

Arup bv

## CO2 Performance Ladder

Energy Management Plan 2021-2030

ISSUE | 25 May 2021

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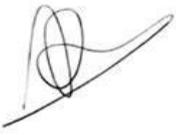
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# 1 Introduction

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At Arup we aim to contribute towards a more sustainable future. Arup in the Netherlands have adopted the CO<sub>2</sub>-performance ladder as a tool to map and reduce CO<sub>2</sub>-emissions. The aims of the CO<sub>2</sub> performance ladder are in line with the Arup global Net Zero Carbon Strategy released in 2020.

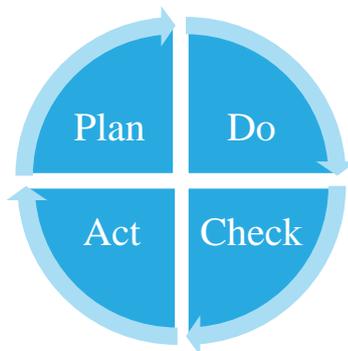
This Energy Management Plan combines our global company aims and strategies to reduce CO<sub>2</sub>-emissions and the local CO<sub>2</sub> performance ladder aims. Reduction targets and measures are set-up for emissions of scopes 1, 2 and 3 on the basis of the insight gained through the documents: GHG-inventory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

Due to the abnormal business conditions in 2020 and the uncertainty of business conditions in 2021, this plan will have an intermediate status. For most of 2020 the Arup offices have been closed except for business-critical reasons. In the Netherlands this has meant a very limited office presence of staff. Reception services continued during this period and regular lighting and heating in the office was provided.

The plan is set for the period from 2021 to 2030, with an update by the end of 2021. The present assumption is that in the second half of 2021, business as usual will slowly start to resume. In the rest of the plan we will discuss the post-COVID measures we aim to take in order to achieve our carbon reduction goals. The present COVID-induced carbon reduction is assumed to be temporary. The plan is written according to the ISO 50001 standard, as to comply to the CO<sub>2</sub>-ladder certification.

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<sub>2</sub> strategy.
- Check:** Measure and monitor performance
- Act:** Analyse the variances, recommend improvements



## 1.1 Organizational boundaries

The CO<sub>2</sub>-ladder certification will be applicable to the firm Arup b.v. in the Netherlands. Arup b.v. has a permanent facility in Amsterdam and a temporary facility in Groningen. 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.

Arup b.v. produced in 2020 a total amount of CO<sub>2</sub> emissions below 500 tons a year classifies as a small company. The size classification determines the specific set of CO<sub>2</sub>-ladder certification requirements.

## 1.2 Responsibilities

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

Role	Name	Tasks
Sustainable Development Director (SDD)	Tudor Salusbury	<ul style="list-style-type: none"> <li>Sets priorities and goals for the next 3 years</li> <li>Reviews governance policies</li> <li>Discusses with management team for approval of plans and implementation policies</li> <li>Audits if new projects meet the goals set by European board</li> <li>Yearly evaluates the goals</li> </ul>
Sustainable Development Manager (SDM)	Paul van Horn, supported by Martin Koster, AMSFacilities, AMSFinance and junior PM.	<ul style="list-style-type: none"> <li>Researches future scenarios</li> <li>Coordinates if goals meet CO2-prestatieladder</li> <li>Manages implementation of plans</li> <li>Checks governance with sustainability objectives</li> <li>Measures and monitors the effect of plans</li> <li>Analyses measurements</li> <li>Assists PM's of projects won with CO2-prestatieladder</li> <li>Reports to SDD</li> </ul>

The responsible collaborators for project specific targets are:

Role	Name	
Project Director (PD)	-	<ul style="list-style-type: none"> <li>Includes EC review the sustainability objectives</li> <li>Monitors progress on the sustainability objectives</li> </ul>
Project Manager (PM)	-	<ul style="list-style-type: none"> <li>Implementation sustainability objectives projects</li> <li>Measures and monitors CO2-footprint on project</li> <li>Measures and monitors the project objectives</li> <li>Analyses non-conformances and advises PD</li> <li>Update of sector- initiatives relevant for project</li> </ul>

Additional collaborators within the office are:

Role	Name	Tasks
Quality control	Martin Koster	Organisation audits
Human Resources	Esther de Vreugd	Mobility plan, input for Environmental reporting
Marketing / Com.	Hester Duijndam	Communication strategy
Facility manager	Diede van Graas/Robin Langelaar	Facility management
Finance	Mathijs Lammertse	Input for Environmental reporting

## 2 Reduction plan own organization

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). The main areas of influence are defined in GHG-inventory report.

