ARUP

CO2 Prestatieladder

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CO2 Rapportage 2025

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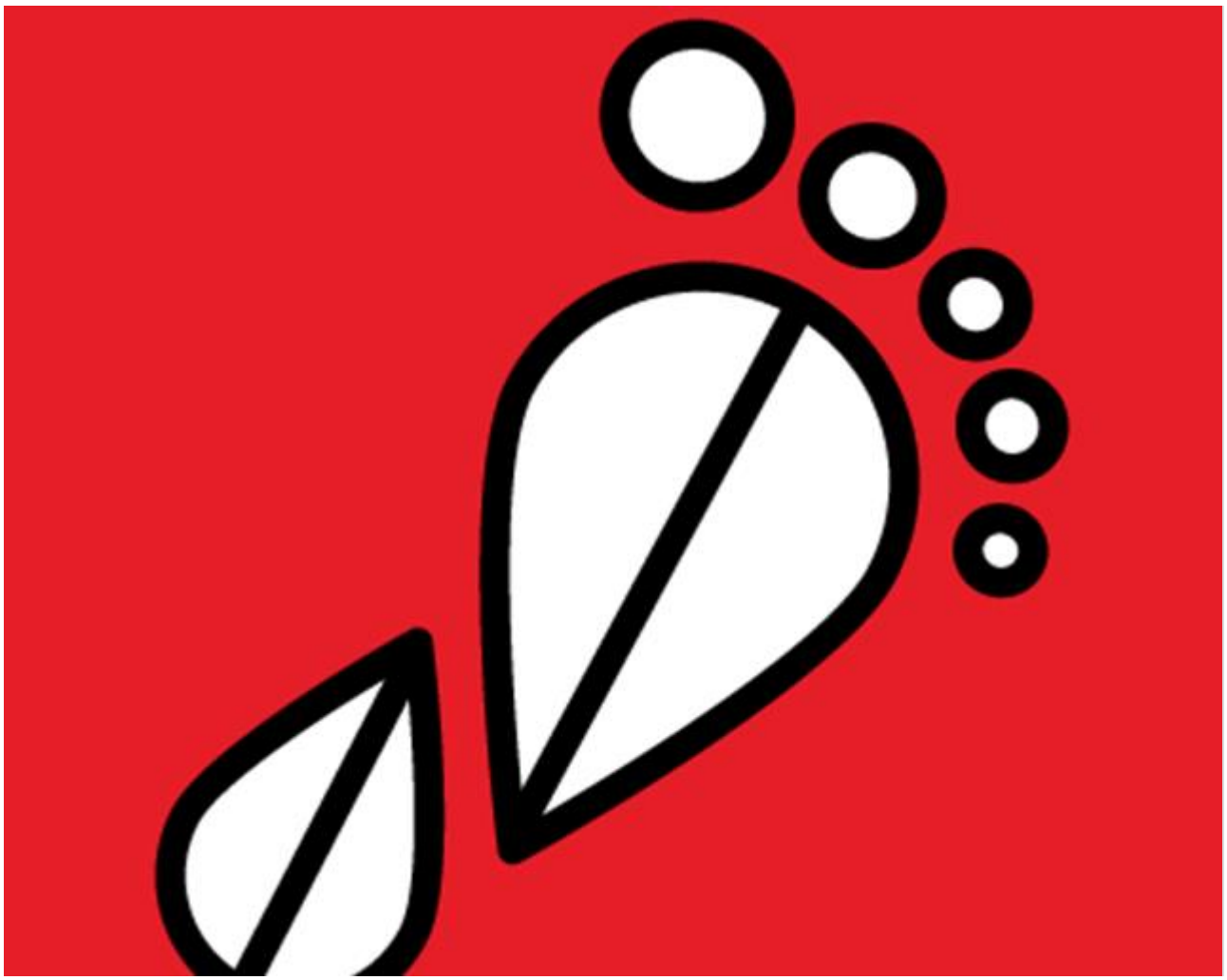

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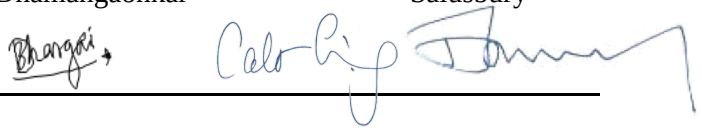
		Signature			
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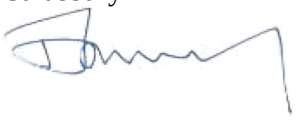
Signature			

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1. Introduction

At Arup we aim to contribute towards a more sustainable future. Arup in the Netherlands has adopted the CO_2 -performance ladder as a tool to map and reduce CO_2-emissions. The aims of the CO_2 Performance Ladder are in line with:

- Arup's Global Net Zero GHG Emission Statement;
- Arup's Global Net Zero Carbon Strategy; and
- Arup's Europe Region GHG Emissions Reduction Plan.

The Energy Management Plan combines our global company aims and strategies to reduce CO_2-emissions and the local CO_2 performance ladder aims. Reduction targets and measures are set-up for emissions of scopes 1, 2 and 3 on the basis of the insight gained through the documents: GHG-inventory report, analysis of downstream scope 3 emissions and the chain analysis.

When reading this report it should be noted that, for most of 2020 and 2021, the Arup Amsterdam office was closed with the exception of business-critical activities or open with limited capacity to enable physical distancing to be implemented. This resulted in very limited staff office presence. Reception services continued during this period and regular lighting and heating in the office was provided. In 2022 the situation improved and office activities increased with staff aiming to spend at least 50% of their time in the office. By 2023 the office and operations resumed to business as usual with the Work Unbound Policy in place, allowing us to compare the improvements made from 2023 onward, and helped by the new way of working in the past years. It should be noted that before 2019, working at the office was the norm, this results in higher numbers until the pandemic hit.

The ER Net Zero reduction plan is set for the period from 2020 to 2030, with an annual update by the end of fiscal 2024 (April 2025). The plan is written in accordance with ISO 50001.

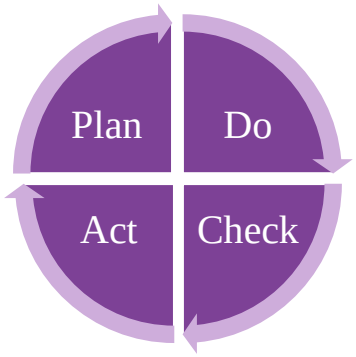
The energy management planning is intended to be a process of continuous improvement, on the basis of a Plan, Do, Check and Act system:

Plan: Set energy management targets and measures

Do: Implement the CO_2 strategy.

Check: Measure and monitor performance

Act: Analyse the variances, recommend improvements



As per 2024 the reporting will be combined into a singular report. In section 1.1 and 1.2 the compliance to ISO 50001 and ISO 14064-1 will be described, followed by section 1.3 describing our organizational and operational boundaries and section1.4 describing the responsibilities that will be valid for the entirety of the report.

1.1 Reader's guide

This report is built up in the following manner:

- Chapter 1 is the introduction, providing background on
  - the compliance of the EMP to the ISO standards
  - the compliance of the GHG to the ISO standards
  - Organizational boundaries
  - Overview of the responsibilities
- Chapter 2 Energy Management Plan
  - includes results of the third-party validated supply chain analysis report
- Chapter 3 GHG report
- Chapter 4 Project Reporting
- Chapter 5 Communication plan
- Chapter 6 Participation plan

1.2 Compliance to ISO 50001

The Energy Management Plan (Section 2) is written in accordance with NEN-ISO 50001 as shown in Table 1.

Table 1: Compliance with ISO 50001 2011 vs 2018

ISO 50001:2011[1]	ISO 50001:2018[2]	Topic
§4.4.3	§6.3	Energy review
§4.4.4	§6.5	Energy baseline
§4.4.5	§6.4	Energy performance indicators
§4.4.6	§6.2	Objectives, energy targets and planning to achieve them
§4.6.1	§6.6 & §9.1.1	Planning for collection of energy data
§4.6.4	§10.1	Nonconformity and corrective action

Table 2: Compliance with ISO 50001:2018

§6.2 Objectives, energy targets and planning to achieve them	
§6.2.1 The organisation shall establish objectives at relevant functions and level. The organisation shall establish energy targets.	Section 2.1
§6.2.2 The objective and energy targets shall:	-
a) Be consistent with the energy policy	Section 2.1
b) Be measurable (if practicable)	Section 2.1

[1] Clauses referred to in CO2 Performance Ladder Handbook

[2] Latest version of the standard

c) Take into account applicable requirements	Section 2.1
d) Consider Significant Energy Uses (SEUs)	Section 2.1 and Strategies described in Section 1
e) Take into account opportunities to improve energy performance	Section 2.7
f) Be monitored	Section 2.4
g) Be communicated	Section 2.4
h) Be updated as appropriate	Section 2.8
The organization shall retain documented information on the objectives and energy targets	Section 2.1
§6.2.2 When planning how to achieve its objectives and energy targets, the organization shall establish and maintain action plans that include:	Table 26
- What shall be done;	Table 26
- What resources will be required;	Table 26
- Who will be responsible;	Table 26
- When it will be completed;	Table 26
- How the results will be evaluated, including the method(s) used to verify energy performance improvement.	Table 26
The organization shall consider how the actions to achieve its objectives and energy targets can be integrated into the organization's business processes. The organization shall retain documented information on action plans.	Section 2.6
§6.3 Energy Review – To develop the energy review, the organisation shall:	
a) Analyse energy use and consumption based on measure and other data, i.e.: 1. Identify current types of energy 2. Evaluate past and current energy uses(s) and consumption	Section 2.4
b) Based on the analysis, identify SEUs (significant energy use)	Section 2.1 and Section 2.4
c) For each SEU: 1. Determine relevant variables; 2. Determine current energy performance; 3. Identify person(s) doing work under its control that influence or affect the SEUs	Section 1.5, Section 2.4 and Section 2.7
d) Determine and prioritise opportunities for improving energy performance	Section 2.7
e) Estimate future energy use(s) and energy consumption	Section 2.8
The energy review shall be updated at define intervals, as well as in response to major changes in facilities, equipment, systems or energy-using processes.	Updated annually
The organisation shall maintain as documented information the methods and criteria used to developed the energy review, and shall retain documented information of its results.	Data retained within office electronic filing locations
§6.4 Energy Performance Indicators – The organisation shall determine EnPIs that:	
a) Are appropriate for measuring and monitoring its energy performance	Section 2.1
b) Enable the organisation to demonstrate energy performance improvement	Section 2.7
The method for determining and updating the ENPI(s) shall be maintained as documented information.	Section 2.4

Where the organisation has data indicating that relevant variables significantly affect the energy performance, the organisation shall consider such data to establish appropriate EnPI(s).	Not applicable.
ENPI value(s) shall be reviewed and compared to their respective ENB(s), as appropriate. The organisation shall retain documented information of EnPI values.	Section 2.3 shows energy baseline
§6.5 Energy baseline	
The organization shall establish (an) EnB(s) using the information from the energy review(s) taking into account a suitable period of time.	Section 2.3 shows energy baseline
Where the organisation has data indicating that relevant variable significantly affect energy performance, the organisation shall carry out normalisation of the EnPI value(s) and corresponding EnB(s).	Not applicable.
EnB(s) shall be revised in the case of one or more of the following:	Not applicable.
a) EnPI(s) no longer reflect the organisation’s energy performance	-
b) There have been major changes to the static factors	-
c) According to a pre-determined method	-
The organisation shall maintain information of EnB(s), relevant variable data and modifications to EnB(s) as documented information.	Section 2.3 shows energy baseline
§6.6 Planning for collection of energy data	
The organization shall ensure that key characteristics of its operations affecting energy performance are identified, measured, monitored and analysed at planned intervals. The organisation shall define and implement an energy data collection plan appropriate to its size, its complexity, its resources and its measurement and monitoring equipment. The plan shall specify the data necessary to monitor the key characteristics and state how and at what frequency the data shall be collected and retained.	Section 2 and 3
Data to be collected (or acquired by measurement as applicable) and retained documented information shall include:	Section 2 and 3
a) The relevant variables for SEUs	-
b) Energy consumption related to SEUs and to the organization	-
c) Operational criteria related to SEUs	-
d) Static factor, if applicable	-
e) Data specified in action plans	-
The energy data collection plan shall be reviewed at defined intervals and updated as appropriate.	Section 2 and 3
The organization shall ensure that the equipment used for measurement of key characteristics provides data which are accurate and repeatable. The organisation shall retain documented information on measurement, monitoring and other means of establishing accuracy and repeatability.	Section 2 and 3
§9 Performation evaluation – §9.1 Montoring, measurement, analysis and evaluation of energy performance and the EnMS - §9.1.1 General	
The organisation shall determine for energy performance and the EnMS:	
a) What needs to be monitored and measure, including at a minimum the following key characteristics: 1. The effectiveness of the action plans in achieving the objective and energy targets 2. EnPI(s)	Section 2.4

3. Operation of SEUs 4. Actual versus expected energy consumption	
b) The methods for monitoring, measurement, analysis and evaluation, as appropriate, to ensure valid results	Section 2
c) When the monitoring and measurement shall be performed	Section 3
d) When the results from monitoring and measurement shall be analysed and evaluated	Section 2.7
The organisation shall evaluate its energy performance and the effectiveness of the EnMS	Sections 2.4 and 2.7
Improvement in energy performance shall be evaluated by comparing EnPI value(s) against the corresponding EnB(s)	Section 2.6
The organisation shall investigate and respond to significant deviations to energy performance. The organisation shall retain documented information on the results of the investigation and response.	Noted
The organisation shall retain appropriate documented information on the results from monitoring and measurement.	Noted.
§10.1 Nonconformity and corrective action	
When a nonconformity is identified, the organization shall:	
a) React to the nonconformity and, as applicable: 1. Take action to control and correct it; 2. Deal with the consequences	See CAPA register
b) Evaluate the need for action to eliminate the cause(s) of the non-conformity, in order that it does not recur or occur elsewhere, by: 1. Reviewing the nonconformity 2. Determining the causes of the nonconformity 3. Determining if similar nonconformities exist, or can potentially occur	See CAPA register
c) Implement any action needed	See CAPA register
d) Review the effectiveness of any corrective action taken	See CAPA register
e) Make changes to the EnMS, if necessary	Noted
Corrective actions shall be appropriate to the effects of the encountered nonconformities.	See CAPA register
The organization shall retain documented information of: - the nature of the nonconformities and subsequent actions taken; - The results of any corrective action	See CAPA register

1.3 Compliance to ISO 14064-1

The GHG Inventory report (section 3) is written in accordance with ISO 14064-1 as shown in Table 3.

