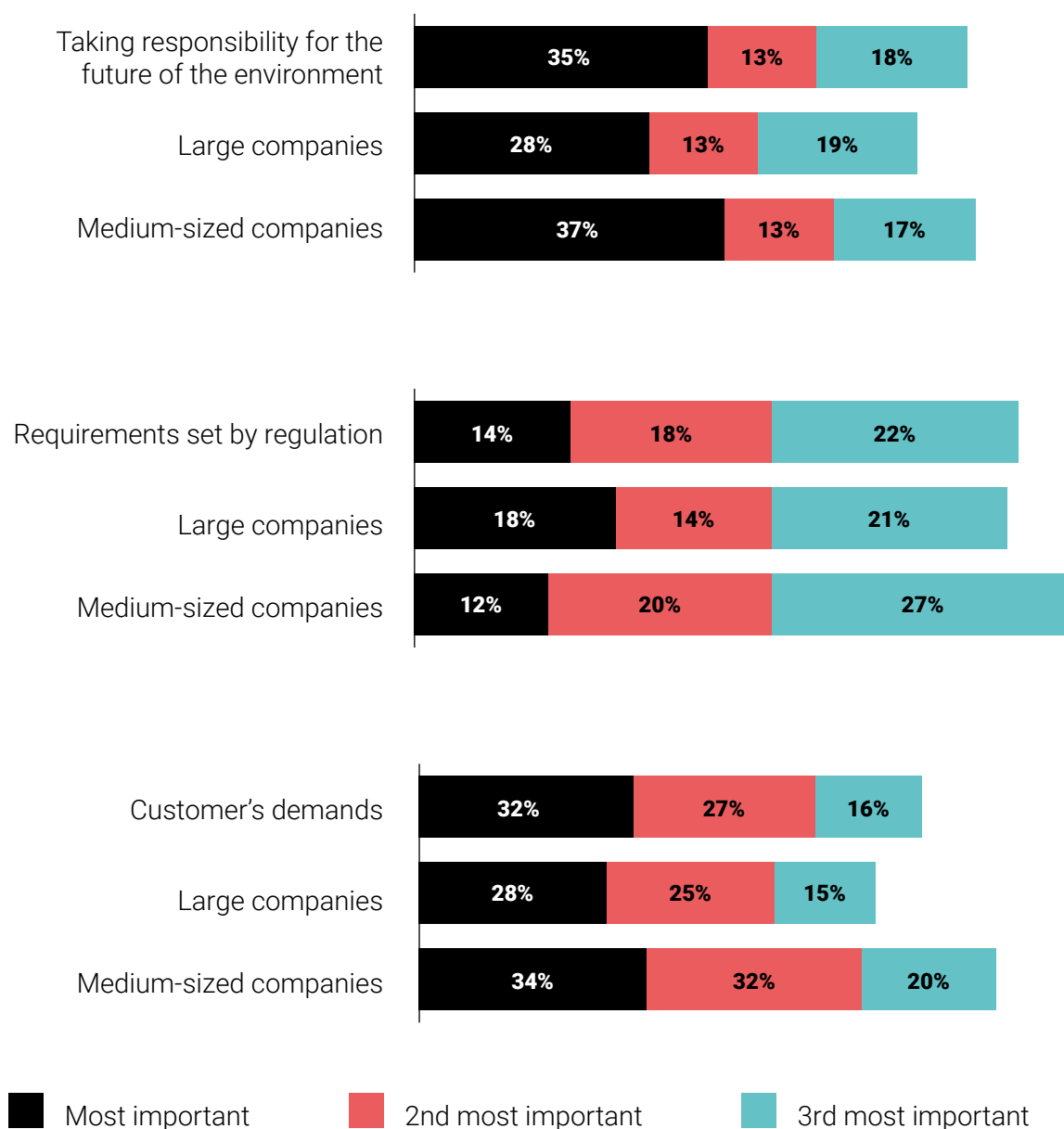


Figure 6. Responsibility for the environment (n=197), regulatory requirements (n=163), and customer demands (n=228) as reasons for pursuing carbon neutrality by company size.