### 2.1 Evaluation reduction targets

#### 2.1.1 Scope 1

Scope 1 reduction is linked to the reduction of number of lease vehicles and the electrification of the lease fleet. These measures were put in place in early 2019 with an evaluation of these measures set for early 2021.

First item to note is the reduction in lease companies from 6 to 3, this will make it easier to produce reliable information.

Second trend is the one towards electrification of the vehicle fleet, from 0 in 2015 to 12 in 2020. Note that the amount of lease vehicles spikes in 2020 due to some temporary contracts (< 3 months) for the Groningen office. These were included in the totals. For 2021 the number of non-electrical lease contracts is 3.

KG CO2 emissions			
Scope 1	2018	2019	2020
Business travel			
Lease cars gasoline	49106	41538	11500
Lease cars diesel	31866	9110	3696
Lease cars hybrid	-	-	-
Lease cars fully electric	1108	1640	12787
<b>Total carbon lease cars</b>	<b>82.080</b>	<b>52.289</b>	<b>27.982</b>
<b>Total Scope 1</b>	<b>82.080</b>	<b>52.289</b>	<b>27.982</b>

[Source: Business Travel tab in Environmental20210428 v6.0 xl sheet]

#### 2.1.2 Scope 2

##### Electricity buildings Amsterdam and Groningen:

With the sale of the Arup office building in Amsterdam the electricity supplier has changed as well. From 100% wind energy between September 2017 and July 2020, Arup is since July 2020 using grey electricity (average mix of fuels of electricity on the Dutch market).

Scope 2		2018	2019	2020
<b>Electricity</b>				
<b>AMS Building</b>	<b>Electricity - grey</b>			80066
<b>AMS Building</b>	<b>Electricity -wind</b>	0	0	0
<b>Total carbon AMS building Electricity</b>		-	-	<b>80.066</b>
<b>GRO Building</b>				
<b>GRO Building</b>	<b>Electricity</b>	30874	23112	12300
<b>Total carbon GRO building Electricity</b>		<b>30.874</b>	<b>23.112</b>	<b>12.300</b>

[Source: Carbon per FTE tab in Environmental20210428 v6.0 xl sheet]

The Groningen office is currently using grey electricity.

### Heating buildings Amsterdam and Groningen

The Amsterdam building is heated by the AEB waste incinerator providing the whole western harbour area.

The Groningen building is heated by using natural gas. The exact amount for our own office is not known, the costs are included in the service-costs. The quoted figures seem overstated given the size of the office. Will be investigated.

There is not much gain to be had in reduction of heating, only in reduction in the amount of space leased. This will affect the heating requirements directly. An assessment of space requirements is presently undertaken for the Amsterdam office.

Heating		2018	2019	2020
<b>AMS Building</b>	<b>Heating</b>	8061	10511	10281
<b>GRO Building</b>	<b>Heating</b>	105667	79398	104990
<b>Total carbon Heating AMS and GRO</b>		<b>113.728</b>	<b>89.909</b>	<b>115.272</b>

[Source: Carbon per FTE tab in Environmental20210428 v6.0 xl sheet]

### Business travel with private car

The numbers on the use of a private car for business travel (not commuting) vary over the years and are assumed to be mainly influenced by the P500 project in Groningen. Staff from Groningen regularly visited Amsterdam and vice versa. The spike in 2019 could also be an error due to a new accounting system for the private mileage.

Business travel with private car		2018	2019	2020
<b>Total carbon business travel with private car</b>		<b>42.966</b>	<b>117.891</b>	<b>27.243</b>

Source: Carbon per FTE tab in Environmental20210428 v6.0 xl sheet]

## Business travel with public transport

The mobility plan that was put in effect on 1<sup>st</sup> January 2019 aims to have business travel done as much as possible by public transport or by using electric lease vehicles.

The public transport numbers are strongly influenced by the energy sources of the public transport companies. Between 2018 and 2020 more and more public transport companies have started using green electricity or hydrogen, pushing down the emissions factors.

The blacked out sections in the table below show the total numbers derived from earlier calculations. The modal split has only been possible since 2019.

Business travel with public transport		2018	2019	2020
Public transport	Bus		1105	356
Public transport	Metro		584	188
Public transport	Tram		2	2
Public transport	Intercity train		2249	724
Public transport	International train		456	0
<b>Total carbon business travel with public transport</b>		<b>3.984</b>	<b>4.395</b>	<b>1.270</b>

Source: Carbon per FTE tab in Environmental20210428 v6.0 xl sheet]

## Business travel airplane

The main source of carbon emissions in the past has been business travel by airplane. From 28% of total emissions in 2014 to an all-time high of 42% in 2019 and an all-time low of 16% in 2020. These percentages partially hide a wide range of absolute emissions, from 215.426 kg in 2014, through a peak of 362.648 kg in 2018 to an all-time low of 55.369 kg in 2020. For the internal Arup net zero strategy the year 2018 is used as a reference.