Table 3: Compliance with ISO 14064-1

§9.3.1 GHG report content shall include the following:	
a) description of the reporting organization;	Section 1.4
b) person or entity responsible for the report;	Document Verification table
c) reporting period covered;	Section 3.1
d) documentation of organizational boundaries ;	Section 1.4

e) documentation of reporting boundaries, including criteria determined by the organization to define significant emissions;	Section 3.2
f) direct GHG emissions, quantified separately for CO2, CH4, N2O, NF3, SF6 and other appropriate GHG groups (HFCs, PFCs, etc.) in tonnes of CO2e;	Currently only tracking CO_2 (equivalent) emissions. Reported in Section 3.
g) a description of how biogenic CO2 emissions and removals are treated in the GHG inventory and the relevant biogenic CO2 emissions and removals quantified separately in tonnes of CO2e;	Not applicable.
h) if quantified, direct GHG removals, in tonnes of CO2e;	Not applicable.
i) explanation of the exclusion of any significant GHG sources or sinks from the quantification;	Not applicable.
j) quantified indirect GHG emissions separated by category in tonnes of CO2e;	Not applicable.
k) the historical base year selected and the base-year GHG inventory;	Section 2 and Section 3.1
l) explanation of any change to the base year or other historical GHG data or categorization and any recalculation of the base year or other historical GHG inventory, and documentation of any limitations to comparability resulting from such recalculation;	Not applicable
m) reference to, or description of, quantification approaches, including reasons for their selection;	Section 3.2.2 and 3.2.3
n) explanation of any change to quantification approaches previously used;	Not applicable
o) reference to, or documentation of, GHG emission or removal factors used;	Section 3.2.3
p) description of the impact of uncertainties on the accuracy of the GHG emissions and removals data per category;	Section 3.2.4
q) uncertainty assessment description and results;	Section 3.2.4
s) a disclosure describing whether the GHG inventory, report or statement has been verified, including the type of verification and level of assurance achieved;	Not externally verified, internal verification only
t) the GWP values used in the calculation, as well as their source. If the GWP values are not taken from the latest IPCC report, include the emissions factors or the database reference used in the calculation, as well as their source.	Not applicable only CO2 taken into account Emissions factors from https://www.co2emissiefactoren.nl have been used
9.3.2 Recommended information	
The organization should consider including in the GHG report:	
a) description of the organization's GHG policies, strategies or programmes;	Available on www.arup.com Section 3.1
b) if appropriate, description of GHG reduction initiatives and how they contribute to GHG emission or removal differences, including those occurring outside organizational boundaries, quantified in tonnes of CO2e;	Section 6
c) if appropriate, purchased or developed GHG emission reductions and removal enhancements from GHG emission reduction and removal enhancement projects, quantified in tonnes of CO2e;	Not applicable
d) as appropriate, description of applicable GHG programme requirements;	Not applicable

e) GHG emissions or removals disaggregated by the facility;	Section 3.2.1
f) total quantified indirect GHG emissions;	Section 2
g) description and presentation of additional indicators, such as efficiency or GHG emission intensity (emissions per unit of production) ratios;	Two measures proposed: kg CO2e/FTE and kg CO2e/€ turnover.
h) assessment of performance against appropriate internal and/or external benchmarks;	Section 2
i) description of GHG information management and monitoring procedures;	Section 3.2.2
j) GHG emissions and removals from the previous reporting period;	Section 2
k) if appropriate, explanation of GHG emissions differences between the present inventory and the previous one. The organization may aggregate direct emissions and direct removals.	Section 2
9.3.3 Optional information and associated requirements	
The organization may report optional information separately from the required information and the recommended information. Each type of optional information described below should be reported separately from the others.	-
The organization may report the results of contractual instruments for GHG attributes (market based approach), expressed in GHG emissions (tCO2e) as well as in the unit of transfer (e.g. kWh). The organization may report the amount purchased compared to the amount consumed.	-
The organization may report offsets or other types of carbon credits. If so, the organization:	
− shall disclose the GHG scheme under which they were generated;	Not applicable
− may add offsets or other types of carbon credits together if they originate from the same GHG scheme and are of appropriate vintage;	Not applicable
− shall not add or subtract offsets or other types of carbon credits from the organization’s inventory of its direct or indirect emissions.	Not applicable
The organization may report GHGs stored in GHG reservoirs.	Not applicable

1.4 Organisational boundaries

The CO_2 Performance Ladder certification will be applicable to the firm Arup BV in the Netherlands. In 2024, Arup BV has one permanent office in Amsterdam. Prior to 2022, there was also a small office in Groningen but that office is no longer used as an Arup office. The firm operates as a consultant for the planning, 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 B.V.

In 2024 Arup B.V. produced a total amount of 131 100 kg CO_2 emissions in Scope 1 and 2, classifying it as a small company according to the CO_2 Performance Ladder. The size classification determines the specific set of CO_2-ladder certification requirements.

Table 4: 2024 CO_2 Emissions for Arup B.V.

Scope	2024 CO_2 emissions in kg
Total Scope 1	975
Total Scope 2	130.126
Total Scope 3[3]	1.280.001
Grand total	**1.411.101**

1.4.1 Operational boundaries

Arup B.V. is responsible for the carbon emission related to all activities and projects that fall under its direct operational control. In 2024, Arup B.V. leased one office facility as described in Table 5.

Table 5: Arup B.V. Locations

Location	Consolidation	Operational control
Amsterdam office (permanent leased facility)	Equity share	Arup B.V. rents a floor area of 3040m^2 out of a building with a total floor area of 6080m^2. The building also has a communal atrium which is shared with the other building tenants. Energy and district heating suppliers not chosen by Arup B.V. Energy/climate is controlled centrally for the whole building, not falling under control of Arup B.V. Furniture, lighting and all operational devices such as computers and printers are property of Arup B.V.

[3] This now includes Scope 3 categories 1 & 2 and 5. See Supplier Emissions Analysis for details on category 1 & 2.

1.5 Responsibilities

The energy management team and organizational framework is introduced in the tables below. The team is also responsible for the yearly document maintenance.

Table 6: Sustainable Development Roles

Role	Name	Tasks & Responsibilities
Group Leader and Europe Region Sustainable Development Director (SDD)	REDACTED	Sets priorities and goals for the next 3 years Reviews governance policies Discusses with management team for approval of plans and implementation policies Audits if new projects meet the goals set by European board Yearly evaluates the goals
Environmental and CO2 PL Director	REDACTED	Oversees the groups environmental management system Provides inputs on priorities and goals Ensures resourcing
Europe Region Net Zero Manager	REDACTED	Provides oversight and support in data collection and reporting both Regionally and on a Group Level Manages organisation of emissions reporting and systems Reports to SDD
Environmental and CO2 PL Manager (with input from supported by Q&E Officer, Facilities and Finance.)	REDACTED	Researches future scenarios Coordinates if goals meet CO2-prestatieladder Manages implementation of plans Checks governance with sustainability objectives Measures and monitors the effect of plans Analyses measurements Assists PM’s of projects won with CO2-prestatieladder

The responsible collaborators for project specific targets are:

Table 7: Project Roles

Role	Tasks & Responsibilities
Project Director (PD)	Includes EC review of the sustainability objectives Monitors progress on the sustainability objectives
Project Manager (PM)	Implementation of project sustainability objectives Measures and monitors project CO_2-footprint Measures and monitors the project objectives Analyses non-conformances and advises PD Update of sector initiatives relevant for the project

Additional collaborators within the office are:

Table 8:Additional Collaborators

Role	Name	Tasks & Responsibilities
Quality Officer	REDACTED	Organisation of audits
Environmental and CO2 PL Officer	REDACTED	CO2 Performance Ladder Data Collection Drafting of CO2 reporting
Human Resources	REDACTED	Mobility plan, input for Environmental reporting
Marketing / Com.	REDACTED	Communication strategy
Facility manager	REDACTED	Facility management
Finance officers	REDACTED	Input for Environmental reporting

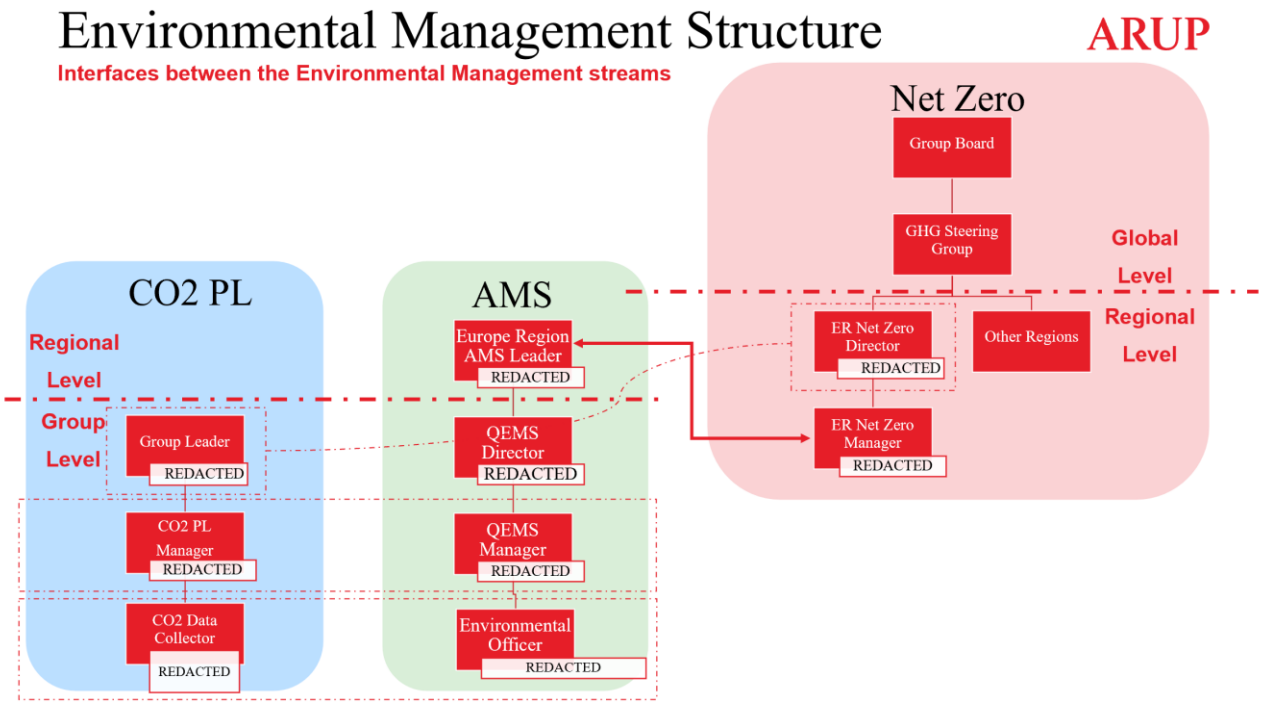


Figure 1: Environmental Management Structure

2. Energy Management Plan

In this section, the reduction strategy is outlined for emission categories associated with the operational activities of our own organization (scope 1 + scope 2 + upstream scope 3).

2.1 Reduction Targets

2.1.1 Global and Regional Targets

Arup's reduction targets are set out in the Global Net Zero Carbon Strategy and reiterated in the Europe Region GHG Emissions Reduction Plan. A summary of these targets is provided in Table 9. The reference number provided in the table of for ease of reference to the targets within this EMP.

Table 9: Arup Reduction Targets

Ref. No.	Source	Arup Area	Target	Reduction Area
G1	Global Net Zero Carbon Strategy	Global	We will reduce purchases such as catering, stationery and events by 50% (compared to 2018 baseline)	Scope 3 Category 1 – Purchases goods and services
G2	Global Net Zero Carbon Strategy	Global	Maintain at least an 75% reduction in commuting emissions compared to 2018 baseline emissions.	Scope 3 Category 7 – Employee Commuting
G3	Global Net Zero Carbon Strategy	Global	Maintain at least a 50% reduction in business travel emissions compared to 2018 baseline emissions.	Scope 3 Category 6 – Business Travel
G4	Global Net Zero Carbon Strategy	Global	Only electric cars will be used for business travel as far as practically possible.	Scope 1 – Company Vehicles Scope 3 Category 6 – Business Travel
G5	Global Net Zero Carbon Strategy	Global	Offset certifications are bought, 100% renewable energy achievable by 2026 per landlord.	Scope 2 – Purchased electricity, steam, heating and cooling for own use
G6	Global Net Zero Carbon Strategy	Global	Engage with Top 10 of reoccurring suppliers subconsultants to receive their emissions reduction plan.	Scope 3 Category 1 – Purchases goods and services

2.1.2 Netherlands Group Targets

Group targets are set at country level and should be at least in line with the Group and Regional targets. For the Netherlands group several targets are stricter as we want to continuously improve our CO2 emissions compared to the previous years.

2.2 Mobility Policy

The Group Mobility Policy for Arup BV dated 2019 has the following CO2 emission reducing objectives:

2.2.1 Discourage the use of cars;

Reduce and maintain CO2-emissions regarding mobility (commuting and business trips) in 2022 by over 35% compared to the 2018 baseline.

For the sake of reporting in this EMP, these targets are considered to be superseded by the Global and Regional targets which are more measurable, more ambitious and have the same intention.

2.2.2 Remote Working

During the pandemic, commuting and business travel dropped significantly due to Covid travel restrictions and office presence of staff was restricted and employees started to work from home. A key lesson from pandemic was the apparent effectiveness of remote working and the development of a range of online working methods. This has continued to influence travel patterns post-pandemic as online conferencing and remote working has become more accepted. However, it is not realistic to think all work can be productively done online and an increase in travel and commuting post pandemic should be expected and taken into account in reduction targets. In 2023, we saw an increase in national and international travel as all restrictions had been lifted and this trend continued through 2024. With a new global travel policy introduced in 2024, however, we take travel to be controlled and to not return to pre-pandemic travels.

2.2.3 Group Reduction Targets for 2024

Table 10 shows the reduction targets which were made in 2022 to be achieved in 2024.