Companies differ to some extent on their main reasons for pursuing carbon neutrality across sectors (Fig. 7). For instance, the proportion of wholesale and retail trade companies who stated that their most important reason is taking responsibility for the environment was 43% compared to the corresponding proportions for construction companies, which was 26% and manufacturing 32%. The proportion of wholesale and retail

trade companies who stated that their most important reason is regulatory requirements was also larger (18%) than construction (8%) and manufacturing (13%). Conversely, the proportion of construction companies stating the most important reason for pursuing carbon neutrality to be customer demands is far larger (42%) than the corresponding proportions for wholesale and retail trade companies (26%) and manufacturing (34%).

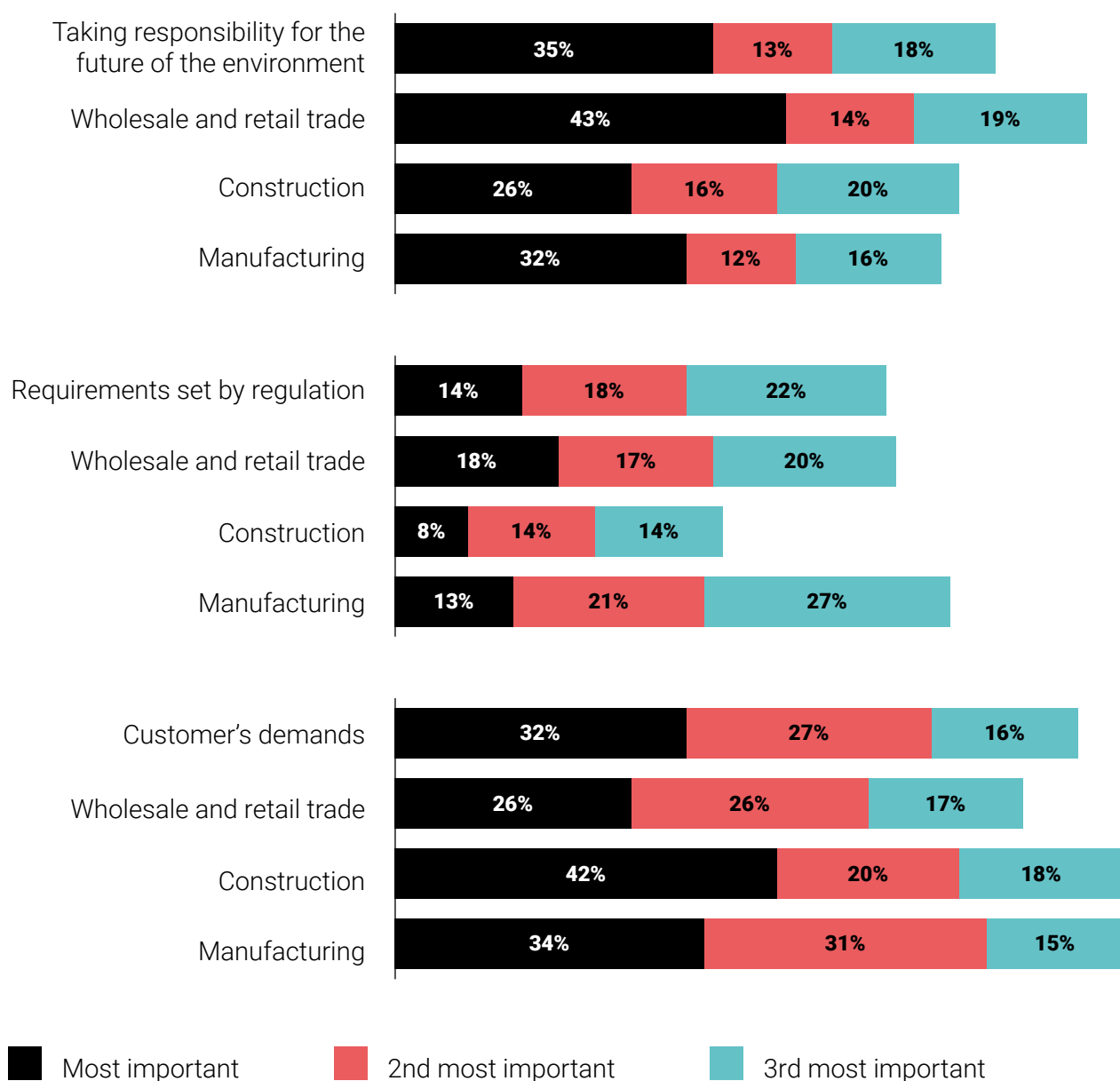


Figure 7. Responsibility for the environment (n=197), regulatory requirements (n=163), and customer demands (n=228) by sector

Overall scope 3 emission targets

The challenges related to scope 3 quantification outlined above are reflected in the results of our survey. The following two sections detail the difficulties of first, setting clear targets for scope 3 emissions and second, raising the level of ambition further by setting targets specifically for transportation.

About one-third of companies have set scope 3 targets. Of the companies surveyed, 31% have set scope 3 emission targets so far (Fig. 8). About half of the current targets are set for 2030 (approximately 43%) and some 21% are set for the current year 2024. Nonetheless, for most companies, their scope 3 target setting is still in the works.