Business travel airplane	2018	2019	2020
distance <700 km	101908	79194	15825
2500< distance >700	115130	104602	16839
distance >2500 km	145611	102978	22705
<b>Total carbon business travel by airplane</b>	<b>362.649</b>	<b>286.773</b>	<b>55.369</b>

Source: Analysis 2020 tab in Environmental20210428 v6.0 xl sheet]

Airplane travel is done for project reasons or for internal Arup reasons, mostly training and meetings. The mobility policy encourages a transfer to train for international travel on short distances. The recorded travel so far has been 41 trips recorded in 2019 and 25 in 2020. Unfortunately the destinations were not tracked.

### 2.1.3 Scope 3

Commuting private car	2018	2019	2020
Fuel and weight unknown		88798	25352
<b>Total carbon commuting private car</b>	<b>308.863</b>	<b>88.798</b>	<b>25.352</b>

Source: Carbon per FTE tab in Environmental20210428 v6.0 xl sheet]

Commuting public transport	2018	2019	2020
Bus		3978	1281
Metro		2103	677
Tram		0	0
Train		8098	2608
<b>Total carbon commuting public transport</b>		<b>14.178</b>	<b>4.567</b>

Source: Carbon per FTE tab in Environmental20210428 v6.0 xl sheet]

The scope 3 figures are almost all related to commuting. The amount of commuting has been difficult to establish because in earlier years before 2019 there was no distinction between private car and public transport. The advent of Reisbalans (an app showing the modal split) now allows for more accuracy.

For 2020 the amount of commuting was limited due to the COVID19 restrictions.

Looking back at the carbon emissions per FTE in kg we can discern a gradual reduction in the years between 2014-2019 and a dramatic drop in 2020. In the next chapter we will outline the steps we will take to continue this path of reduced emissions.

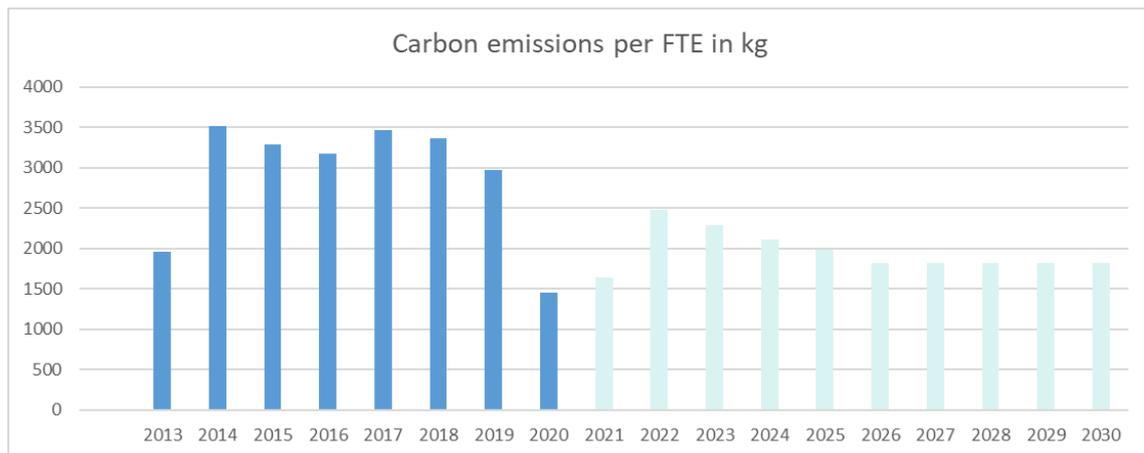


Figure 1 Yearly carbon emissions per FTE in kg

[source Analysis 2020 tab Environmentaldata 20210428 v6.0]

## 2.2 Reduction strategy

Table 31. GHG inventory	2018=100				
	2018	2020	2021*	2020	2021*
Lease cars	82.080	27.982	20.226	-66%	-75%
<b>Scope 2</b>	<b>554.201</b>	<b>291.520</b>	<b>271.459</b>	<b>-47%</b>	<b>-51%</b>
Electricity	30.874	92.366	51.947	199%	68%
Heating	113.728	115.272	109.269	1%	-4%
Business travel private car	42.966	27.243	19.042	-37%	-56%
Business travel public transport	3.984	1.270	539	-214%	-271%
Business travel airplane	362.649	55.369	90.662	-85%	-75%
<b>Scope 3</b>	<b>308.863</b>	<b>29.918</b>	<b>65.307</b>	<b>-90%</b>	<b>-79%</b>
Commuting private car	308.863	25.352	62.966	-92%	-80%
Commuting public transport	-	4.567	2.341		
Paper consumption	-	-	-		
<b>Total</b>	<b>945.144</b>	<b>349.421</b>	<b>356.993</b>	<b>-63%</b>	<b>-62%</b>

[source: Analysis 2020 tab in worksheet Environmentaldata 20210428 v6.0]

[\* predicted based on assumptions listed in Assumptions 2020 tab in worksheet Environmentaldata 20210428 v6.0]

With the present COVID crisis gradually subsiding, we expect the regular business cycles to resume by end of September 2021. This means that from then on the regular travel patterns will re-emerge.