Table 10: Group Reduction Targets for 2024

Ref. No.	Source	Arup Area	Target	Reduction Area
G8	Energy Management Plan dated 12 July 2022	Netherlands Group	Air travel to Arup meetings and Arup internal conferences to maintain 70% reduction compared to 2018 due to availability of online alternatives.	Scope 3 Category 6 – Business Travel
G9	Management review dated 20 October 2023	Netherlands Group	Measure CO2 emissions from waste and develop improvement plan.	Scope 3 Category 5 Waste in operations
G10	Management review dated 20 October 2023	Netherlands Group	From 2023/24, all new company vehicles will be fully electric	Scope 1 Company Vehicles
G11	Management review dated 11 September 2024	Netherlands Group	Engage with Top 10 of subconsultants on projects to receive their emissions reduction plan, and develop procedure for to assess sustainability performance of subconsultants	Scope 3 – Cat. 1 Purchased goods and services
G12	Management review dated 11 September 2024	Netherlands Group	Implement an energy efficiency project to identify possible energy savings for our office (in relation to any refurbishment of the office)	Scope 2 – usage of electricity
G13	Management review dated 11 September 2024	Netherlands Group	Start carrying out an annual benchmark of energy consumption against similar premises and business operations (other offices e.g. Germany, Copenhagen	Scope 2 – usage of electricity

2.3 Baseline

Europe Region has taken 2018 as the base year for the reduction targets. The Arup BV energy data for 2018 is reported in Table 11.

Table 11: 2018 Baseline

Scope	Category	2018 CO2 Emissions (kg CO2)
Scope 1	Company facilities	113 728
Scope 1	Company vehicles	82 080
Scope 2	Purchased electricity, steam, heating and cooling for own use	30 874 for Groningen office 0 for Amsterdam office (100% green energy)
Scope 3	Category 1 – Purchased goods and services	836 425
Scope 3	Category 2 – Capital goods	49 702
Scope 3	Category 5 – Waste generated in operations	Unknown. Not reported in 2018.
Scope 3	Category 6 – Business travel	362 649
Scope 3	Category 7 – Employee commuting	308 863
Total		1 781 569

2.4 Evaluation of Emissions and Reduction Targets

2.4.1 Scope 1

Emissions from Company Facilities

This category includes direct emissions from own installations such as own gas use (e.g. boilers, heating systems, ovens etc).

Refrigerant Losses

Refrigerant losses are reported for the first time in 2022. The Landlord, REDACTED has informed us that there were no refrigerant losses from the cooling equipment in the building. This is supported by maintenance reports in 2022 and 2023.

Refrigerant losses from Arup owned equipment have been reported to be zero. In 2023, we've established the cooling agent and fill weight associated with this equipment. In 2024, the air handling units remain the same, and there was no refrigerant loss, hence the emissions in this area are zero.

Table 12 Product and Refrigerant Used Information

Location (under Arup control)	Product manufacturer Name / Model Number	Refrigerant Type	Kg Refrigerant (/Charge)
Server Room 3rd floor Unit 1	REDACTED	R32	3,2 KG
Server Room 3rd floor Unit 2	REDACTED	R32	3,2 KG
Server Room 1st floor Unit 1	REDACTED	R32	2,0 KG

Location (under Arup control)	Product manufacturer Name / Model Number	Refrigerant Type	Kg Refrigerant (/Charge)
Server Room 1st floor Unit 2	REDACTED	R410A	2,2 KG

Emissions from (Non-Electric) Company Vehicles

Company Vehicles are used by employees for commuting, business travel and personal use. Scope 1 reduction is linked to Reduction Target G4 and G10 via reduction of the number of lease vehicles and the electrification of the lease fleet. Steps towards electrification of the lease fleet began in early 2019 and by the end of year 2024, Arup achieved the target of electrification of all lease vehicles.

In 2020 the number of lease companies used was reduced from 6 to 3. With fewer lease companies to manage, it should be easier to acquire reliable information.

The number of non-electric lease cars is continuing to decrease. In 2015 there were no electric vehicles in the fleet and in 2022 there were 10 electric and just 2 non-electric vehicles. In 2023 we can report that we only have 2 non-electric vehicles (1 diesel, 1 gasoline). In the year 2024, there were a 13 electric and 2 non-electric lease vehicles. By the end of 2024, not only were most leases terminated, the remaining 4 leases were converted to electric vehicles. This is supported by section 7 of the Mobility Policy.

Annual CO2 emissions from non-electric company vehicles is shown in Table 13. Since mid-2020, a flexible working agreement has been in place, so we expect numbers to remain lower than the baseline year of 2018 as more staff work from home. In 2024, CO2 emissions reported in Scope 1 from company vehicles was reduced by 99% compared to the baseline year of 2018. With the last of the lease cars converted to electric, Scope 1 emissions are expected to be 0 in 2025.

Table 13: CO2 Emissions from Scope 1 (non-electric) Company Vehicles

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Lease cars petrol	49 106	41 538	11 500	6 991	6 286	2 098	201
Lease cars diesel	31 866	9 110	3 696	5 549	5 816	7 707	773
Total Scope 1	80 972	50 648	15 196	14 255	12 102	9 805	975
% reduction compared to baseline year 2018	-	37%	81%	83%	85%	88%	99%

Summary

An overview of all Scope 1 CO2 emissions is given in Table 14: Overall Scope 1 CO2 Emissions. Overall, the 2024 Scope 1 CO2 emissions have reduced by 99% since 2018. Provided the refrigerant losses remain at nil and with the electrification of all the lease vehicles having been achieved, Scope 1 emissions are forecast to be 0 by 2025. See section 2.8 for further forecasting details.

Table 14: Overall Scope 1 CO2 Emissions

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Refrigerant Losses	0	0	0	0	0	0	0
Non-Electric Company Vehicles	80 972	50 648	15 196	14 255	12 102	9 805	975
Total	80 972	50 648	15 196	14 255	12 102	9 805	975
% reduction compared to baseline year 2018	-	37%	81%	82%	85%	88%	99%

2.4.2 Scope 2

Emissions from purchased electricity, steam, heating and cooling for own use.

Scope 2 emissions for Arup BV consists of:

Emissions from generation of energy and heating used in the Amsterdam office, and

Emissions from electricity generated to power the electric lease vehicles.

Electricity

Between September 2017 and July 2020, the leased Amsterdam office used 100% wind energy. However, in 2020 the building was sold to a new landlord, REDACTED, which resulted in a change to the electricity supplier. Since then, the building has been using grey electricity which is an average mix of fuels of electricity on the Dutch market. As part of the negotiations for Arup BV to renew the lease agreement in July 2021, the Arup has requested 100% green energy backed up by certification. At a meeting on 8th February 2023, REDACTED explained that they purchase certificates to "offset" the non-green energy they use. To date further details or evidence of this has not been provided although Arup BV has requested it. Therefore, for reporting purposes the electricity in the Amsterdam office has been classified as "grey" electricity for the whole year of 2024 as well.

Table 15 shows a significant increase in CO2 emissions since the baseline year of 2018 due to the aforementioned switch from green to grey electricity. In 2018 the Scope 2 electricity related CO2 emissions were entirely from the Groningen office location which has been terminated since 2022. Despite terminating the Groningen office, CO2 emissions have increased by 225% since 2018 in this category.

However, it should be noted that a global Arup Renewable Energy Certificate procurement has been completed until 2026 whereby the emissions associated with the Amsterdam Office (and all other Arup offices) will be backed by third-party (RECs) - this is to align with goal G5 "to procure electricity in our offices from 100% renewable sources by 2023". The Arup regional team have engaged with the landlord to secure 100% renewable electricity, and in 2024 a renewable energy certificate was provided by the landlord. Although the certificate may meet Arup regional requirements for renewable energy, the fact that energy company is based in Spain, which does not meet Handbook 3.1 requirements, we continue to calculate grey energy emissions for 2024.

Table 15: CO2 Emissions from Electricity

CO2 Emissions (kg of CO2)	2018	2019	2020	2021[4]	2022[5]	2023	2024
Electricity – Amsterdam	0 (100% wind)	0 (100% wind)	80 066	111 958[4]	79 423[5]	80 696	100.207
Electricity - Groningen	30 874	23 112	12 300	6 024	0	0	0
Total	30 874	23 112	92 266	117 652	79 423	80 696	100.207
% reduction compared to baseline year 2018	-	25%	-199% (increase)	-281% (increase)	-157% (increase)	-261% (increase)	-225% (increase)

[4] 2021 electricity usage figures were estimated

[5] Electricity usage for 2022 is calculated from meter readings taken in October 2021 and December 2022, so the emissions are for 14 months rather than one calendar year.

Heating

The Amsterdam office building is heated by the AEB incinerator which provide district heating to the whole western harbour area. No other supplier of heating is possible.

Historically, heating emissions of the Groningen office appear out of line with benchmarks, presumably due to mistakes in reporting. Figures in the past seem overstated by a factor 3. Most probably connected to a correction factor linked to the floor space used. In 2022, the 2018-2020 data was reviewed and updated to more accurately reflect the floor area used by Arup. For 2021 an average calculation based on 2 credible sources (CBS & Milieubarometer) was made, since no information was received from the landlord at the time of the audit. The Groningen office was closed on 31 December 2021 and will not be reported on after 2021.

Table 16 shows the CO2 emissions from heating. Although the Groningen office was closed in 2021, which historically accounted for the majority of the emissions due to heating, the heating emission increased by 51% in 2022, despite coming from only the Amsterdam office. Looking more closely at the emissions of the Amsterdam office, the emissions in 2023 show an increase of 174% over 2018 levels. The reason for this is unclear however one hypothesis is poor building management by the landlord, leading to increased heating usage. For example, one of the main doors was broken for a longer period of time which inevitably would have led to increased heat loss. However, after the door was repaired, we see in 2023 that while overall heating emissions are down 47%, the emissions for the Amsterdam office alone are still up 142% over 2018 levels.

Table 16: CO2 Emissions from Heating

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
District Heating - Amsterdam	8 061	10 511	10 281	20 424	32 476	14 006	11.415
Heating - Groningen	13 474	7 002	17 498	15 184	0	0	0
Total	21 535	17 513	27 780	35 608	32 476	14 006	11.415
% reduction compared to baseline year 2018	-	19%	-29% (increase)	-65% (increase)	-51% (increase)	35%	47%

Electricity to Power Lease Vehicles

Arup's Scope 2 emissions also include emissions from electricity generated to power electric lease vehicles. As discussed in section 2.7, these emissions are linked to reduction targets G4 and G10 and the aim of making the lease vehicle fleet 100% electric.

Currently grey energy is assumed for charging electric vehicles as the energy source is not currently known and cannot be accurately tracked at this time.

In 2015 there were no electric vehicles in the fleet and in 2022 there were 10 electric and just 2 non-electric vehicles. The remaining two non-electric vehicles were successfully replaced as planned in late 2024. This is visible in the emissions report where the CO2 emissions due to electricity of electric lease vehicles are increasing (see Table 17). However, Table 18 shows that the combined CO2 emissions from lease vehicles have reduced by 76% since 2018 through a combination of reduced travel and conversion from fossil fuel to electric vehicles.

Table 17: CO2 Emissions from Electricity to power Electric Lease Vehicles

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Lease cars fully electric	1 108	1 640	12 787	13 448	22 970	17 566	18.503

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Total	1 108	1 640	12 787	13 448	22 970	17 566	18.503
% reduction compared to baseline year 2018	-	-48%	-1054% (increase)	-1114% (increase)	-1973% (increase)	-1485% (increase)	-1570% (increase)

Table 18: Overall CO2 Emissions from Lease Vehicles (Scope 1 and 2)

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Lease cars petrol	49 106	41 538	11 500	6 991	6 286	2 098	201
Lease cars diesel	31 866	9 110	3 696	5 549	5 816	7 707	773
Lease cars fully electric	1 108	1 640	12 787	13 448	22 970	15 562	18.503
Total	82 080	52 288	27 983	25 988	35 072	25 368	19.478
% reduction compared to baseline year 2018	-	36%	66%	68%	57%	70%	76%

Summary

An overview of all Scope 2 CO2 emissions is given in Table 19. It can be seen that overall, the 2024 Scope 2 CO2 emissions have increased by 143% since 2018.

Table 19: Overall Scope 2 CO2 Emissions

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Electricity (Office)	30 874	23 112	92 266	117 652	79 423	80 696	100 207
Heating	21 535	17 513	27 780	35 608	32 476	14 006	11 415
Electricity (Lease Vehicles)	1 108	1 640	12 787	13 448	22 970	17 566	18 503
Total	53 517	42 265	132 833	166 708	134 869	112 268	130 125
% reduction compared to baseline year 2018	-	21%	-148% (increase)	-212% (increase)	-152% (increase)	-110% (increase)	-143% (increase)

2.4.3 Scope 3

Category 1 & 2 – Purchased goods, services and capital goods

In 2024, a large investigation was carried out to gain insight into purchased goods, services and capital goods. This research can be found in the Supplier CO_2 Emissions Analysis dated 7th March 2025. The summary of the results can be found in Table 20 and have been added retrospectively into our data calculations also for the previous years, incl. the 2018 baseline.

Table 20: Yearly CO2 emissions for scope 3 Category 1 and 2

	2018	2021	2022	2023	2024
Purchased Services	723.851	999.699	681.271	579.951	951.845
Purchased Goods	112.574	37.391	11.269	77.145	0[6]

	2018	2021	2022	2023	2024
Capital Goods	49.702	0	48.007	23.909	83.324[6]
Total	886.127	1.037.090	740.547	681.006	1.035.169
Change compared to 2018 baseline	100%	+17%	-16%	-23%	+17%

Category 5 – Waste generated in operations

The landlord, REDACTED, has provided us access to the waste portal of REDACTED, which shows the building tenants produced a total of 23 010 kg of Waste. Starting in 2024, REDACTED also shows the emissions related to specific waste streams, and because Arup leases half of the building, waste-related emissions attributed to Arup BV operations is 4 769 CO_2e. A breakdown of types of waste is shown in Figure 2.