Scope 3 targets vary across sectors and company size. The proportion of companies that have scope 3 targets was 44% for

manufacturing, 42% for those in the wholesale and retail trade, and 14% for the construction sector. Among companies with scope 3 targets, the majority (59%) employ under 250 employees and 41% more than 250 employees. The fact that companies with less than 250 employees have set such targets signals a solid commitment to emission monitoring.

Estimating end goals and target years for scope 3 emissions is intricate. Despite being experts, some respondents could not state the ultimate scope 3 emission goal and the year by which it should be achieved. Respondents had a hard time recalling the exact targets, although their company had internal targets in place. A few reported having achieved a low emission threshold at the time of the interview: **“Our emissions are at such a low level that we are aiming to keep it that way,”** one respondent said.

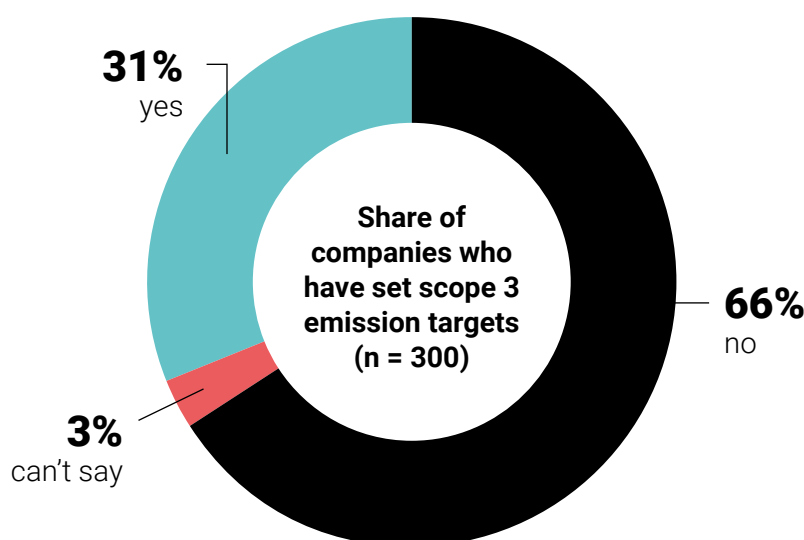


Figure 8. Share of companies who have set scope 3 emission targets (n = 300)

Other respondents did not want to share information publicly yet: *“The targets are for internal use only at this time, yet they will become public shortly.”* Still, others mentioned targets in greater detail: *“The yearly target is 10% reductions. No final year target but rather decrease [emissions] each year [by] 10% starting from 2021 onwards.”*

Even within the same company group, different approaches may be found. Some respondents mention group-level decisions had been made in their companies but the national organization they are employed in has its own goals.

