

CO2 Performance Portfolio

Supplier CO₂ Emissions Analysis

Reference: 074764-96-SAP24

1.0 | 21 maart 2024

REDACTED



©



Dit rapport is opgesteld met inachtneming van de specifieke instructies en eisen van de opdrachtgever. Gebruik van (delen van) dit rapport door derden, zoals bijvoorbeeld (maar niet beperkt tot) openbaarmaking, vermenigvuldiging en verspreiding is verboden. Arup aanvaardt geen enkele aansprakelijkheid jegens derden voor de inhoud van het rapport, noch kan een derde aan de inhoud van het rapport enig recht ontlelen. This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party

Opdracht nummer

Arup B.V.
Beta Building Naritaweg 118
1043 CA
Amsterdam
Netherlands
[arup.com](https://www.arup.com)

Document Verificatie

Opdracht titel CO2 Performance Portfolio
Document titel Supplier CO2 Emissions Analysis
Opdracht nummer
Document ref 074764-96-SAP24
Dossier referentie

Versie	Datum	Dossiernaam	CO2 Performance Portfolio - CO2 Performance Portfolio		
0.1	31 January 2024	Omschrijving	Reporting Period Jan to Dec 2023 – First Version		
			Vorbereid door	Gecontroleerd door	Goedgekeurd door
		Name	M. Trompert	K. Komarnyckyj	T. Salusbury
		Handtekening			
1.0	21 March 2024	Dossiernaam	CO2 Performance Portfolio - CO2 Performance Portfolio		
		Omschrijving	Reporting Period Jan to Dec 2023 – Final Version		
			Vorbereid door	Gecontroleerd door	Goedgekeurd door
		Name	M. Trompert	K. Komarnyckyj	T. Salusbury
		Handtekening			

Uitgifte Document Verificatie met Document Issue Document Verification with Document



Inhoud

1.	Introduction	1
1.1	Definitions	1
1.2	Organisational Boundaries	1
2.	Methodology	2
2.1	Methodology Followed	2
2.2	CO2 Emissions	3
2.3	Assumptions and Exclusions	5
2.4	Relative Scope and Influence	7
3.	Analysis of the data	9
3.1	Comparison with ER Net GHG Reduction Plan	9
3.2	Accuracy of the DEFRA Emissions Factors	10
3.3	Chain partners emissions	10
4.	Outcomes	10
4.1	Findings	10
4.2	Improvements	11
5.	Conclusion	11

Tabellen

Table 1: Yearly CO ₂ emissions for Scope 3 Category 1 and 2	3
Table 2: CO ₂ emissions for Purchased Goods Suppliers	4
Table 3: CO ₂ emissions for Service Suppliers	4
Table 4: CO ₂ emissions for Capital Goods Suppliers	5
Table 5: Assumptions and Exclusions	5
Table 6: Relative scope and influence of each product category	7
Table 7: Arup Netherlands 2023 CO ₂ Emissions	9

Diagrammen

Figure 1: Yearly CO ₂ Emissions for Scope 3 category 1 and 2	3
Figure 2: Source for estimating relative importance of CO ₂ burden of sector and activity in Table 6 (Source: https://www.cbs.nl/nl-nl/cijfers/detail/84057NED?q=co%20emissie%20co2%20emissie)	7
Figure 3: Distribution of Europe Region CO ₂ Emissions from ER GHG Reduction Plan (2018 data)	9

Appendices

Appendix A	A-1
List of suppliers, invoice values and categories	A-1
Appendix B	B-1
DEFRA Emissions Factors	B-1
Appendix C	C-1

1. Introduction

Arup has made a commitment to be a net zero organisation by 2030. Our GHG Reporting focusses on Scope 3 Categories 1 and 2 and mainly concern “Purchased Goods and Services” and “Capital Goods”.

This document assesses the suppliers in the calendar year 2023 and compares the Scope 3 emissions to the calendar years 2022 and 2018 (baseline) to see what reductions have been established and report according to the requirements of the CO2-Performance Ladder.

Arup Europe Region (ER) has produced a Europe Region Net Zero GHG Reduction Plan. The plan reports that 67% of the Arup ER emissions come from Scope 3 Purchased goods and services and capital goods. This is a key reason why Arup NL are investigating the emissions from our upstream supply chain.