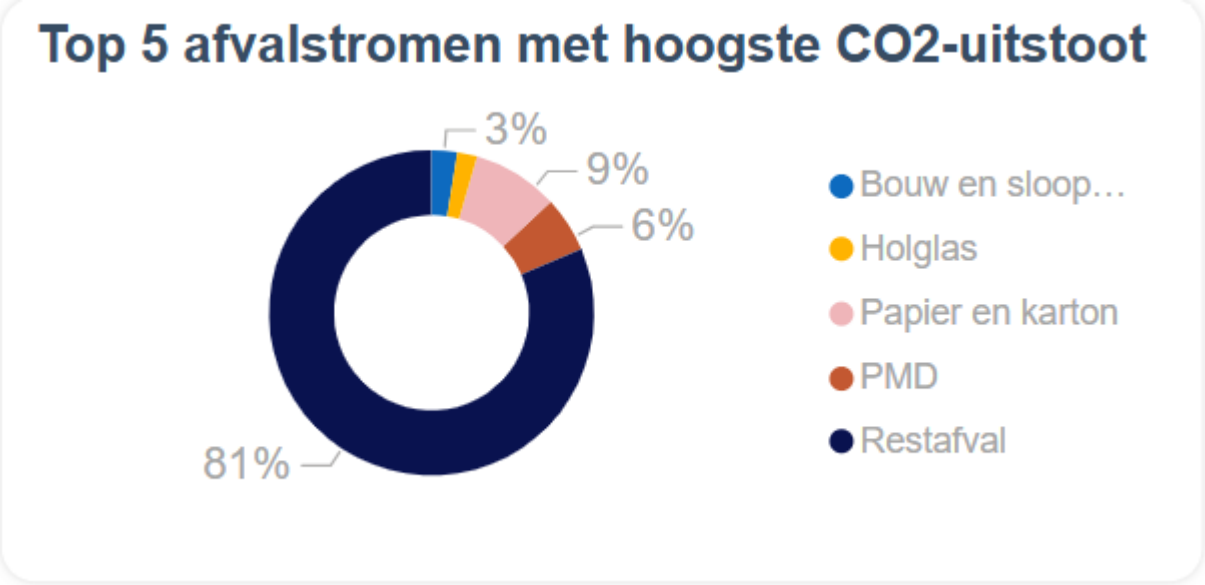


Figure 2: Waste report for whole building in 2024

As mentioned before, 2023 was the first year that we're able to report on waste. In 2024, as per updated REDACTED portal, we're able to get the direct values for kg CO2 emissions which are as per Table 21.

Table 21: CO2 emmissions per waste stream

Waste stream	2024 kgCO_2e
Restafval (CO2e)	3 882
Papier/Karton (CO2e)	409
Hol Glas (CO2e)	94
Bouw en sloopafval (CO2e)	121
PMD (CO2e)	263

[6] Note the drop in Purchased Goods and increase in Capitol Goods emissions was largely due to a classification change, as Arup Finance classify the items as Capitol Goods which had in previous years been classified as Purchased goods. The remaining portion of the increase stems from the Canteen renovation and fitout conducted at the end of 2024.

Waste stream	2024 kgCO_2e
Total waste-related emissions	4 769

Category 6 – Business travel

Table 22 shows the CO2 emissions from business travel since the baseline year of 2018. Overall, business travel emissions were reduced by 58% in 2024 compared to 2018. The pandemic was a contributing factor as both government and company guidelines restricted the ability to travel. During this time the business developed improved ways of remote working which can continue to be implemented post-pandemic to maintain a lower level of emissions from business travel. From 2022 onwards however it is expected that levels of business travel will increase compared to the 2020/21 levels as travel is now possible. The data in 2023 shows this hypothesis to be correct, our expectation for the coming years is that emissions will remain consistent with 2023 levels. This is reflected in the data in Table 22. The business mobility plan encourages use of public transport, electric vehicles and international train travel in place of air travel where possible in the aim to maintain, or further reduce, lower CO2 emissions.

Table 22: CO2 Emissions from Business Travel

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Business travel with private car	42 966	117 891	27 243	14 203	26 684	20 775	23 674
Gasoline	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Diesel	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Hybrid	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Fully electric	Unknown	Unknown	Unknown	Unknown	Unknown	792	1 701
Business travel with public transport	3 984	4 395	1 270	255	1 139	1 048	889
Bus	Unknown	1105	356	145	298	255	275
Metro	Unknown	584	188	0[7]	0	0	0[7]
Tram	Unknown	2	2	0[7]	0	0	0[7]
National train	Unknown	2249	724	0[7]	0	0	0[7]
International train	Unknown	456	Unknown	110	841	793	614
Business travel airplane	362 649	286 773	55 369	17 156	91 727	109 914	146 196
distance <700 km	101 908	79 194	15 825	2 458	15 576	15 290	30 428
2500< distance >700	115 130	104 602	16 839	5 127	24 152	43 421	38 981
distance >2500 km	145 611	102 978	22 705	9 571	51 999	51 203	76 787
Total business travel	409 599	409 061	83 882	31 614	119 550	132 529	170 759
% reduction in business travel compared to baseline year 2018	-	0%	80%	92%	71%	68%	58%
% reduction in private car emissions compared to baseline year 2018	-	-174% (increase)	37%	67%	38%	52%	46%
% reduction in public transport emissions compared to baseline year 2018	-	-10% (increase)	68%	94%	71%	74%	78%
% reduction in air travel emission compared to baseline year 2018	-	21%	85%	95%	75%	70%	60%

Business travel with private car

Business travel using private cars is down 46% since 2018. It is not currently possible to report the fuel type of these private cars so an emission factor of 0.193 kg CO2/km of “unknown weight and fuel” has been used. This is close to the emission factor for petrol vehicles so if personnel are using hybrid or electric vehicles the emissions will be considerably lower at 0.124 or 0.109 kg CO2/km respectively.

[7] Emissions are 0 due to Netherlands transit using exclusively green energy.

Business travel with public transport

The public transport numbers are strongly influenced by the energy sources of the public transport companies. Since 2021, intercity trains[8], metro, train and local trains have also used 100% green electricity. This means travel on these forms of public transport result in zero CO2 emissions in Well to Wheels (WtW) analysis. Only bus travel produces a limited amount of CO2 emissions but even this has reduced from 2021 onwards. This is reflected in the falling CO2 emissions, with a 78% reduction in emissions since 2018. It should be noted that the 95% reduction in emissions in 2021 is a result of home working and reduced travel due to the pandemic and an increase in emissions in 2022 and compared to 2021 was to be expected as travel in general increased post-pandemic.

Business travel by air

Air travel has historically had the largest contribution to business travel CO2 emissions, in 2018 the contribution was 89%. Air travel contributed 38% to overall reported CO2 emission in 2018.

Training is mainly held on-line. To that effect Arup University has made great strides in transforming training resource material to on-line variants. We see that projects remain to collaborate online and some business travel to sites have returned, therefore we see an increase in business travel by air.

The business mobility plan Section 3.4 states that travel between the Netherlands and Belgium, Germany, France and England will preferably be made by train.

Category 7 – Employee Commuting

Table 23 shows the CO2 emissions from commuting since the baseline year of 2018. Overall, emissions from commuting was reduced by 78% since 2018. The pandemic was a contributing factor as both government and company guidelines restricted the ability to work in the office. During this time the business developed improved ways of remote working including implementing a hybrid working policy. Hybrid working has continued post-pandemic which contributes to maintaining a lower level of emissions from commuting. From 2022 onwards however it is noticeable that levels of commuting are increased compared to the 2020/1 levels as business is settled back to non-restrictive. In 2023 we see an increase in travel, we expect 2024 onwards to be around the same levels as 2023. This is reflected in the data in Table 23. The business mobility plan encourages use of public transport where possible with the aim of maintaining, or further reducing, lower CO2 emissions.

For the commuting by public transport there is little to be gained in limiting carbon emissions, since most means of public transport (tram, train and metro) are now run on 100% green energy. Only commuting with bus contributes to CO2 emissions.

[8] Intercity trains have used 100% green electricity since 2017 and therefore have had zero CO2 emissions, but it has not been possible to differentiate between intercity and local train travel so emissions were conservatively calculated for all train travel between 2017 and 2021.

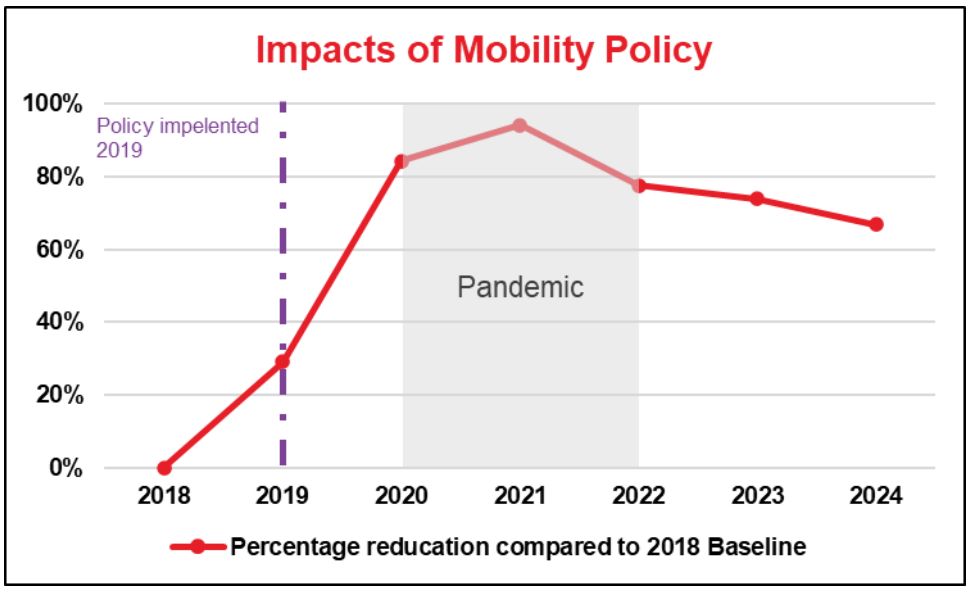
Table 23: CO2 Emissions from Commuting

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Commuting by private car	308 863	88 798	25 352	9 723	41 932	52 647	64 942
Gasoline	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown [9]
Diesel	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown[9]
Hybrid	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown[9]
Fully electric	Unknown	Unknown	Unknown	Unknown	Unknown	1 649	557
Commuting by public transport	3 984	14 179	4 566	152	861	1 536	2 104
Bus	3984	3978	1281	152	861	1 536	2 104
Metro	Unknown	2103	677	0	0	0	0
Tram	Unknown	0	0	0	0	0	0
National train	Unknown	8098	2608	0	0	0	0
Total	312 847	102 977	29 918	9 875	42 793	55 832	67 603
% reduction compared to baseline year 2018	-	67%	90%	97%	86%	82%	78%
% reduction in private car emissions compared to baseline year 2018	-	71%	92%	97%	86%	82%	79%
% reduction in public transport emissions compared to baseline year 2018	-	-256%	-15%	96%	78%	61%	47%

Mobility Policy

The Mobility Policy, implemented in 2019, set to achieve a 35% reduction in emissions from the 2018 baseline for all commuting and business travel.

[9] From 2024 Dutch law requires more detailed tracking of commuting data. Arup are in conversations with REDACTED, our supplier for tracking this data, to be able to comply with the law. At the time of writing of this report, REDACTED was not yet able to offer this enhanced service.



Summary

Although Arup Netherlands had achieved significant reductions in emissions related to purchased goods and services in previous years when compared to the baseline year of 2018, the year 2024 saw an increase over the baseline year. This is not related to an increased spend from 2023 to 2024, and determining the cause will require additional investigation in 2025. As a reminder, supplier emissions are calculated based on UK-related figures, as Netherlands-related figures have not been previously available. Not only were the UK-based factors amended upward for the 2024 reporting year, but the UK's energy mix also differs significantly from the Netherlands and is likely to be skewing the reporting. As stated, additional investigation will be required.

The Mobility Policy results show that Arup Netherlands achieved the goal of 35% reductions in business travel and commuting emissions by 2022 in comparison to 2018 baseline figures. It should be noted, however, that the Covid Pandemic, from January 2020 to May 2022, which severely limited travel, likely played an outsized role in achieving the reductions. The fact that pandemic era reductions have been eroded in 2023 and further in 2024, indicate that further diligence may be needed in future years to maintain the 35% reduction.

2.5 Overall CO2 Emissions

The overall annual CO2 emissions since baseline year 2018 are shown in Table 24.

It should be noted that some items have moved scope, for example business travel was reported under Scope 1 until 2021 when it was moved to Scope 3.

The large overall reduction is due to several factors including:

- Reduced business travel, particularly by air, resulting from the pandemic and continued efforts to utilise remote working thereafter,
- Transformation of the company lease vehicles to be almost all electric, and
- Transformation of the public transport via train, tram and metro in the Netherlands to operate on 100% green energy.

Table 24: Overall Annual CO2 Emissions

CO2 Emissions (kg of CO2)	2018	2019	2020	2021	2022	2023	2024
Scope 1	82 080	52 289	27 982	14 255	12 102	9 805	975
Scope 2	462 008	449 684	204 028	167 038	134 869	112 268	130 125
Scope 3 (Cat 6 & 7)	312 847	103 432	29 918	41 378	162 344	186 712	240 063
Total	856 935	605 405	261 929	22 781	309 316	306 781	371 163
Total % reduction compared to baseline year 2018	-	29%	69%	74%	64%	64%	57%
Scope 1	82 080	52 289	27 982	14 255	12 102	9 805	975
Scope 2	462 008	449 684	204 028	167 038	134 869	112 268	130 125
Scope 3 (1, 2, 5, 6, 7)	1 198 974	-	-	1 078 578	902 891	870 552	1 280 001
Total	1 743 062	-	-	1 259 871	1 049 863	992 625	1 411 100
Total % reduction compared to baseline year 2018	-	-	-	28%	40%	43%	19%

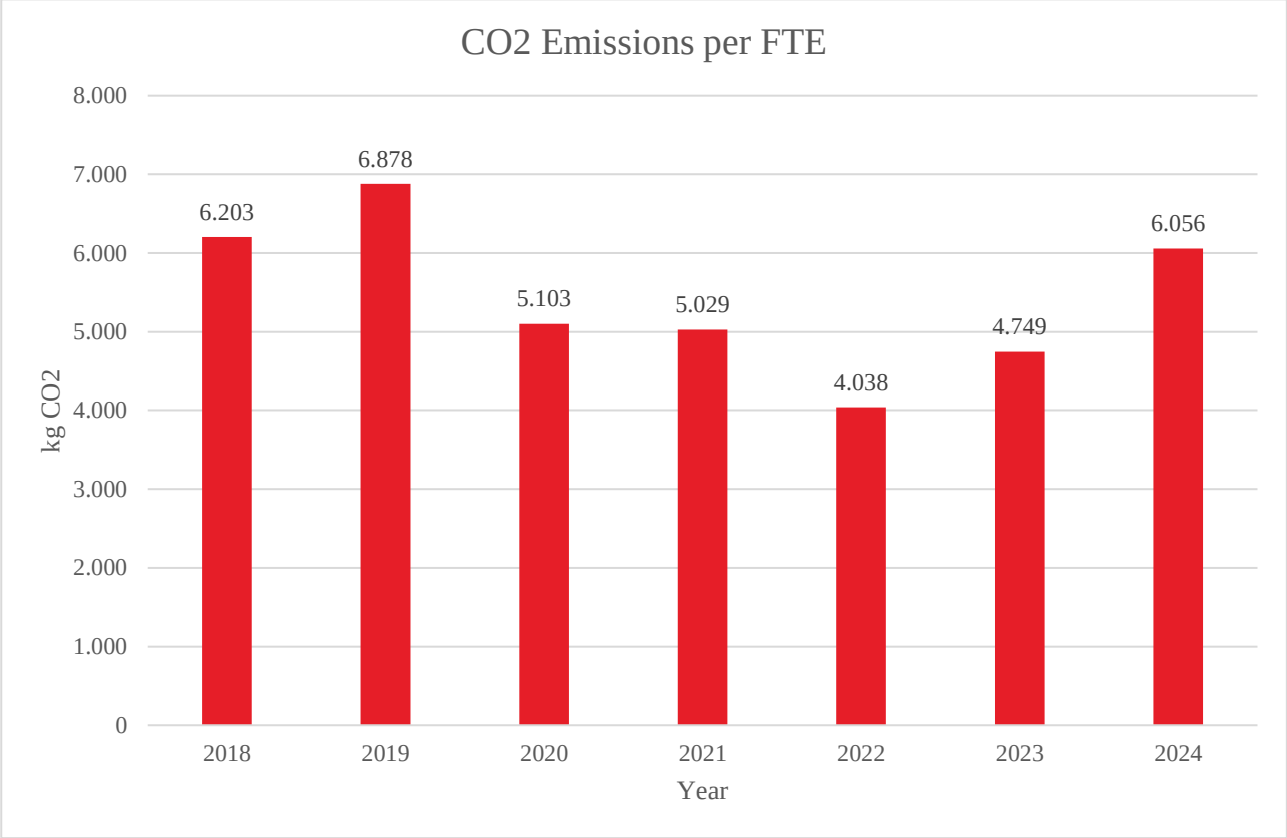


Figure 3: Annual carbon emissions per FTE

2.6 Performance Against Reduction Targets

Table 25 summarizes performance against the reduction targets in 2024 compared to the baseline year 2018. Whilst section 2.5 shows that in 2022 overall CO2 emissions reduced by 70% compared to 2018, this is not directly reflected in performance against reduction targets.