The open answers provide evidence that the most common goal for scope 3 targets was

30% until 2030. Some cargo owners set higher emissions cut levels, up to net-zero.

Interim goals were mainly quota-based, such as 5% or 10% per year reductions. When it came to benchmarking, several companies mentioned 2019 as a reference year against which they compared their emission reduction interim goals.

All in all, at the moment scope 3 targets are found only in early adopting companies. Those that do have such targets aim to systematically assess their emissions holistically. As evidence in our surveys' open answers suggests, it is not an easy task.

Targets for transportation emissions within scope 3

As mentioned, scope 3 consists of several types of emissions. This section of the report focuses on emissions stemming from transportation as part of scope 3.

Every fifth company has set scope 3 emission targets for transportation. Twenty-one percent of respondents said that their companies have set transportation emission targets (Fig. 9). Half of these companies have set their targets for 2030.

Companies operating in wholesale and retail are more eager to set scope 3 emission targets for transportation. The proportion of companies who have scope 3 targets for transportation is 56% for those in the wholesale and retail trade, 40% for manufacturing and 4% for the construction sector. As was the case with scope 3 emissions targets, the construction companies seem to lag behind the two other sectors. Sixty-five percent of these companies with scope 3 emissions for transportation are medium-sized companies, and 35% are large companies.

Scope 3 emission end targets and years for transportation are far too detailed.

If respondents had a hard time estimating the overall scope 3 emissions, the case of transport is an additional hurdle. Overall, transportation is just one component of scope 3 emissions, and singling it out was perceived as too detailed for many respondents. First, many respondents could not state precisely whether their company had a scope 3 emission reduction target specifically for transportation in the first place. Some mentioned they had not set targets for transportation: *"We have not defined transportation in such detail,"* one respondent said. At the other end of the spectrum, others were aiming at zero emissions: *"The goal is that there would be no scope 3 emissions. We are aiming for zero-emissions,"* and still others have already achieved their targets: *"We have achieved our target for logistics."*

The quote "[Scope 3 emissions reductions for transportation] is either 30% or 50% until 2030" exemplifies the challenges of scale and perception when it comes to singling out one contributing factor, such as transportation, to an already ambiguous and vast scope 3 emission aggregate. Broadly, the targeted cuts for transport were mostly set at 30% for 2030 similar to the case of overall scope 3 emission targets as suggested in the open answers in the survey. However, some cargo owners also target far larger transport emissions cuts.

For interim goals on scope 3 emissions for transportation, reference years start to build up from 2018 onwards and a peak in 2022.

We asked companies without scope 3 emissions targets for transportation about their outlooks for 2024. Twenty-one percent stated, that their company is considering setting transportation targets during the current year. Granted, perhaps the focus on transportation is too detailed in the context where to begin with, only a third have scope 3 levels. Nonetheless, transport is one area where cargo owners have considerable flexibility to choose from transport and logistics providers of their choice. From this vantage point, the early adopters might choose those logistics providers who can help them meet their targets efficiently. Furthermore, having clear targets might guide purchasing decisions to align with the company's overall sustainability efforts.

Regarding multimodal transportation emissions, *road transportation is expected to cut emissions the fastest.* Our survey results reveal that the most impactful emission cuts are expected from road transportation (75%), followed by sea transport (13%) by a considerable margin (Fig. 10). The potential for road transport is largely expected to stem from decarbonization efforts through electrification.