This report will focus on the top 80% of Arup NL suppliers based on purchase value. This approach allows significant insight into our potential carbon emission influence within our supply chain whilst keeping the number of suppliers within the analysis manageable. It is also in line with the 80% for identification of an organisational boundary set out in Chapter 4 of the CO2 Performance Ladder Handbook, “Methode 2; de laterale methode”.

1.1 Definitions

1.1.1 GHG Protocol Sub-categorization Definitions & Commentary:

As per the GHG Protocol ‘Corporate Value Chain (Scope 3) Accounting and Reporting Standard’¹, this category of scope 3 emissions is defined as follows:

- **(1) Purchased Goods and Services** – ‘Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in categories 2-8’.

For reference the GHG standard combines Goods and Services procured by Arup, however for analysis we should have these divided to reflect the varying scales of which Arup procure services and goods. In addition Scope 2-8 include other scope 3 emissions Arup manage separately, for example Business Travel, Employee commuting, waste generated in operations etc.

- **(2) Capital Goods** – ‘Extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year’. This must include ‘All upstream (cradle-to-gate)’² emissions of purchased capital goods’

Within previous GHG Emissions reporting cycles, Arup have utilized a spend based approach whereby spend data has been used to generate a carbon emission value for different services and goods procured by Arup – this is an acceptable methodology, however is less accurate than supplier & service provide carbon data.

1.2 Organisational Boundaries

The CO₂ Performance Ladder certification will be applicable to the firm Arup BV in the Netherlands. In 2023, Arup BV had one permanent office in Amsterdam. The firm operates as a consultant for the planning,

¹ https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf

² <https://www.eea.europa.eu/help/glossary/eea-glossary/cradle-to-grave>

design, management and research of architectural and engineering related projects, primarily in the building and infrastructure sector. There are no sub-companies operating under the control of Arup BV.

In 2023, Arup BV produced a total amount of CO₂ emissions below 500 tons a year, classifying it as a small company according to the CO₂ Performance Ladder. The size classification determines the specific set of CO₂ Performance Ladder certification requirements.

2. Methodology

2.1 Methodology Followed

A focus is put on our suppliers due the organizational boundaries and the nature of our work and aligning with our Global Net Zero strategy. For the CO₂ Performance Ladder we're a small company, therefore we will make 1 chain analysis based on our suppliers. The following methodology has been used to identify relevant suppliers and calculate the associate CO₂ emissions. The following methodology is followed.

Stage 1 – Identification of relevant suppliers within an organisation boundary:

1. A list of suppliers and invoices was provided by the Finance Team for 2023 calendar year (1st January to 31st December), see Appendix A.
2. CO₂-Performance Ladder Handbook 3.1 section 4.1 “Methode 2: de laterale methode” has been used to identify which suppliers fall within the organisational boundary. To do this, the suppliers were first ranked from largest (highest spend) to smallest (lowest spend). The cumulative purchase value of suppliers was then calculated and the top 80% of suppliers was identified, see Appendix A.
3. The top 80% suppliers have been categorised as suppliers of Purchased Goods, Purchase Services or Capital Goods, see Appendix A.
4. Suppliers of services have been reviewed to ensure that the Goods and Services have not been included in other GHG Emission Reporting Scope areas. Details of the suppliers that have been excluded from the Scope 3 Category 1 & 2 analysis can be found in Table 5.
5. Suppliers with negative total spends have also been excluded.

Stage 2 – Calculation of CO₂ emissions

A database of UK Department for Environment, Food and Rural Affairs (DEFRA) emissions factors developed by the Centre of Sustainability Accounting (CenSA) has been used to estimate CO₂ emissions based on the cost of the goods and services. See Appendix B for details. These emissions factors are based on data from 2019, at this time there is not a more recent update to the data so costs have been indexed accordingly. (Note that this is an improvement on the 2011 factors which were used in this analysis for the reporting period January to December 2021.)

6. Each supplier has assigned a product category according to the Standard Industrial Classification (SIC) Codes.
7. The total kg of CO₂ per £ is read from the DEFRA emissions factor database for each product category.
8. The emission factors have been indexed from 2019 to 2023 figures³
9. The total spend per supplier was converted from EUR to £ using an average exchange rate for 2023⁴ to calculate an £ equivalent spend per supplier.
10. The total kg of CO₂ per £ is then multiplied by the equivalent emission factor to estimate the CO₂ emissions per supplier.