The COVID crisis has shown that remote working is more realistic and feasible than previously imagined. With everyone now having at their disposal a suitable desk and chair along with an extra computer screen, the conditions are set to make use of the home-working possibilities.

### 2.2.1 Scope 1 reduction

The target for the coming years is a full electrification of the lease vehicles and a reduction in lease vehicles. This is reflected in the targets, with a total of 12 fully electric lease vehicles being used for forecasting. The current lease contracts for non-electrical vehicles will expire in the coming years, with the last one in 2023. The target for 2024 is the target for a fully electric lease vehicle fleet. After 2024 the only way to reduce carbon is to ensure 100% renewable energy for charging and/or reduction of number of lease vehicles.

### 2.2.2 Scope 2 reduction

#### Electricity Amsterdam and Groningen

Scope 2	2020	2021
<b>Electricity</b>		
<b>AMS Building</b>	<b>Electricity - grey</b>	
	80066	84682

<b>AMS Building</b>	<b>Electricity -wind</b>	0	0
<b>Total carbon AMS building Electricity</b>		<b>80.066</b>	<b>84.682</b>
<b>GRO Building</b>	<b>Electricity</b>	12300	19211
<b>Total carbon GRO building Electricity</b>		<b>12.300</b>	<b>19.211</b>

Discussions are underway to revert the Amsterdam electricity supply back to Dutch wind power 100% green electricity by 1<sup>st</sup> July 2020. In that case the predicted 84682 kg emissions would be halved.

Switching the Groningen office to green electricity could reduce carbon emissions by 20 tons yearly. Discussion with the landlord in Groningen are also underway.

Target date for switch is June/July 2021.

Heating		2020	2021
<b>AMS Building</b>	<b>Heating</b>	10281	10281
<b>GRO Building</b>	<b>Heating</b>	104990	98988
<b>Total carbon Heating AMS and GRO</b>		<b>115.272</b>	<b>109.269</b>

Heating of the Amsterdam office is done through district heating from the waste incinerator AEB. This system can't be changed.

In 2021 we will discuss the issue of reverting to other possible uses (green gas) with the landlord of the Groningen office. The current figures for heating of the Groningen office seem inflated. This will be investigated.

Business travel with private car	2020	2021
<b>Total carbon business travel with private car</b>	<b>27.243</b>	<b>19.042</b>

The mobility policy favours business travel by electric lease car or public transport. This category is expected to stay at low levels in the coming years.

Business travel with public transport		2020	2021
<b>Public transport</b>	<b>Bus</b>	356	83
<b>Public transport</b>	<b>Metro</b>	188	0
<b>Public transport</b>	<b>Tram</b>	2	0
<b>Public transport</b>	<b>Intercity train</b>	724	0
<b>Public transport</b>	<b>International train</b>	0	456
<b>Total carbon business travel with public transport</b>		<b>1.270</b>	<b>539</b>

With effect from 2021 all public transport companies use 100% green electricity in their operations. This means travel on public transport in WtW analysis means zero emissions. This is reflected in the falling numbers over the years. Only bus travel will be producing a limited amount of carbon emissions from 2021 onwards.

Business travel airplane	2020	2021
<b>distance &lt;700 km</b>	15825	25477
<b>2500&lt; distance &gt;700</b>	16839	28782
<b>distance &gt;2500 km</b>	22705	36403
<b>Total carbon business travel by airplane</b>	<b>55.369</b>	<b>90.662</b>

The mobility policy favours trains for short distance international travel and this is already showing in the growing number of international train trips. In 2020 and 2021 this development was temporarily interrupted.

In coming years air travel will be dealt with as a direct cost to the projects. Projects will be charged an additional \$US40 per ton of calculated emission. These amounts will be used to buy verified carbon offsetting certificates. The effect of this will be closely monitored.

Training will be increasingly held on-line. To that effect Arup University has made great strides in transforming training resource material to on-line variants.

The target emissions from airtravel will be 70% of 2018 in 2022, reducing with 10% year on year until 2026 when the emissions will be 30% of the 2018 figures.