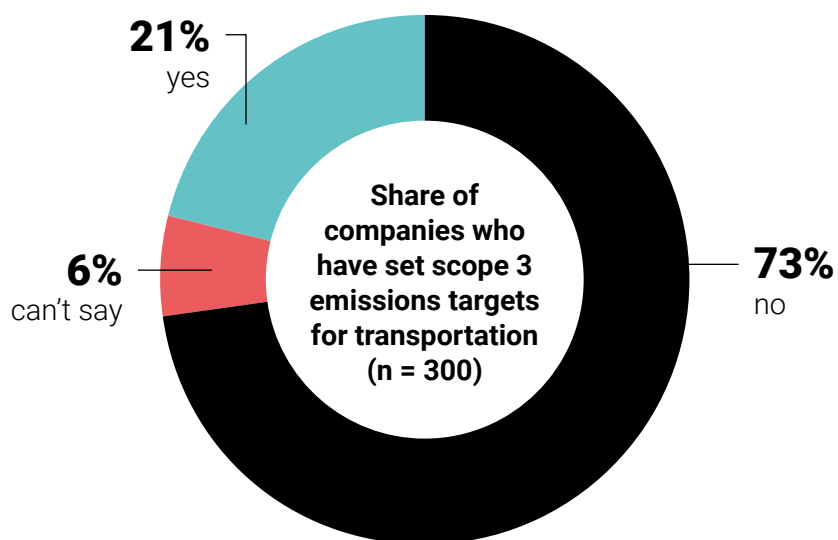


Figure 9. Share of companies who have set scope 3 emissions targets for transportation (n = 300).