³ Using a conversion rate of 0.88 GBP in 2023 to 1 GBP in 2019 (<https://www.worlddata.info/europe/united-kingdom/inflation-rates.php>)

⁴ 1EUR to 0.8703GBP ([Euro to British Pound Spot Exchange Rates for 2023](#))

The results of this calculation are shown in Section 2.2.

2.2 CO2 Emissions

2.2.1 Scope 3 Category 1 and 2 - General

We've monitored our Scope 3 Category 1 and 2 emissions since 2021 to compare against our 2018 baseline year. The total emissions (kg CO₂) per category per year are shown in Table 1 and Figure 1. It can be seen that in 2023 these emissions have reduced by 23% since our baseline year of 2018.

Table 1: Yearly CO₂ emissions for Scope 3 Category 1 and 2

	2018	2021	2022	2023
Purchased Services	723.851	999.699	681.271	579.951
Purchased Goods	112.574	37.391	11.269	77.145
Capital Goods	49.702	0	48.007	23.909
Total	886.127	1.037.090	740.547	681.006
Change compared to 2018 baseline	100%	+17%	-16%	-23%

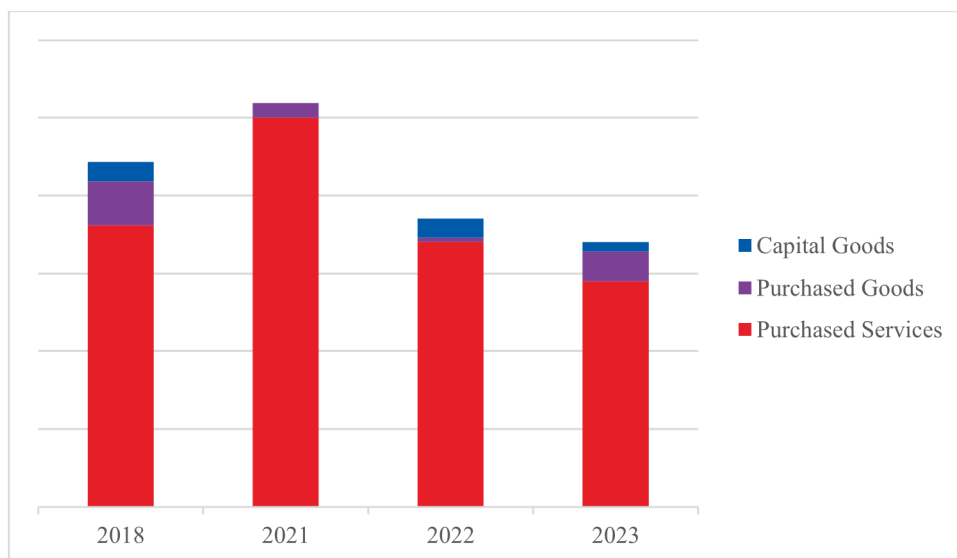


Figure 1: Yearly CO₂ Emissions for Scope 3 category 1 and 2

2.2.2 Scope 3 Category 1 – Purchased Goods and Services

Table 2 gives the CO₂ emissions for the goods suppliers in 2023. The total CO₂ emissions for the goods suppliers identified within the top 80% of suppliers is shown below compared in % to the total kg CO₂.

Table 2: CO2 emissions for Purchased Goods Suppliers

Purchased Good Suppliers (2023)	SIC Code	Product Category	Total kg CO ₂ e (2023)	% of total top 80% (2023)
REDACTED	31	Furniture	70.590	10%
REDACTED	56	Food and beverage serving services	6.556	1%

Over the years, views on the goods we purchase have changed. Therefore suppliers and their category may have changed over the years or have been removed. In 2023 we had two special occurrences happening in our office, the office had a new fit-out buying new furniture. We were also the host of our Arup Group Annual Meeting, which has contributed significantly to our CO₂ footprint in purchased goods and services.

Table 3 gives the top 5 CO₂ emissions for from Purchased Services. The total CO₂ emissions for the services suppliers identified within the top 80% of suppliers is shown below compared in % to the total kg CO₂. A separation is made between a project ‘purchased service’ and a business ‘purchased service’.

