CO2 Progress and Energy Action Plan

Period January 1st, 2024 until December 31st, 2024

Strukton

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Contents

1 Introduction

This document reports on the developments at Strukton regarding the reduction of carbon emissions in 2024 (January 1st – December 31st).

In 2024, we reduced our scope 1 and 2 greenhouse gas emissions by 2,787 tonnes compared to 2023, which translates to a 7.4 percent decrease. Additionally, our emissions relative to our revenue also decreased by 15.9 percent. This decrease puts us on track to achieve our goals of reducing our gross emissions by 50% in 2030 and being climate-neutral by 2040, in line with the goals set in the Paris Agreement. Furthermore, we are committed to gain further insight into our scope 3 emissions, to identify and implement emission reduction measures in our material value chains.

Results in the past

For over 10 years, Strukton has been certified at the highest level of the CO2 Performance Ladder. Following the successful reduction of our carbon footprint with 47% during the period 2009 - 2021, we've sharpened our ambition for 2030. In the past, we've reduced our CO2 emissions through a variety of measures. Regarding mobility, we have made adjustments in our car fleet (changing the standard from petrol to diesel-powered vehicles and promoting electric vehicles), enabled and encouraged the use of a mobility card for public transport (NS-business card), and promoted hybrid working after national COVID-19 regulations were loosened. Regarding our day-to-day operations, we closed down an (outdated) asphalt plant and implemented biofuels (i.e. HVO) for certain types of equipment. We are also invested in initiatives to electrify equipment (retrofit), re-use materials and implement circular design and production methods. We are also involved in value chain initiatives such as *Groene liggers* to promote and implement circular design among value chain partners.

2 CO2 emissions

2.1 Goals

Due to several organisational changes between 2020 and 2021, we expanded our organisational boundary to include our operations in Belgium, the Nordics (Sweden and Denmark) and Italy. This has led us to set 2021 as the new reference year (base year) as this was the first year data on carbon emissions was available for all different divisions. Our goal for reducing GHG emissions is set relative to our operating income. In the coming years, we expect to further reduce our emissions through transitioning our fleet to electric vehicles, retrofitting our equipment to electric or hydrogen propulsion - or the use of biofuels in cases where retrofitting is not feasible. Last but not least, all corporate divisions and portfolio subsidiaries are working on raising awareness regarding sustainability among staff. With these combined efforts we aim to reduce our own carbon emissions (scope 1 and 2) by 50% by 2030 compared to 2021. This 50% reduction goal by 2030 compared to 2021 is in line with the Paris Agreement (45% reduction by 2030 compared to 2010, and net zero in 2050). This means for Strukton as a whole (all home countries) that the carbon emissions per million euros of revenue in 2030 should be no more than 12,50 tonnes (as opposed to 25,00 tonnes in 2021).

For scope 3 emissions, our goal is to reduce carbon emissions in our value chain for the production and commissioning of (circular) concrete catenary supports by 55% in 2030 compared to 2023. Additionally, we aim to reduce carbon emissions in our value chain for the production of catenary wire by 55% in 2035 compared to 2025.

Strukton's sustainability ambitions for the period 2021-2050 are:

- We want to be a climate-neutral organisation by 2040 (scope 1 and 2)
- By 2050 we have our first year of business operations with zero CO2 emissions for scope 1, scope 2, scope 3 and (if material) other controllable emissions.
- Our working locations (both office and project locations) are free of harmful emissions and residual waste by 2030
- We design our products and projects in a circular way, re-use materials and build with circular materials by 2030
- All our projects contribute to better soil quality and biodiversity by 2030

Our ambition to be climate-neutral by 2040 breaks down in the following goals to reduce carbon emissions:

- We reduce our total gross carbon emissions in 2030 by 50% compared to 2021, relative to our operating income
- We reduce our carbon emissions resulting from business travel by 50% per FTE in 2030 compared to 2016
- We reduce carbon emissions in our value chain for the production and commissioning of (circular) concrete catenary wire supports by 55% in 2030 compared to 2023
- We reduce carbon emissions in our value chain for the production of catenary by 55% in 2035 compared to 2025

We have translated these long term goals into annual goals for the period 2025-2027 (see table 5). The annual goals for 2025 to 2027 (expressed as a percentage) are relative reductions compared to the gross emissions of the previous year. When we achieve a goal before the date planned, we will update our goals accordingly.

Table 1 – *Year to year CO_2 emission targets*

Percentage reduction compared to previous year	**2025**	**2026**	**2027**
Emissions resulting from our car fleet, relative to FTE	5%	10%	10%
Emissions resulting from our equipment, relative to operating income	10%	10%	5%
Emissions resulting from natural gas consumption, relative to gross surface area	11%	11%	11%

2.2 Progress on reduction measures

The implementation of and progress on measures to achieve the aspired reductions is described for each goal separately.

Relative to our operational income, we achieved a significant reduction per million euros in 2024 due to an increase in revenue and a decrease in total emissions compared to 2023. GHG emissions per FTE due to business travel have slightly decreased compared to 2023. For a comparison of the 2023 and 2024 figures, please refer to table 2 on the next page.