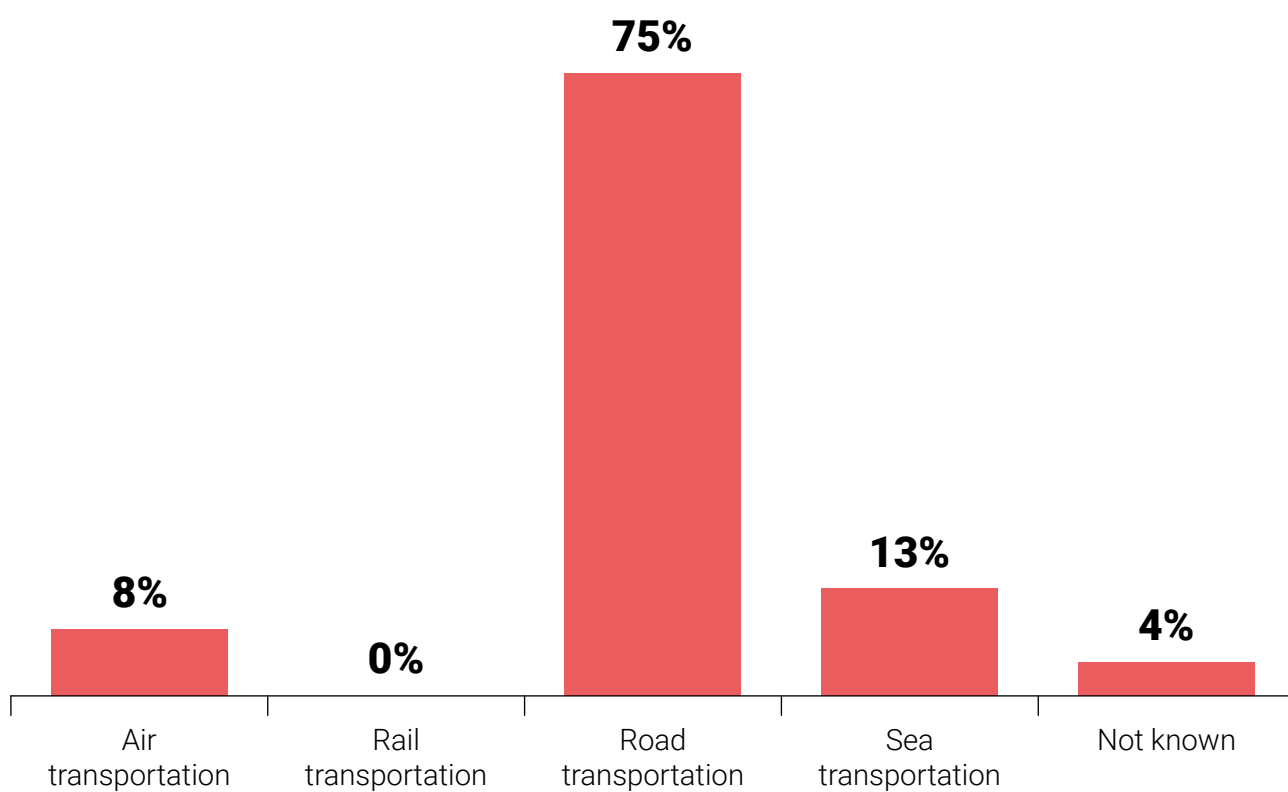


Figure 10. Estimations of fastest emission reductions by transport mode (n = 300).

Competitive advantage from sustainability

Overall, environmental sustainability is relevant to companies across the board in positioning themselves in the market (Fig. 11). Interestingly, only 3% of respondents stated that their competitors are ahead of them.

Just above half of the respondents (51%) in the survey estimate their companies are at the same level of environmental sustainability as their competitors, and 46% estimate they have a competitive advantage over their competitors.

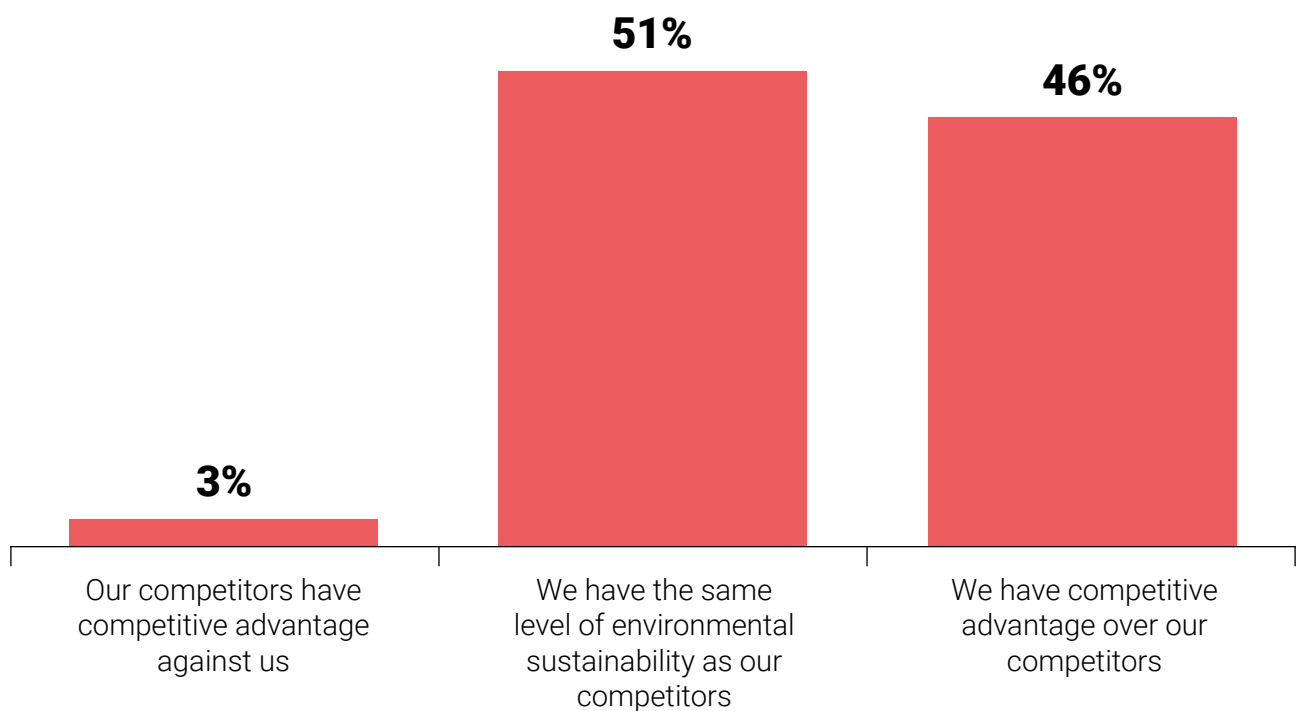


Figure 11. Respondent's perceptions of their company's competitive advantage from pursuing sustainability in relation to competitors (n=300)