Table 3: CO2 emissions for Service Suppliers

Purchased service Suppliers (2023)	SIC Code	Product Category	Total kg CO ₂ e (2023)	% of total top 80% (2023)	Project/Business service
REDACTED	55	Accommodation services	88.211	13%	Business
REDACTED	65.1-2	Insurance and reinsurance services, except compulsory social security	75.310	11%	Business
REDACTED	68,3	Real estate services on a fee or contract basis	32.299	5%	Business
REDACTED	71	Architectural and engineering services; technical testing and analysis services	31.854	5%	Project
REDACTED	71	Architectural and engineering services; technical testing and analysis services	29.044	4%	Project

The above shows a difference from the previous year, where we’ve spend more on accommodation services, the reason for this is that in 2023 we were the host of our Arup Group Annual Meeting, which has contributed significantly to our CO₂ footprint in purchased goods and services.

2.2.3 Scope 3 Category 2 – Capital Goods

Table 4 gives the CO₂ emissions for capital goods suppliers. The total CO₂ emissions for the capital goods suppliers identified within the top 80% of suppliers is shown below.

The computers and associated hardware supplied by REDACTED are essential for the operation of Arup. REDACTED measures and reports their sustainability impact⁵ and have various awards and accreditations

⁵ REDACTED

nationally and internationally such as 2022 Energy Star Partner of the Year. ⁶**REDACTED** is also recognised by the Energy Star rating system as well as the EPEAT that evaluates electronics for their effect on the environment.

Table 4: CO₂ emissions for Capital Goods Suppliers

Capital Goods Suppliers (2023)	SIC Code	Product Category	Total kg CO ₂ e (2023)	% of total top 80% (2023)
REDACTED	26	Computer, electronic and optical products	23.909	4%

2.3 Assumptions and Exclusions

In carrying out this analysis a number of assumptions and exclusions have been made. These are as listed in

Table 5: Assumptions and Exclusions

No.	Related Suppliers	Assumption / Exclusion	Follow up to improve accuracy of reporting
1	REDACTED	This supplier is a travel agency. Our invoicing data for 2022 does not enable us to separate out the costs related to transportation, hotels and travel agency services. Emissions due to transportation have been included within Scope 3 Category 6 reporting in the Energy Management Plan. Therefore to avoid double counting, data from REDACTED has been excluded from this Scope 3 Category 1&2 analysis.	It is noted that this exclusion results in emissions resulting from hotel stays and travel agency services being excluded from Scope 3 Category 1 data. In the future it would be good to find a way to separate out the data relating to transportation, hotels and travel agency services to allow a more complete reporting.
2		This is a lease car agency. Emissions from lease vehicles are included in Scope 1 and 2. Therefore to avoid double counting, data from REDACTED has been excluded from this Scope 3 Category 1&2 analysis.	It is noted that emissions relating to the lease car agency costs are not included in our analysis.
3		This data relates to a contracted staff member. All staff costs are accounted for elsewhere in the reporting. Therefore to avoid double counting, this data has been excluded from this Scope 3 Category 1&2 analysis.	None

⁶ **REDACTED**

No.	Related Suppliers	Assumption / Exclusion	Follow up to improve accuracy of reporting
4	<div>REDACTED</div>	This is payment of NS Business Cards for travel by public transport. Emissions from this data is included in Scope 3 Categories 6 and 7. Therefore to avoid double counting, this data has been excluded from this Scope 3 Category 1&2 analysis.	None
5	All	Product categories have been manually assigned to the data based on the type of supplier.	Reporting quality could be improved if more details can be recorded and provided for each supplier invoice.

2.4 Relative Scope and Influence

Based on the product categories, the relative scope of each category can be determined using the format of Table 6.1 from the CO₂ Performance Ladder Handbook 3.1 for each Product Market Combination (PMC). The below list is based on markets we operate in and expected portfolio growth as reported in the Annual Management Review. Arup B.V. is a firm that provides engineering and advisory services in diverse sectors. Based on the statistics from the CBR, Figure 2 and the potential influence we as a company can have on the sectors the ranking is determined. Based on Table 6, the choice was made to investigate Scope 3, activities 1 and 2 as this is where we have the biggest impact in our own operations. The next Chapter will analyze the data.