Targets G2, G3, G7 and G8 have been met, in fact the emissions have been reduced by more than the targeted amounts. The pandemic played a significant role in achieving this so these areas should continued to be monitored in the coming years to ensure that the reduced emissions are maintained and, if possible, further reduced.

The scope 1 aspect of target G4 is close to being met with almost all lease vehicles now being electric and the remaining two non-electric vehicles will be recommissioned of exchanged for electric vehicles when their leases expire in the coming two years. As for the Scope 3 category 6 aspect of this target, further definition of the target is required. There is no baseline data from 2018 regarding the proportion of emissions from electric vs non-electric cars used for business travel. It is still not possible to report fuel type of private cars used for business travel. Furthermore, the current mobility policy does not restrict use of non-electric private vehicles for business travel.

Target G5 has been set globally, but in the Netherlands the energy for the office is purchased by the landlord. Whilst Arup has requested 100% green energy the landlord is not delivering this. Emissions are 224% higher in 2024 than 2018 as a result of this but Arup cannot influence it. Arup is in regular discussions with the landlord on this topic but to no avail. Within Arup at a global level, a Renewable Energy Certificate procurement is underway, whereby the emissions associated with the Amsterdam Office (and all other Arup offices) will be backed by third-party (RECs) - this is to align with goal G5 “to procure electricity in our offices from 100% renewable sources by 2023”. At the time of this report being written, that procurement planning is that the building will be supplied by green energy in 2026. In the meantime, certificates are bought to offset the current usage.

Table 25: Performance Against Reduction Targets in 2024 compared to 2018

Ref. No.	Target	Reduction Area	2024 Performance vs 2018
G1	We will reduce purchases such as catering, stationery and events by 50% (compared to 2018 baseline)	Scope 3 Category 1 – Purchases goods and services	A comparison is made against the baseline in 2018, this is explained in the Chain analysis. For 2024 a reduction of 23% was achieved.
G2	Maintain at least an 75% reduction in commuting emissions compared to 2018 baseline emissions.	Scope 3 Category 7 – Employee Commuting	83% reduction
G3	Maintain at least a 50% reduction in business travel emissions compared to 2018 baseline emissions.	Scope 3 Category 6 – Business Travel	68% reduction
G4	Only electric cars will be used for business travel as far as practically possible.	Scope 1 – Company Vehicles Scope 3 Category 6 – Business Travel	Scope 1 - Emissions from company cars has reduced 89%. Scope 3 Category 6 – Target needs further definition. Currently it is not possible to measure fuel type of private vehicles used for business travel, the only distinction currently made in the system is whether the car is fully electric. Also, the current company mobility policy does not prevent employees from using non-electrical private vehicles for business travel. We will be seeking to lease only new electric vehicles from 2024 once the final lease ends.
G5	We are aiming to procure electricity in our offices from 100% renewable sources by 2023.	Scope 2 – Purchased electricity, steam, heating and cooling for own use	206% increase. The energy contract for the Amsterdam office is no longer for 100% green energy. The target to have green energy for the office in 2023 was not met. Current negotiations with the landlord, who purchases electricity for the building, show a timeline for 2026.
G6	Reduce the emissions of goods from our top 20 suppliers by 20%.	Scope 3 Category 1 – Purchases goods and services	A comparison is made against the baseline in 2018, this is explained in the Chain analysis. For 2023 a reduction of 23% was achieved.
G8	Air travel to Arup meetings and Arup internal conferences to maintain 70% reduction compared to 2018 due to availability of online alternatives.	Scope 3 Category 6 – Business Travel	70% reduction.
G9	Measure CO2 emissions from waste	Scope 3 Category 5 – Waste in operations	With updated reporting through REDACTED this goal was achieved in 2024.
G10	From 2023/24, all new company vehicles will be fully electric	Scope 1 Company Vehicles	Achieved for permanent leases in March of 2024, and for temporary leases in December of 2024.
G11	Engage with Top 10 of subconsultants on projects to receive their emissions reduction plan, and develop procedure for to assess sustainability performance of subconsultants	Scope 3 – Cat. 1 Purchased goods and services	Due to business constraints and changes in global leadership, no progress was made in 2024.

Ref. No.	Target	Reduction Area	2024 Performance vs 2018
G12	Implement an energy efficiency project to identify possible energy savings for our office (in relation to any refurbishment of the office)	Scope 2 – usage of electricity	Due to business constraints and changes in global leadership, no progress was made in 2024.
G13	Start carrying out an annual benchmark of energy consumption against similar premises and business operations (other offices e.g. Germany, Copenhagen)	Scope 2 – usage of electricity	No progress. Target date in Table 26 amended due to project workload.

2.7 Future Plan

Future Reduction Strategy

The reduction targets described in section 2.1 remain going forward as Arup continues to improve in these areas. Improvement is planned in three ways; further reduction in energy use and emissions, improvements to data collection and further definition of targets to make them more SMART[10]. Details are given in Table 26

Table 26: Action Plan for Reduction Targets

Ref. No.	Target	Reduction Area	Updates and Improvements Needed	Proposed Action	Action Owner	Other Resources	Evaluation Method	Due By
G1	We will continue to aim for a reduction of at least 50% for purchases such as catering, stationery and events.	Scope 3 Category 1 – Purchases goods and services	Arup (Global and Europe Region) are currently in the process of altering this initial target for the financial year 2023/24. Nevertheless, the largest impact of this category is emissions associated with events. As part of our improved approach to manage business travel (see below) - this is contributing to a reduction in emissions for events. A 2018 baseline has been measured against other years in the Chain analysis. Within our office, we will propose to only use suppliers for office goods with a positive impact on the world, this can either be because they’ re a more sustainable option or because they are using staff with a	G11 is added to give a more direct approach to investigate suppliers and subconsultants in 2024.	CO2PL Manager Facilities Manager Group Leader	Finance to provide list of suppliers and invoiced amounts from 2018 onwards.	Success is production of a preferred supplier list with vendors for office goods that are sustainable	Ongoing

[10] SMART = Specific, Measurable, Achievable, Relevant, and Time-Bound

Ref. No.	Target	Reduction Area	Updates and Improvements Needed	Proposed Action	Action Owner	Other Resources	Evaluation Method	Due By
			disadvantage in the labor market.					
G2	Maintain at least an 75% reduction in commuting emissions compared to 2018 baseline emissions.	Scope 3 Category 7 – Employee Commuting	Through the work-unbound policy we are seeing more staff spend less time in our offices. Due to pandemic years between the baseline and to date we are only starting to establish data on working patterns. Collection and analysis of data on working patterns will continue. A new hybrid working policy will be announced in April 2024, making a return to the office for 3 days a week mandatory, this will replace the work-unbound policy.	Request REDACTED to report on vehicle type and bike type (electric, paddle only) to improve data collection. Electric vehicle is now available in REDACTED, a choice for e-bike is not yet present in REDACTED.	CO2PL Manager	HR to coordinate with REDACTED	Success is positive response from REDACTED to add e-bikes to the choice menu.	Achieved, to be maintained
G3	Maintain at least a 50% reduction in business travel emissions compared to 2018 baseline emissions.	Scope 3 Category 6 – Business Travel	Arup is currently looking to onboard a single travel agent in the Region and a new booking process. This process will allow for the approver, ER travel team and Net Zero colleagues to have oversight as to the emissions for specific sub-categories of business travel. For example, our goal is to be able to delineate between travelling for a specific client purpose or a number of internal purposes. In addition, we are working to enhance our business travel policy which provides a ‘suggested’ mode of	Introduce policy whereby all international travel must be booked through a centralised booking system. Update the travel policy to make certain routes only re-imbursable by Arup if public transport is used.	Europe Region Net Zero Manager	-	Success is introduction of centralised travel booking system. Updated policy to make certain routes only re-imbursable if public transport is used.	Achieved, to be maintained

Ref. No.	Target	Reduction Area	Updates and Improvements Needed	Proposed Action	Action Owner	Other Resources	Evaluation Method	Due By
			travel between certain office locations – accounting for more sustainable travel options as the priority where viable.					
G4	Only electric cars will be used for business travel as far as practically possible.	Scope 1 – Company Vehicles Scope 3 Category 6 – Business Travel	Currently it is not possible to measure fuel type of private vehicles used for business travel. Arup are investigating whether it is possible to collect this data via the REDACTED system. We will be seeking to lease only new electric vehicles from 2023/4 once the final lease ends. Currently only 2 vehicles in NL are non-electric. Per 01-04-2024 all company and project cars are electric.	-				Goal to be achieved per 12-03-2024.
G5	We are aiming to procure electricity in our offices from 100% renewable sources by 2023.	Scope 2 – Purchased electricity, steam, heating and cooling for own use	Arup has purchased Energy Attribute Certificate for our office whereby we are not provided with Renewable Energy supply by our landlord. These certificates will cover the Netherlands group, and on the target of 100% renewable globally from 2023 to 2026. An office refurbishment is planned which will target "good" Energy Use Intensity Values which will contribute to reducing energy use in the Amsterdam office.	Engage with the global Arup Renewable Energy Certificate procurement which is underway.	Europe Region Net Zero Manager	Landlord	Certification of 100% renewable electricity in the Amsterdam office	Target failed, achievable per 2026.

Ref. No.	Target	Reduction Area	Updates and Improvements Needed	Proposed Action	Action Owner	Other Resources	Evaluation Method	Due By
G6	2024 target: Engage with Top 10 of re-occurring suppliers subconsultants to receive their emissions reduction plan. Old target: Reduce the emissions of goods from our top 20 suppliers by 20%.	Scope 3 Category 1 – Purchases goods and services	At a Regional level, Arup is currently going through a programme of supply chain engagement with our Top 20 suppliers in the Europe Region by spend. Based on spend, the majority of the top 20 are service providers. However we are seeking to investigate which goods suppliers are our priority for engagement over the coming year. In the chain Analysis a comparison has been made comparing the goods data.	Purchased goods to use in the office should be reduced by 20% and bought from sustainable suppliers or those that hire staff with a disadvantage in the labor market.	CO2PL Manager	Finance to provide list of suppliers and invoiced amounts from 2018.	Success is production of a list of preferred suppliers.	Dec 2024
G8	Air travel to Arup meetings and Arup internal conferences to maintain 70% reduction compared to 2018 due to availability of online alternatives.	Scope 3 Category 6 – Business Travel	None	Update the travel policy to make certain routes only re-imbursable by Arup if public transport is used.	Europe Region Net Zero Manager Group Leader	-	-	Achieved, to be maintained
G9	Continue to measure CO2 emissions from waste and develop improvement plan	Scope 3 Category 5 – Waste in operations	Access has been granted to (monthly) waste reporting from the landlord. Obtain emissions data for the waste transportation and final disposal/recycle/reuse from landlord’s waste disposal contractor.	Obtain emissions data for the waste transportation and final disposal/recycle/reuse from landlord’s waste disposal contractor	CO2 PL Manager	Landlord	Success is: influence of waste strategy	Achieved, to be maintained
G10	From 2023/24, all new company	Scope 1 Company Vehicles	Update target: only electric vehicles part can be part of the Fleet	-	Group Leader Facilities Manager		Success is: zero non-electric vehicles	Achieved, to be maintained

Ref. No.	Target	Reduction Area	Updates and Improvements Needed	Proposed Action	Action Owner	Other Resources	Evaluation Method	Due By
	vehicles will be fully electric							
G11	Engage with Top 10 of subconsultants on projects to receive their emissions reduction plan, and develop procedure for to assess sustainability performance of subconsultants.	Scope 3 – Cat. 1 Purchased goods and services	This is a new target set in 2024.		Group Leader Business Development Co-ordinator Environmental Officer for select support		Success is: receiving atleast 5 CO2 reduction plans	July 2024
G12	Implement an *energy efficiency project* to identify possible energy savings for our office (in relation to any refurbishment of the office).	Scope 2 – usage of electricity	This is a new target set in 2024.	All new equipment used for the canteen & coffee machines and lighting have an energy reduction component as well. Investigate onsite renewables for owned by Arup and Arup use only	Group Leader for alignment REDACTED (PM) with REDACTED Facilities Manager		Success is a detailed approach for refitting of the office	December 2024
G13	Start carrying out an annual benchmark of energy consumption against similar premises and business operations (other offices e.g.	Scope 2 – usage of electricity	This is a new target set in 2024.	Incorporate in next CO2 report for CO2 performance ladder	Environmental Manager Environmental Officer		Success is: Inclusion of comparison to 2 other Arup offices in next report	December 2025

Ref. No.	Target	Reduction Area	Updates and Improvements Needed	Proposed Action	Action Owner	Other Resources	Evaluation Method	Due By
	Germany, Copenhagen)							
G14	DRAFT[11] The organisation mandates the use of trains for distances under 700 km;	Scope 3 – Business travel	This is a new target set in 2025.		Group Leader HR		Success is: an updated mobility and travel policy	December 2025
G15	DRAFT[11] Organisation offers a higher (net) travel allowance for bicycle use that is higher than the allowance for car mileage.	Scope 3 – Commute and business travel	This is a new target set in 2025.		Group Leader HR		Success is: an updated mobility and travel policy	December 2025
G16	DRAFT[11] Organisation **requires** CO2 management system from contract partners when outsourcing works.	Scope 3 - Cat. 1 Purchased goods and services	This is a new target set in 2025.		Group Leader ManEx		Success is: an updated subconsultant agreement	December 2025

[11] Goals G14, G15, and G16 are in draft while the Group leadership team transitions at the occasion of Arup's new fiscal year commencing 1 April.