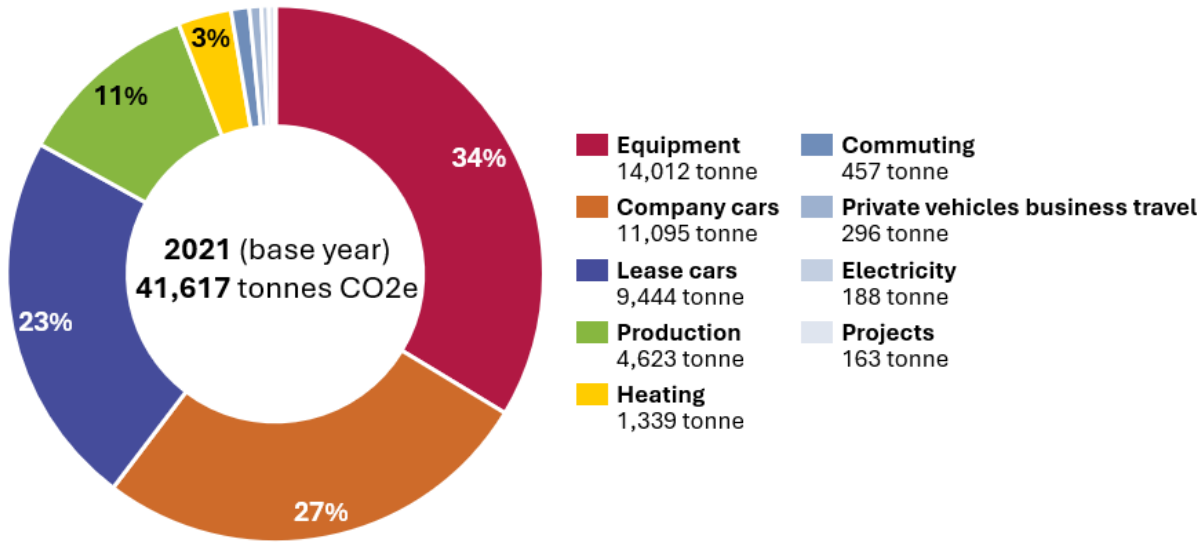
Table 2 – *Actual and relative CO_2 reductions (in kg tonne) in 2024 compared to 2023*

	2023	2024	Difference	% difference
Gross GHG emissions	37,948	35,161	-2,787	-7.4%
GHG emissions per million euro	26.3	22.2	4.1	-15.9%
GHG emissions resulting from business travel per FTE	4.7	4.7	-	0.1 %

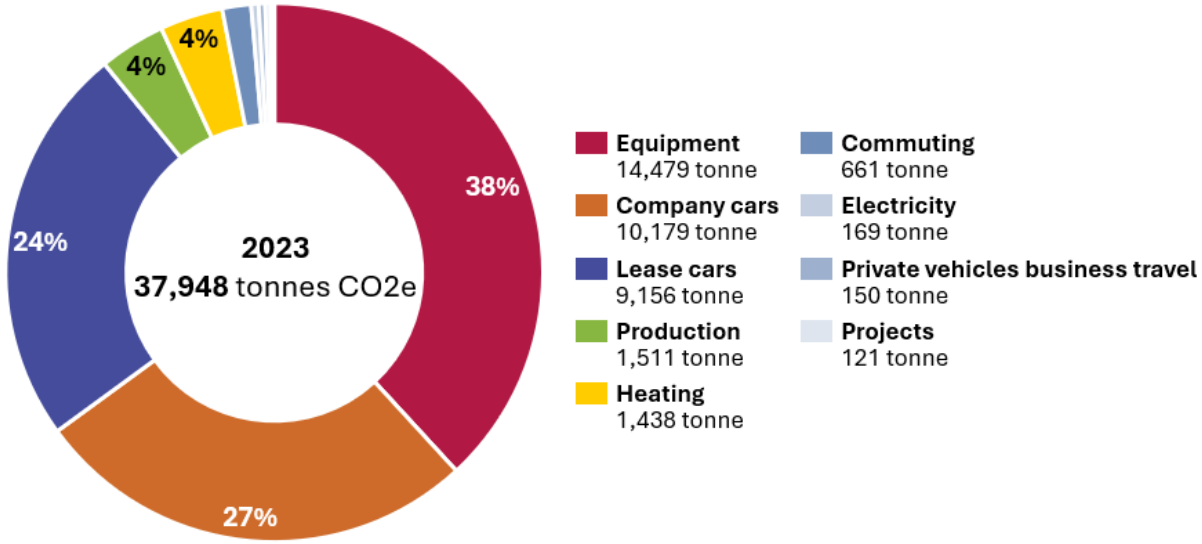
2.3 Footprint base year, prior year and current year scope 1, 2 and business travel

Below are three graphs, depicting the footprint of our organisation for our base year (2021), the previous reporting period (2023) and the current reporting period (2024).

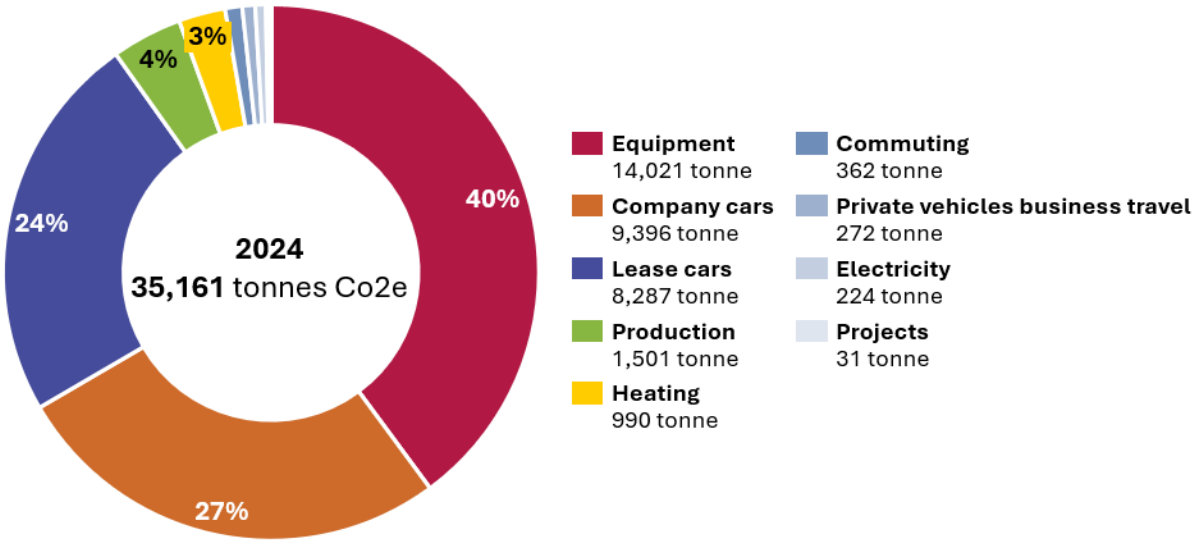
Graph 1 - *Scope 1, 2 and business travel footprint over 2021*