Discussion

In light of the results of the cargo owner survey in Finland, it appears that cargo owners are increasingly considering measures to cut their supply chain emissions as an integral part of their total emission reduction efforts. The prevalence of scope 3 targets in Finland, especially for transports, is still limited. However, our results show evidence that a growing number of companies consider target setting still during 2024; going forward, especially medium-sized companies are expected to follow suit.

The vast amount of newly introduced and upcoming international sustainability regulations for the transportation sector, coupled with growing sustainability expectations of cargo owners is imposing certain challenges in the transportation sector. On the one hand, legislation is setting minimum normative requirements for the logistics and transportation sector, and on the other hand, the sector is influenced by transport customer emission targets. What makes this dual impact particularly challenging is the nature of emission targets: regulation is typically transport mode-specific, while cargo owners' perspective is end-to-end transport chains, often involving multimodal transportation. Both of these perspectives need to be simultaneously considered when creating long-

term sustainability strategies, particularly when the outcomes are envisioned to support the company's competitive advantage efforts.

Emission reduction targets for scope 3 and transports, more specifically, vary between cargo owners both by sector and size. This applies to the level of ambition for emission reductions as well as the time period in which it is estimated for these levels to be achieved. Notably, some cargo owners target faster emission reductions than what is required by current or foreseen regulations for each transport mode. This can be seen at the same time as a challenge and an opportunity. A challenge, especially for commercial business relations, is dealing with far-reaching decarbonization, which is a significant cost factor. At the same time, it is an opportunity for logistics and transport sector companies to generate new green solutions and business models that enable concrete differentiation in the market and help them to grow. As recently noted by industry analysts (see, for example, Bertelè et al., 2024), instead of just recovering the costs, logistics companies need to rethink their green commercialization strategies—the authors of this CCR Insights report second this point.

Key Insights

1. Complexity and challenges

Scope 3 emission reductions are far more complex and challenging to companies compared to the more straightforward scopes 1 and 2. Typical challenges relate to, among others, the large scale of activities and the number of actors, the fact that combined emissions from up- and downstream can be far bigger than their emissions, the calculation and data efforts require significant resources, control and transparency over the value chain are limited, to name a few. Against this background, it is not surprising that many companies struggle with concrete targets and actions as evidence in our open-ended answers suggest. For the reasons mentioned above, the scope 3 approach might be somewhat lagging behind other sustainability measures in companies.

2. Drivers of change

Scope 3 is gradually gaining importance in emission reduction strategies for several reasons. For cargo owners, one of the key drivers is that their (end) customers are demanding more transparency regarding the sustainability of their products and services. This also includes emissions generated by logistics and transportation. Regulations and standards also play a role, e.g., via mode-specific GHG regulations, more transparent monitoring, and systematic public reporting of different categories of emissions (such as those mandated by CSRD for large companies). These aspects are interlinked with the fact that cargo owners are increasingly valuing environmental responsibility in all their activities.

3. Expansion of scope 3 targets ahead

Currently, among Finnish manufacturing, construction, and wholesale and retail trade companies, every third company has set scope 3 emission targets. To some extent, this can be seen as logical as large companies are obliged to collect and report publicly their emission developments in all scopes; smaller companies, in turn, are not required to yet. Our survey results suggest that next, medium-sized companies will follow large corporations, gradually increasing the share of cargo owners with scope 3 emission targets in Finland. In addition, more companies will probably set emission reduction targets (within scope 3) for transports specifically, which is not currently mainstream

among Finnish cargo owners. All in all, the transport sector will increasingly face specified expectations and demands for emissions cuts stemming from transport customers.