2.7.1 Follow-up items:

Scope 2 – Electricity: At the time of writing, the target to have 100% renewably sourced electricity on our office by 2024 (G5) has not been met to the degree that satisfies the requirements of the standard. The new target date is set to 2026 by the landlord. In the meantime, offset certificates have been bought to offset the non-renewable electricity used.

Scope 2 - Heating: In the last year we've measured the meter for heating on a monthly basis. The new number is more in line with the other years, therefore we believe that 2022 has been an incident. We expect this to no longer be an issue in the future.

Scope 3 Category 6 – Business Travel: We aim to maintain a reduction of 50% for business travel against the 2018 baseline. In the next 1-2 years a new travel booking system will be implemented at a European Region level to better control and measure data on business travel as well allow us to see how and why people are travelling for business. Furthermore, the Europe Regions intends to provide recommended travel modes between our offices in region, to guide our non-client related travel.

Scope 3 Category 6 – Business Travel & Category 7 – Employee Commuting: It is currently possible to distinguish the fuel type of private vehicles used by staff for business travel and commuting. Journeys are recorded in the REDACTED app. An improvement measure is to ask REDACTED whether it's possible to adjust this for bikes as well, making a distinction between peddle and electric bikes.

2.8 Future Usage

Our forecasted CO2 emissions from 2024 to 2030 is shown in Figure 5. This forecast is based on the following assumptions:

Scope 1 – Emissions from (Non-Electric) Company Vehicles: the last two remaining non-electric lease vehicles were removed from the fleet by the end of 2024. From January 2025 onwards these emissions are forecast to be 0kgCO2 as there should no longer be non-electric vehicles in the company fleet.

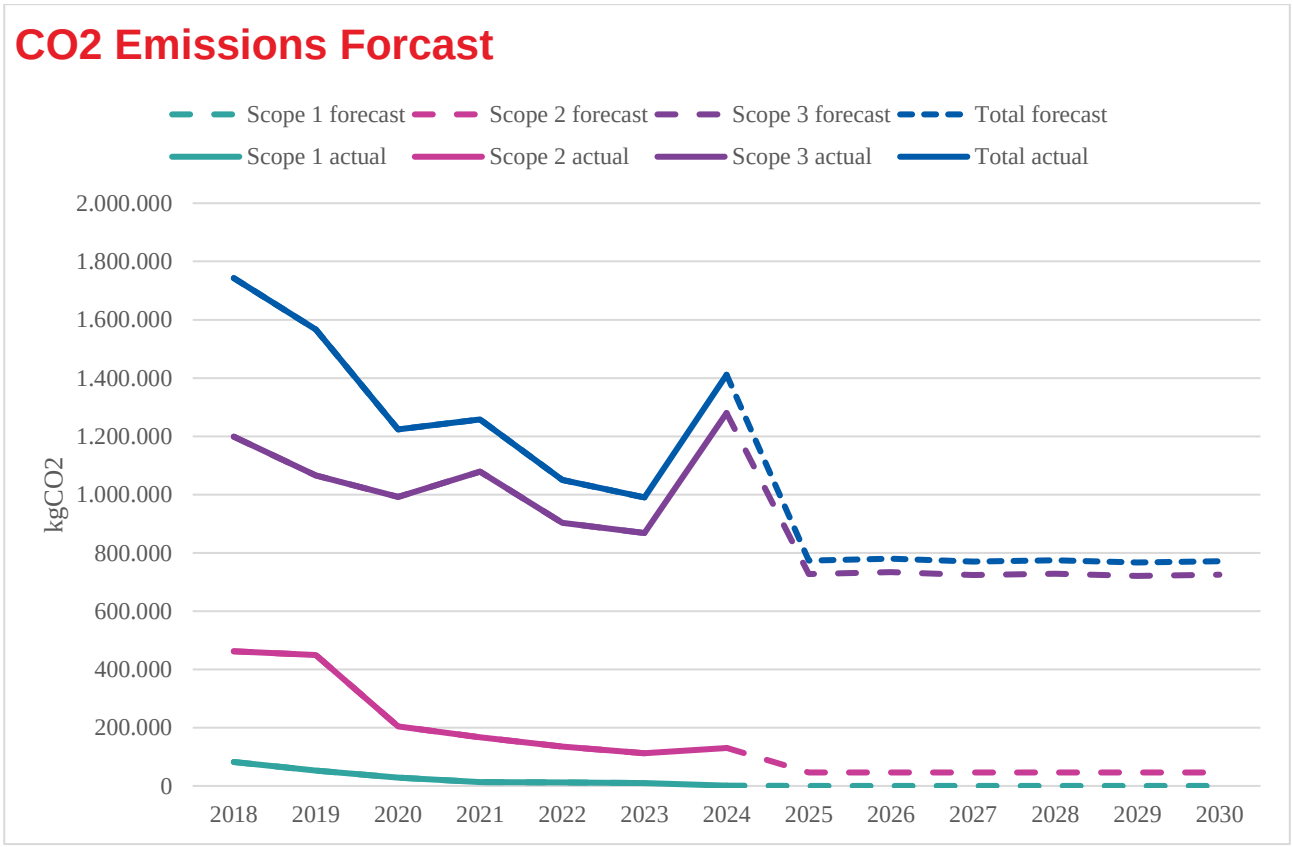
Scope 2 – Electricity: At the time of writing, the Global and Europe Region target G5 to procure electricity in our offices from 100% renewable sources by 2024 has not been met. The new estimation for this is by 2026, in the meantime offset certificates will be purchased.

Scope 2 – Heating: It is assumed that the average energy usage will be maintained going forward. We believe 2022 to be an exception as the 2024 figures are more in line with the earlier years.

Scope 3 – Commuting: We aim to maintain at least a 75% reduction in commuting emissions compared to 2018 baseline emissions. The REDACTED app makes recording the mode of travel easy and user friendly, this results in better data to forecast with.

Scope 3 – Business travel: We aim to maintain at least a 50% reduction in business travel emissions compared to 2018 baseline emissions. In calculating the emissions for specific transport types, it is assumed that the kilometres travelled by air in 2023 for journeys under 700km would be made by international train going forward once the new travel agent has been appointed by the region.

Figure 4: CO2 Emissions Forecast to 2030



Note on Figure 5: for 2019 and 2020 no information on Scope 3 Category 1 and 2 is available, therefore these years are an estimate only based on 2018 and 2021 data.

3. GHG rapport

3.1 Introduction

At Arup we aim to contribute towards a more sustainable future. Arup in the Netherlands has adopted the CO_2 Performance Ladder as a tool to map and reduce CO_2 emissions. The aims of the CO_2 Performance Ladder are in line with:

Arup's Global Net Zero GHG Emission Statement;

Arup's Global Net Zero Carbon Strategy; and

Arup's Europe Region GHG Emissions Reduction Plan.

The targets in these documents are set until 2030 with a reference year of 2018.

Reporting within Arup is unusually based on the Arup Financial year which runs April to March. For the sake of CO2 reporting, the data is reported on a standard calendar year. In this way the data collection is more aligned with standard practice of reporting in energy and mobility. The reporting period for this report is January 2024 until December 2024. Net Zero Plan - Arup is updated in was updated in January 2025, and will be in effect for our next reporting year.

Measuring and reporting of the carbon footprint of our organisation is a fundamental first step in our action cycle. Our footprint is reported every year in accordance with the GHG-protocol and ISO 14064-1, as to comply with our CO_2 Performance ladder certification.

3.2 Method, Scope & Assumptions

3.2.1 CO2 Emissions Scopes

The inventory reports its CO_2-emissions for direct and indirect emissions as described in Table 27.

Table 27: CO2 Emissions per Category

Scope	Category	Activities	Reporting
Scope 1	Company facilities	Direct emissions from own installations such as own gas use (e.g. boilers, heating systems, ovens etc)	Refrigerant losses were reported for the first time in 2022. See 2.4.1 of the Energy Management Plan.
Scope 1	Company vehicles	Emissions from non-electric company cars (lease vehicles)	Reported in section 2.
Scope 2	Purchased electricity, steam, heating and cooling for own use	Emissions from generation of energy and district heating used by the Arup B.V. office. Emissions from electricity generated to power the electric lease vehicles.	Reported in Section 2.
Scope 3	Category 1 – Purchased goods and services	Emissions from goods and services purchase by Arup B.V. Goods include for example office supplies, paper etc. Services include catering, subconsultants, events etc.	Reported in Supplier Emissions Analysis.
Scope 3	Category 2 – Capital goods	Emissions from purchase of capital goods including computers, plotter and other electronic equipment,	Reported in Supplier Emissions Analysis.

Scope	Category	Activities	Reporting
		lease vehicles (excluding emissions from fuel), office furniture	
Scope 3	Category 3 – Fuels and energy related activities (not included in scope 1 or 2)	Emissions related to the production of fuels and energy purchased and consumed that are not included in scope 1 or scope 2.	Not reported. Arup B.V. does not these types of emissions.
Scope 3	Category 4 – Upstream transport and distribution	Emissions from transportation of purchased goods and capital goods from tier 1 supplier to Arup B.V. E.g. catering deliveries, postal deliveries, delivery of gifts to staff etc	Not currently reported. The emissions from goods purchased by Arup (and therefore transport emissions of these goods) is comparatively low compared to emissions in other areas. Therefore this has not been a focus area to date.
Scope 3	Category 5 – Waste generated in operations	Emissions from office waste and recycling.	Waste disposal by a third party is managed by the landlord for the whole building. Volume of waste produced has been estimated (see section 2.4.3 of the Energy Management Plan) but insufficient information has been provided by the landlord to determine the associated emissions.
Scope 3	Category 6 – Business travel	Emissions from business travel including air, private car, nation and international rail and other forms of public transport.	Reported in Section 2.
Scope 3	Category 7 – Employee commuting	Emissions from commuting travel via car and public transport.	Reported in Section 2.
Scope 3	Category 8 – Upstream leased assets	Emissions from leased assets such as coffee machines, printers etc.	Not Applicable. Energy from this equipment is already included in Scope 2 emissions.
Scope 3	Category 9 – Downstream transportation and distribution	Emissions from sold products.	Not reported. Arup B.V. does not produce products which require transportation. Arup B.V. primarily delivers services which can involve digital products such as documentation of software however there are no transportation emissions associated with these products.
Scope 3	Category 10 – Processing of sold products	Emissions from processing of sold intermediate products by third parties (e.g., manufacturers) subsequent to sale by the reporting company.	Not reported. Arup B.V. does not process sold products.
Scope 3	Category 11 – Use of sold products	Emissions from the use of goods and services sold by the reporting company in the reporting year.	Not reported. Arup B.V. does not produce physical products.
Scope 3	Category 12 – End-of-life treatment of sold products	Emissions from the waste disposal and treatment of products sold by the reporting company at the end of their life.	Not reported. Arup B.V. does not sell products.
Scope 3	Category 13 – Downstream leased assets	Emissions from the operation of assets that are owned by the reporting company (acting as lessor) and leased to other entities	Not reported. Arup B.V. does not lease assets.

Scope	Category	Activities	Reporting
Scope 3	Category 14 - Franchises	Emissions from the operation of franchises not included in scope 1 or scope 2	Not reported. Arup B.V. does not operate franchises.
Scope 3	Category 15 - Investments	Emissions associated with investments. This category is applicable to investors and companies that provide financial services.	Not reported. Arup B.V. is not an investor and does not provide financial services.

3.2.2 Data Sources

The main sources of data used to calculate the CO_2 emissions are:

Table 28: Sources for data collection

Aspect	Data	Source
Total surface facility [m2]	The office facility is part of a building leased from and managed by the landlord REDACTED. The area occupied by Arup B.V. is based on the rent contract, plus a portion of the shared space.	Landlord, REDACTED
Number of FTEs	Full -time equivalent for direct employment contracts as well as under secondment conditions, both full- and part-time and free-lancers.	Arup HR (REDACTED)
Scope 1		
Non-Electric Lease Cars [litres or km]	Up to 2019 the fuel consumption is tracked through the lease company records. Starting in 2020, the records state the mileage during the year from the lease company data (verified during exchange of tires from winter to summer tires and vice versa). Quality of data expected to improve due to reduction of lease companies from 6 to 3.	Arup Facilities (Lease companies)
Scope 2		
Facility heating [Gjoules]	Heating is centrally measured and then paid for through the service costs based on square meters used. Arup leases 3040 m2 of office space in a building of 6080m2 (50%) with an additional 0,8% for the communal hallway.	Landlord, REDACTED
Facility electricity [kWh]	Measurement devices are linked to each rented space unit. Electricity meters are located in the hallways, but up to 2021 no records kept.	Building Owner
Electric Lease cars [kWh]	Up to 2019 the fuel consumption is tracked through the lease company refuelling records. Starting in 2020 the records state the mileage during the year from the lease company data (verified during exchange of tires from winter to summer tires and vice versa). Quality of data expected to improve due to reduction of lease companies from 6 to 3.	Lease companies
Scope 3		
Capital good and purchased goods and services	Since 2022 invoices provided by the finance team have been provided for analysis.	Finance
Commuting travel [km] %	As per January 1st, 2020, commuting distances per transport mode for the employees that have accepted the mobility plan, are recorded in REDACTED.	HR (REDACTED)

Aspect	Data	Source
	Commuting distances for employees that have not accepted the mobility plan, are calculated as described in Table 27.	Calculated
Business air travel [km]	Flight distances are tracked for the categories <700 km, <2500 and >2500 km.	External travel agency
Business travel by private cars [km]	Mileage for business travel for the employees that have accepted the new mobility plan, effective as per January 01, 2019, is recorded through REDACTED. Mileage for business travel for employees that have not accepted the new mobility plan, effective as per January 1, 2019: declared mileage for business travel. The calculation is based on the 'Car fuel and weight unknown' factors in the Emissiefactoren.	HR (REDACTED) HR Finance
Business travel by public transport [km]	As per January 1st, 2019 Mileage for national business travel per transport mode for the employees that have accepted the new mobility plan, effective as per January 01, 2019, are recorded through REDACTED Mileage for national business travel for employees that have not accepted the new mobility plan (21 employees), effective as per January 1, 2019: declared mileage for business travel. Travel destinations are tracked for international business travel by train.	HR (REDACTED) Finance External travel agency
Waste [CO2e]	As per January 1st 2024 Waste disposal by a third party is managed by the landlord for the whole building. Volume of waste produced has been estimated (see section 2.4.3 of the Energy Management Plan) but insufficient information has been provided by the landlord to determine the associated emissions. During 2024, the dashboard was updated by REDACTED, values retrievable are now reported in CO2e per waste stream.	REDACTED portal

3.2.3 Calculation methods

The calculation methods used for reporting the emissions factors are described in Table 29. For calculation of emissions from purchased (capital) goods and services the calculation method is described in the separate Supply Chain CO2 Emissions Analysis report.