Graph 2 - *Scope 1, 2 and business travel footprint over previous reporting period (2023)*



Graph 3 - *Scope 1, 2 and business travel footprint over current reporting period (2024)*



2.4 Trend over the years by category

Graph 4 – *CO2e emissions (kg tonne) from January 1st, 2021 – December 31st, 2024*

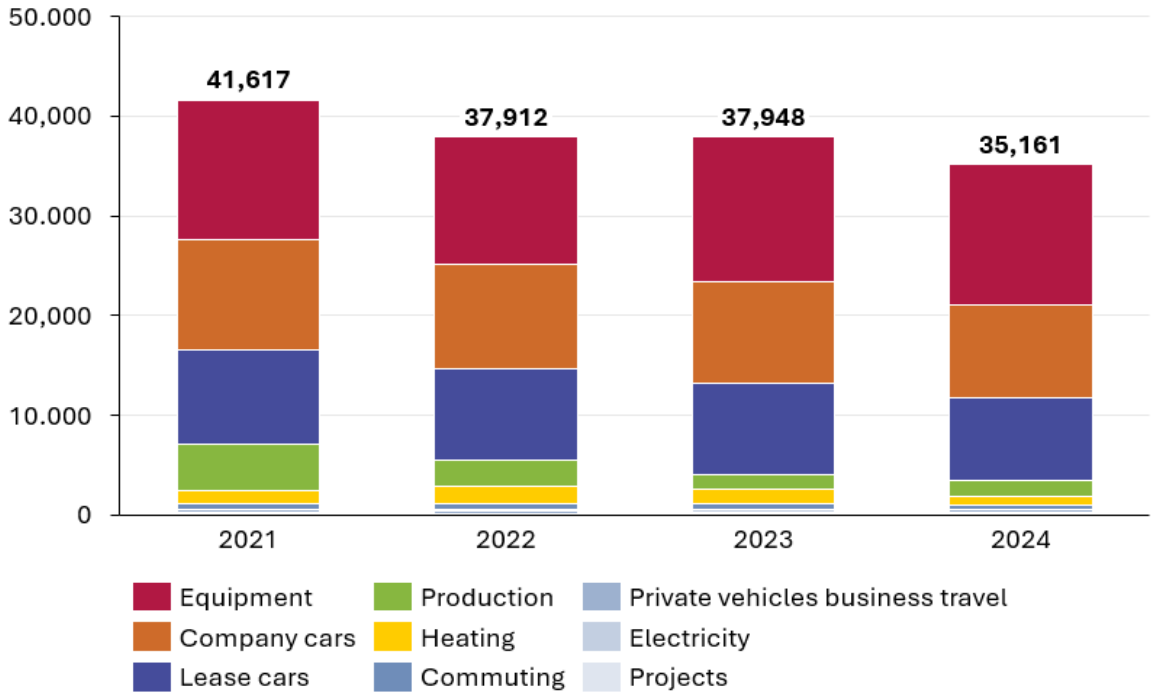


Table 3 – *CO2e emissions (kg tonne) between scope 1 + 2 + business travel 2021-2024*

Function	2021	2022	2023	2024
Air traffic business travel	0.0	119.9	82.1	73.9
Commuting	457.3	616.4	660.8	362.5
Company cars	11,094.6	10,394.9	10,179.4	9,395.8
Electricity	188.0	196.0	168.8	223.9
Equipment	14,011.8	12,818.8	14,479.4	14,021.4
Heating	1,338.6	1,684.9	1,437.7	990.4
Lease cars	9,444.5	9,204.8	9,156.1	8,286.5
Private vehicles for business travel	295.7	161.7	149.6	272.3
Production	4,623.0	2,624.0	1,511.5	1,500.7
Projects	163.0	89.1	121.2	30.8
Public transport for business travel	0.4	1.1	1.5	2.5
Total	**41,616.7**	**37,911.7**	**37,948.22**	**35,160.9**

The most significant developments in the trend over the years are highlighted below.