Perioden : 2023 3e kwartaal⁶

Nederlandse economie	Raming CO ₂ -emissie; mln kg (mln kg)	Raming CO ₂ -emissie; jaarmutatie (%)	Raming CO ₂ -emissie; weersgecorrigeerd (%)
CO ₂ emissie totaal, Nederlandse economie	33.773	-10,5	-8,5
CO ₂ emissies huishoudens	4.170	-6,6	.
CO ₂ emissies energie-, waterbedrijven	8.968	-27,8	.
CO ₂ emissies transportbedrijven	5.759	-1,9	.
CO ₂ emissies landbouw, industrie, bouw	13.070	1,5	.
CO ₂ emissies overige dienstverlening	1.720	-14,4	.

Bron: CBS.

Figure 2: Source for estimating relative importance of CO₂ burden of sector and activity in Table 6 (Source: <https://www.cbs.nl/nl-nl/cijfers/detail/84057NED?q=co%20emissie%20co2%20emissie>)

Table 6: Relative scope and influence of each product category

PMC Sectors & Activities	Description of activity ⁷ where CO ₂ is released	Relative importance of CO ₂ burden of the sector and influence of the activities		Potential influence of the organisation on CO ₂ emissions	Ranking (Average 20223)
		Sector	Activities		
General sectors applicable to engineering firms	Upstream: Building facilities Purchased goods & services Capital goods Waste Staff travel Downstream: None.	Medium	Medium	Large Arup aims to find the most sustainable suppliers for the services we use to run our business.	1
Industry (engineering or advisory projects in: Science, Industry, Technology, Energy, Aviation)	Upstream: Staff travel Purchased goods & Services Downstream: None	Large	Large	Negligible	2
Property	Upstream:	Large	Medium	Small	3

⁷ Within the influence of Arup b.v.

PMC Sectors & Activities	Description of activity ⁷ where CO ₂ is released	Relative importance of CO ₂ burden of the sector and influence of the activities		Potential influence of the organisation on CO ₂ emissions	Ranking (Average 20223)
		Sector	Activities		
(engineering or advisory projects in: Development, private and public sector)	Staff travel Purchased goods & Services Downstream: None				
Cities and Transport (engineering or advisory projects in: Cities, Roads, Rail, Transport)	Upstream: Staff travel Purchased goods & Services Downstream: None	Medium	Medium	Small	4

The ranking and our potential influence is explained below.

General Sectors applying to engineering firms

This is where we have the most impact on our Scope 3 emissions. Our scope of work is office based, by choosing local and sustainable partners where possible we're able to influence our CO₂ emissions stemming from this. Changes to our company policies should allow for further reductions in emissions by choosing local vendors or proven sustainable vendors.

Industry

We operate in this sector delivering engineering and advisory services to clients. Our company policies require us to always suggest the most sustainable solutions, however this is subject to approval from the clients. We've noticed an improvement in sustainability wishes within the clients, but compared to the other sectors we operate in this is lower.

Property

We operate in this sector delivering engineering and advisory services to our clients. Our company policies require us to always suggest the most sustainable solutions, however this is subject to approval from the clients. We've noticed an improvement in sustainability wishes within the clients and have been able to be part of some very exemplary projects such as HAUT. This industry is already making a big effort to lessen their CO₂ emissions.

Cities and Transport

We operate in this sector delivering engineering and advisory services to our clients. Our company policies require us to always suggest the most sustainable solutions, however this is subject to approval from the clients. Our teams collaborate with some of the biggest players in this field and the transition to improving the environmental impact of the projects is growing.

3. Analysis of the data

3.1 Comparison with ER Net GHG Reduction Plan

Striving towards Net Zero, in August 2020 the Europe Region produced the ER Net GHG Reduction Plan. The plan identifies purchased goods and services to account for 63% of Arup's global emissions and 68% of the Arup Europe Region emissions based on 2018 data, see Appendix E.