Table 29: Calculation Methods

GHG emission	Quantification method
Facility energy consumption (electricity/heating) [kWh/Gj]	= Total measured energy consumption (Gj) x % Arup floor space x conversion factor. = Total measured electricity consumption to calculate common space use (elevator etc), based on area in use. Metered consumption for each floor added to this. Total amount used. Close to half the use of the total building.
Business air travel [km]	= Total Mileage per category distance (≤700 km, > 2500 km, etc.) x conversion factor

GHG emission	Quantification method
Business travel by private cars [km]	= Total (declared) mileage x Average Conversion factor for cars of unknown weight and fuel type.
Business travel by public transport [km]	= Mileage / transport mode (TM) x conversion factor TM
Business travel by lease cars [km]	= Total km reported x Conversion factor per fuel type for km travelled
Commuting [km]	= Total amount of reported commuting km per mode (public transport and private car) x Conversion factor per mode.
Waste [CO2e]	Not calculated. Figures are provided directly but the supplier.

3.2.4 Uncertainties

There are a number of uncertainties associated with the data collection and reporting as described in Table 30.

Table 30: Uncertainties

Aspect	Uncertainty/ influence
Lease car	The data delivered by the lease company will include private usage as well as commuting and business usage.
Electricity Amsterdam office	Consumption is measured for the whole building; Arup consumption is derived from % rented office space. For electricity it is a mixed system. Metered on each floor with a occupied space % applied to the common use (elevator, cooling, air ventilation). Actual consumption is said by the landlord to be annually checked through the service costs. Attempts to verify this were difficult as the energy costs were not separated from the rest.
Business air travel	Included are all flights booked through the designated travel agency. This also includes staff that sit in our office but are part of the Europe Region. Any self-booked flights that are declared through expenses or other means of flights booked are not included. Note that these instances should be anomalies.
Business travel by private cars	There are now two ways to declare travel miles: through REDACTED and through Finance.
Business travel by public transport	Up to 31st December 2018, an assumption was made for the distances travelled for business by public transport. This assumption involved large uncertainties. From 2020 onwards REDACTED also reports on business trips by public transport.
Commuting travel	As per January 1st, 2020 Number of people not on REDACTED: Calculation made: 1. Average commuting distance and mode for all REDACTED users, 2. then applying this average distance and mode to all 21 non-REDACTED users.
Waste	Waste disposal by a third party is managed by the landlord for the whole building. As we rent 50% of building area the assumption is made that we produce 50% of the waste.

4. Project report

In this chapter an overview will be given on the CO2 reduction initiatives in our projects. Arup have made a number of commitments and schemes relating to CO2 reduction in projects.

Whole Life Carbon buildings commitment - From 2022, Arup have committed to undertake Whole Life Carbon Assessments (WLCA) for all buildings projects, both new and retrofit. Adopting these assessments is a crucial step that will allow the global buildings sector to progress towards a 50% carbon emissions reduction by 2030.

4.1 CO2 Reduction in Projects

4.1.1 Milieu Kost Indicator calculations

Milieu Kost Indicator (MKI) Calculations – The Sustainable Cities & Transport team are carrying out MKI calculations for all live infrastructure projects. This will give us a set of reference data which can be applied to client projects. Currently MKI calculations have been carried out for the following projects:

REDACTED

Since 2023, no new projects were won where an MKI calculation was made.

4.1.2 Tools

The following tools are available within Arup to monitor, report and reduce CO2-emissions on projects:

Internal Project Plan (IPP) – IPP is mandatory for all projects. Managed by the PM and PD, it is where all project information is recorded. For projects with a fee over €150k, IPP records consideration of the UN Sustainable Development Goals (SDGs) in relation to the project and whether the environmental aspects of the project fall within Arup's influence. Environmental reviews are also recorded where applicable.

REDACTED

Figure 5: Screenshot of IPP

CRM – CRM is mandatory for all projects. Managed by the PM and PD, it is where all leads and opportunities are recorded. At the bidding stage, consideration is given to aspects of Sustainable Development relating to the project.

Sustainability Overview Dashboard – As part of the Business Management dashboard, there is a Sustainability Overview which reports on environmental aspects from IPP. This gives Management an overview of the Sustainability aspects of all the projects carried out by Arup B.V.

Zero - Zero is a digital platform designed to collect or estimate whole life carbon assessments for buildings projects. Whole Life carbon is a way of accounting for embodied carbon emissions arising from construction and replacement materials, and operational emissions associated with the energy and water used to run the building. Arup is currently working on developing Zero to include Infrastructure projects.

REDACTED

Figure 6: Screenshot from Zero showing embodied and operation CO2 emissions

Circular Buildings Toolkit - CBT has been developed in partnership with the Ellen MacArthur Foundation to support designers, developers, construction firms as well as asset owners and operators make the transition to circular design. By enabling these groups to optimise their building(s) for circularity, it facilitates rapid, large-scale reductions in built environment greenhouse gas emissions.

Circular Economy (CE) tool – the CE dashboard is a tool to compute and visualise the material impact of design variations on the environment. The tool is based on the methodology of the platform CB23. It has two usage cases, firstly it can be applied at a project level to assess different variations within the design process. It can also be used for a project without design variations to identify areas of the project that have the largest material impact. It was originally developed in 2021 and was greatly improved in 2022. For example, originally the dashboard was only applicable for new build projects but now it can be used for renovation projects too. The tool is primarily for use on infrastructure projects although it could be applied to other types of projects with a significant material impact.

4.2 Projects Won with CO2 Performance Ladder

4.2.1 Projects won with CO2 Award Advantage

Currently, one framework containing 2 of our projects have been won with a CO2 Award Advantage.

REDACTED

4.2.2 Projects won without CO2 Award Advantage

A number of our projects require a minimum CO2 Performance Certificate Level 3, however there was no CO2 Award Advantage for these projects:

REDACTED

4.3 CO2 Emissions on Projects

Table 31 provides an overview of the CO2 emissions per project. The Energy Management Plan reports that in 2022, Arup B.V. (this is our baseline year for project emissions) produced 889 kgCO2 per FTE. In 2024 from Scope 1, 2 and 3 emissions kgCO2 per FTE (excluding category 1 and 2 to prevent double calculations as per method for Chain Analysis). This can be converted into an hourly CO2 emission production of 3.21kgCO2/hr[12]. Multiplying the project hours by this value gives the CO2 emissions per project.

12 Annual hours worked by 1FTE = (40 hrs per week x 52 weeks) - 192 hrs of annual leave (taken from ovacode)

In total Arup B.V. produced 829 364 kgCO2 through project work in 2024.

It should be noted that this methodology makes the following assumptions or exclusions:

- Project specific travel – commuting and business travel is not allocated per project but spread evenly across all projects. This is not realistic but is a limitation of our current reporting methods.
- Business services – emissions relating to business services and other non-project specific hours are not allocated to projects.
- Overtime – if overtime hours have not been booked in the timesheet system then emissions as a result of staff overtime are not included in these figures.

Table 31: Overview of CO2 emissions per project based on total number of project hours worked in 2024

Project Number	Project Title	Sum of Total Hours	CO2 Emissions in 2024 (kgCO2)
			65911
			48087
			44152
			33154
			33124
			32748
			25009
			22965
			21453
			20781
			17516
			17398
			17376
			15883
			14968
			14729
			14439
			13658
			13618
			13610
			11634
			11322
			10156
			9899
			9649

REDACTED

			9586
			8528
			8494
			7693
			7612
			7356
			6746
			6547
			6388
			6356
			6241
			6133
			5995
			5466
			5404
			4993
			4420
			4141
			4133
			3947
			3675
			3613
			3593
			3512
			3500
			3493
			3387
			3260
			3171
			3007
			2983
			2980
			2902
			2471
			2463
			2418
			2374

			2299
			2265
			2153
			2153
			2117
			2024
			2023
			2012
			1959
			1915
			1854
			1810
			1716
			1664
			1629
			1599
			1570
			1543
			1482
			1481
			1469
			1458
			1445
			1408
			1388
			1381
			1293
			1291
			1260
			1254
			1249
			1239
			1195
			1177
			1159
			1124
			1103

			1054
			971
			952
			939
			924
			922
			907
			903
			884
			872
			869
			840
			837
			820
			731
			730
			722
			712
			710
			704
			694
			666
			654
			646
			614
			603
			589
			572
			563
			537
			533
			502
			494
			492
			474
			456
			455

REDACTED

			439
			431
			423
			414
			412
			410
			398
			394
			391
			390
			390
			388
			385
			382
			382
			361
			345
			320
			284
			280
			277
			276
			265
			257
			236
			234
			231
			224
			216
			207
			199
			194
			188
			185
			184
			181
			180

REDACTED

			175
			160
			144
			143
			141
			131
			130
			125
			118
			112
			112
			109
			101
			101
			99
			77
			74
			72
			64
			63
			56
			55
			53
			51
			51
			50
			48
			47
			46
			45
			40
			38
			26
			24
			22
			19
			16

REDACTED

			16
			13
			13
			6
			6
			6
	REDACTED		3
			2
			-3126
Grand Total			829 161

5. Communication plan

Arup uses both internal and external channels to communicate the implementation of the CO2 Performance Ladder. Each channel contains content targeted to a specific group or audience.

5.1 Target Groups and Communication Content

Table 32 shows the internal and external target groups identified for communications related to CO2 reduction.

Table 32: Target Groups

Target Group	
Internal	Employees Project managers and Directors Businessand Service Leaders Management Executive and Operational Executive Wider Arup firm (regional and global)
External	Clients: public and private sector Sector / network associations and knowledge exchange platforms: SKAO “Stichting Klimaatvriendelijk Aanbesteden en Ondernemen: Project partners such as contractors, architects, developers, investors and other engineering and consultancy firms Students and potential new hires

Table 33 describes the content of communications applicable to the target groups.

Table 33: Content of communication for each target group

Target group	Content of communication	Frequency target
General	Reduction target and progress of Arup B.V. in meeting these targets	Once a year
Internal	Actual footprint, reduction goals and measures to be taken to reduce emissions (All internal target groups)	Twice a year

Target group	Content of communication	Frequency target
	Measured progress in reducing emissions (All internal target groups) Expected / measured environmental performance of projects using Power BI dashboard (Project Managers, Business Unit Leaders & Management team) Environmental audits on projects (Project Managers, Business Unit Leaders & Management team)	
Arup Global and Arup companies	Progress of Arup Netherlands in complying with Arup Regional and Global sustainability strategy and plans. Progress of Arup B.V. in meeting reduction goals	Once a year
Clients, Sector and knowledge exchange platform	Carbon footprint, reduction targets and measures (to be) taken. Progress in meeting reduction targets Our measures and visions about a collaborative progress towards more sustainable designs	Twice a year
SKAO	Documents and links required according to certified level requirements of CO2-performance ladder Valid certificates	Once a year
Partners and clients	Continuous reporting on design propositions, feasibility studies and decisions to increase the sustainability outcome of a project	Continuous

5.2 Internal Communication Channels

Multiple channels are used to convey our message around our CO2 performance we provide information and reasoning around CO2 reduction internally with all employees. These channels are described in this section.

5.2.1 Arup Intranet

The Arup intranet is a constant source of information regarding sustainability and CO2 reduction in Arup at a Global, European and Group (local) level. The following intranet sites should be the starting point for any Arupian looking for information on sustainability and CO2 reduction:

Global Sustainability Page – this page contains links to Global Sustainability Policy and Strategy, Global Sustainability Reports and Global KPIs.

Europe Sustainable Development site – this page contains links to the Europe Region Plan 2020-2030 and other applicable commitments, networks and strategies.

Netherlands Sustainable Development site – this page contains country specific information including the Netherlands Group Sustainable Development Plan 2021-2023 which translates the Group and Regional Strategies into a local plan. At the moment of writing this report, no new Group Sustainable Development Plan is published.

Global Newsroom – the Global newsroom reports on Arup news throughout the company. It is possible to search by topic and there is a Sustainable Development topical page.

Europe Newsroom - the Europe newsroom reports on Arup news throughout the company.

5.2.2 Training

Through training we communicate the importance of sustainability and CO2 reduction to employees, equipping them with the skills necessary to implement this on projects. In our employee induction our CO2 reduction goals are communicated for the first time, during the year employees can attend Show & Tells or dedicated learning paths.

Sustainable development is at the heart of everything we do and is laid out in our global strategic plan. It is our purpose. It is how we shape a better world. We train our people to equip them with the right skills set to help deliver complex projects for our clients. The way we train our people is based on four pillars:

Act: Deliver projects, products, services and solutions that create shared value and drive innovation.

Influence: Use our knowledge and networks to lead the way and shape the markets in which we work.

Learn: Build capability and deep expertise through research, learning, knowledge management and communications.

Enable: Integrate sustainable development in our operations and business practices.

Specific learning paths and courses include:

Sustainable Development Learning paths - All staff members can enroll through our internal training system Moodle on to this learning path.

UNSDG's - This Learning Burst provides an introduction to the SDGs – how they came about, what they comprise and why they are important to our business.

Planning Projects For Sustainable Positive Impact - This Learning Burst will introduce staff to concepts used by government departments, NGOs and the voluntary sector when designing projects for positive social impact.

Learning Design for Sustainability - Watch this course to explore the tools, resources, and best practices of sustainable design.