- **Commuting** - The emissions as a result of commuting are significantly lower than in 2023. This is the result of a change in calculation method at Strukton Rail Nederland. The commuting emissions are based on the kilometre reimbursement. In previous years, a higher kilometre reimbursement was used to calculate the emissions. This has now been updated to a more accurate kilometre reimbursement.
- **Company cars** - Emissions of company cars in the Nordics has increased significantly due to a governmental decision that decreased the amount of renewable fuels in MK1 diesel fuel. The use of diesel in company cars in Sweden has decreased. On a group level, emissions continue to decrease. This is the result of the introduction of HVO100 cars and less kilometres. In 2024, emissions from company cars decreased compared to 2023.
- **Equipment** - The emissions from Strukton's equipment show a significant decrease compared to 2023, particularly in Q2 2024. This is due to a decrease in the usage of equipment. Strukton will monitor this trend closely to see whether this is an incidental decrease or whether a decreasing trend will continue in 2025.
- **Heating** - The emissions as a result of heating have decreased because of the high temperatures in 2024 compared to 2023, particularly in the Netherlands. This has led to a decrease in gas usage and its associated emissions. Other contributing factors to the decrease of emissions as a result of heating are: higher energy label requirements in the Netherlands, the use of new - more sustainable - offices, combining and centralising offices.
- **Lease cars** - The emission of lease cars decreased in 2024 compared to 2023 because of the phasing out of fossil fuelled cars and the introduction of more electric cars. This decrease can be seen across all countries and business units. Emissions from lease cars are expected to decrease by 10% each year until 2030 as a result of our new leasing policy in the Netherlands.
- **Production** – After significant decreases in 2022 and 2023, CO2 emissions from production in 2024 have remained stable compared to 2023. With the sale of Ooms as per December 2024, future emissions from production will be reduced significantly.

3 Employee engagement

Several initiatives are deployed across the organisation to increase employee awareness regarding (the importance of) sustainability. For example, sustainability is a topic during the onboarding of new employees and during quarterly meetings. In the '*Winterschool*' of Strukton Rail Nederland, sustainability was one of the topics; all employees working at contract and projects sites attended the *Winterschool.* Sustainability is also part of an internal course on rail infrastructure techniques within Strukton Rail Nederland (BORIT). In 2024, Strukton also continued with its "sustainable Thursday" broadcasts, which consist of sustainability-oriented interviews throughout the organisation. These broadcasts were shared throughout our internal communication channels.

During Q1 2024 the CSR team of Strukton Infra Specials (SIS) organised workshops throughout the whole SIS organisation. During these workshops employees gained more insight into the strategic goals of the organisation as well as the practical actions that they could take in their role to improve sustainability within SIS. Through these workshops, SIS was able to notify all employees of the importance of sustainability.

Strukton Roads & Concrete has set up an organisation wide sustainability program to push sustainability and inform all employees about the role they can play. The three main goals of this program are to reduce emissions by 60% in 2030 compared to 1990, to implement circular measures in at least 50% of the projects in 2030 and to implement climate adaptation measures in all projects. A list of preconditions has been created to implement this throughout the organisation, which involves the inclusion of sustainability in all existing business processes and a knowledge sharing program, enabling the organisation to learn from sustainability experts at Strukton Roads & Concrete.

15 colleagues participated in the Climate Classic, a cycle tour along the 'imaginary' coastline that will arise as a consequence of climate change and rising sea levels. The tour is about raising awareness and unleashing action.

In the Netherlands, Strukton Rail organised a brainstorm about reducing waste with superintendents.

In Belgium, Strukton formulates collective targets for all employees. When these targets are met, every employee will be rewarded. The 2023 collective targets focused on 4 different themes having to do with sustainability (from taking the train, organising bike days to checking the tyre pressure of vans to collecting waste). The 2023 collective targets were such a success that the same themes were repeated in the collective targets for 2024. Strukton Rail Belgium organised a workshop on sustainability for all staff. Part of this workshop was creating the construction site of the future. Moreover, Strukton Belgium is also working towards more insight in their energy use at specific construction sites as well as testing out measures to reduce their energy consumption.

4 Reduction measures

4.1 General measures

In Italy, Strukton is implementing a new management system which will help the organisation in Italy to identify further reduction opportunities.

Strukton Rail Nederland is in dialogue with ProRail about sustainability requirements in tenders related to a zero emission construction site. This would stimulate more investments in zero emission equipment as it would level the playing field. Additionally, Strukton Roads & Concrete is working on a strategy with the goal of only working with sustainable clients in the future, by including sustainability criteria in the selection process.

4.2 Mobility

As of Q1 of 2024, a new lease policy applies in the Netherlands. This policy requires employees to lease full-electric vehicles only. This will mainly have an impact on a longer term as combustion engine cars will slowly be replaced when the lease contract ends. Non-electric vehicles will only be allowed if the electric equivalent is not possible due to the nature of the work or the circumstances. This policy applies to all Dutch entities.

At Strukton project sites in the Netherlands, electrical charging stations and (e-)bikes are facilitated where possible to reduce mobility related emissions. Additionally, staff with a lease car have access to a public transport card. For office staff, remote meetings are encouraged to reduce the amount of car commutes, while electrical bikes are made available for the commute between the office and train station. In order to identify new ways to stimulate sustainable mobility, Strukton has ongoing conversations with NGOs related to a further improvement of the mobility situation around the headquarters, with a focus on the stimulation of public transport and bike commutes.

For the lease of new vans, electric is the standard within Strukton Rail Nederland as of January 1st 2024. Like with business cars, the impact will be visible on a longer term. A policy was drafted to make an inventory of all available zero emissions alternatives to the current internal combustion engine vehicles. A first batch of electric vans has been delivered, so a positive impact of these vehicles is already ongoing.

In the Nordics, the possibility to lease (non-)electrical bikes was implemented, while initiatives to increase the amount of electrical cars and the share of biofuel are being worked on. Additionally, in Sweden Strukton has developed its own charging station for electric vehicles to enhance further transition towards an electric vehicle fleet. This is also in line with contract requirements in Sweden, requiring a set percentage of electric vehicles. The switch to renewable fuels has been promoted by an interview with the chief sustainability officer.

4.3 Equipment

Strukton is working hard to reduce its emissions as a result of the use of equipment. This is done through the use of emission free and low emission equipment where this is possible. In order to achieve this Strukton is continually developing new solutions. These solutions range from redefining processes to developing electrical equipment. Apart from reducing CO2 emissions, these solutions also help Strukton reduce its NOx emissions.