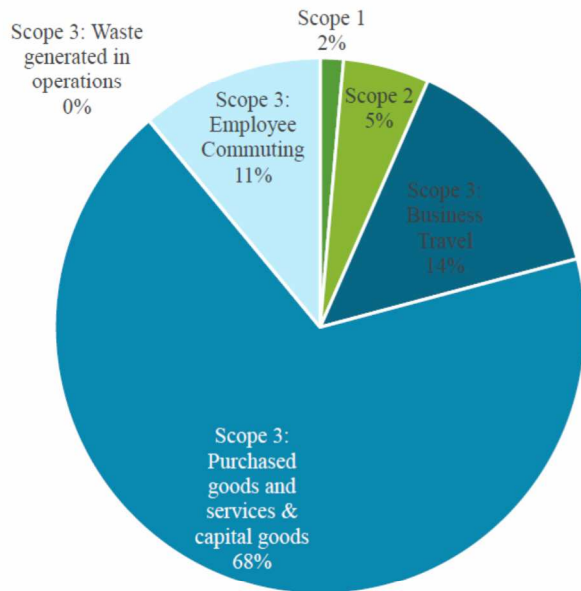


Figure 3: Distribution of Europe Region CO₂ Emissions from ER GHG Reduction Plan (2018 data)

Intuitively the proportion of emissions from purchased good and services appears very high. The analysis in report can be used to interrogate this. For Arup Netherlands emissions are as seen in Table 7⁸.

Table 7: Arup Netherlands 2023 CO₂ Emissions

Scope	2023 Emissions (kg CO ₂ e)	Percentage of Emissions
Scope 1	9.805	0,9%
Scope 2	110.264	11,1%
Scope 3: Employee commuting	55.832	5,6%
Scope 3: Business travel (incl. international travel)	132.529	13,4%
Scope 3: Purchased goods & services	657.096	66,4%
Scope 3: Capital goods	23.909	2,4%
Grand Total:	989.435	-

⁸ Scope 1, Scope 2 and Scope 3 Business Travel and Employee commuting are measured in our general GIIG reporting, this is excluded from this supply chain analysis.

In 2018, pre-pandemic, office occupancy, commuting and business travel emissions were higher than in 2022 and 2023. As can be seen in Table 1 we've managed to reduce our supplier footprint by 23% in 2023, a region effort is in place to look for sustainable partners or better CO2 footprint data.

3.2 Accuracy of the DEFRA Emissions Factors

The DEFRA emissions factor database was used in all sets of calculations. As described in chapter 3.2 of report 074764-56-003_P01 CO2-portfolio_Supply Chain Analysis, we question the accuracy of the emission factors. However, currently there we don't have a more reliable form of calculation.Chain partners emissions

An improvement that was raised last year was finding our the emissions from our chain partners. The Europe Region team is still working on receiving the emissions for the top 5 companies (as listed in chapter 4.2). A questionnaire has been send to their representatives asking for their emissions if they have this or a timeframe of when they aim to start reporting on this. Responses have been summarized in chapter 4.2.

We expect with the new legislation around energy efficiency and climate impact in place from 01-01-2024 this data will be available mid 2025. In the meantime we were able to find one of our chain partners is certified with the CO₂ prestatie ladder.

Company name:	REDACTED (2022 reporting)
Certifying level	5
Company type	Contractor
Company Size CO ₂ Performance ladder	Medium
Total tonnes CO ₂ 2022	765
Business Travel	75%
Uitstoot van gebouwen	13%
Waste	12%

4. Outcomes

4.1 Findings

The key findings from this Upstream CO₂ emissions analysis are:

- Service suppliers make up the majority of the assessment boundary of the Arup Netherlands Upstream Supply Chain.
- CO₂ emission contributions from purchased good and services are very difficult to calculate. Section 2.2.2 of this report shows that the emissions can be calculated as between 16% and 83% depending on the dataset and emissions factors used.
- A crude comparison of the DEFRA emissions factors with a calculated Arup NL office emissions factor (074764-56-003_P01 CO2-portfolio_Supply Chain Analysis) show that the DEFRA emissions factors are likely to be highly inaccurate although there is no better alternative calculation method at this time.
- Comparing the years shows a reduction of 23% in Scope 3 categories 1 and 2 compared to our baseline in 2018. As written in our GHG report G6, we had the aim of reducing our emissions in the form of purchased goods from our top 20 suppliers by 20%.