Sustainable Development: an introduction to Multi-Criteria Analysis - This module seeks to close this gap, providing a clear picture of the role that sustainability plays in project planning and making the case that everyone has a role to play in embedding sustainability across project planning.

External trainings:

External trainings are provided on the following topics, and are available to employees who work in this area:

BREEAM-NL

GPR gebouw

LEED

Dubocalc - to link up with the standard sustainability measurement tool used by REDACTED , one of our key clients. We offer all staff members a training course, on a subscription basis.

5.2.3 Group Meetings

The primary channel for internal communication is the Group Meeting. These meetings are recorded and widely shared with all staff in the Netherlands. These meetings provide an opportunity for discussion and questions. Table 34 records examples of discussion of our sustainability topics during Group Meetings in 2024.

The Group Meeting MS Teams Chat is also regularly used as a communication channel for informal messages for the whole Netherlands Group.

Table 34: Examples of Sustainability Topics covered during Group Meetings in 2024

Date	Topic	Link
25/01/2024	Climate & Sustainability Services update	Group meeting 25 January 2024.pptx

Date	Topic	Link
28/03/2024	CO2 Performance Ladder	Group meeting 28 March 2024.pdf

5.2.4 Emails

Email is key communication channel for communicating with internal Arup staff. Table 35 records examples of the sustainability related email communications in 2024.

Table 35: Examples of Sustainability communications via email in 2024

Date	Topic	Link
06/08/2024	New Climate, Nature & Environment policy	-

5.3 External Communication Channels

Our work and our solutions are communicated externally in various ways.

5.3.1 Arup website

The website is Arup's primary method of communication with external parties. As can be seen in Figure 8, the landing page focuses on sustainable development. Our sustainability offering, including decarbonisation, is communicated through our Climate & Sustainability Services page.

Arup also communicates its participation in the CO2 Performance Ladder through the website.

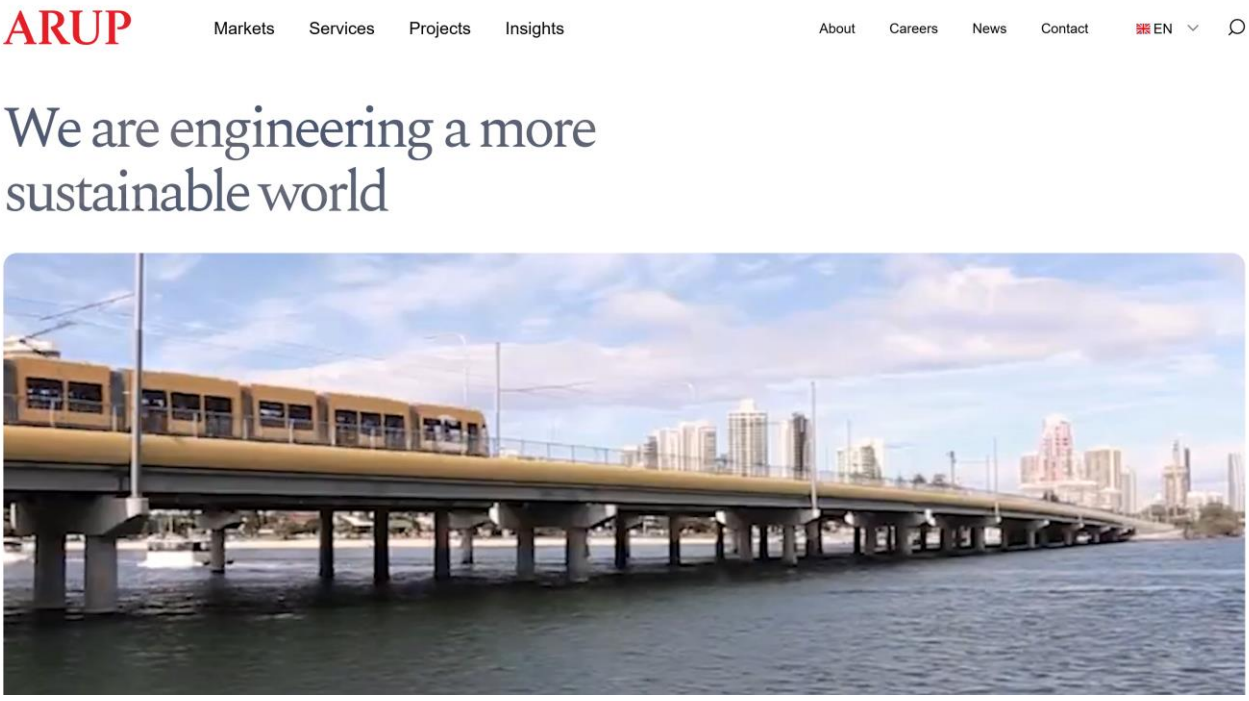


Figure 7: Arup.com landing page promotes sustainable development (date 19/03/2024)

The Annual Report which focuses on Creating Sustainable Futures is also communicated via the Annual Report FY 2023/24 - Arup

5.3.2 External News Platforms

Through national media and trade platforms/ magazines we convey our vision and our inventive approach to achieve sustainable outcomes for our clients or to inspire the public to change their ways to help achieve a more sustainable future. In addition we regularly post news articles about sustainability and climate to our website.

Table 36: Examples of external news articles relating to Arup and CO2 reduction in 2024

Date	Topic	Link
15/01/2024	Arup reinforces commitment to circular economy innovation at the WCEF 2024	https://www.arup.com/news/arup-reinforces-commitment-to-circular-economy-innovation-at-the-wcef-2024/
20/02/2024	Arup and WWF to establish nature-based solutions standards for Hong Kong's rural development	https://www.arup.com/news/arup-and-wwf-to-establish-nature-based-solutions-standards-for-hong-kongs-rural-development/
25/03/2024	Welcoming Australia's commitment to a national adaptation plan	https://www.arup.com/news/welcoming-australias-commitment-to-a-national-adaptation-plan/
10/04/2024	UMAS and Arup research highlights UK's potential to kick-start shipping's transition to zero-emission fuel	https://www.arup.com/news/umas-and-arup-research-highlights-uks-potential-to-kick-start-shippings-transition-to-zero-emission-fuel/
15/05/2024	Unlocking sustainability challenges at pace and scale	https://www.arup.com/news/unlocking-sustainability-challenges-at-pace-and-scale/
01/06/2024	Arup unveils first-ever universal framework for better natural hazard and climate risk preparedness	https://www.arup.com/news/arup-unveils-first-ever-universal-framework-for-better-natural-hazard-and-climate-risk-preparedness/
30/06/2024	Arup to support Nordic Council of Ministers in highlighting Nordic climate mitigation solutions at COP29	https://www.arup.com/news/june-2024-arup-to-support-nordic-council-of-ministers-in-highlighting-nordic-climate-mitigation-solutions-at-cop29/
18/07/2024	UK Collective Offsetting Fund proposed to accelerate responsible carbon offsetting efforts	https://www.arup.com/news/uk-collective-offsetting-fund-proposed-to-accelerate-responsible-carbon-offsetting-efforts/
19/07/2024	Arup consortium appointed to deliver second phase of EIB's Circular City Centre	https://www.arup.com/news/arup-consortium-appointed-to-deliver-second-phase-of-eibs-circular-city-centre/
03/09/2024	Clean Air Fund partners with Arup on global Clean Air Zone initiative	https://www.arup.com/news/clean-air-fund-partners-with-arup-on-global-clean-air-zone-initiative/
30/09/2024	Climate Change Committee appoints Arup to lead research into national urban heat modelling, health impact and economic analysis	https://www.arup.com/news/climate-change-committee-appoints-arup-to-lead-research-into-national-urban-heat-modelling-health-impact-and-economic-analysis/
24/10/2024	Arup & Ellen MacArthur Foundation convene Circular Leaders Group to accelerate circular economy transition	https://www.arup.com/news/arup-ellen-macarthur-foundation-convene-circular-leaders-group-to-accelerate-circular-economy-transition/
24/10/2024	Buildings must enhance nature, not harm it, construction industry told at COP16	https://www.arup.com/news/buildings-must-enhance-nature-not-harm-it-construction-industry-told-at-cop16/

LinkedIn

Arup is active on the social media platform LinkedIn. This allows us to reach colleagues and peers within the industry as well as a range of clients and potential clients. Below some examples of our interactions for 2024.

Table 37: Examples of LinkedIn posts relating to CO2 reduction in 2024

Topic	Link
The time-value of carbon	https://www.linkedin.com/posts/arup_the-time-value-of-carbon-activity-7275178048675614721-OQw3?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Cayanga Hillside Solar Farm	https://www.linkedin.com/posts/arup_the-cayanga-hillside-solar-farm-is-the-philippines-activity-7272296498762022912-QCXO?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Energy transition and renewable energy	https://www.linkedin.com/posts/arup_energy-energytransition-reneweableenergy-activity-7271926256768585728-NUHC?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Sustainability in infrastructure and transport	https://www.linkedin.com/posts/arup_sustainability-infrastructure-transport-activity-7271807063607967744-zl0A?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Sydney Metro Martin Place Station	https://www.linkedin.com/posts/arup_sydney-metro-martin-place-station-activity-7271664440926773249-kqBF?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Arup Journal – Sustainable Design	https://www.linkedin.com/posts/arup_wearearup-arupjournal-sustainabledesign-activity-7269720273027829762-7iuJ?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Future of renewable energy	https://www.linkedin.com/posts/arup_thats-a-future-where-renewables-generate-activity-7269279129626193920-n90J?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
Accelerating the transition to net zero	https://www.linkedin.com/posts/arup_how-can-we-accelerate-the-transition-to-net-activity-7262071685644791809-_weM?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc
COP16: Biodiversity and sustainability	https://www.linkedin.com/posts/arup_cop16-biodiversity-sustainability-activity-7259962166856847363-57yh?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAABU0uFoBV4dBwHQHCqstCg_8-MVWVRJMayc

5.3.3 SKAO

Arup B.V. reports information applicable to the CO2 Performance Ladder on the SKAO website. The information stays available on the website for at least 2 years. Arup is listed on the website of SKAO as a level 5 certified company.

5.3.4 Client Relationships

Arup nurtures client relationships, including understanding client's sustainability and CO2 reduction needs. This is managed on a client specific basis.

One example is our relationship with REDACTED , annually we discuss sustainability issues in our annual suppliers meeting. Part of our collaboration and tenders for

work with REDACTED is valued on sustainability.

5.3.5 Events

Throughout the year we organize various events, lectures, and meetings with and for clients to inspire, update and motivate. Together we are responsible for delivering a more sustainable future. In sharing our knowledge, learnings and delivered projects we lead the way.

Table 38: Examples of events relating to CO2 reduction in 2024

Date	Topic	Link
11 - 13 June 2024	Provada Real Estate Fair: De waarde van duurzamheid	https://www.provada.nl/en/about-us/
28 November 2024	DGBC: Paris Proof Congress 2024	https://www.dgbc.nl/agenda/paris-proof-congres-2024/

6. Participation plan

Sustainable development is at the heart of everything we do and laid out in the Arup Strategy. It is our purpose. It is how we shape a better world. For us 'better' is all about creating a more sustainable future and delivering on our commitment to meaningfully contribute to the 17 UN Sustainability Development Goals (UNSDGs).

Arup B.V. is committed to actively participate in initiatives in the field of sustainability in general and CO_2-reduction in particular. This entails both performing in-house research and establishing partnerships with academic and industry partners.

This report is produced in 2025 and covers the actions that were carried out in 2024. Section 6.3 looks ahead to planned measures for 2025.

6.1 Internal Initiatives

Arup works with a range of internal initiatives outside of projects. These include Research, Invest in Arup and Digital Tools.

6.1.1 Completed research

In 2024, some Arup specific sustainability research was carried out through Invest in Arup. See section 6.1.2.

6.1.2 Invest in Arup

The following Invest in Arup projects had been funded over the last years:

REDACTED

6.2 External Initiatives

Arup B.V. participates in a number of external initiatives aiming to reduce CO2-emissions.

6.2.1 Green Business Club Amsterdam Sloterdijken

Arup is a founding membership of a Green Business Club Amsterdam Sloterdijken, aiming to help the local business deploy sustainable development initiatives. Since 2022 Arup sits in the Board and facilitates with developing achievements in the coming years.

In 2023, Arup (with participants) have worked on energy scans for buildings. These scans will help buildings in the neighborhood become more energy efficient and improve their energy consumption. The next project will be focus around waste. Our partnership continued on in 2024.

6.2.2 Memberships

Arup is a member of the Sustainability Committee TC1 of the Dutch Steel Association (Bouwen met Staal)

Arup is a Member of Madaster, the circularity initiative for building materials

Staalakkoord - As Arup we want to push and support the initiative to make the use of steel in construction more sustainable. Therefore we signed in 2022 the 'Bouwakkoord Staal' and are one of the front runners for this initiative. As frontrunner in sustainability we agreed to share our knowledge, experiences, insights and ideas for the ambitions and activities of the agreement and making the application of steel in the construction and civil sector even more sustainable. We have a position in the steering committee, Director Sabine Delrue represents Arup. This committee is responsible for the strategy and the realization of the points from the agreement. We share our knowledge and experiences in one of the action teams, in team 'design'. For 2024 we have had regular meetings.

Arup is a member of NL Ingenieurs

Arup is a member of VN Constructeurs

6.2.3 Sector Initiatives

Arup is a Knowledge Partner of the Ellen MacArthur Foundation. Whilst most of the effort is geared towards Arup global, there have been a number of calls for input from Arup in Amsterdam.

Arup was a participant in the RWS initiative Roadmap naar klimaatneutrale en circulaire kunstwerken in 2030. In 2022 we participated in two RWS workshops regarding climate neutral and circular structures. No new workshops on this were held in 2023 and 2024.

Presented a VNConstructeurs Webinar regarding Sustainable Design in Infrastructure on the topics of circular design and extending the life of existing steel bridges.

As part of the Week of Circularity, Arup held a Circularity Workshop in partnership with Engineers without Borders.

In 2023 Arup joined the Dutch Green Building Council (DGBC). This partnership continues for 2024 and 2025.

6.3 Future Plans

In 2025, Arup plans to:

- Continue funding internal initiatives
- Renew membership with NL Ingenieurs – We believe that by working intensively with our partners through NL Ingenieurs, we can help the Netherlands achieve its climate goals. John Walraven meets with them regularly.
- Continue the Dutch Green Building Council (DGBC) venture

- Attend the Provada event again
- Renew membership with VN Constructeurs
- Look for community engagement projects that have sustainability impacts
- Continue to make local impact through the Green Business Club Sloterdijken