In the Netherlands, Strukton Rail has performed its first two pilots with an electric crane on rails. These pilots included charging facilities at the work site and a fast charging electric crane on rails. The reactions

on the pilots were positive. Following the results of the pilots, Strukton Rail has ordered the retrofitting of 3 additional diesel cranes on rails to completely electric cranes on rails.

In the Netherlands, Strukton Rail has worked together with students of TU Eindhoven in a research focussed on electrifying small mechanical equipment. This research was completed in Q1 of 2024. Strukton will use the results in further electrifying (small mechanical) equipment and generating acceptance among colleagues. Strukton Rail has purchased retrofitting packages for small mechanical equipment.

Strukton Rail's retrofitted aerial working platforms for catenary work has been approved and used at our projects. The approval procedure for the battery powered locomotive has entered the testing phase, with the first test on the main tracks planned for the first half of 2025. Additionally, Strukton's electric smart ERTMS trackbot, which automatically places axle counters and balises on the track and digitises the information flow, has been successfully tested in 2024.

Strukton Roads & Concrete has completed the N270 Deurne project, using emission-free and low-emission equipment, applying recycled asphalt and using HVO. At this project, Strukton Roads & Concrete conducted a pilot using Strukton Rail's electric crane on rails operating as a regular electric crane, in combination with an additional battery pack system that has been developed by Strukton Power. The lessons learned from this project are being applied in other tenders and projects.

Strukton Infrastructure Specialties (SIS) uses HVO100 as a replacement for regular diesel. Moreover, on the Dijksgracht project in Amsterdam, SIS has been using more and more low and zero-emission equipment in the form of an electrical telecrane, which is one of the first in Europe. The intention is to use more low-emission and zero-emission equipment during 2025. This can also be seen on the Zoutkamp project, where an electrical tower crane and telehandler are used.

Terracon has implemented a new engine for their ground handling cranes, which is expected to reduce their emissions by almost 45%. At Strukton Milieutechniek, sign trailers are being used that generate energy through solar panels.

4.4 Energy

In the Netherlands, Strukton is minimising its fossil fuel energy usage by using batteries and hybrid generators fuelled by HVO at their project sites. Furthermore, a project was started to standardise the facilities for construction sites in the Netherlands, which includes (renewable) energy supply.

Moreover, next to installing solar panels at project sites, SIS is actively trying to place solar panels on buildings around the project sites on a temporary basis. This will enable Strukton to further reduce the use of fossil fuels as an energy source. Next to this, SIS is also working with sedum green roofing on project sites. This roofing provides better roof isolation and results in less energy needed for cooling/heating. The insulation of gas pipes and increased use of LED further improves Strukton's energy efficiency.

In 2024 Strukton has activated its photovoltaic system at the Bologna office in Italy, which has reduced CO2 emissions significantly. Additionally, another system is currently being constructed. In the Nordics, Strukton only purchases renewable energy to further promote the energy transition and limit emissions associated with non-renewable energy sources.

4.5 Value chain involvement

In addition to reducing scope 1 and 2 emissions, we are also taking measures to reduce scope 3 emissions.

- GBN, Strukton Rail and Magnus Beton (formerly Strukton Prefab Beton) are involved in the pilots with catenary constructions made of circular concrete. When Strukton Prefab Beton was sold to Magnus Beton, we agreed with the new owner to continue the sustainable initiatives that Strukton Prefab Beton was involved in, since this is highly important for Strukton.
- By carrying out (preventative) maintenance on time, our ambition is to prevent large-scale maintenance or renewal, which means that fewer materials are needed.
- On an industrial track, we are carrying out a pilot with a new type of bamboo composite sleeper. This type of sleeper significantly reduces CO2 emissions over the entire life cycle compared to the traditional concrete sleeper; the bamboo sleeper even has negative CO2 emissions.
- If the client allows it, we reuse elements (switches, sleepers, gantries, transitions) and materials in our projects (such as circular concrete for platforms). We proactively approach relevant stakeholders in our value chain to discuss options for reusing elements.
- Strukton is part of the sector wide initiative *Groene Liggers V.O.F.*, which is focused on increasing the reuse rate for concrete beams. Where prior pilots have shown that circular beams are technically possible, *Groene Liggers*' goal is to upscale this towards a mature market.
- GBN is working on a circular resources corridor, with the goal of connecting material use demands between different projects within a region. Through this corridor, material use is approached from a regional perspective to reduce material transportation emissions and material costs.
- Strukton Rail AB in Sweden is a member of the Fossil Free Sweden initiative, which has the goal of transitioning the Swedish industrial sector to create more jobs and export opportunities, while going fossil free.

Apart from the measures described above, Strukton also takes action to influence the value chain:

For reducing the scope 3 emissions, Strukton is actively involved in conversations with value chain partners (for instance the 'sustainable railways chain dialogue' *(ketenoverleg duurzaam spoor*) in the Netherlands that was initiated by GBN. Based on this dialogue, an advisory report was generated regarding the process to release new materials. This report was presented to Strukton's biggest client with the aim to fasten the acceptance and implementation of sustainable alternatives. Strukton is also organising sessions with value chain partners to discuss challenges in the value chain surrounding sustainability.

Strukton was an active participant in the Dutch Week of Circularity in March 2024. This week focuses on the transition to a circular economy. Strukton shared its efforts to make the concrete chain more sustainable, such as the production and application of circular concrete catenary pillars and by reusing concrete bridge girders. As concrete is one of the most carbon intensive resources that Strukton uses, the use of circular concrete could significantly reduce the scope 3 emissions.