4.2 Improvements

A number of improvements have already been identified in Table 5. In addition to these, the following potential improvements have been identified:

- Improvement of emissions from suppliers. In order to improve the calculated emissions from our suppliers, the Europe Region Net Zero team are contacting the top 20 European suppliers to request their specific emissions data. Discussions will also be initiated regarding influencing their emissions. The following Netherlands suppliers are included in this top 20 list:

REDACTED

- Arup Global is investigating improving invoice tagging and categorisation within the financial system to improve reporting on purchased (capital) good and services.

5. Conclusion

This report has provided an insight into the Scope 3 Purchased (capital) goods and services emissions for Arup NL. It has identified that the majority of the upstream supply chain (by purchase value) is service suppliers.

This report shows that the percentage of Arup NL total carbon emissions which comes from Scope 3 purchased (capital) goods and services is broadly in line with that identified in the Arup ER Net Zero GHG Reduction Plan. However this percentage is still considered high and the accuracy of the emissions factors used to calculate the emissions has been brought in to question. Improvements discussed in section 4.2 are underway to further improve data collection and reporting.

Finally, the Arup ER Net Zero GHG Reduction Plan sets out a target of reducing emissions from top 20 goods suppliers by 20% by 2025 compared to 2018 emissions. The next step is to retrospectively determine a 2018 baseline which can be measured and reported against. In 2023, our reductions have been 23%, meeting the set goal early compared to the target that was set.

The next reporting year we will shift our focus on Scope 3 Category 5, waste, as we believe this is the next topic we can influence within our company (culture).

Appendix A

List of suppliers, invoice values and categories

2023					
Supplier Name	Total Spend (EUR)	Type Supplier	SIC Multiplier code	SIC Multiplier category	CO2 Emmissions based on spend (kgCO2)
		Purchased Services	55	Accommodation services	88.211
		Purchased Services	65.1-2	Insurance and reinsurance services, except compulsory social security	75.310
		Purchased Services	68,3	Real estate services on a fee or contract basis	32.299
		Purchased Services	71	Architectural and engineering services; technical testing and analysis services	31.854
		Purchased Services	71	Architectural and engineering services; technical testing and analysis services	29.044
		Purchased Services	71	Architectural and engineering services; technical testing and analysis services	22.952
		Purchased Services	72	Scientific research and development services	22.219
		Purchased Services	90	Creative, arts and entertainment services	21.604
		Purchased Services	71	Architectural and engineering services; technical testing and analysis services	18.999
		Purchased Services	62	Computer programming, consultancy and related services	16.363
		Purchased Services	62	Computer programming, consultancy and related services	14.299

REDACTED

		Purchase d Goods	31	Furniture	70.590
		Purchase d Services	69,2	Accounting, bookkeeping and auditing services; tax consulting services	12.635
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	11.887
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	11.499
		Purchase d Services	81	Services to buildings and landscape	11.158
		Purchase d Services	55	Accommodation services	10.108
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	9.091
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	8.627
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	8.604
		Purchase d Services	72	Scientific research and development services	8.308
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	8.257
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	8.155
		Purchase d Services	70	Services of head offices; management consulting services	8.141

REDACTED

		Purchase d Services	72	Scientific research and development services	7.680
		Purchase d Services	65.1-2	Insurance and reinsurance services, except compulsory social security	7.540
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	7.501
		Purchase d Services	73	Advertising and market research services	6.649
		Purchase d Services	62	Computer programming, consultancy and related services	6.543
		Purchase d Services	70	Services of head offices; management consulting services	6.091
		Capital Goods	26	Computer, electronic and optical products	23.909
		Purchase d Services	52	Warehousing and support services for transportation	5.995
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	5.876
		Purchase d Services	70	Services of head offices; management consulting services	5.620
		Purchase d Services	62	Computer programming, consultancy and related services	4.746
		Purchase d Services	72	Scientific research and development services	4.618
		Purchase d Services	71	Architectural and engineering services; technical testing and analysis services	4.617
		Purchase d Services	64	Financial services, except insurance and pension funding	4.515
		Purchase d Services	80	Security and investigation services	4.166

REDACTED

		Purchase d Services	61	Telecommunications services	3.777
		Purchase d Goods	56	Food and beverage serving services	6.556
		Purchase d Services	85	Education services	2.946
		Purchase d Services	69,1	Legal services	1.448
					Total
					681.006 kgCO2

REDACTED

Appendix B

DEFRA Emissions Factors

Appendix C

Extract from ER GHG Emissions Reduction Plan