### 2.2.3 Scope 3 reduction

Commuting private car	2020	2021
<b>Fuel and weight unknown</b>	25352	62966
<b>Diesel</b>	0	0
<b>Hybrid</b>	0	0
<b>Fully electric</b>	0	0
<b>Total carbon commuting private car</b>	<b>25.352</b>	<b>62.966</b>

Home-working in 2020 has shown that productivity doesn't necessarily suffer. This has made it more realistic to introduce regular home-working as a way to push down commuting, either by public transport or private car. The aim for 2022 is 20% less commuting per FTE than in 2018.

For the commuting by public transport there is little to be gained in limiting carbon emissions, since all means of public transport are now run on sustainable energy. All commuting miles with public transport are basically zero emission.

Another possible outcome could be the re-evaluation of office size. With a 20% less attendance in the office, there is scope for hotdesking and reducing the amount of office space. This will have a positive impact on the energy use per FTE. The effects are now being studied but are not expected to be the same 20%.

### 2.3 Targets set in Europe region net zero carbon strategy

Arup has set itself global goals in reducing carbon emissions and being a net zero carbon organisation by 2030, with an intermediate goal of 30% reduction by 2025. The Europe region has set out a detailed plan for reductions by 2025 and 2030. The relation between those reductions and the ones proposed for the CO2 prestatie ladder will be discussed below.

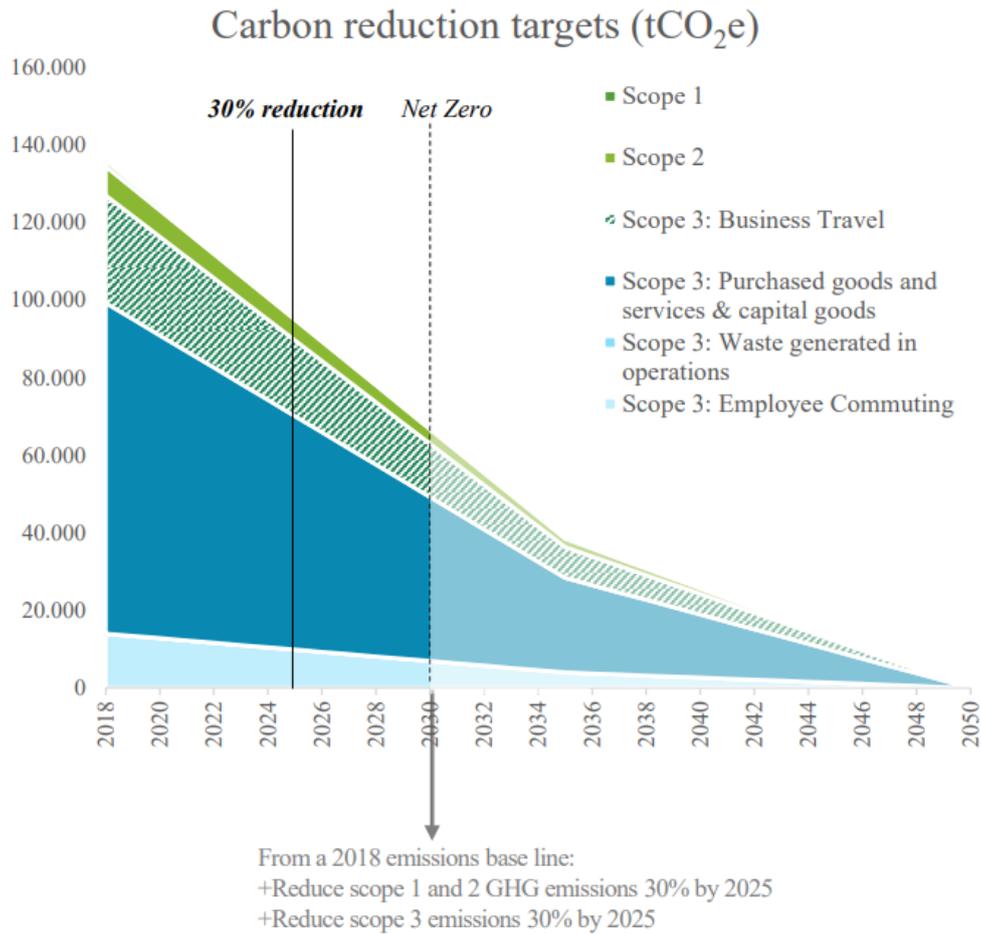


Figure 2 ER GHG reduction goals [source: Net Zero ER GHG Reduction Plan August 2020]