Furthermore, Strukton is actively involved in efforts to close the loop and create circular resource flows. In February, we organised a knowledge sharing session regarding value chain analysis to facilitate discussions between clients, suppliers governmental organisations and other stakeholders. GBN shared its experience with organising the circular resources corridor, while Strukton Rail Short Line described how reusing materials works for industrial train tracks.

Strukton participated in the CEE Staal Tafel. This event focused on the road towards circular steel and the production of steel with (near to) zero carbon emissions. Steel is one of the most carbon intensive resources

that Strukton uses. Therefore, developments in circular steel or blue or green steel would significantly reduce our scope 3 emissions.

Strukton Rail and supplier Voestalpine Track Solutions Netherlands are collaborating closely to promote circularity and reuse of products within the rail sector. One of the results of this collaboration is that certain rail products are transported in circular crates instead of in plastic throughout the entire value chain.

Strukton Rail organised a meeting for a delegation of ProRail about circular concrete (for more information, see the value chain analysis below). The meeting was held at Strukton Rail Equipment in Zutphen, where a catenary pillar made from circular concrete was installed. In December, another meeting followed to discuss further steps to include this product in the product catalogue of ProRail (which is necessary to implement the pillars in projects). Also, during the year, various tests were run to verify the strength and quality of the circular concrete.

GBN facilitated a workshop about reusing bridge girders during the event ‘Together on the way towards a Climate Neutral and Circular Infra’, organised by ProRail and Rijkswaterstaat.

Strukton’s CSR code of conduct for suppliers has been updated to be more in line with Strukton's sustainability efforts and the upcoming CSRD and CSDDD responsibilities.

Other

Together with the Vlinderstichting and companies in the construction sector in the Netherlands, Strukton was actively involved in developing the Natuurladder. The Natuurladder was published in May 2024 and is available for project teams. Strukton is now taking the next step to apply the Natuurladder in projects and tenders.

Please refer to the list below for additional initiatives and actions, where Strukton is an active participant:

- Battery powered locomotive on industry train tacks
- Europe’s Rail Joint Undertaking
- Fossil Free Sweden initiative
- Closing the Loop initiative for circular viaducts / Groene Liggers
- Coalitie Anders Reizen
- Manifest Duurzaam GWW 2030
- Green Deal Verduurzaming Betonketen (Betonakkoord - national concrete deal)
- De Duurzame leverancier
- Asfalt Impuls
- Bewuste Bouwers
- Emissieloos Netwerk Infra (ENI)
- De Groene Koers
- Bereikbaarheidsalliantie A2
- Programme Natural Capital in Construction Sector
- Transition paths of ProRail and Rijkswaterstaat
- Nature Builders (part of Infranatuur – Delta plan recovery of biodiversity)
- Ketenoverleg Duurzaam Spoor
- Circulaire Grondstoffencorridor Utrecht

4.6 Value chain analysis

Strukton has carried out a double materiality analysis to determine which activities lead to the highest emissions in scope 3 and which supply chains have the greatest impact. The activities with the greatest impact are our rail activities in the Netherlands[1]. The use of materials has the biggest impact on our scope 3 emissions. In the use of materials we have identified specific materials in which Strukton can exert its influence. This results in a strategic focus, when it comes to CO2 reduction in scope 3, on concrete and copper. These are the chains with a major impact on CO2 emissions, and they are also the supply chains where Strukton can exert its influence to reduce CO2 emissions. Our goal is to reuse as many materials as possible, and then refurbish and recycle them (if our clients allow this). We have analysed the supply chains of these materials and formulated CO2 reduction targets and measures.

Our value chain analysis regarding ballast has been concluded, as it was not possible for Strukton to have an influence in decreasing the associated scope 3 emissions.

For the time being, Strukton calculates scope 3 emissions on the basis of SPEND. In 2024, our scope 3 emissions amounted to 447,733 kg tonnes, with purchases of 549 million euros. The biggest contributors to scope 3 emissions are the emissions associated with the production and transportation of metal, concrete and asphalt related products and the emissions generated by subcontractors. Strukton wants to increase its insight into scope 3 emissions. We are currently investigating the possibilities of calculating these emissions based on quantities of material. For this we are in conversation with several of our largest suppliers.

Circular concrete catenary pillars

Strukton Rail is working with GBN and Magnus Beton on catenary gantries made of circular concrete. Old concrete portals are removed from the track by Strukton Rail and processed into granulate by GBN. Magnus Beton turns these into new concrete elements and Strukton Rail places them back on the track. The chain for circular concrete catenary portals is as follows:

Phase A1	Extraction of (reused) raw materials
Phase A2	Transport of the raw materials to the production site in Utrecht
Phase A3	Producing the elements
Phase A4	Transport of the elements to the project site
Phase A5	Construction/installation of the elements
Phase C1	Dismantling the elements
Phase C2	Transport of the old elements to the location where the raw materials are recovered
Phase C3	Resource recovery

Strukton faces some difficulties in limiting the emissions in the circular concrete value chain:

- Gantries made of circular concrete are not yet included in ProRail's SPC (product specifications). This means that the product may not yet be used in the track. Circular concrete was therefore not used in the projects in 2024, and this is also not allowed in the first tenders won in 2025. In 2023, only six circular concrete portals were installed as a trial.
- The switch to HVO100 in phases A5 and C1 has not been made, because this will void the warranty on the equipment. For the long term, it has been decided not to switch to HVO100. Based on this, the reduction has been adjusted. However, the expectation is that switching to electric equipment will result in greater savings as planned. This will be quantified more accurately next year.

1. Materials and resources at the non-Dutch companies are supplied by the client and therefore not part of the scope 3 emissions.

Despite this, the measures mentioned above have resulted in a 4.5% reduction in CO_2 in 2024. This is slightly less than the planned 5.2% for 2024.