4. It is not a straightforward task to cut emissions in transport chains

Many cargo owners are currently assessing their transport chains and evaluating emission reduction scenarios and possibilities in dialogue with the logistics and transport sector. Those who are yet to set transportation emission reduction targets are expected to follow suit. As many cargo owners have international and multimodal transport chains, they need to assess how to approach different transport mode emission reductions and what kind of strategy to apply. Different transport modes have diverse technical, operational, commercial, and regulatory conditions and outlooks, and thus, different baselines and approaches to emission reductions, especially short-term. This is likely to generate optimization considerations and strategies among many cargo owners: it is a delicate balance to strike the emission reduction levels required or expected per transport mode in a given time horizon to be aligned with future emission reduction targets. Overall, it seems that road transportation is currently expected to cut emissions the fastest.

5. New business opportunities in the outlook

Going forward toward 2030, the year to which many companies tie their next targets, the logistics and transport sector in Finland is expected to face growing sustainability demands from cargo owners. Some of the cargo owners' expectations regarding emission reductions are more ambitious compared to what is required by regulation. Such ambition levels for emission targets create operative, technical, and commercial challenges that stakeholders need to solve. Importantly, the situation also creates business opportunities for those striving for new sustainable transport concepts, customized services, differentiation in markets, and, ultimately, competitive advantage. Considering the enormity of transport emission reductions globally there is also huge potential for novel collaborative models across transportation chains.



References

Bertelè, A., Pacca, M., & Weber, B. (2024). *Making green logistics services profitable*. McKinsey & Company Insights. Retrieved November 18, 2024, from <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/making-green-logistics-services-profitable>

European Union. (2022). *DIRECTIVE (EU) 2022/2464 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting*. Official Journal of the European Union L322/15, 15.12.2022. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32022L2464>

Kallionpää, E., Viri, R., Liimatainen, H., & Nykänen, L. (2024). Logistiikkaan liiketoiminta- ja päästövähennyspotentiaalia päästöraportoinnilla. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 2024:21. https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/165656/VNTEAS_2024_21.pdf?sequence=1&isAllowed=y

World Economic Forum. (2021). *Net-Zero Challenge: The supply chain opportunity. Insight report January 2021*. https://www3.weforum.org/docs/WEF_Net_Zero_Challenge_The_Supply_Chain_Opportunity_2021.pdf

World Resources Institute and World Business Council for Sustainable Development. (2011). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Supplement to the GHG Protocol Corporate Accounting and Reporting Standard, September 2011*. Retrieved November 18, 2024, from https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf

Background Information about this CCR Insights report

Researchers at the Centre for Collaborative Research CCR, Turku School of Economics at the University of Turku, Finland, carried out this CCR Insights report. It is part of the ongoing R&D project GreenConnect - Connecting green transition to new competitive advantage in transport solutions, funded by Business Finland, the University of Turku, and a group of companies. The project is part of the Wärtsilä-led Zero Emission Marine program.

GreenConnect aims to investigate and develop green transportation concepts to support the green transition. In the GreenConnect project, potential emission reduction measures in door-to-door transport, including maritime transportation, are examined, carbon dioxide emission calculation models and accuracy are

improved, and business potential for green competitive advantage is investigated.

This report intends to picture the current state of scope 3 emission reduction targets among cargo owners in Finland and feed discussion about implications for the transport sector and logistics service providers.

The authors would like to thank warmly 300 corporate respondents who were part of the national data sample and shared their facts and views.

Titiana Ertiö works as Research Manager and Antti Saurama is the Director at the Centre for Collaborative Research CCR, Turku School of Economics.

For more information and downloads

In Finnish » www.utu.fi/fi/yliopisto/turun-kauppakorkeakoulu/ccr/ccr-insights-ajankohtaistatsauksia

In English » www.utu.fi/en/university/turku-school-of-economics/ccr/ccr-insights

» www.utu.fi/en/university/turku-school-of-economics

GreenConnect

**Centre for Collaborative
Research CCR**