## Route map for reducing emissions

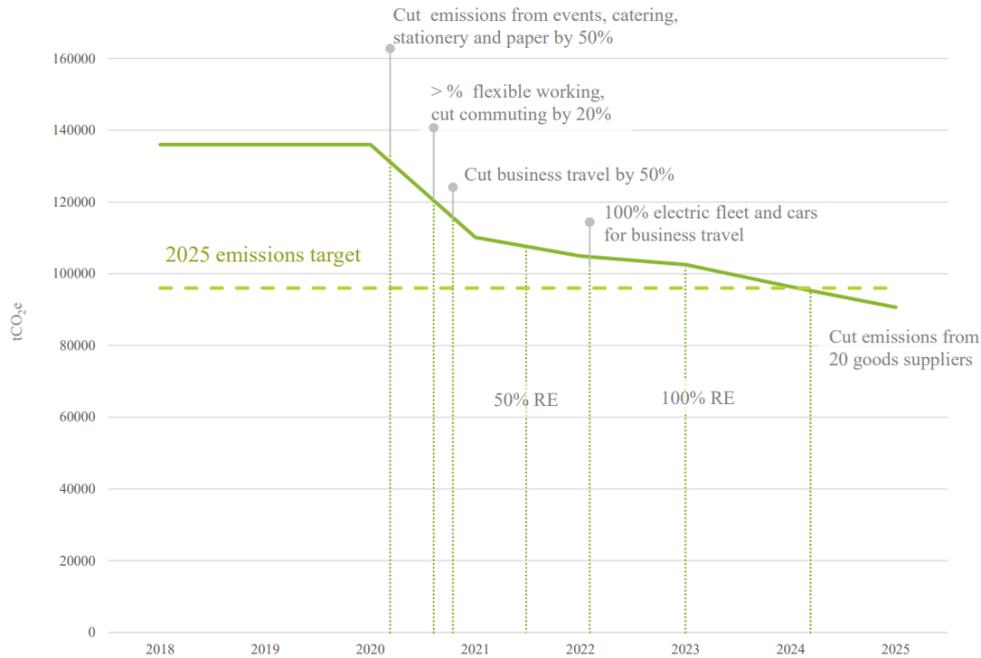


Figure 3 ER GHG reduction plan route map [source: Net Zero ER GHG Reduction Plan August 2020]

A few remarks: the ER plan uses different definitions of scope for their emissions calculations than the ones used for CO2 prestatieladder. The CO2 prestatieladder has business travel with lease cars in scope 1, business travel by private car, public transport and airtravel in scope 2, commuting in any form in scope 3. The CO2 prestatieladder excludes emissions from suppliers.

ER GHG reduction plan	target				% reduction		
ER GHG reduction goals	2018	2020	2021	2025	2020	2021	% complete
Scope 1	82.080	27.982	20.226	57.456	66%	75%	251%
Scope 2	554.201	291.520	271.459	387.941	47%	51%	170%
Scope 3	308.863	29.918	65.307	216.204	90%	79%	263%
Total scope 1, 2,3	945.144	349.421	356.993	661.601	63%	62%	207%
ER GHG reduction plan route map							
Cut emissions from events, catering, stationary and paper 50%							
Cut commuting by 20%	308.863	29.918	65.307	247.090	90%	79%	394%
Cut business travel by 50%	409.599	83.882	110.243	204.800	80%	73%	146%
					% increase		
100% electric fleet and cars for business travel	22%	35%	75%	100%	13%	53%	75%
Cut emissions from 20 goods suppliers	-	-	-	-			

As can be seen the global targets for 2025 have already been attained.