Strukton is therefore focusing on maintaining discussions with ProRail to include circular concrete foundation piles in the SPC. This will help determine when and at what pace a large number of these circular concrete foundation piles can still be installed. Since this is an innovative product, the process will be long-term. For ProRail, ensuring the quality, safety, and lifespan of the product is crucial. Strukton is therefore committed to demonstrating these aspects. Once this is successfully achieved and the product is approved for use, the potential reduction in the supply chain could be significant. This gives us confidence in continuing this supply chain analysis and collaboration.
Additionally, Strukton is exploring the possibilities of producing other concrete elements around the railway using circular concrete. Specifically, we are considering foundation blocks, retaining walls, and concrete plugs. Strukton has also increased its ambition for the application of Circument from 20% to 50%, which will further enhance CO2 reduction. In 2025, the upper beams of the portals will also be included in this development, with the ultimate goal of being able to install a fully circular concrete portal in the future.

Strukton's own calculations indicate that these measures will contribute to CO2 reduction. Therefore, in 2025, we aim to expand this supply chain analysis to include these circular concrete elements. We also hope to make progress in 2025 in making our equipment more sustainable. By increasing our ambitions in certain areas, we believe we are on the right path to achieving our reduction targets.

Circular catenary wire
The chain for circular catenary wire is as follows:

Phase A1	Extraction of (reused) raw materials
Phase A2	Transport of the raw materials to the production site
Phase A3	Production
Phase A4-5	Transport and construction
Phase B1-4	Usage and maintenance
Phase B5	Transport to the production site (**Phase A3**)

As a result of the value chain, the following reduction measures have been identified for up until 2035:

- Implementing 100% circular copper in the production process. The expected reduction is 85% throughout the value chain.
- Implementing equipment running on HVO100 during the application process, with an expected reduction of 5%.
- Using trains and electric vehicles as a transportation method of the materials has an expected reduction of 2,2% in the entire value chain.

Strukton has made an agreement with ProRail regarding the application of circular catenary in rail projects. The scope 3 emissions reduction target for the production and application of catenary components is a minimal decrease of 55% in 2035, with 2025 as a base year.

The expected reduction as a result of the implementation of circular materials follows the following decrease schedule up until 2033:

Table 4 – *Expected reduction per year by implementing circular catenary*

2025	2026	2027	2028	2029	2030	2031	2032	2033	Total reduction
0.5 %	1.0 %	1.0%	2.0%	2.0%	5.0%	5.0%	7.5%	10.0%	**51.0%**

A limitation to the value chain analysis can be found in the limited data quality for the production of the copper wire in the catenary component. Currently, only the production of the copper wire is included, while other segments of the catenary are excluded. We are working with partners in the value chain to develop a life cycle assessment that incorporates additional steps in the value chain that includes the components that are now missing from the data.

5 Description of the organisation

Strukton contributes to the transition to a climate-neutral and circular economy through co-facilitating the energy transition, re-using materials, including and encouraging circularity and sustainability throughout the supply chain in which we operate, increasing the percentage of sustainable energy and making a positive ecological impact with our activities.

We are a service provider in sustainable infrastructure, with a focus on green transport and electrification. It is with passion and energy that we combine over a century of craftsmanship with the latest technology and innovation. We prioritize safety, quality and sustainability. We have developed a strong base in our home countries: Belgium, Denmark, Italy, the Netherlands, Sweden. We wish to contribute to the safety, quality and sustainability of infrastructure. Rail, roads and energy. In order to do so we develop and integrate technologies and solutions, challenging customers to opt for contracts with room for sustainability and innovation. We are committed to operate with care and integrity and in a sustainable way and encourage our sector and value chain partners to do the same. We combine this approach with a focus on functionality, quality, life span and a good price-quality ratio.

5.1 Responsible officers

Below is an overview of the officers responsible for the data per entity (see table 1).

Table 5 – *Responsible officers per entity*

Name	Actors
Strukton Groep N.V.	CSR Analyst Strukton Group
Portfolio Investment Holding B.V.	CSR Analyst Strukton Group
Strukton Roads & Concrete B.V.	Financial Controller Strukton Roads & Concrete
Strukton Infrastructure Specialties B.V.	Financial Controller Strukton SIS
Strukton Groep Enkelvoudig	Manager Shared Service Center
Strukton Power B.V.	Financial Controller Strukton Power
Strukton Rail B.V.	Administrator Shared Service Center
Costruzioni Linee Ferrovia S.P.A	CSR Coordinator of Strukton in Italy

Name	Actors
Strukton Rail AB and Strukton Rail A/S	CSR Coordinator of Strukton in Sweden

5.2 Base year

Below is an overview of the default reference year per entity (see table 2).

Table 6 - *Default reference year per entity*

Name	Default reference year
Strukton Groep N.V.	2021
Portfolio Investment Holding B.V.	2021
Strukton Roads & Concrete B.V.	2021
Strukton Infrastructure Specialties B.V.	2021
Strukton Power B.V.	2021
Strukton Rail B.V.	2021
Costruzioni Linee Ferrovia S.P.A	2021
Strukton Rail AB and Strukton Rail A/S	2021

5.3 Reporting period

This report covers the period from January 01st, 2024 till December 31st, 2024.

5.4 Verification

The CO2 footprint in this document has not been verified by an (external) auditor. This happens once every year in line with the certification audit by an external certifying body (CI).

6 Demarcation

6.1 Organisational boundaries

Below is an overview of the different entities within the organisational boundary and their consolidation percentage (see table 3).

Table 7 – *Overview of entities and their consolidation percentage*

Name	Type	Consolidation percentage
Strukton Groep N.V.	Group	100%
Portfolio Investment Holding B.V.	Department	100%
Strukton Roads & Concrete	Department	100%
Strukton Infrastructure Specialties B.V.	Department	100%
Strukton Power B.V.	Department	100%
Strukton Rail B.V.	Department	100%
Costruzioni Linee Ferrovia S.P.A	Department	100%
Strukton Rail AB and Strukton Rail A/S	Department	100%

6.2 Organisational changes

As of January 1st, GBN – AGR has been sold. Because Strukton did not report on emissions of GBN – AGR separately the base year has not been adjusted.

As of March 28th 2024, A1 Electronics (previously part of Strukton Power) has been sold to Gimv. As A1 Electronics was part of Strukton for almost the whole of Q1, A1 Electronics is still incorporated in the Q1 carbon footprint. Because A1 electronics is still part of the Q1 GHG emissions, the GHG emissions of Strukton Group in the base year as well as previous years have not been adjusted as a result of the sale of A1 Electronics.

As of April 2nd 2024 Strukton Integrale Projecten has been sold to Aiber Services. Because Strukton Integrale Projecten is still part of the Q1 GHG emissions, the GHG emissions of Strukton Group in the base year as well as previous years have not been adjusted as a result of the sale of Strukton Integrated Projects.

As of July 12th 2024, Strukton Prefab Beton BV has been sold to the Roevla Group. As Prefab Beton was part of Strukton for Q1, Q2, and a part of Q3, its emissions are incorporated in the 2024 carbon footprint.

As of October 23st 2024, Van Rens BV has been sold to Groupe LT. As Van Rens was part of Strukton for Q1, Q2, Q3 and a part of Q4, its emissions are incorporated in the 2024 carbon footprint.

As of December 5th 2024, Ooms Producten BV has been sold to Pankas AS. As Ooms was part of Strukton for Q1, Q2, Q3 and a part of Q4, its emissions are incorporated in the 2024 carbon footprint.

6.3 Projects tendered with CO2 Performance Ladder component

Once a year, a list of won projects that included a CO2 Performance Ladder component is published on the SKAO website.

7 Calculation method

7.1 Current calculation method and conversion factors

The conversion factors to calculate the CO2-footprint were derived from several sources, in line with the local standards:

- For the Netherlands: https://www.co2emissiefactoren.nl
- For Belgium: https://www.co2emissiefactoren.be
- For Italy: Association of Issuing Bodies (AIB)
- For the Nordics: Swedish Energy Authority

7.2 Changes in calculation method

The calculation method has not been changed during the reporting period.

7.3 Exclusions

Similarly to previous years, the electricity used for the trains deployed by Strukton Rail Equipment is excluded from the footprint. The electricity consumed by these trains is not included by the Group. This is due to the way in which the electricity is purchased. A general distribution key is received from ProRail. This key does not give insight into the usage figures per train. However, this concerns green energy, so the inclusion of these figures has no influence on our footprint.

7.4 Absorption of CO2

Strukton also develops commercial concrete products made with miscanthus grass. This grass absorbs 4 to 5 times as much CO2 during growth as a forest of similar dimensions. After processing, the CO2 remains captured within the grass.

Next to that, we are piloting a new type of railway element – a railway sleeper made out of bamboo composite - at an industrial track. Over its life cycle this bamboo composite sleeper has a significantly lower carbon footprint compared to commonly used alternatives. This is due to the absorption of carbon during the growth of bamboo that remains captured within the product after production.

7.5 Biomass

Strukton does not use biomass.

8 Conclusion

In 2024, we made significant progress toward our CO2 reduction and sustainability goals. We achieved a 7.4% reduction in scope 1 and 2 emissions compared to the previous year, reinforcing our commitment to achieving a 50% reduction by 2030 in relation to 2021 and climate neutrality by 2035, in line with the Paris Agreement. This was accomplished through the implementation of reduction measures focused on fleet electrification, equipment retrofitting, biofuel adoption, and employee engagement initiatives.

Strukton has also actively engaged in reducing scope 3 emissions, focusing on sustainable value chain initiatives such as circular concrete catenary supports and catenary production. While some challenges remain, including regulatory approvals and data accuracy improvements, we remain committed to driving sustainability across our activities and supply chains. An important prerequisite is gathering more insight into these value chains, which we will further pursue in the coming years. Moving forward, Strukton will continue monitoring trends, refining reduction measures, and strengthening partnerships to accelerate its transition to a low-carbon future.

APPENDIX: Glossary and abbreviations

- CI – Certifying body
- CO2 – Carbon dioxide
- E-LCV – Electric light commercial vehicles
- EV – Electric vehicle
- FTE – Full-time equivalent
- HVO - 'Hydrotreated vegetable oil'. This type of diesel is, next to the vegetable oils, produced from waste, residue oils and fats, such as used cooking oil.
- PV panel – A device that converts sunlight into electricity by using photovoltaic (PV) cells. PV cells are made of materials that produce excited electrons when exposed to light
- SKAO – Stichting Klimaatvriendelijk Aanbesteden en Ondernemen
- Sleeper – A large heavy beam that supports the rails of a railway track

This periodic report is part of the control cycle within the energy management system that has been introduced in the context of the CO2-Performance Ladder. This periodic report includes all matters described in §9.3.1 points a to t of the NEN-EN-ISO 14064-1:2018: Description of the Organisation (a), Responsible Persons (b), Reporting period (c), Organisational boundaries (d), Current calculation method and conversion factors (f, m, n , o, r, t), Uptake of CO2 (g, h), Biomass (f, g), Direct and indirect emissions (i, j), Reference year (k, l), Changes in calculation method (k,), Exclusions (h), Recalculate base year and historical data (j, k), Uncertainties (p) and Verification (s).