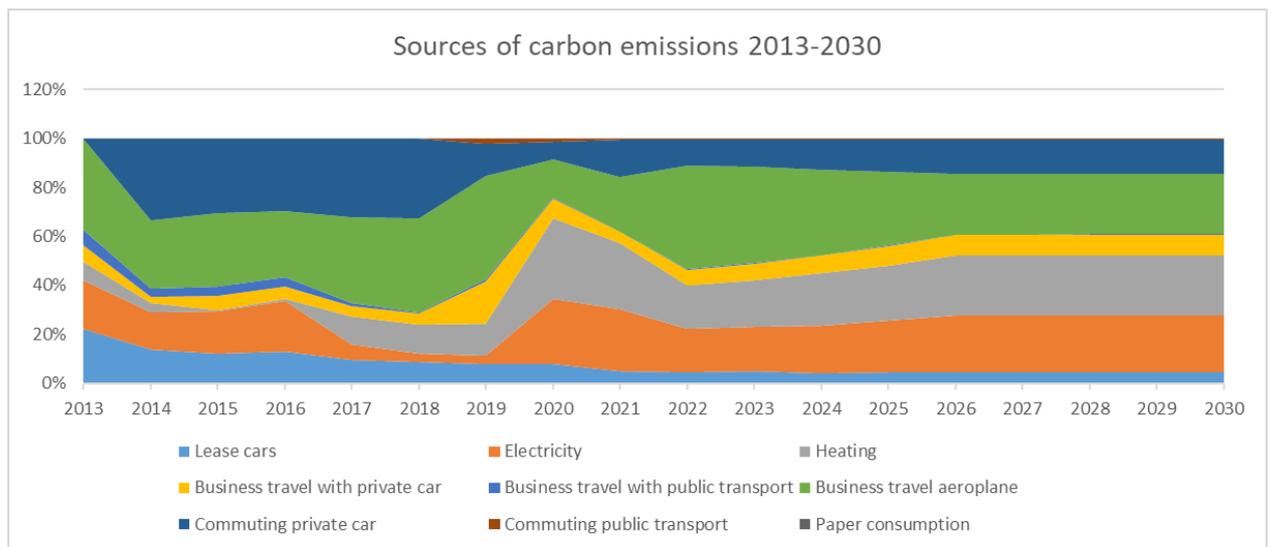
**Commuting** emissions will be reduced further by using only public transport or electric lease vehicles. All public transport companies in the Netherlands have reverted to using 100% green electricity, effectively meaning that commuting by train, tram or metro will not generate carbon emissions in 2021.

With reduced presence in the office (20% reduction as a target), the amount of required office space is also under consideration. This will directly impact the **heating** and **electricity** requirements. Heating emissions are directly linked to amount of office space and can't be influenced in any other way (city heating in Amsterdam is the only supplier allowed).

The last major reduction will be the use of **airtravel** in projects and internally. The conversion of most Arup University material into online courses will have a discernible impact on the amount of airtravel for training.

The only reduction measure not in line with the CO2 performance ladder is the reduction of emissions from 20 goods suppliers. At present these emissions are not included in the scope for the CO2 performance ladder. Further investigation of the exact definition of these emissions and our influence on them will be done before the next report.

### 2.3.1 Prediction 2030 emissions based on historical averages



[actual and forecast distribution of sources of carbon emissions 2013-2030, based on 2020 figures. File: Environmentaldata 20210428 v6.0]

Looking ahead to 2030 based on the data now available (some needs to be corrected and other data is not in line with the historic trend) we can see that the main contributors to carbon emissions in the future will be electricity (orange), heating (grey), airtravel (green). This forecast will be updated yearly to make sure the correct sources are considered for action.

## 2.4 Reduction targets

In the past year 2020 air travel has literally dropped to zero due to Covid-induced travel restrictions. Commuter travel has dropped significantly from March 2020 onwards as office presence of staff became restricted and employees started to work from home.

As stated before, the current Covid travel restrictions make it very hard to set realistic targets. Generally speaking the first six months of 2021 will probably show the same restricted travel patterns as 2020. After that travel is projected to gradually pick up and be fully possible in 2022, most probably not reaching pre-2020 levels.

One of the main lessons from the Covid lockdown was the apparent effectiveness of remote working and online working. Whereas before this was never considered a viable option, it has now become a daily reality.

This will also affect travel patterns in the future as online conferencing and remote working will become more accepted. It is not realistic to think all work can be productively done online. The targets for reduction below take this into account.

Reduction targets for 2021 will be greatly affected by the low levels of travel and commuting in the first half of 2021. Realistically speaking any reduction target should only start in 2022.

For this reason we take the reduction target for 2022 to be the following:

1. Each FTE to work from home 1 day a week, effectively reducing commuting mileage by 20%. This will bring commuting emissions lower if public transport is used. From 2021 onwards all public transport (except busses) has zero emissions.
2. Air travel to Arup meetings and Arup internal conferences to be reduced by 20% in 2022 compared to 2018 due to availability of online alternatives. This reduction will be continued until a 70% reduction is reached compared to 2018. This will bring Arup bv close to net zero in 2025, assuming the compensation of flight with offsetting certificates.

Taking these two targets into account the 2022 reduction will be:

Scope	Source of emission	CO <sub>2</sub> -emission [kg CO <sub>2</sub> -/FTE]***	Reduction Ambition	
			2022	2022 target
		2018		
<b>Scope 1</b>	Business travel: lease cars	292	60%	117
<b>Scope 2</b>	Business travel: private cars	153	Equal	158
	Air travel	1291	20%	1055
	Electricity	110	Equal	81*
	Heating	405	Equal	446**

	Business travel: public transport	14	70%	4
<b>Scope 3</b>	Commuting	1099	76%	271**
<b>Total</b>				
<b>Scope 1,2 en 3</b>		3.364	26 %	2.484

[Source Carbon per FTE tab Environmentaldata 20210428 v6.0]

\* Assumes green power for Amsterdam office, if not the total for Amsterdam and Groningen will be 781 tons per year per FTE.

\*\* Figures look distorted. Need to improve measurements.

\*\*\* Targets per FTE differ slightly from overall targets due to changing number of FTE.

## 2.5 Potential reduction measures

The following definitive set of reduction measures were implemented as part of the new mobility plan, effective as per January 1<sup>st</sup>, 2019. The assumed changes in work patterns as discussed above have also been included.

Category	Measure	Potential % total emissions	Progress	Responsible
Scope 1: Self assessment energy audit.	Use the toolkit of InfoMill <a href="http://www.infomil.nl/kantoren">http://www.infomil.nl/kantoren</a> to identify possible office energy saving measures.	Estimated 1% of Scope 2. Done mainly to verify completeness of measures identified	● ● ●	SDM
Scope 1: Office energy use	Office energy audit by Main Energy, identifying potential areas of saving.	Estimated 1% of Scope 2. Done mainly to verify completeness of measures identified	●	SDM
Scope 2: Business travel – air 	1. Incentives setup in Net Zero Carbon plan. 2. Training move on-line.	▼ 20% in 2022 compared to 2018	● ●	SDM

	<ol style="list-style-type: none"> <li>3. Incentives for train set up in new mobility plan</li> <li>4. Provide alternative travel guideline: Our travel agency is instructed to provide travel by train as the first option for travelling within the EU (Germany, Belgium, UK or France).</li> <li>5. For flights to/from these destinations, an additional supervisor approval will be needed.</li> </ol>			
<p>Scope 3: Commuting</p> 	<ul style="list-style-type: none"> <li>• Incentives in new mobility plan</li> <li>• Use of Reisbalans</li> <li>• OV business cards/ mobility cards</li> <li>• Free OV bike to and from train station</li> <li>• Aim for 1 day home-working</li> <li>• Reduction of number of lease vehicles from 12</li> </ul>	<p>▼ 20% reduction compared to 2018</p>	<p>● ●</p>	<p>SDD</p>

Besides focussing on the main reduction measures of scope 1,2, and 3 to decrease the CO2 emissions of our operations, Arup as a company has put effort into increasing awareness amongst employees.

Category	Measure	Potential %	Progress	Responsible
<p>Awareness</p> 	<p>Sustainable development Learning path</p>	<p><i>Tbd</i></p>	<p>● ●</p>	<p>SDM</p>

## 3 Reduction for projects downstream scope 3

In this section, the reduction strategy is outlined for emission categories associated to our projects, downstream scope 3. The main areas of influence are defined in the downstream scope 3 analysis and the chain analyses.

### 3.1 Reduction strategy

Through our design and consultancy practice we stimulate sustainable decisions in the design process. To assist project managers in setting sustainability objectives a tool will be developed to give insight in the driver for sustainability and help them set and monitor objectives in projects. A focus on energy targets in projects is priority.

The objectives are recorded in the Arup internet Project Plan (IPP)



Figure 4 UNSDGs (Source: United Nations)

Both in the CRM system and the IPP project plan system data on sustainability is captured but up to now without follow up action.

Starting in 2021 there is a Power BI dashboard capturing all projects that have environmental aspects. In the course of 2021 the actions that will spring from this dashboard will be defined and set in motion. The most obvious would be to have an environmental audit of the project to assess the potential for sustainability measures to be taken into account, carbon emissions reduction being one of them.

**REDACTED**

Further work will follow on outlining example projects and project-level interventions and suggestions to lower carbon emissions.

In 2021 work will begin on tracking the carbon emission performance of our suppliers. Initial work will be done in identifying the main suppliers and setting up a questionnaire on their carbon emissions, possibly offering to do a carbon analysis of their operations.

## 3.2 Reduction targets

In compliance with Arup European Objectives:

50% of projects with a fee > €150k are setting sustainability objectives.

Performance 2018: 34% achieved. Goal 2022: 50%

## 3.3 Reduction measures

Target	Category	Measure	Progress	Responsible
1 	Projects – Objectives	Sustainability objectives in projects > €150k fee are recorded in the IPP	● ○ ○	PM
2 	Projects – Objectives	Development of Sustainability objectives tool	● ○ ○	SDM
2 	Projects – design - Energy	Verify if projects comply with Dutch regulation in relation to the ‘Energieprestatie’ of a building. (EPC)	● ● ○	PM
3 	Projects – design - Materials	Verify if projects comply with Dutch regulation in relation to the ‘Milieuprestatie’ of a building. (MPG)	● ○ ○	PM
4 	Projects - Communication	Each year a selection of our projects will be presented in the ‘How We Shape a Better World’ report	● ○ ○	SDM